RYAN HYDRAULICS
Solution to Hydraulic System

Techical Information

Orbital Motors

GM/GP/GPH/GR/GRA/GRS/GH/GS/GT/GV
GFA/GFB/GFD/GFE/GFF/GFK/GGM
GKM/GKA/GKB/GKC/GKT/GKS/GWD/GWH/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

Orbital Motors

Orbital Motors

GM Series Hydraulic Motors

Options

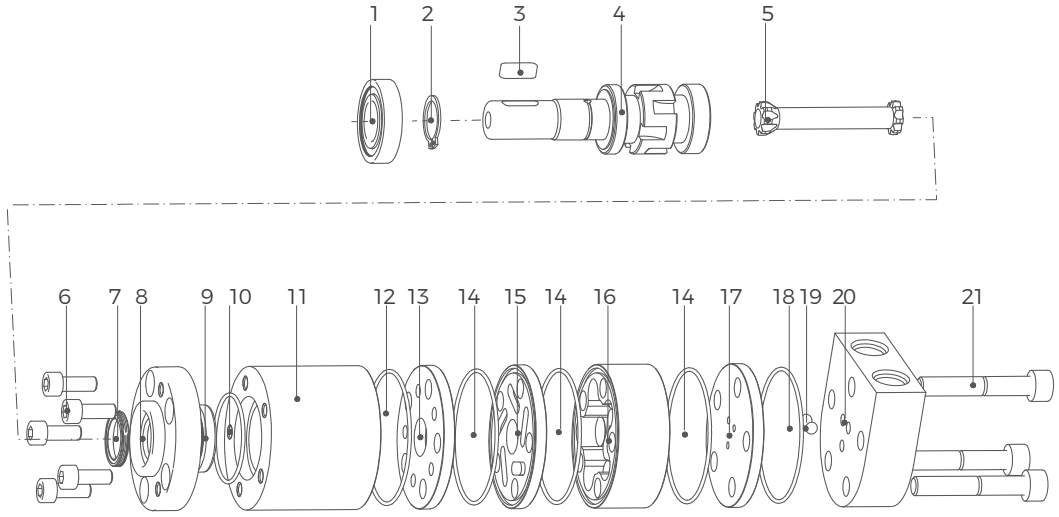
- Flange connection
- Motor with needle roller bearing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Speed sensing
- Other special features

Applications

- Conveyors
- Feeding equipment 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.: 4.6 [410] int.: 8.8 [780]
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	°C [°F]	-40 —140 [-104 —284]
Optimal Viscosity Range	mm^2/s [SUS]	20 —75 [98 —347]
Filtration		ISO code: 20/16 (Min. recommended fluid filtration of 25 microns)



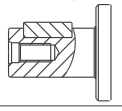
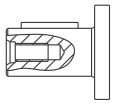
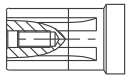
1 Tapered roller bearing
2 Shaft retainer
3 Paralleled key
4 Output shaft
5 Transmission shaft
6 Screw
7 Anti-dust free ring
8 Front cover
9 Skeleton oil seal
10 O-ring
11 Housing
12 O-ring
13 Spacer 1
14 O-ring
15 Spacer 2
16 Rotor and stator
17 Balance plate
18 O-ring seal
19 Steel ball
20 Rear cover
21 Screw

Ordering Code

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

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

CODE	FLANGE
B4	3-M6 Circle, pilot Ø31.5x5 
B5	3-1/4-28UNF Circle, pilot Ø31.5×5 
AD	2-Ø9 Rhomb, pilot Ø63×2 

CODE	SHAFT
SS	Shaft Ø16, parallel key 5×5×6 
ST	Shaft Ø15.85, parallel key 4.8×4.8×19.05 
RK	Shaft Ø16.5, splined B7×14 DIN5482 

CODE	PORTS
GA	G3/8, G1/8
U8	9/16-18UNF, 3/8-24UNF
GB	End port G3/8, G1/8
U9	End port 9/16-18UNF, 3/8-24UNF

CODE	ROTATION
A	Standard
R	Opposite

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

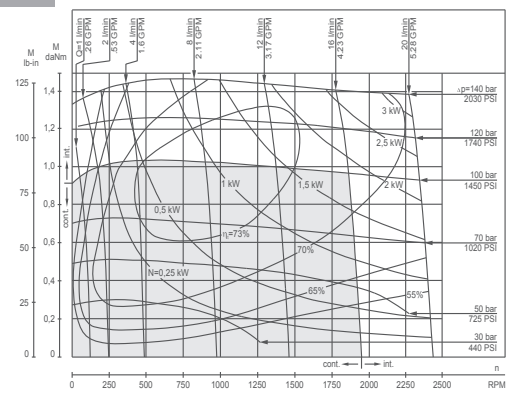
CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High Temp.
S	Low Temp.

Specifications

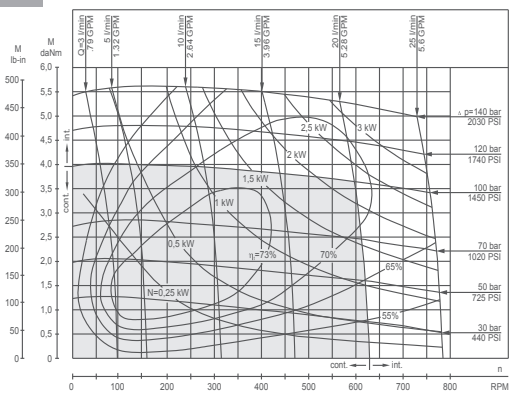
Type		GM8	GM12.5	GM20	GM32	GM40	GM50
Displacement, cm^3/rev [in^3/rev]		8.2[.50]	12.5[.77]	19.9[1.22]	31.6[1.93]	39.8[2.43]	50[3.08]
Max. Speed	Cont.	1950	1550	1000	630	500	400
RPM	Int.*	2450	1940	1250	800	630	500
Max. Torque	Cont.	1.1[95]	1.6[140]	2.5[220]	4.03501	4.5[400]	4.6[410]
daNm [lb-in]	Int.*	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

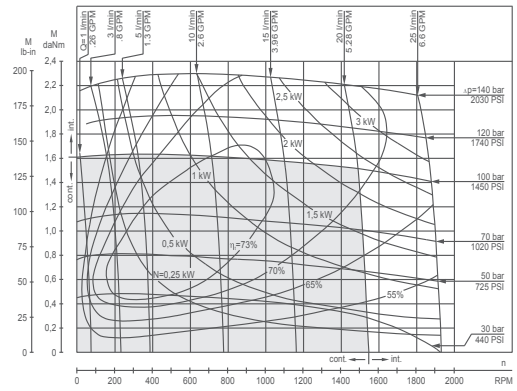
GM8



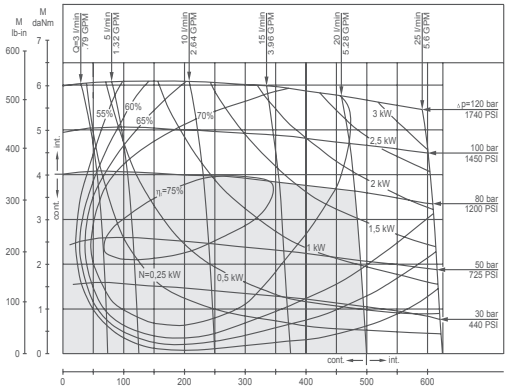
GM32



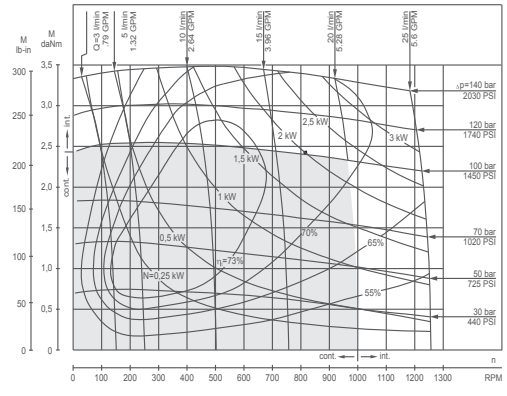
GM12.5



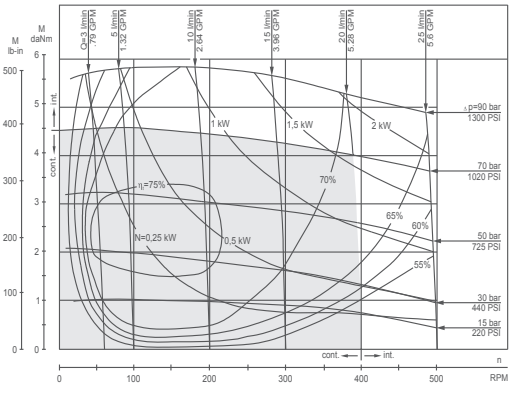
GM40



GM20



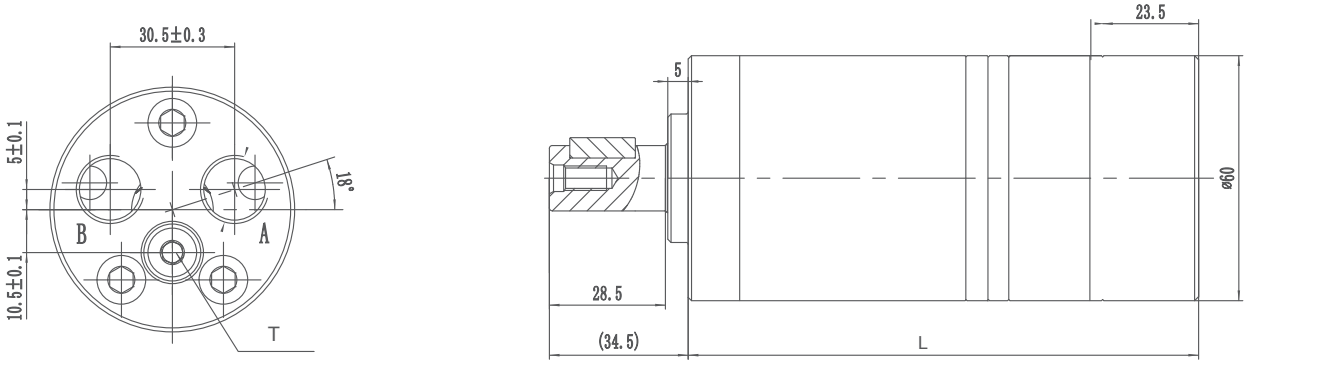
GM50



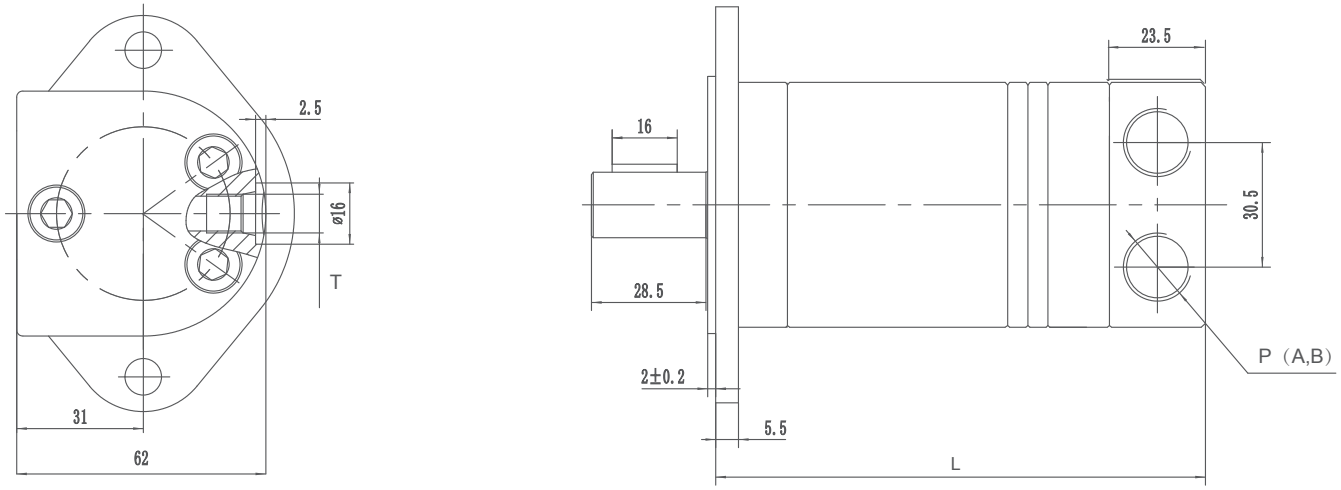
The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

GM Dimensions and Mountings

Model A



Model B

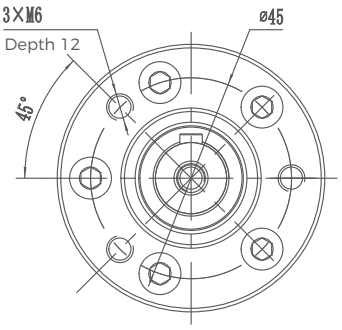


Model	Model A	Model B
	L(mm)	L(mm)
GM8	109	105
GM12.5	111	107
GM20	114	110
GM32	119	115
GM40	122	118
GM50	127	123

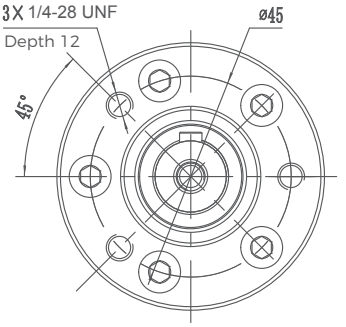
Mounting	GA （depth）	U8 (depth)	GB (depth)	U9 (depth)
P(A, B)	G3/8 (12)	9/16-18UNF (12)	End port G3/8 (12)	End port 9/16-18UNF (12)
T	G1/8 (8)	3/8-24UNF (8)	G1/8 (8)	3/8-24UNF (8)

GM Flange Covers Dimensions

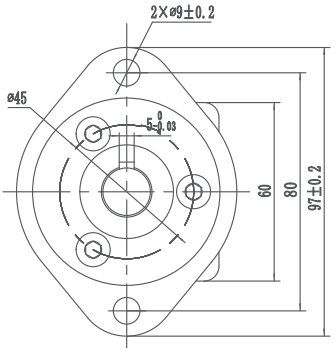
B4



B5

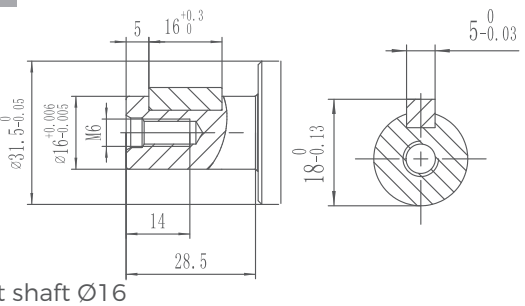


AD



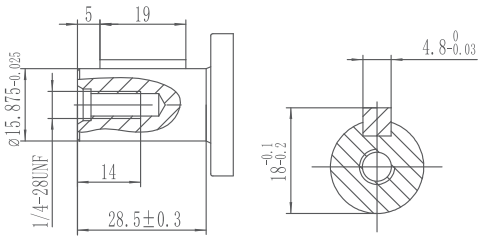
GM Shafts Dimensions

SS



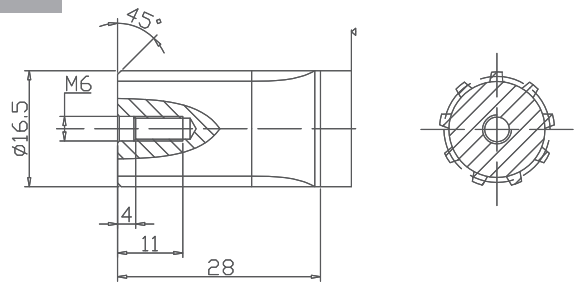
Straight shaft Ø16
Parallel key 5 x 5 x 16

ST



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

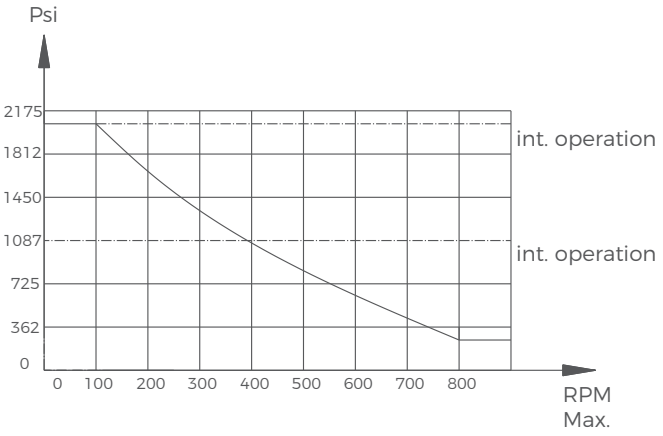
RK



Splined shaft Ø16.5
B7 x 14 DIN5482

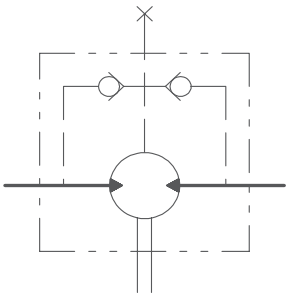
GM Series Hydraulic Motors

Permissible shaft seal pressure



Drain Port

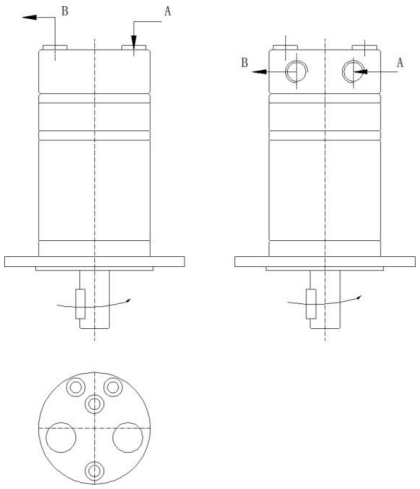
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.



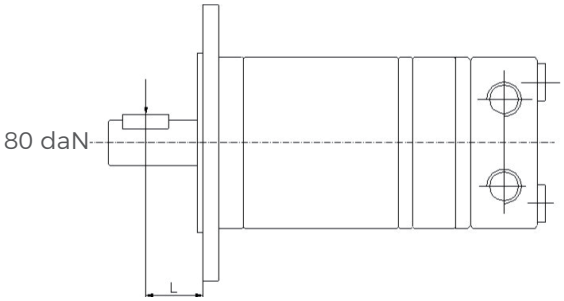
GM with standard shaft seal check valves and without use of drain connection:
The pressure on the shaft seal never exceeds the pressure in the return line. GM with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

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

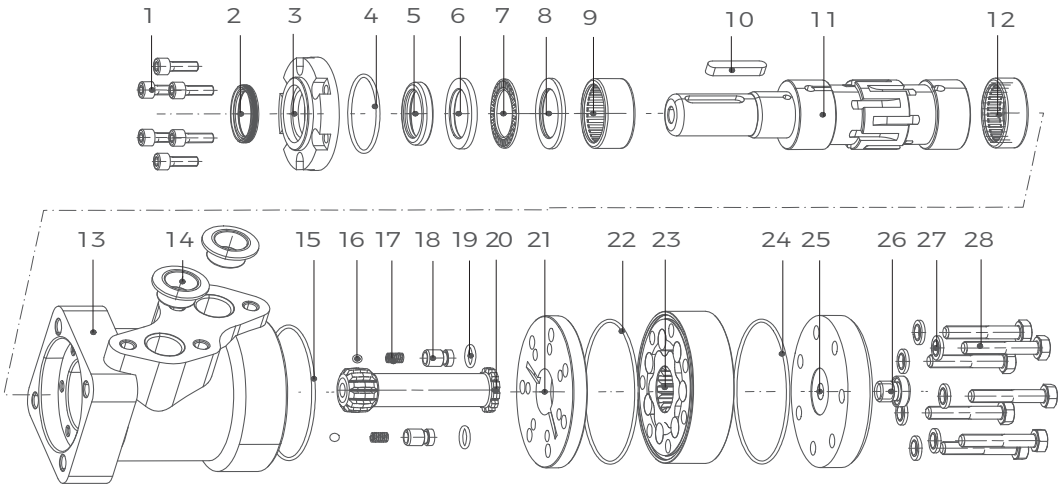
- Flange connection
- Motor with needle roller bearing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

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

General

Max. Displacement	cm^3/rev [in^3/rev]	623,6 [38.05]
Max. Speed	RPM	1815
Max. Torque	daNm [lb-in]	cont.: 44 [3895] 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 [-104—284]
Optimal Viscosity range	mm^2/s [SUS]	20—75 [98—347]
Filtration		ISO code 20/16 [Min. recommended fluid filtration of 25 microns]

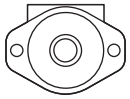
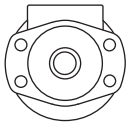
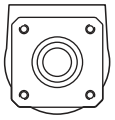
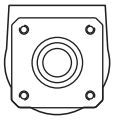


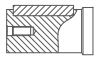
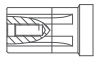
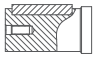
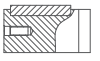
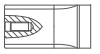
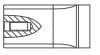
1 Bolt
2 Anti-dust ring
3 Front cover
4 O-ring seal
5 Shaft seal
6 Bearing retainer
7 Flat bearing
8 Bearing retainer
9 Needle roller bearing
10 Parallel key
11 Output shaft
12 Needle roller bearing
13 Housing
14 Rubber plug
15 O-ring seal
16 Steel ball
17 Spring
18 Check valve
19 O-ring seal
20 Transmission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

Ordering Code

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

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

CODE	FLANGE
A2	2-Hole SAE A ,Ø106.4 pilot Ø82.5×2.8 
A4	4-Hole SAE A ,Ø106.4 pilot Ø82.5×2.8 
H4	4-3/8-16UNC square,Ø82.5 pilot Ø44.4×2.8 
H5	4-M10 square, Ø82.5 pilot Ø44.4×2.8 

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, splinedtooth 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	ROTATION
A	Standard
R	Opposite

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	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

Specifications

Technical data for GP with , Ø25,Ø25.4 straight, Ø25.4 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. Spee, 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,Ø25.4 straight, Ø25.4 splined and Ø28.56 tapered shaft

Type		GP160	GP200	GP250	GP315	GP400	GP500	GP630
Displacement, cm^3/rev [in^3/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	At max. press. drop Cont.	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 Int.*	35,5[3140]	42,6[3770]	54,2[4795]	61,9[5480]	60,8[5390]	54[4780]	62[5480]
Min. Speed, RPM		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, cm³/rev [in³/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	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]	5,9[13]	6[13.2]	6,2[13.7]	6,3[13.9]

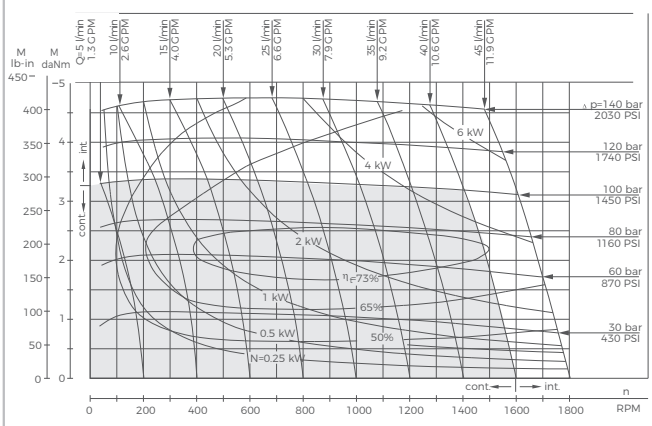
Specifications

Technical data for GP with Ø31.75 and Ø32 shaft

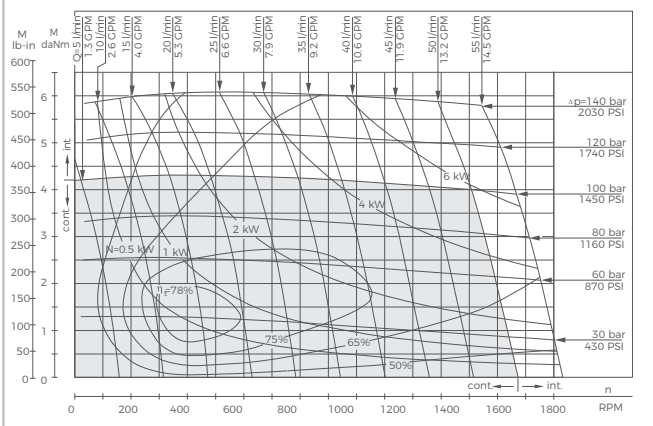
Type		GP160	GP200	GP250	GP315	GP400	GP500	GP630
Displacement, cm^3/rev [in^3/rev]		158,4[9.66]	198[12.1]	247,5[15.1]	316,8[19.3]	396[24.16]	495[30.2]	623,6[38.05]
Max. Speed,	Cont.	378	303	242	190	150	120	95
RPM	Int.*	472	378	303	236	189	150	120
Max. Torque	Cont.	31,3[2770]	36,6[3240]	47[4160]	48[4360]	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	At max. press. drop Cont.	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 Int.*	35,5[3140]	42,6[3770]	54,2[4795]	5480[61,9]	60,8[5390]	54[4780]	62[5480]
Min. Speed, RPM		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

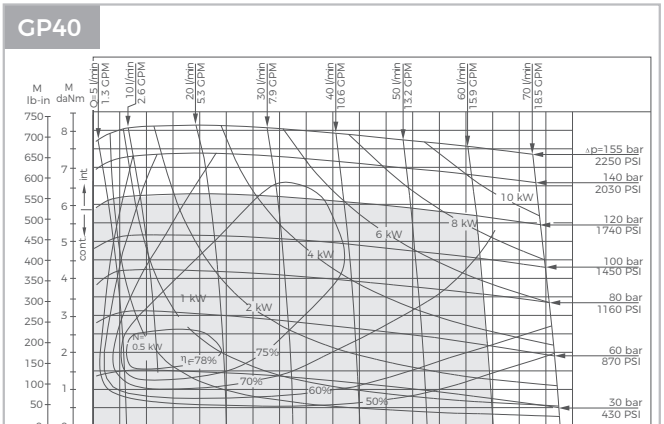
GP25



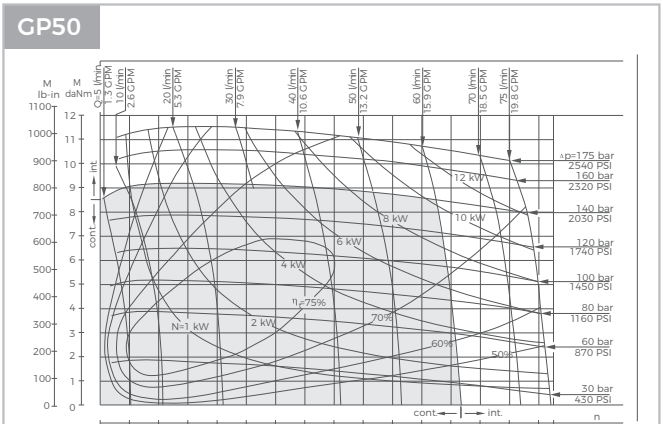
GP32



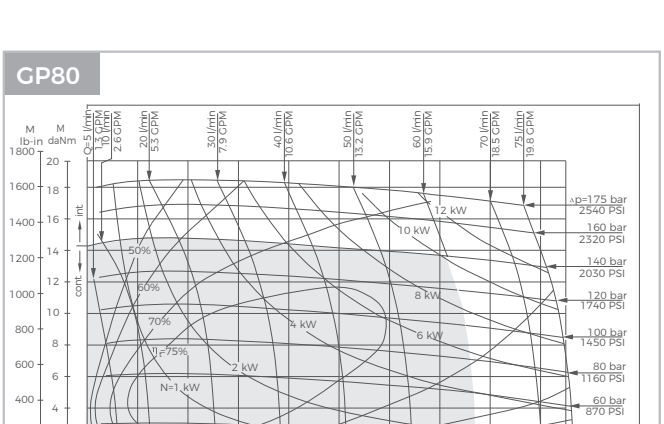
GP40



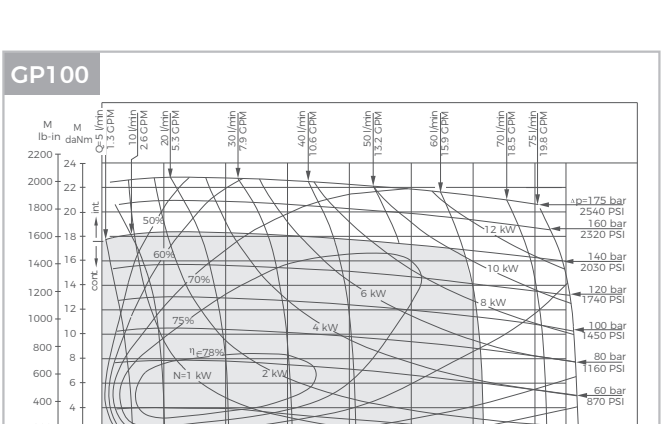
GP50



GP80



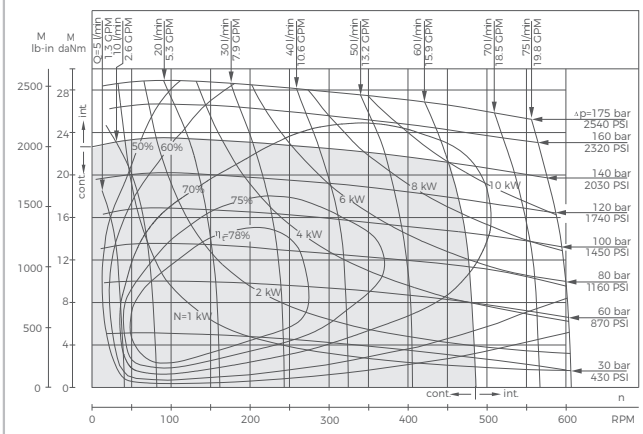
GP100



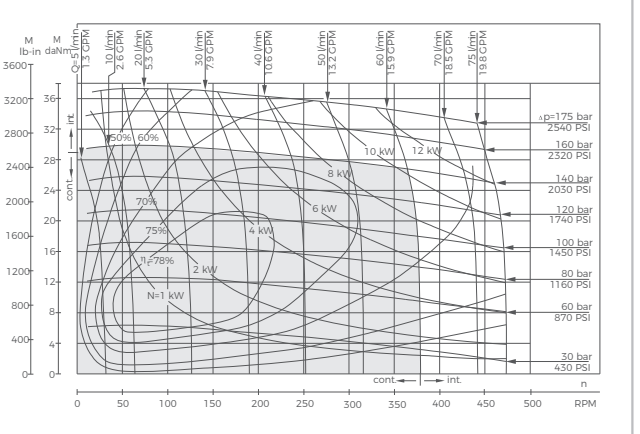
The function diagrams data is for average performance of randomly selected motors at backpressure.
5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

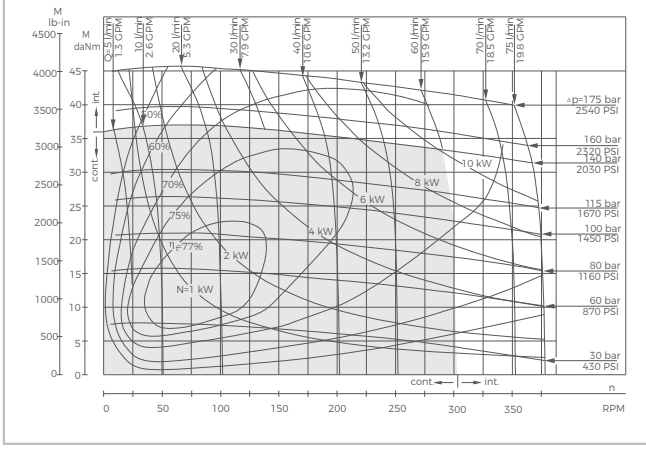
GP125



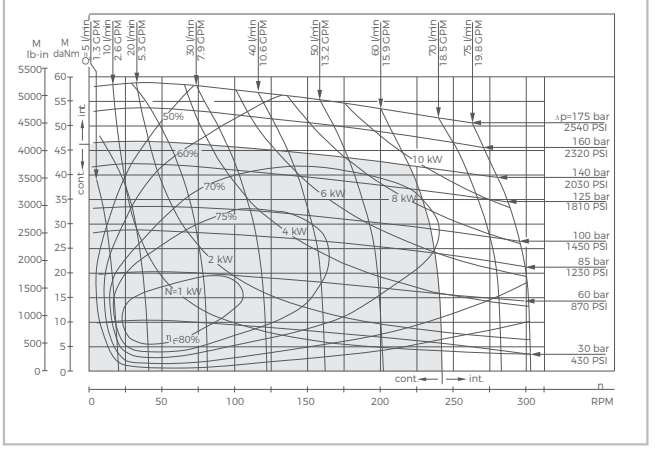
GP160



GP200



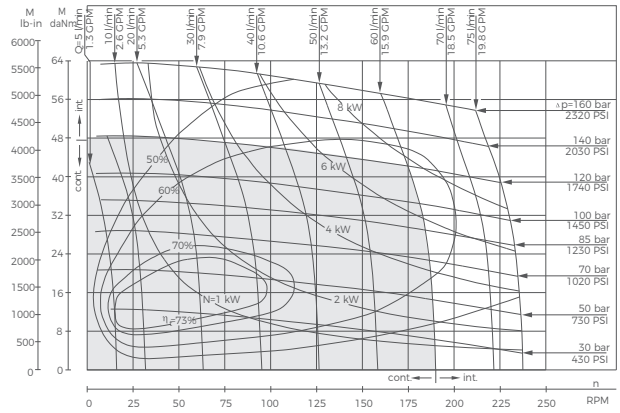
GP250



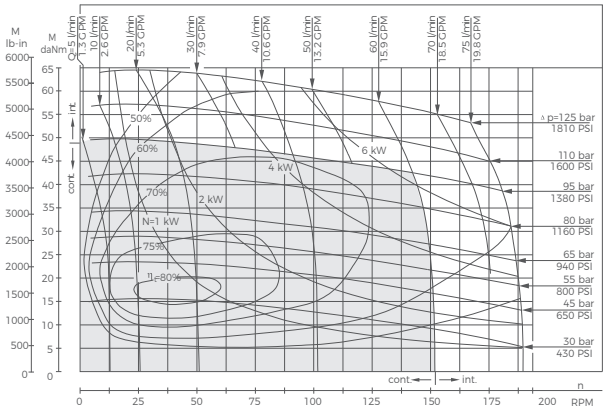
The function diagrams data is for average performance of randomly selected motors at backpressure.
5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

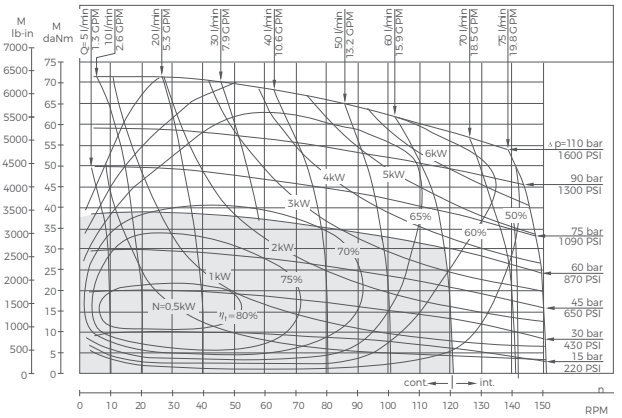
GP315



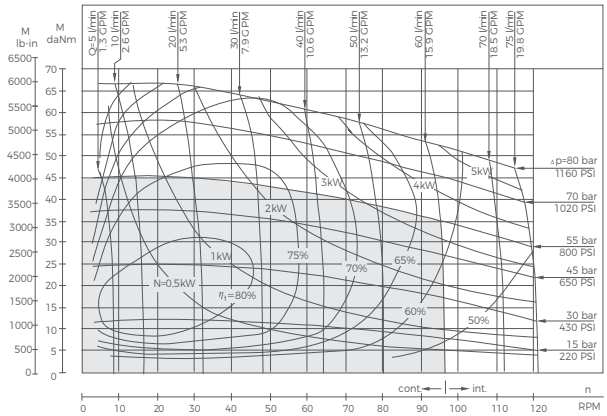
GP400



GP500

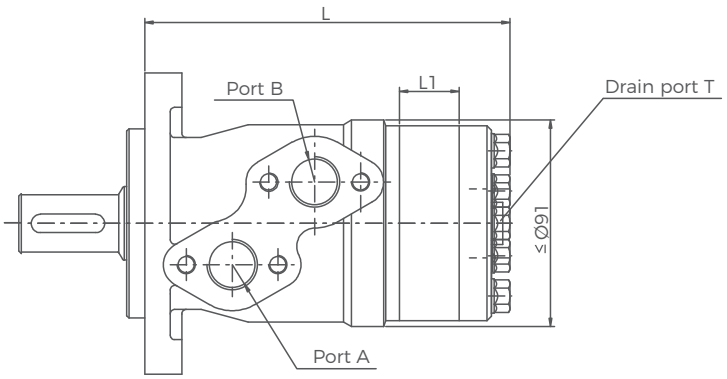


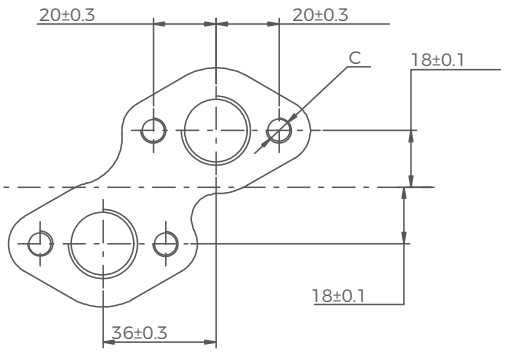
GP630



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

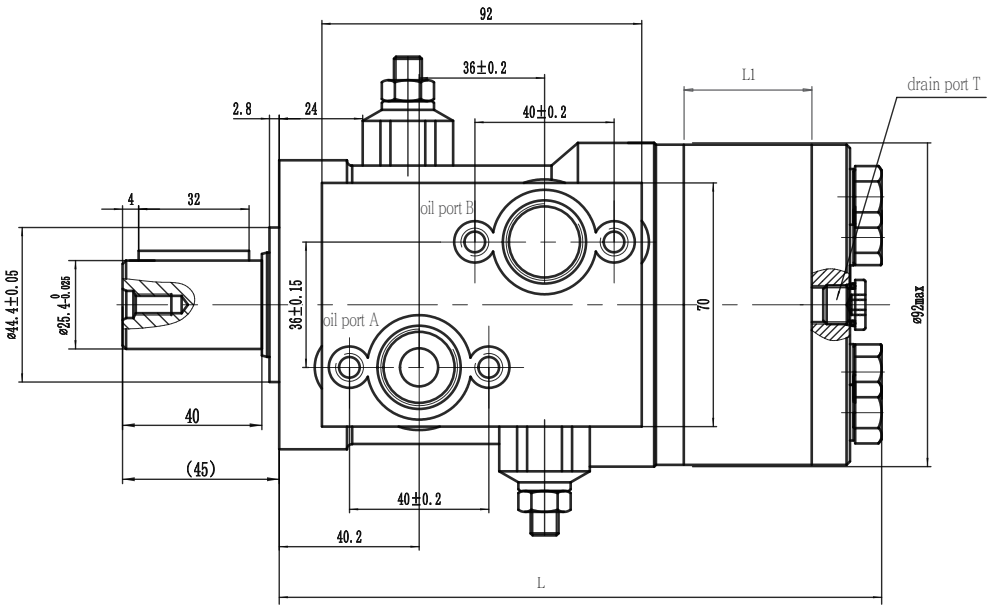


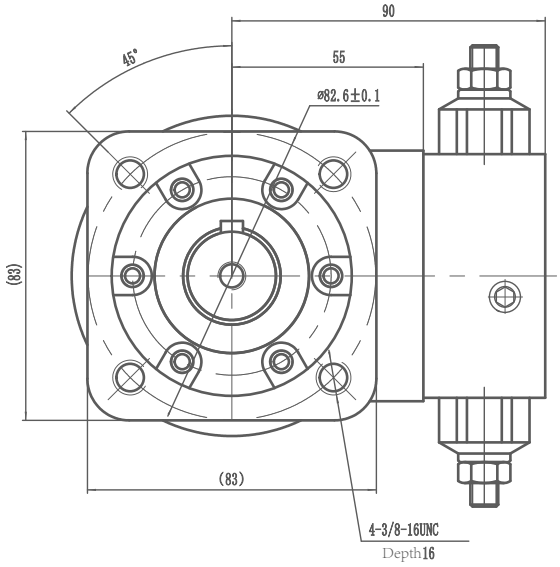


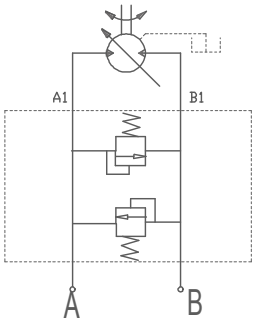
Model	L(mm)	L1(mm)
GP25	135	4.5
GP32	136	5.5
GP40	137	7
GP50	137	7
GP80	140.5	10.5
GP100	143	13
GP125	146	16
GP160	151	21
GP200	157	26
GP250	162	32
GP315	172	42
GP400	182	52
GP500	195	65
GP630	213	84

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 with Manifold Dimensions and Mountings





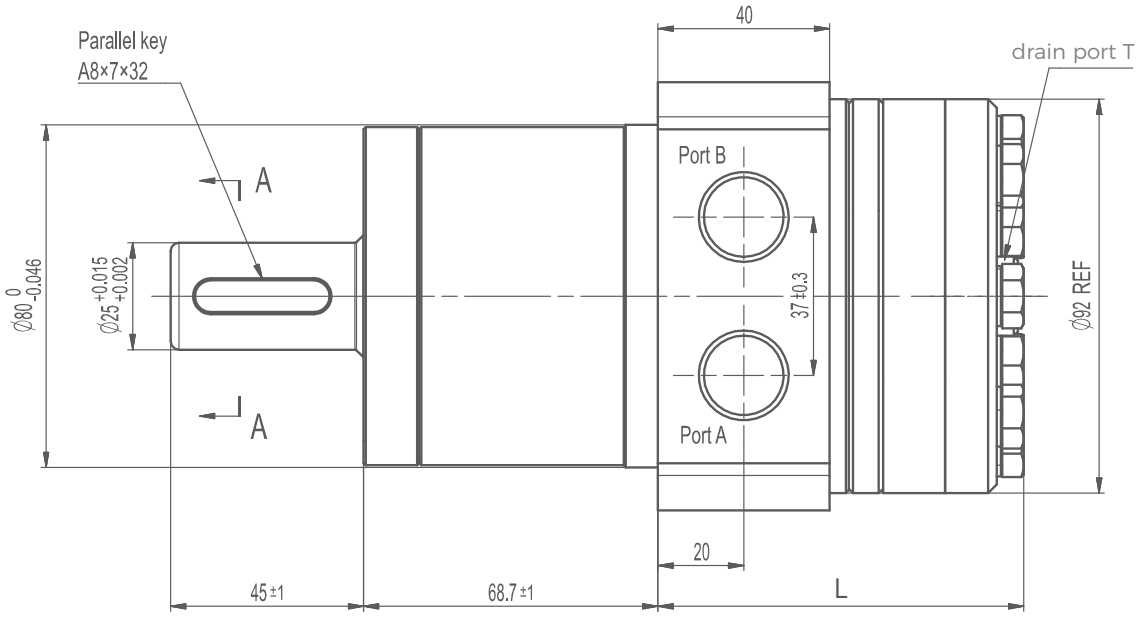


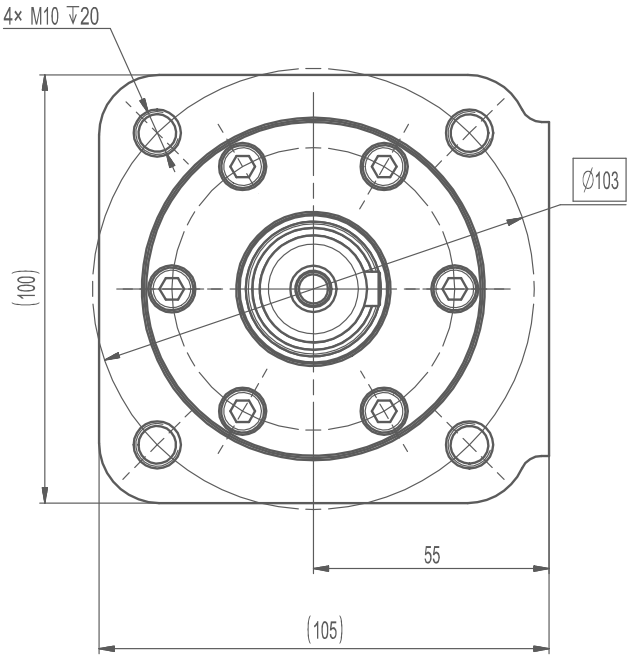
Valve setting pressure

800psi (55bar)
1300psi (90bar)

Model	L(mm)	L1(mm)
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

GPW Dimensions and Mountings

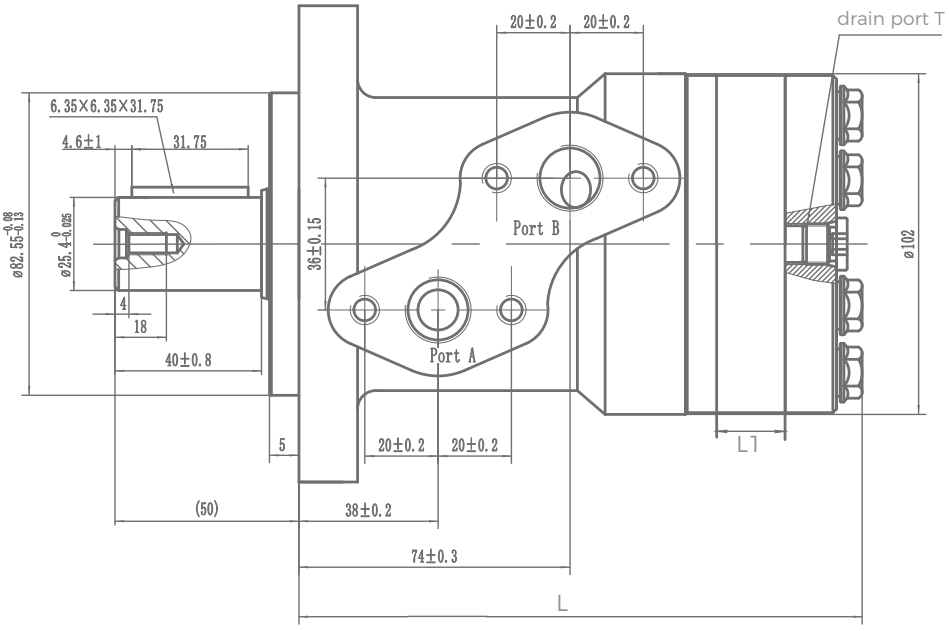




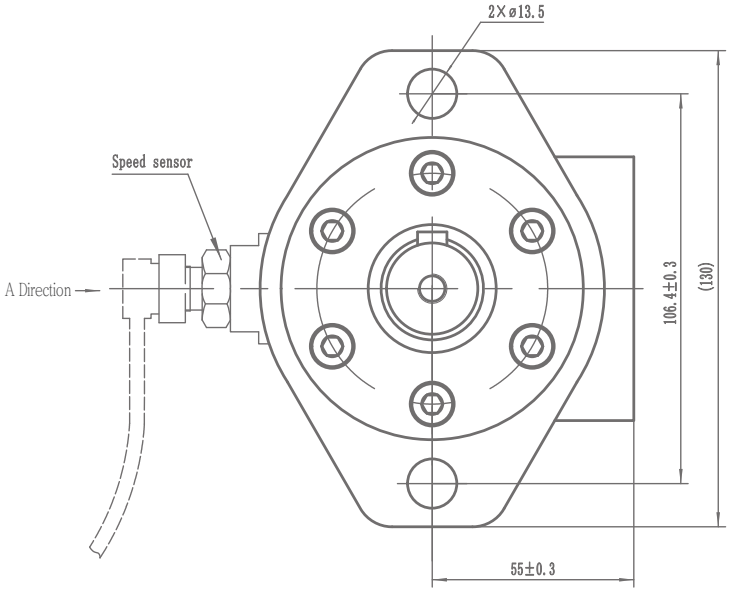
Model	L(mm)
GPW25	76
GPW32	77
GPW40	79
GPW50	82
GPW80	85
GPW100	88
GPW125	93
GPW160	99
GPW200	106
GPW250	118
GPW315	128
GPW400	134
GPW500	140
GPW630	146

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 with Speed Sensor Dimensions and Mountings



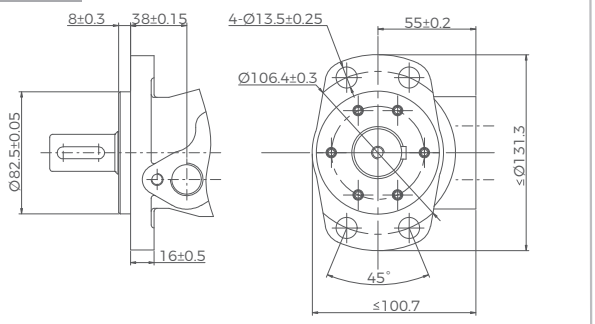
Model	L(mm)	L1(mm)
GP25	135	4.5
GP32	136	5.5
GP40	137	7
GP50	137	7
GP80	140.5	10.5
GP100	143	13
GP125	146	16
GP160	151	21
GP200	157	26
GP250	162	32
GP315	172	42
GP400	182	52
GP500	195	65
GP630	213	84



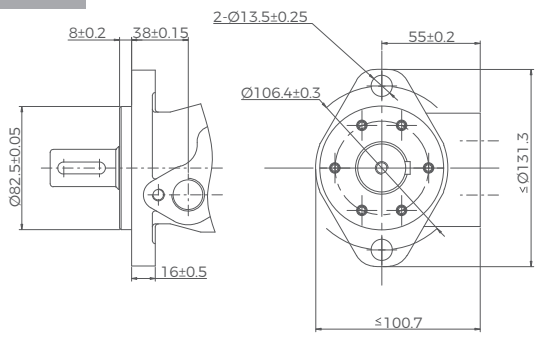
Mounting	G1 (depth)	M1 (depth)	U2 (depth)	U1 (depth)	G2 (depth)
P(A, B)	G1/2(15)	M22 x 1.5(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	PT(RC)1/2(15)
C	4-M8(13)	4-M8(13)	4-5/16-18UNC(13)	4-5/16-18UNC(13)	4-M8(13)
T	G1/4(12)	M14 x 1.5(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)

GP Flange Covers Dimensions

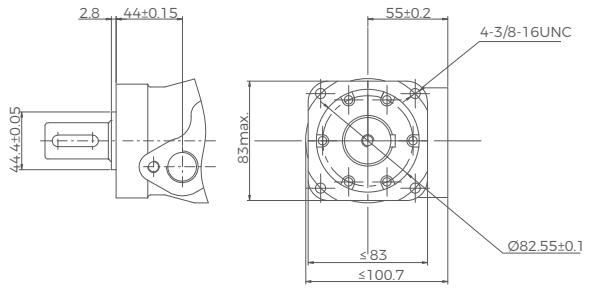
A4



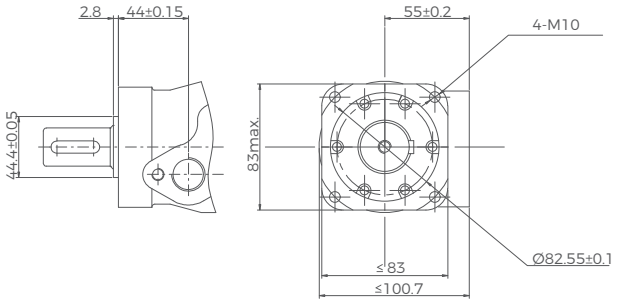
A2



H4

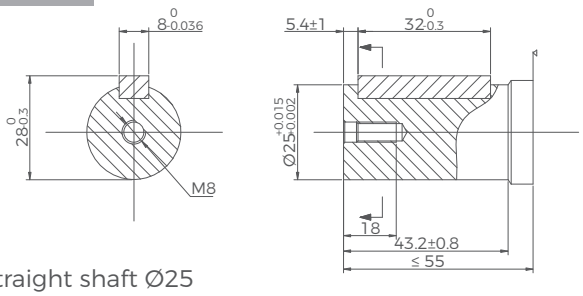


H5



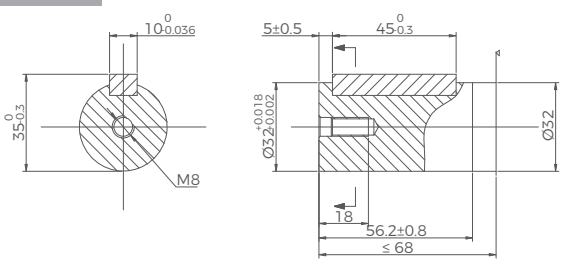
GP Shafts Dimensions

S1



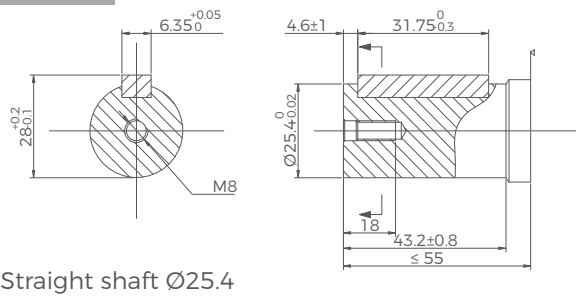
Straight shaft Ø25
Parallel key 8 x 7 x 32

S4



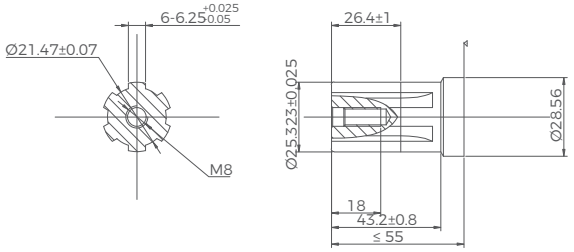
Straight shaft Ø32
Parallel key 10 x 8 x 45

S2



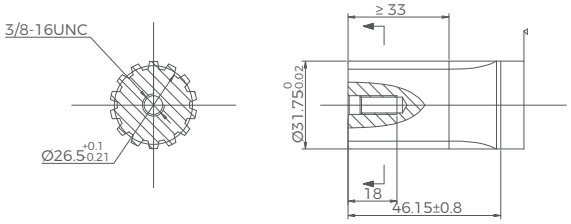
Straight shaft Ø25.4
Parallel key 6.35 x 6.35 x 31.75

R1



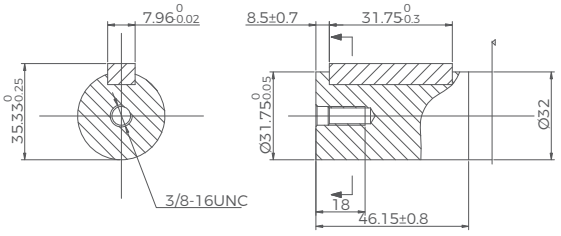
Splined shaft SAE 6B

R2



Splined shaft 14 - DP 12/ 24

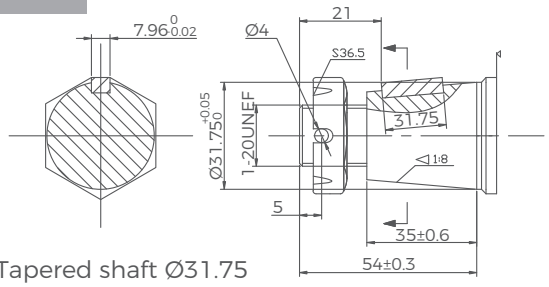
S5



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

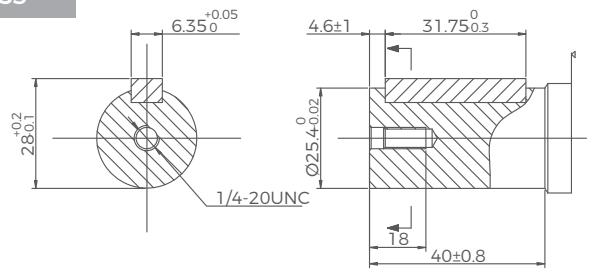
GP Shafts Dimensions

T2



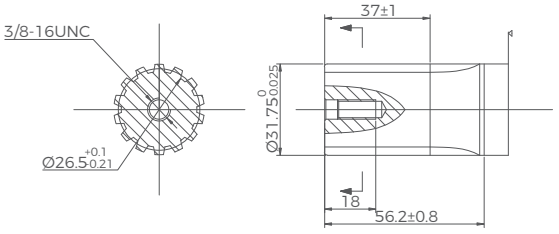
Tapered shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75
Tightening torque 200 ± 10 Nm

S3



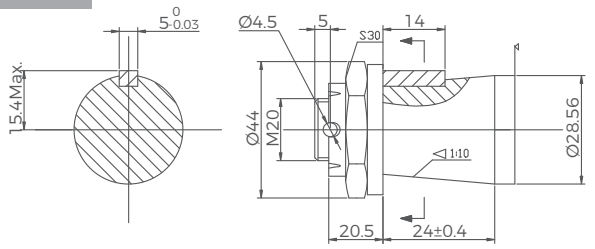
Straight shaft Ø25.4
Parallel key 6.35 x 6.35 x 31.75

R3



Splined shaft Ø14 - DP 12/24

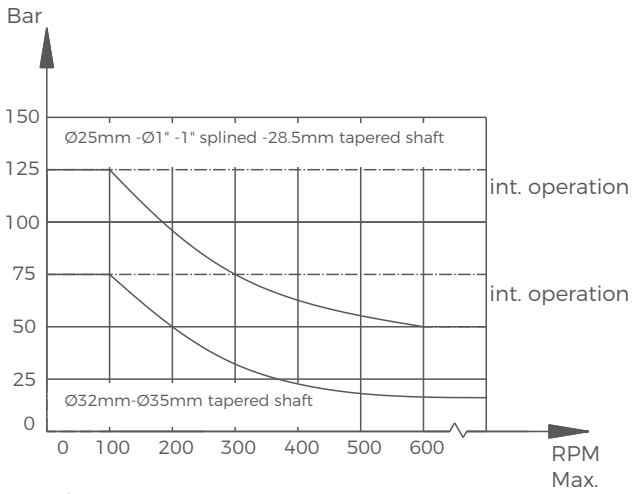
T1



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

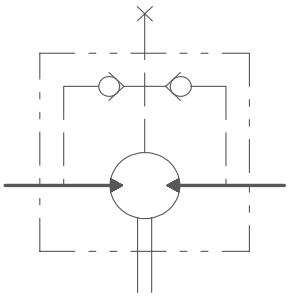
GP Series Hydraulic Motors

Permissible shaft seal pressure



Drain Port

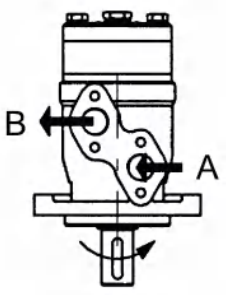
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.



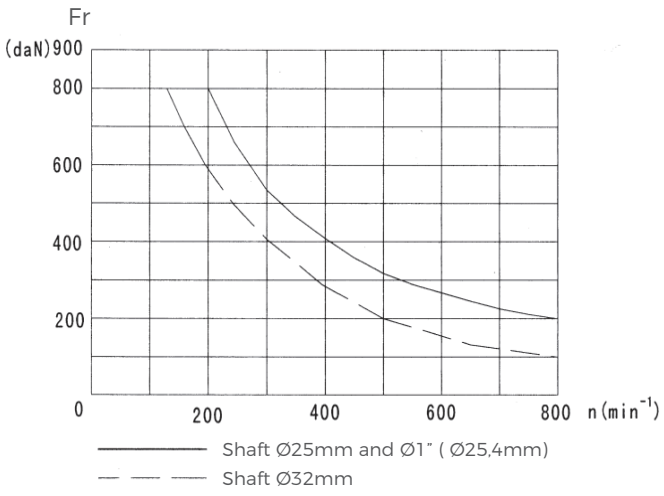
GP with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.
GP with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

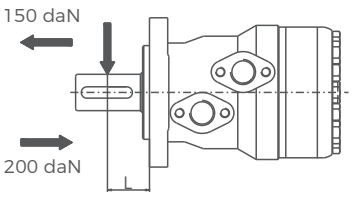
Standard direction of shaft rotation: Standard

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



Output shaft axial and 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

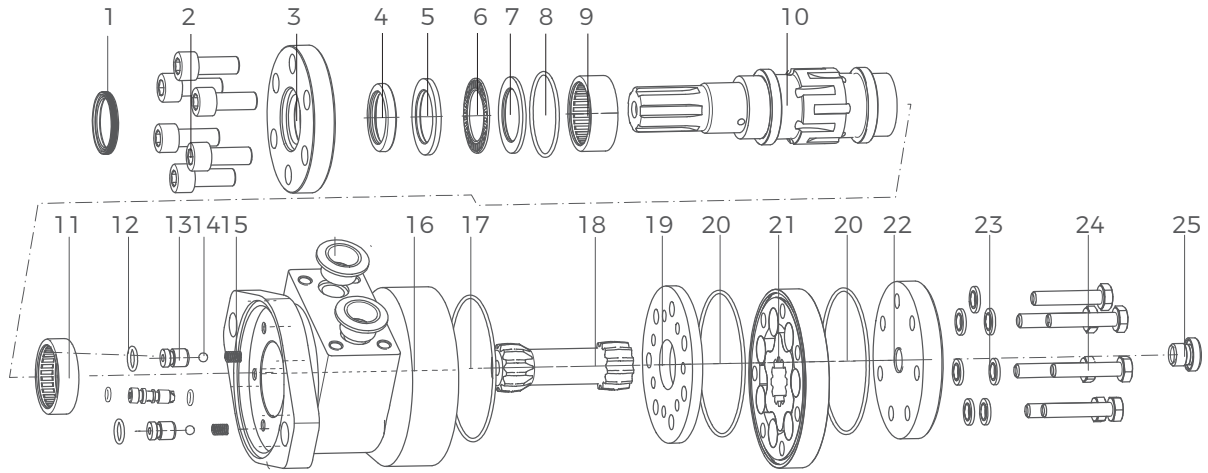
- Flange connection
- Motor with needle roller bearing
- Speed sensing
- Side and bottom ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

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

General

Max. Displacement	cm^3/rev [in^3/rev]	623,6 [38.05]
Max. Speed	RPM	1815
Max. Torque	daNm [lb-in]	cont.:188 [16650] int.:211 [18650]
Max. Output	kW [HP]	64 [85,8]
Max. Pressure Drop	bar [PSI]	cont.: 140 [2030] int.: 175 [2540
Max. Oil Flow	lpm [GPM]	240 [63.4]
Min. Speed	RPM	10
	daN[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)

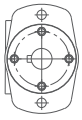
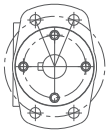
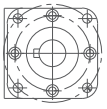
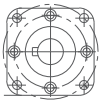


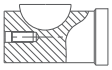
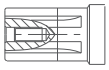
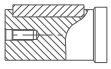
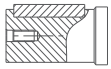
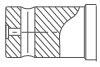
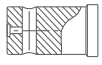
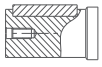
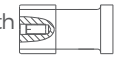
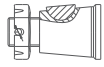
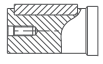
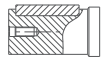
1 Anti-dust ring	6 Flat bearing	11 Needle roller bearing	16 Rubber plug	21 Stator assembly
2 Bolt	7 Bearing retainer	12 O-ring seal	17 Housing	22 Rear cover
3 Front cover	8 O-ring seal	13 Check valve	18 O-ring seal	23 Combination washer
4 Shaft seal	9 Needle roller bearing	14 Steel ball	19 Transmission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

Ordering Code

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

CODE	DISP cm³/rev [in³/rev]
025	25cm [1.52]
032	32 [1.95]
040	40 [2.44]
050	49.5 [3.02]
080	79.2 [4.83]
100	99 [6.0]
125	123.8 [7.55]
160	158.4 [9.66]
200	198 [12.1]
250	247.5 [15.1]
315	316.8 [19.3]
400	396 [24.16]
500	495 [30.2]
630	623.6 [38.05]

CODE	FLANGE
A1	2-Ø13.5,SAE Ø106.4 pilot Ø82.5×2.8 
A3	4-Ø13.5,SAE Ø106.4 pilot Ø82.5×2.8 
H4	4-3/8-16UNC square,Ø82.5 pilot Ø44.4×2.8 
H5	4-M10 square, Ø82.5 pilot Ø44.4×2.8 

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, parallelkey 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	ROTATION
A	Standard
R	Opposite

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

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

Specifications

Type		GPH25	GPH32	GPH40	GPH50	GPH80
Displacement, cm^3/rev [in^3/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 rear port + 0,450 [.992]	GPH	5,6[12.3]	5,6[12.3]	5,7[12.6]	5,8[12.8]	5,9[13.2]

Specifications

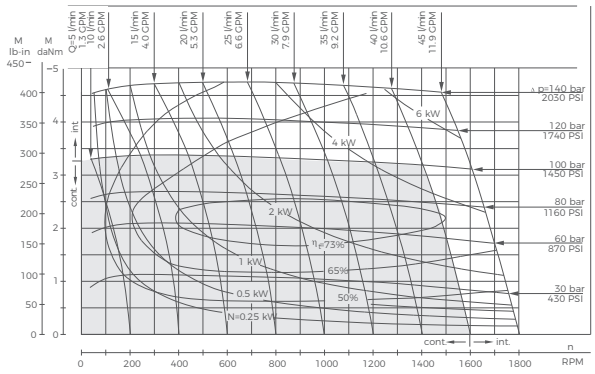
Type		GPH100	GPH125	GPH160	GPH200
Displacement, cm^3/rev [in^3/rev]		99[6.04]	123,8[7.55]	158,4[9.66]	198[12.1]
Max. Speed,	Cont.	605	486	378	303
RPM	Int.*	755	605	472	378
Max. Torque	Cont.	19,3[1710]	23,7[2100]	31,3[2770]	36,6[3240]
daNm [lb-in]	Int.*	23,7[2100]	29,8[2640]	37,8[3345]	45,6[4035]
	Peak**	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 rear port + 0,450 [.992]	GPH	6,1[13.5]	6,2[13.7]	6,4[14.1]	6,6[14.6]

Specifications

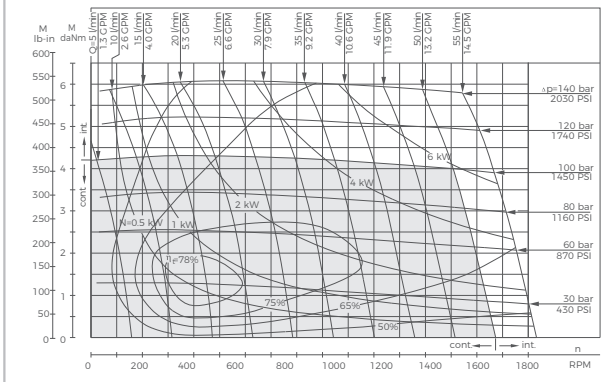
Type		GPH250	GPH315	GPH400	GPH500	GPH630
Displacement, cm^3/rev [in^3/rev]		247,5[15.1]	316,8[19.3]	396[24.16]	495[30.2]	623,6[38.05]
Max. Speed, RPM	Cont.	242	190	150	120	95
	Int.*	303	236	189	150	120
Max. Torque daNm [lb-in]	Cont.	38[3360]	38[3360]	36[3190]	39[3452]	44[3895]
	Int.*	58,3[5160]	56[4960]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

Function Diagrams

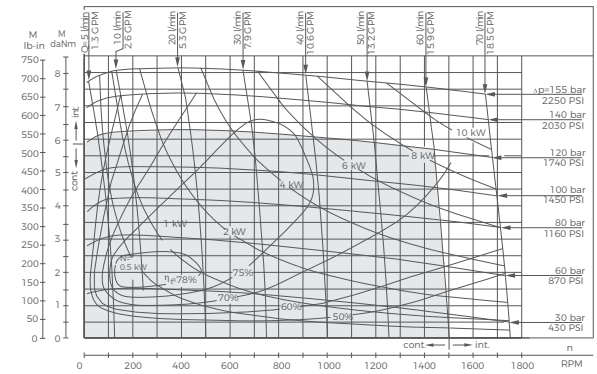
GPH25



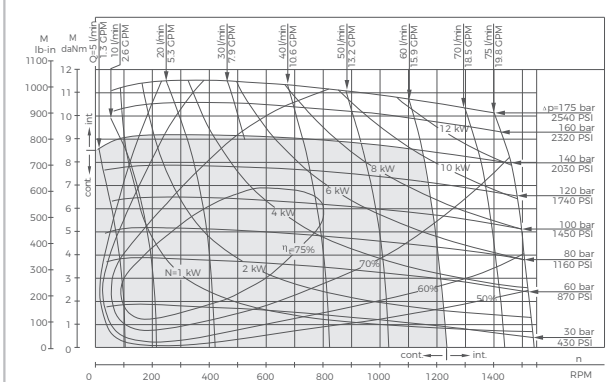
GPH32



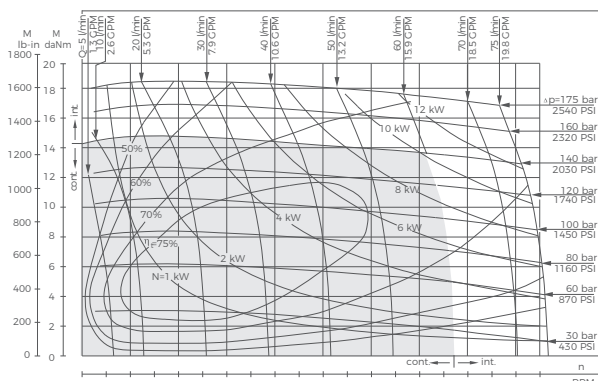
GPH40



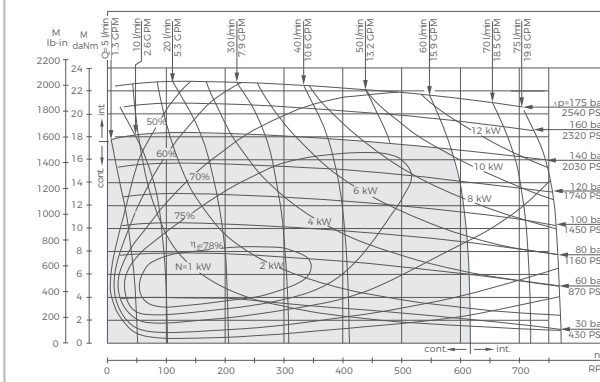
GPH50



GPH80



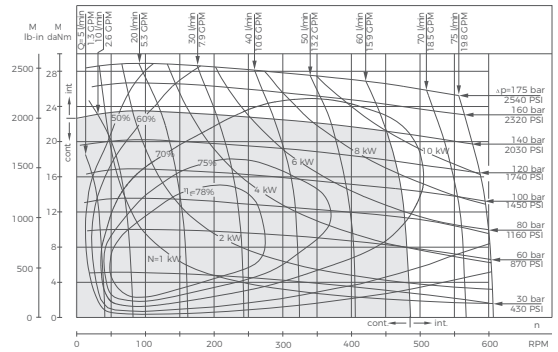
GPH100



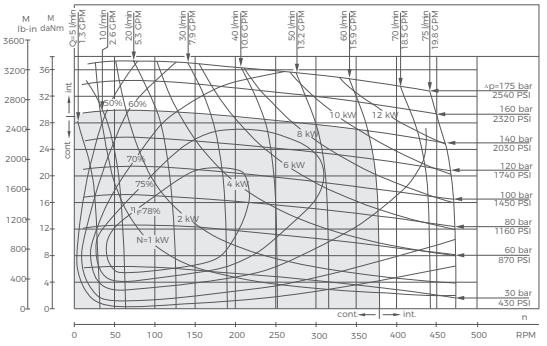
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

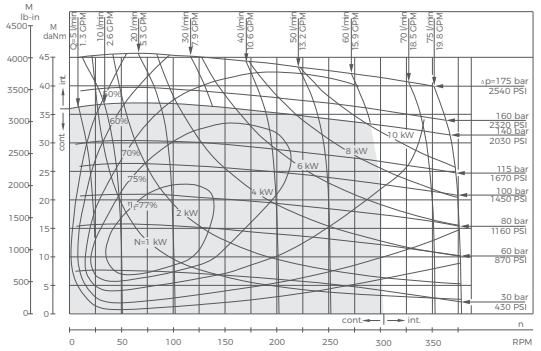
GPH125



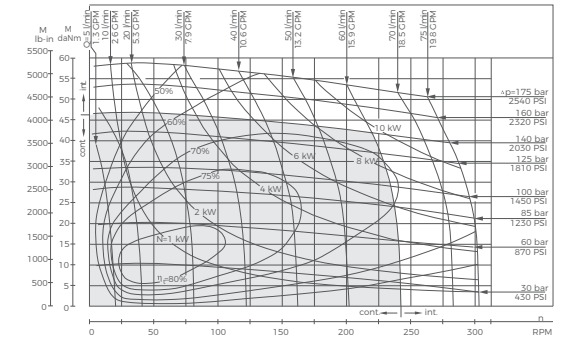
GPH160



GPH200



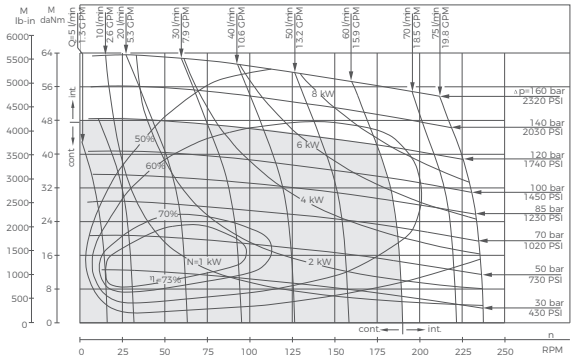
GPH250



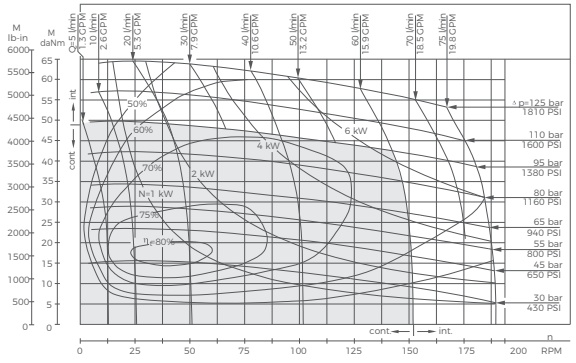
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

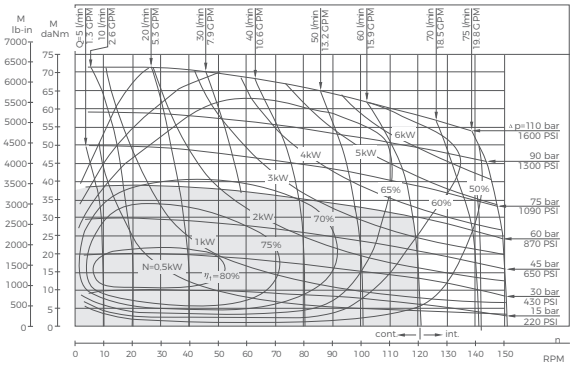
GPH315



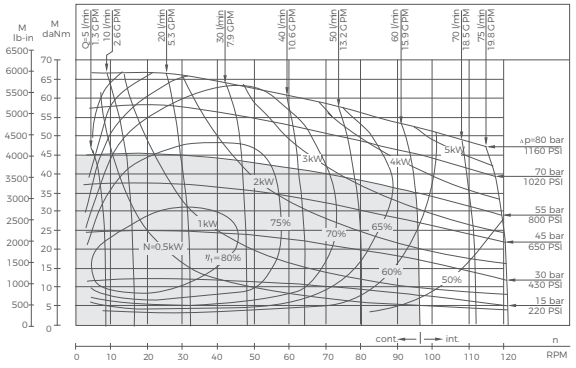
GPH400



GPH500

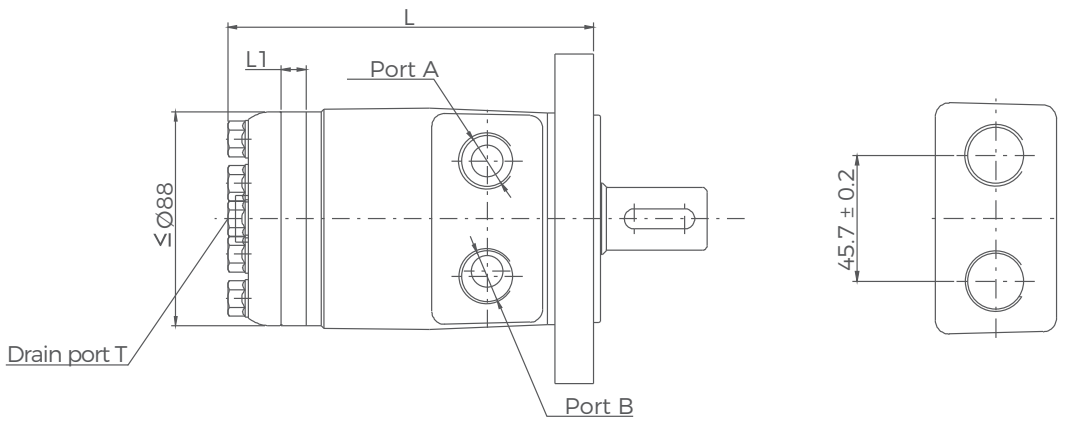


GPH630

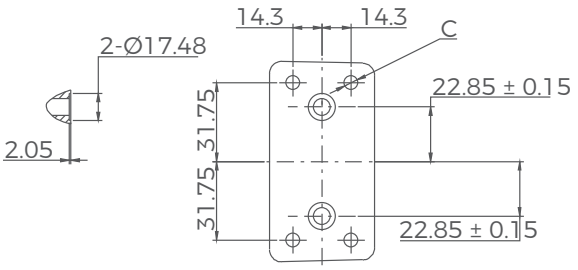


The function diagrams data is for average performance of randomly selected motors at backpressure.
5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

GPH Dimensions and Mountings



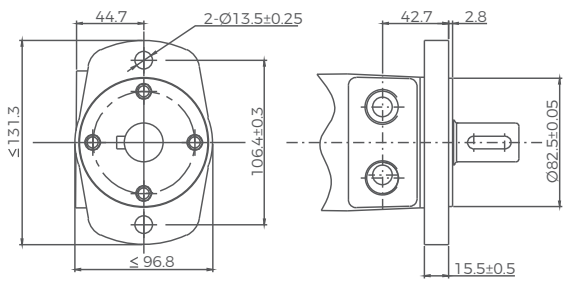
Model	L(mm)	L(mm)
GPH40	136	5.5
GPH50	137	7
GPH80	144.5	10.5
GPH100	147	13
GPH125	150	16
GPH160	155	21
GPH200	160	26
GPH250	166	32
GPH315	176	42
GPH400	186	52
GPH500	199	65
GPH630	203	84



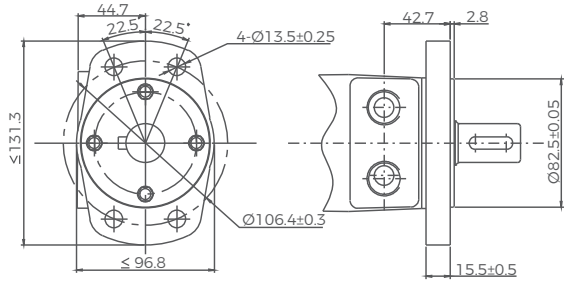
Mounting	G7 (depth)	U9 (depth)	UA (depth)	U3 (depth)	G8 (depth)	D1 (depth)	D2 (depth)
P(A, B)	G1/2(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	3/4-16 O-ring(15)	PT(RC)1/2(15)	Ø10	Ø10
T	G1/4(12)	7/16-20UNF(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)	7/16-20UNF(12)	G1/4(12)
C	—	—	—	—	—	4-5/16-18UNC(13)	4-M8(13)

GPH Flange Covers Dimensions

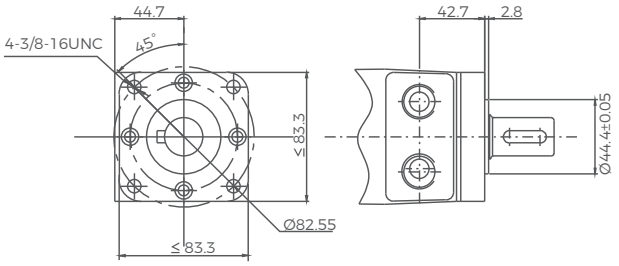
A1



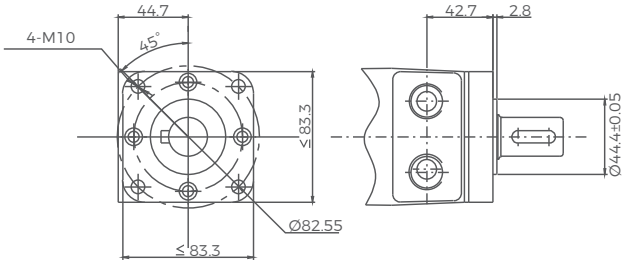
A3



H4

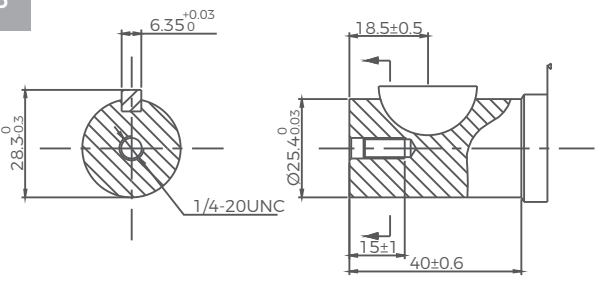


H5



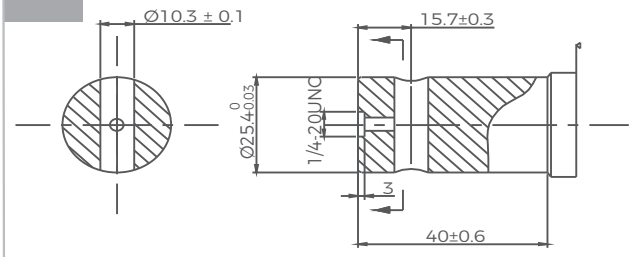
GPH Shafts Dimensions

S6



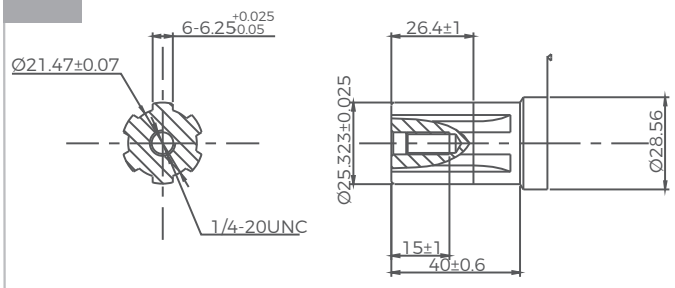
Straight shaft Ø25.4
Woodruff key Ø25.4 x 6.35

S9



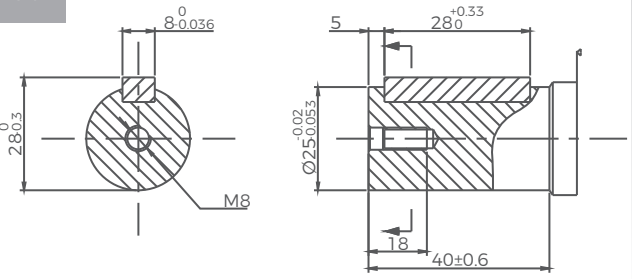
Straight shaft Ø25.4
Pin hole Ø10.3

R4



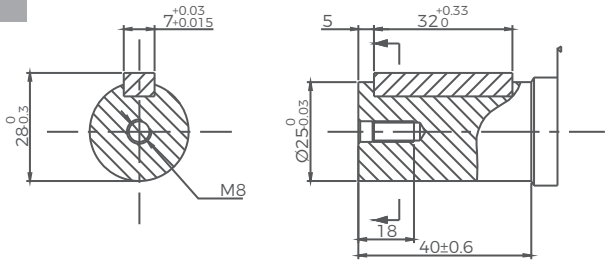
Splined shaft SAE 6B

SC



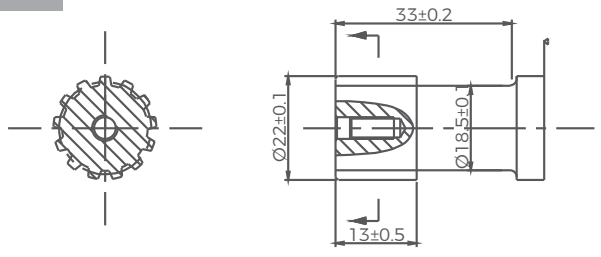
Straight shaft Ø25
Parallel key 8 x 7 x 28

SD



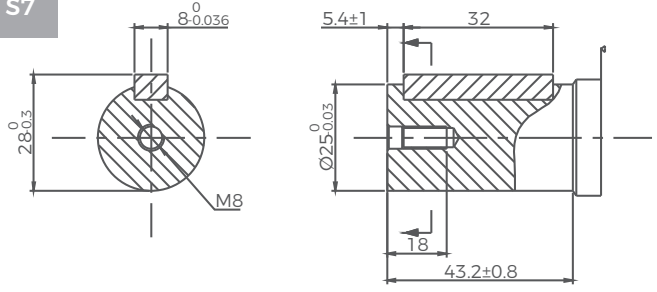
Straight shaft Ø25
Parallel key 7 x 7 x 32

R5



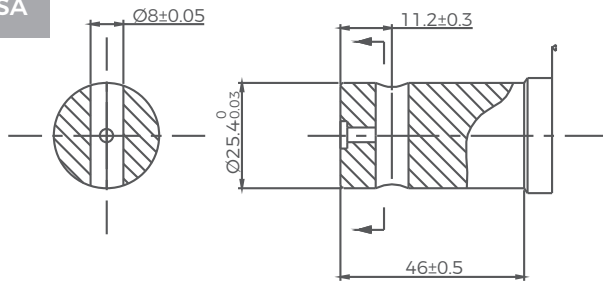
Splined shaft 13-DP 16/32

S7



Straight shaft Ø25
Parallel key 8 x 7 x 32

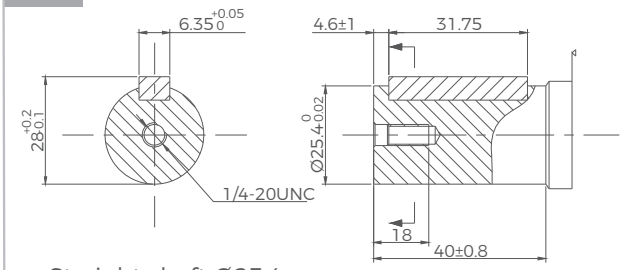
SA



Straight shaft Ø25.4
Pin hole Ø8

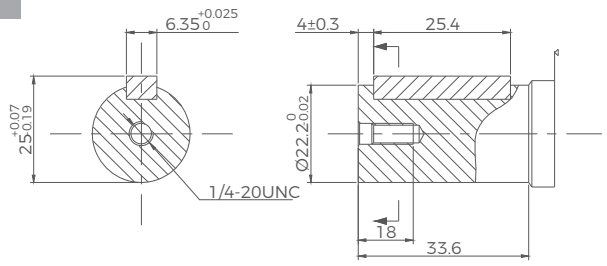
GPH Shafts Dimensions

S8



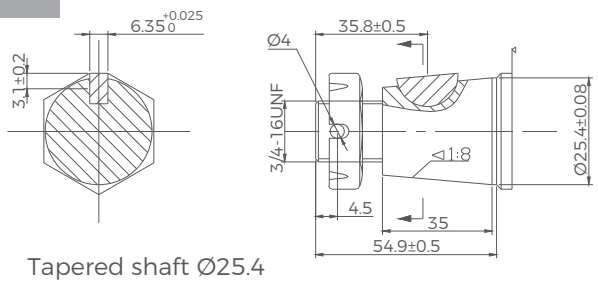
Straight shaft Ø25.4
Paralle key 6.35 x 6.35 x 31.75

SB



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

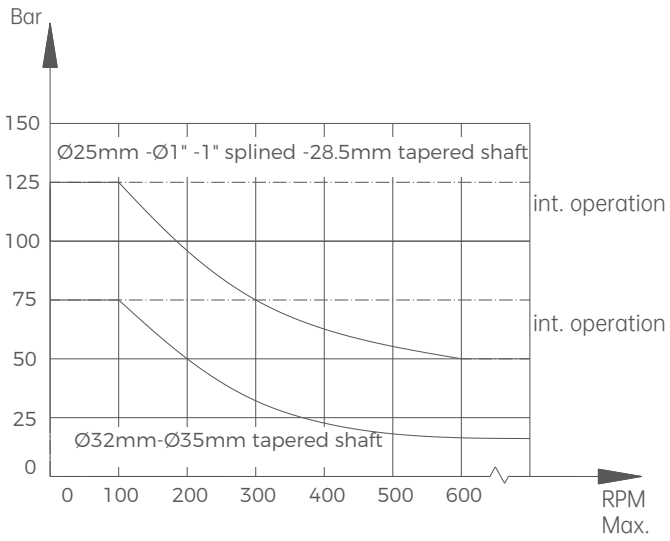
T3

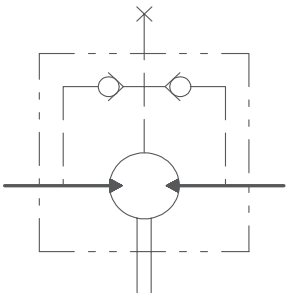


Tapered shaft Ø25.4
Woodruff key Ø25.4 x 6.35
Tightening torque 200 ± 10 Nm

GPH Series Hydraulic Motors

Permissible shaft seal pressure





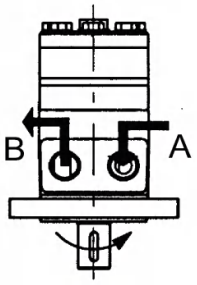
GPH with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.
GPH with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

Drain Port

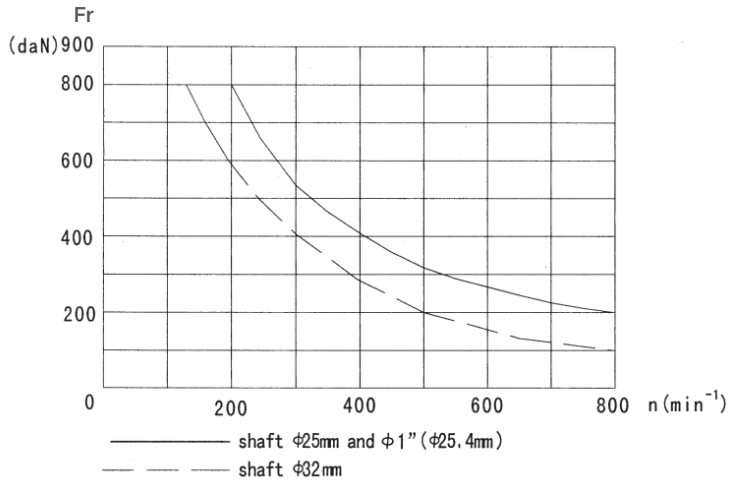
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

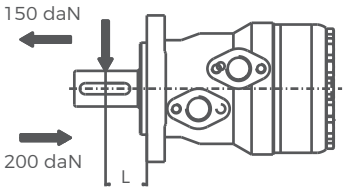
Standard direction of shaft rotation: Standard

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



Output shaft axial and 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

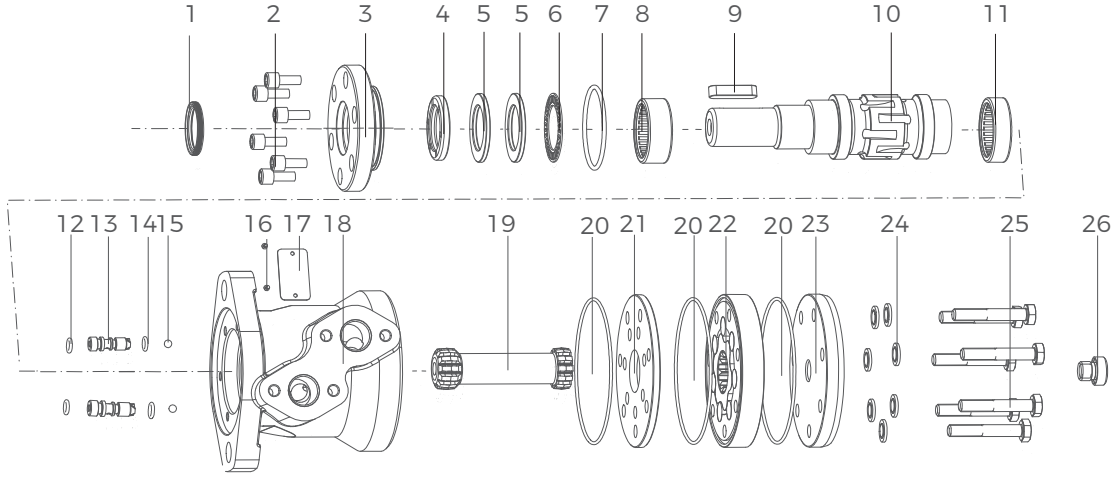
- Flange connection
- Motor with needle bearing
- Side and rear ports
- Straight, splined and tapered shafts
- Shaft seal for high and low pressure
- Metric and BSPP ports
- Speed sensing
- Other special features

Applications

- Conveyors
- Feeding equipment of robots 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[-104—284]
Optimal Viscosity range	mm^2/s [SUS]	20—75[98—347]
Filtration		ISO code: 20/16 (Min. recommended fluid filtration of 25 microns)

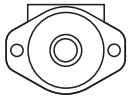
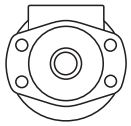
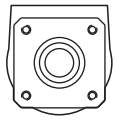
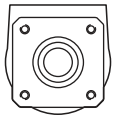


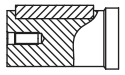
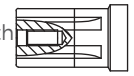
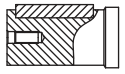
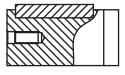
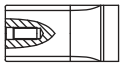
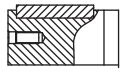
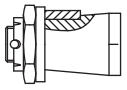
1 Anti-dust ring
2 Bolt
3 Front cover
4 Pressure resistant seal
5 Retainer
6 Needle roller bearing
7 O-ring seal
8 Needle roller bearing
9 Parallel Key
10 Output shaft
11 Needle roller bearing
12 O-ring seal
13 Check valve
14 O-ring seal
15 Steel ball
16 Nameplate rivet
17 Nameplate
18 Housing
19 Transmission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

Ordering Code

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

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

CODE	FLANGE
A2	2-Ø13.5 SAE A, Ø106.4 pilot Ø82.5×8 
A4	4-Ø13.5 SAE A, Ø106.4 pilot Ø82.5×8 
H4	4-3/8-16 square,Ø82.5 pilot Ø44.4×2.8 
H5	4-M10 square, pilot Ø44.4×2.8 

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 Ø28.56,1:10 parallel key B5×5×14 

CODE	ROTATION
A	Standard
R	Opposite

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	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

Specifications

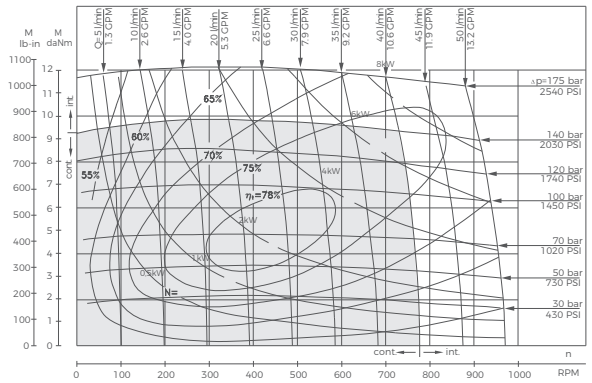
Type		GR50	GR80	GR100	GR125	GR160
Displacement, cm³/rev [in³/rev]		51,5[3.14]	80,3[4.90]	99,8[6.09]	125,7[7.67]	159,6[9.74]
Max. Speed,	Cont.	775	750	600	457	375
RPM	Int.*	970	940	750	600	470
Max. Torque	Cont.	10[900]	20[1770]	24[2125]	30[2655]	39[3450]
daNm [lb-in]	Int.*	13[1150]	22[1947]	28[2480]	34[3010]	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

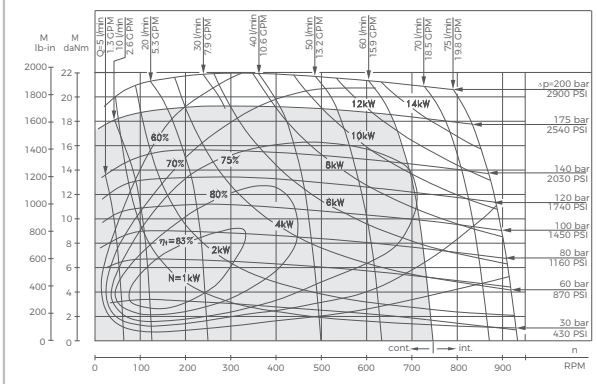
Type		GR200	GR250	GR315	GR400
Displacement, cm³/rev [in³/rev]		199,8[12.19]	250,13[15.26]	315,7[19.26]	397[24.4]
Max. Speed,	Cont.	300	240	194	150
RPM	Int.*	375	300	240	190
Max. Torque	Cont.	45[4000]	54[4780]	55[4870]	61[5400]
daNm [lb-in]	Int.*	50[4425]	61[5400]	69[6110]	69[6110]
	Peak**	56[4960]	71[6280]	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

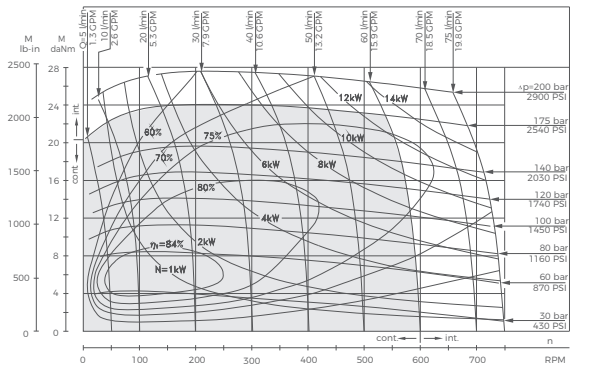
GR50



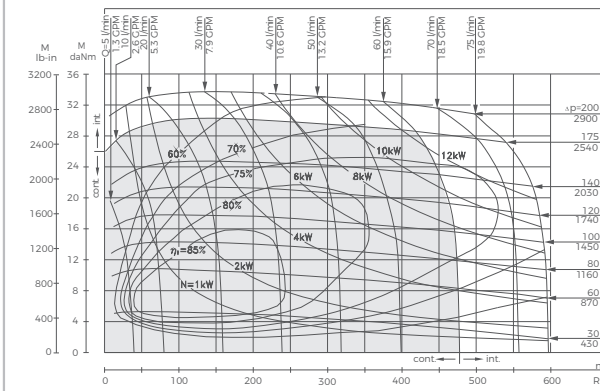
GR80



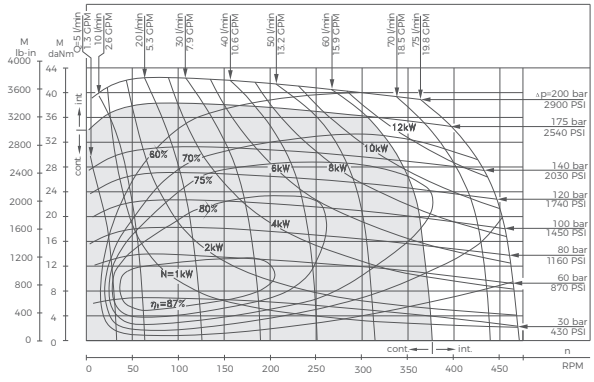
GR100



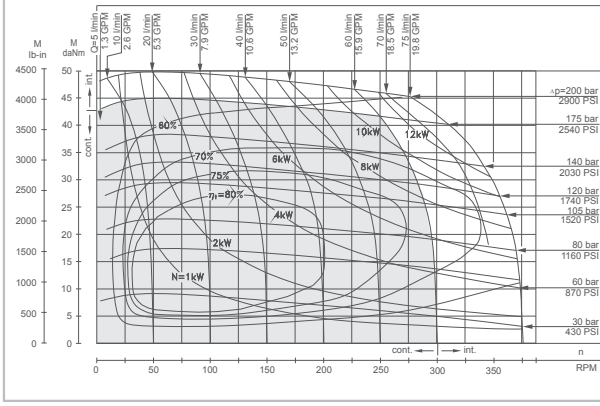
GR125



GR160



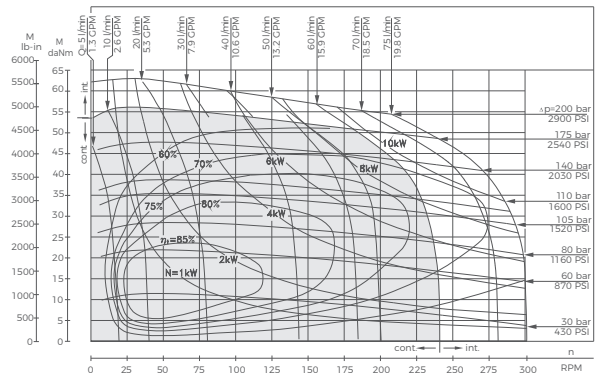
GR200



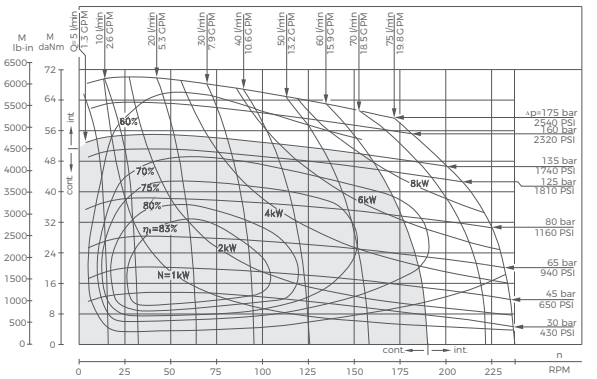
The function diagrams data is for average performance of randomly selected motors at backpressure.
5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

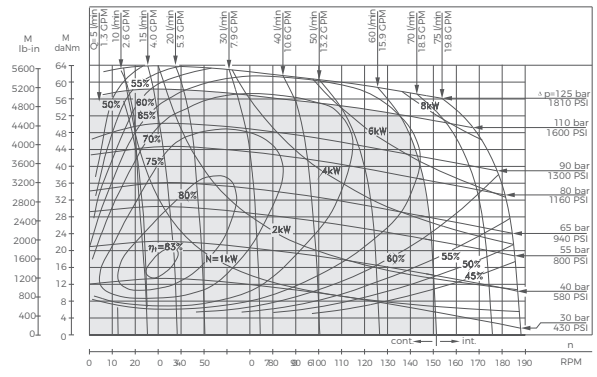
GR250



GR315

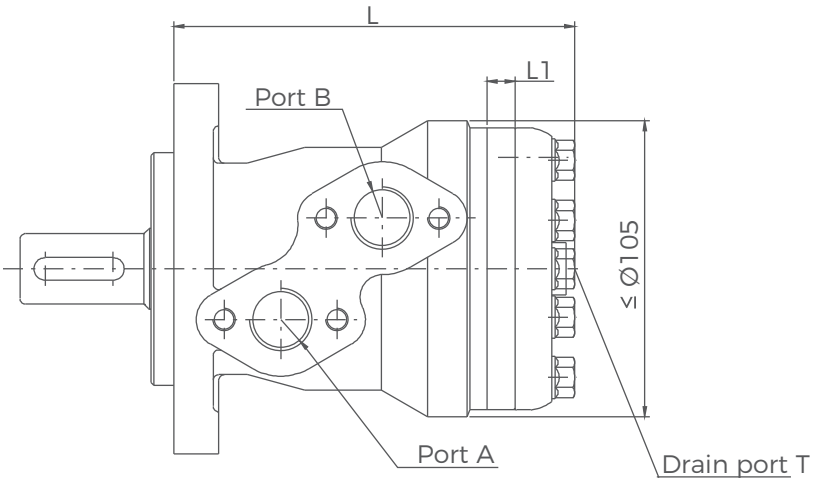


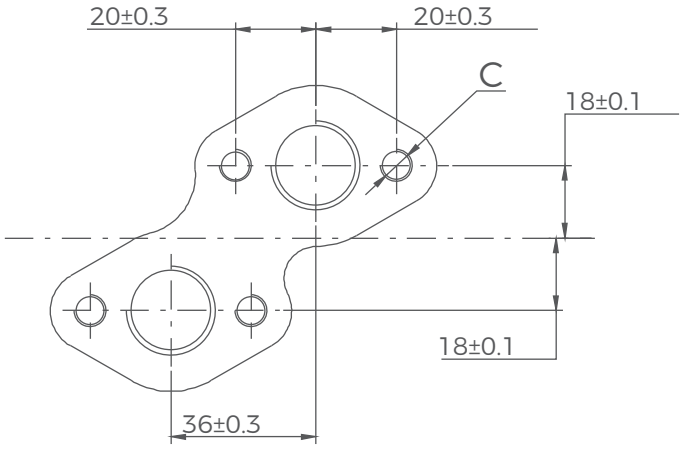
GR400



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

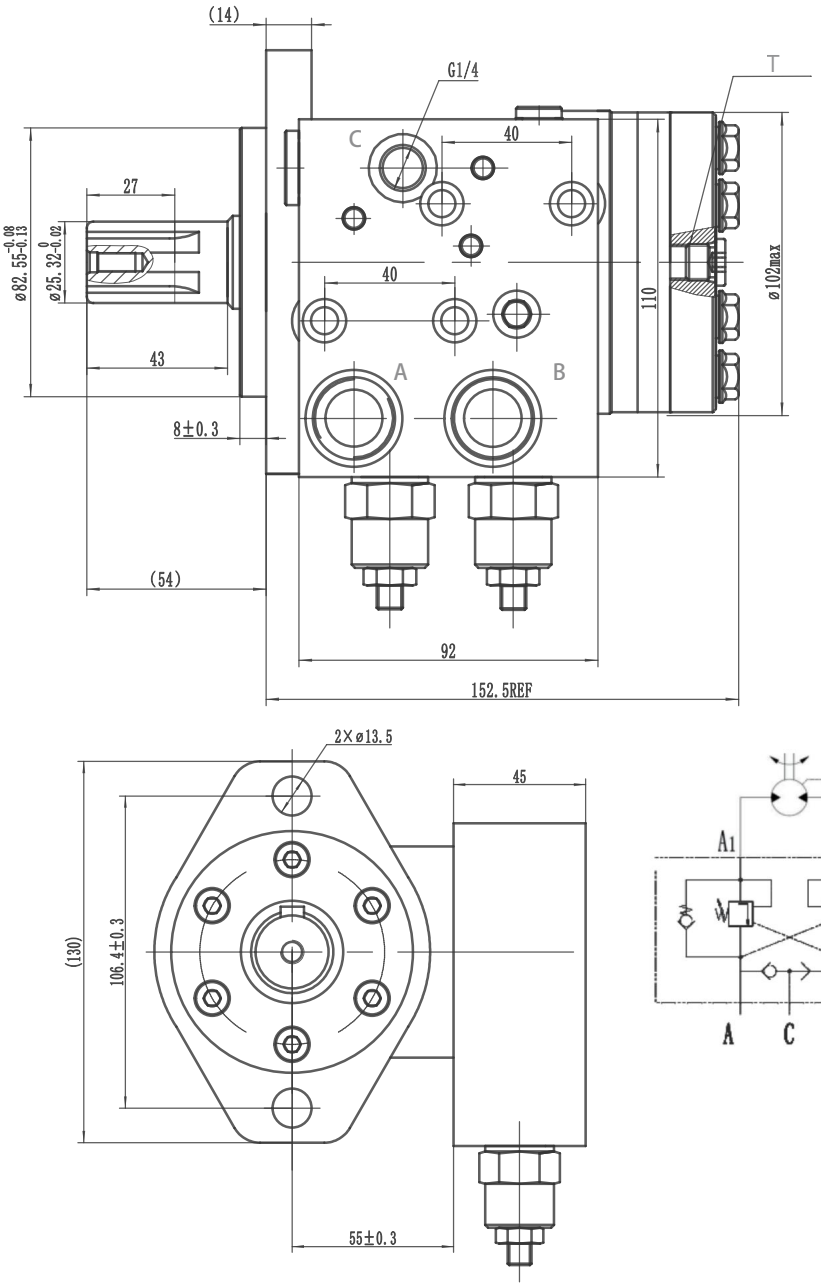




Model	L(mm)	L1(mm)
GR50	140	10
GR80	146	16
GR100	150	20
GR125	155	25
GR160	161.5	30.5
GR200	170	38.1
GR250	180	50
GR315	192	62
GR400	207	76

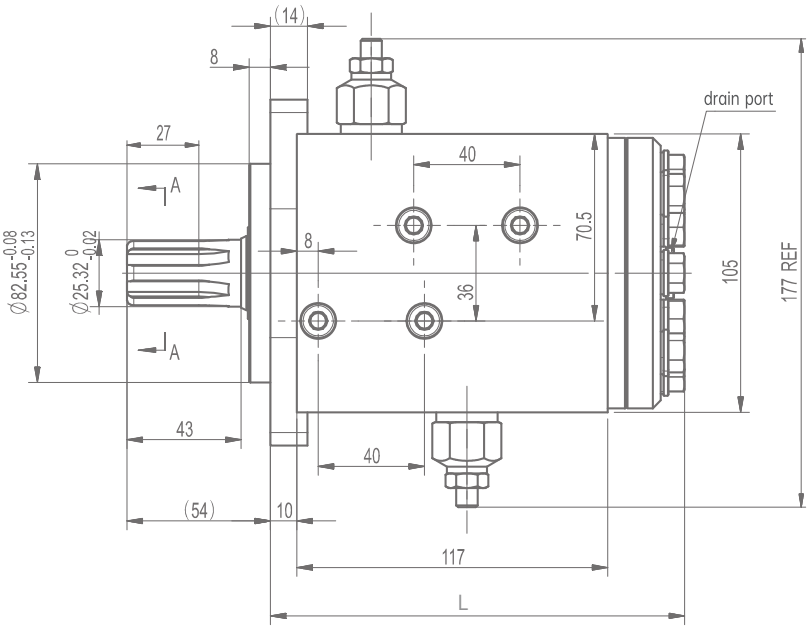
Mounting	**G1** (depth)	**M1** (depth)	**U2** (depth)	**U1** (depth)	**G2** (depth)
P(A,B)	G1/2(15)	M22x1.5(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	PT(RC)1/2(15)
T	G1/4(12)	M14x1.5(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)
C	4-M8(13)	4-M8(13)	4-5/16-18UNC(13)	4-5/16-18UNC(13)	4-M8(13)

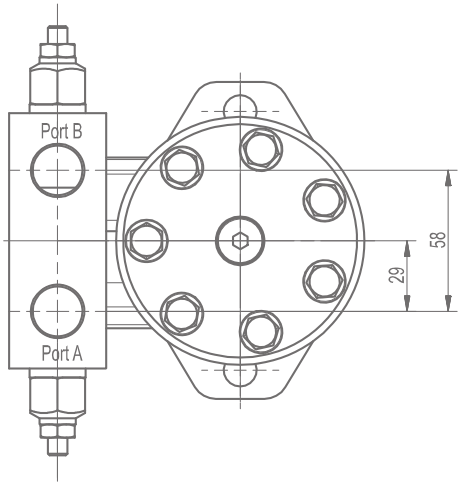
GR with Manifold Dimensions and Mountings

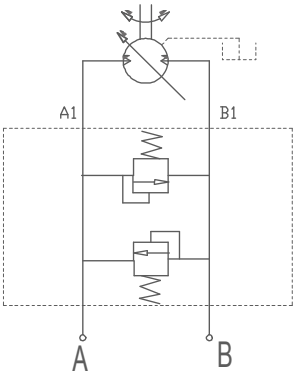


Model	L(mm)
GR50	140
GR80	146
GR100	150
GR125	155
GR160	161.5
GR200	170
GR250	180
GR315	192
GR400	207

GR with Speed Sensor Dimensions and Mountings

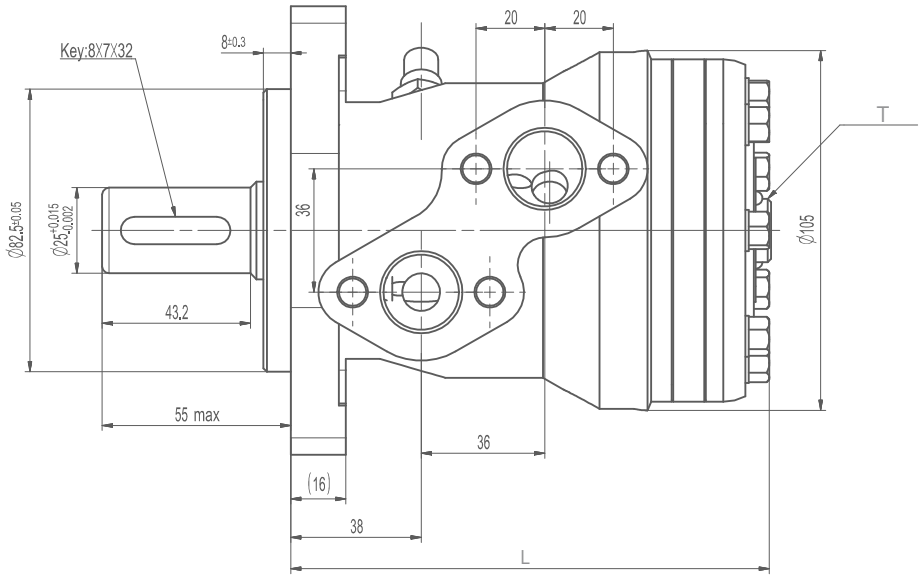


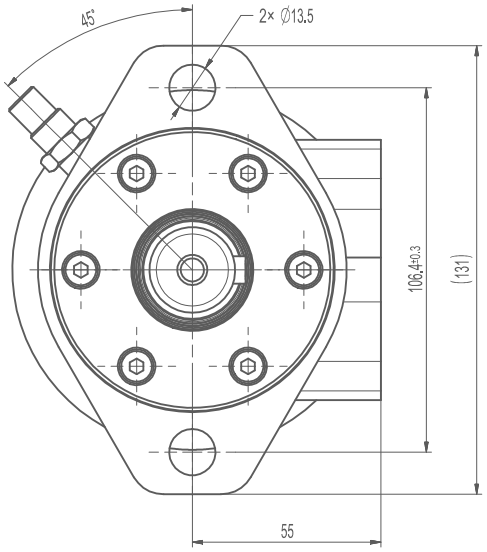




Model	L(mm)
GR50	140
GR80	146
GR100	150
GR125	155
GR160	161.5
GR200	170
GR250	180
GR315	192
GR400	207

GR with Speed Sensor Dimensions and Mountings

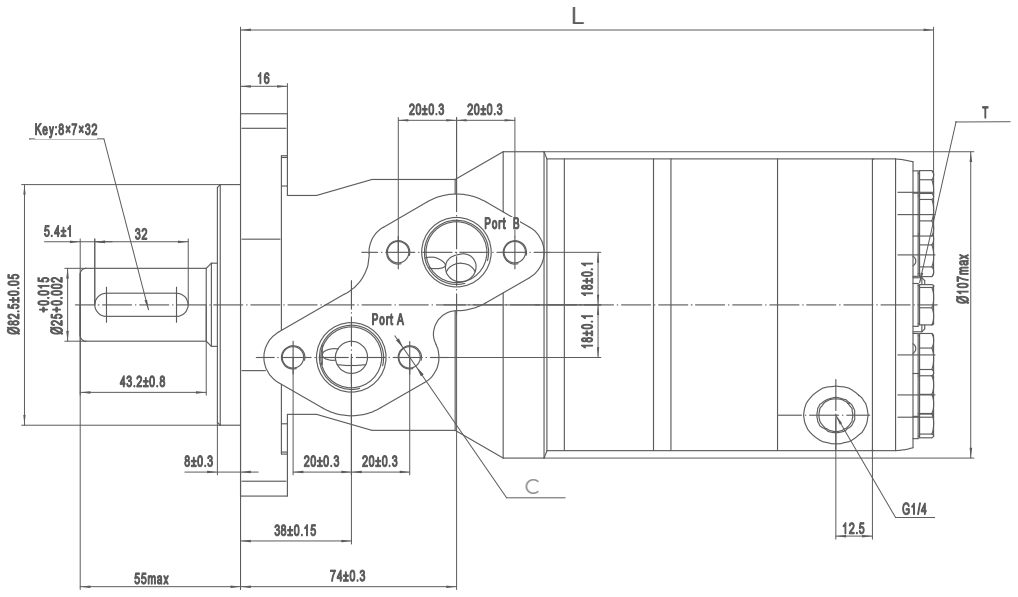


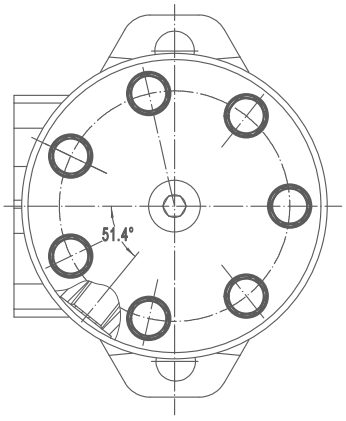


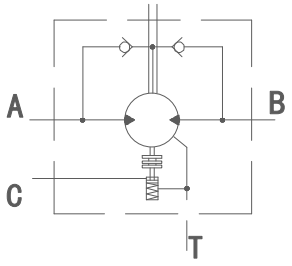
Model	L(mm)
GR50	140
GR80	146
GR100	150
GR125	155
GR160	161.5
GR200	170
GR250	180
GR315	192
GR400	207

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 with Brake Dimensions and Mountings



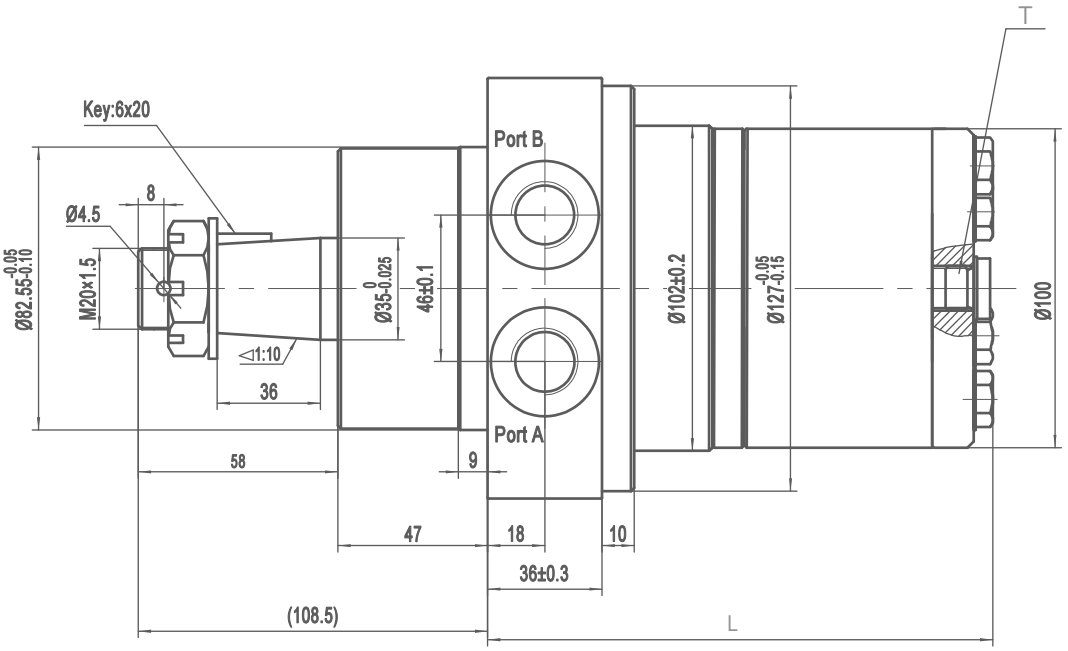


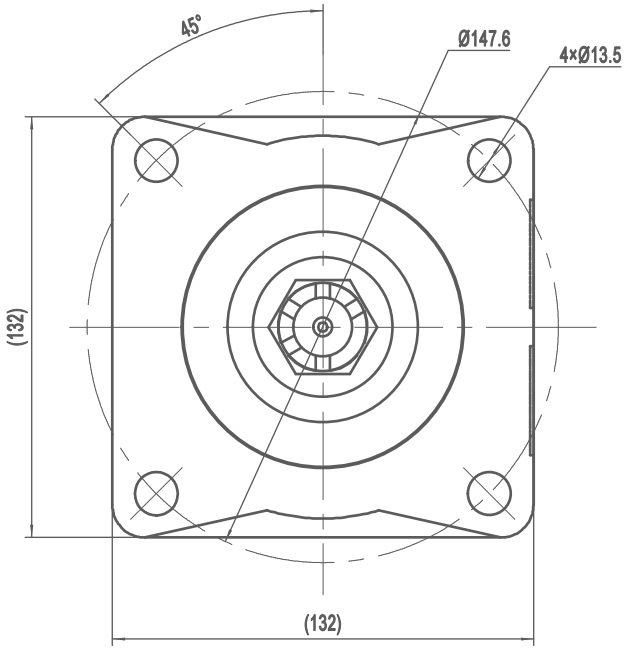


Min.opening pressure	1.7-2.2MPa
Max.inlet pressure	25MPa
Max.brake release port pressure	25MPa
Max.static torque	500~550Nm

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)

GRW Dimensions and Mountings



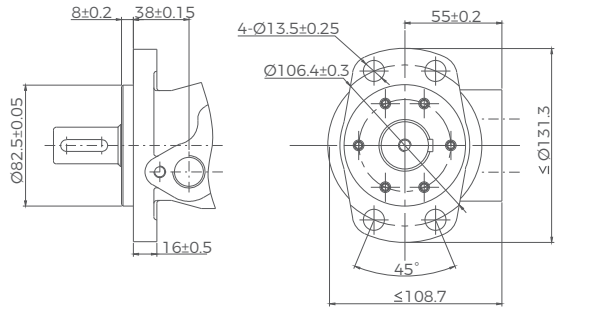


Model	L(mm)
GRW50	120
GRW80	125
GRW100	132
GRW125	139
GRW160	146
GRW200	153
GRW250	160
GRW315	167
GRW400	174

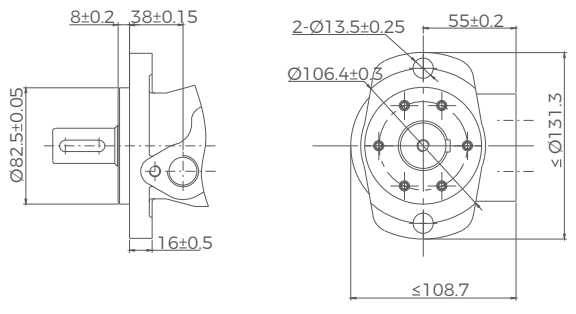
Mounting	G1 (depth)	M1 (depth)	U2 (depth)	U1 (depth)	G2 (depth)
P(A, B)	G1/2(15)	M22x1.5(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	PT(RC)1/2(15)
T	G1/4(12)	M14x1.5(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)
C	4-M8(13)	4-M8(13)	4-5/16-18UNC(13)	4-5/16-18UNC(13)	4-M8(13)

GR Flange Covers Dimensions

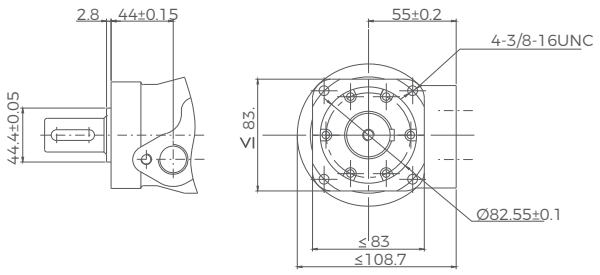
A4



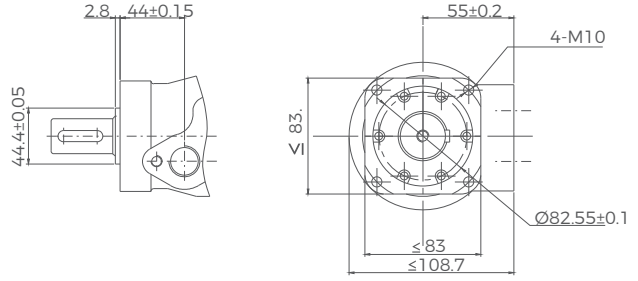
A2



H4

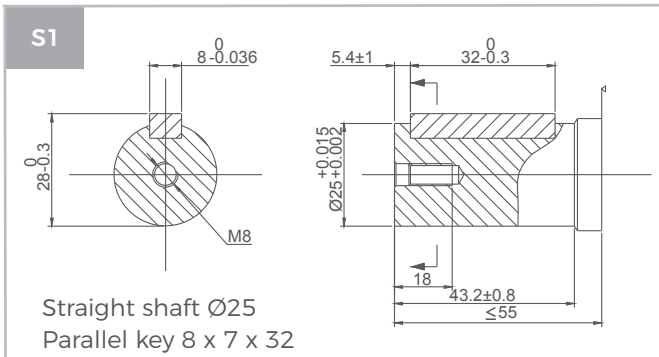


H5



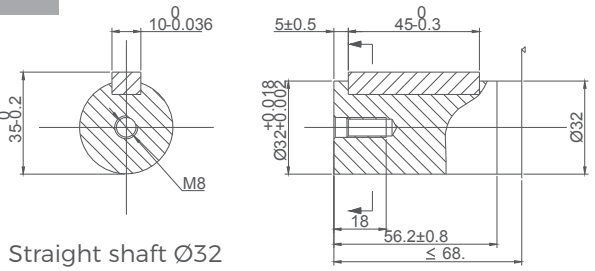
GR Shafts Dimensions

S1



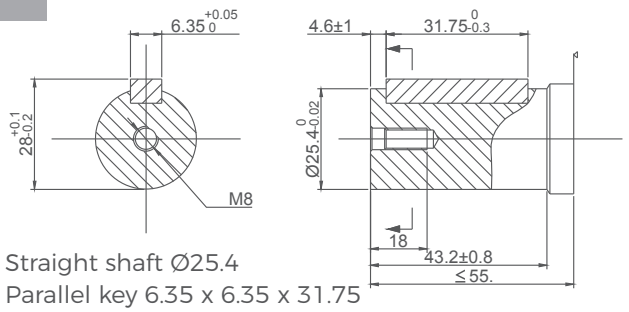
Straight shaft Ø25
Parallel key 8 x 7 x 32

S4



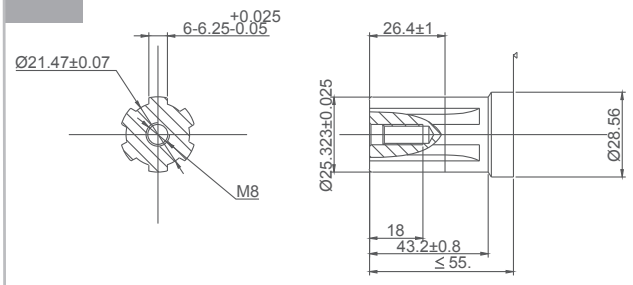
Straight shaft Ø32
Parallel key 10 x 8 x 45

S2



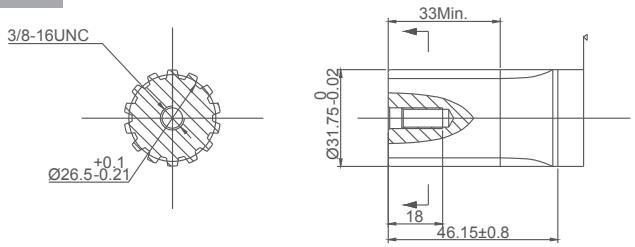
Straight shaft Ø25.4
Parallel key 6.35 x 6.35 x 31.75

R1



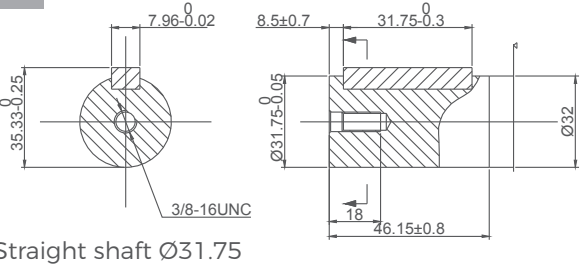
Splined shaft SAE 6B

R2



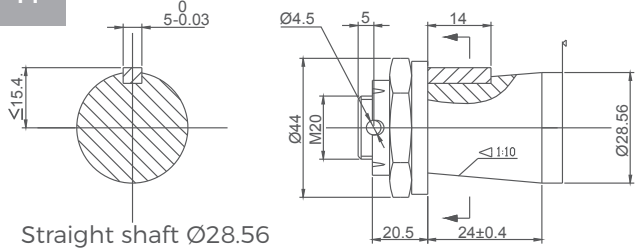
Splined shaft 14-DP 12/24

S5



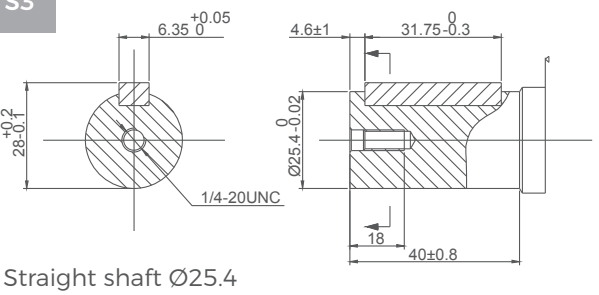
Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75

T1



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

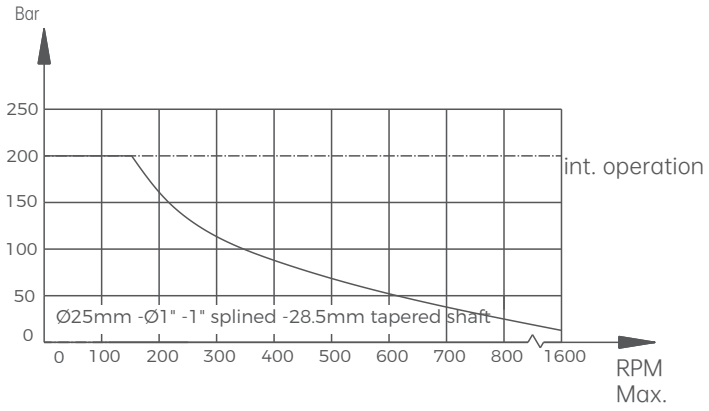
S3



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

GR Series Hydraulic Motors

Permissible shaft seal pressure



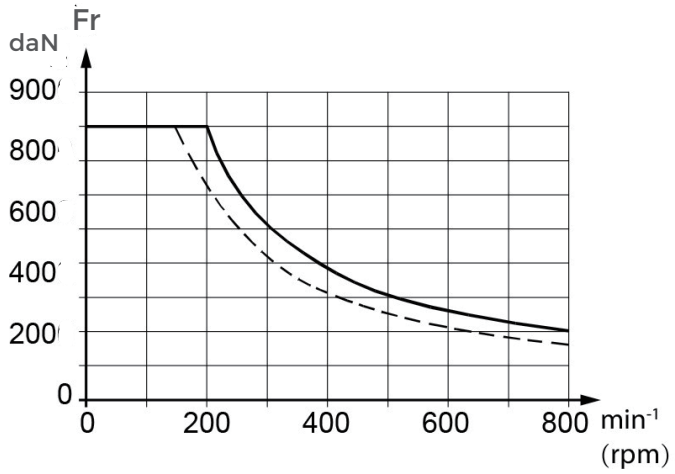
Drain Port

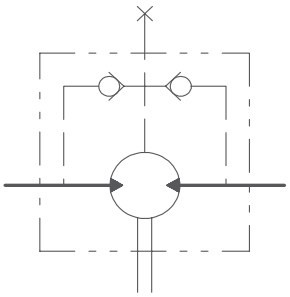
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

Standard direction of shaft rotation: Standard

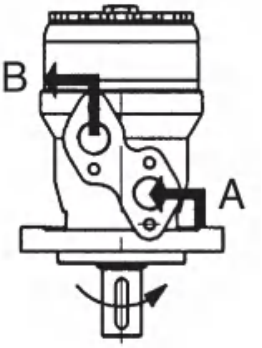
When facing shaft end of motor, shaft to rotate:
Clockwise.When port "A" is pressurized.
Counter-clockwise port "B" is pressurized.

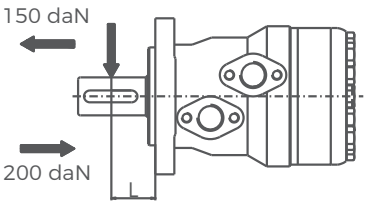
Output shaft axial and radial force





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.





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

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

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

GRA Series Hydraulic Motors

Options

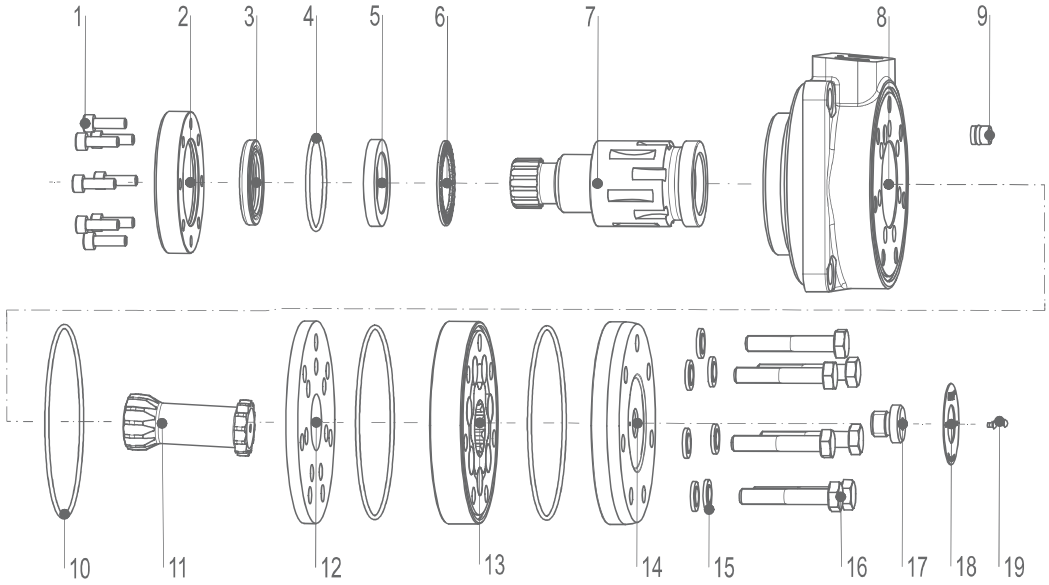
- Flange connection
- Motor with needle roller bearing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Sweepers
- Snow Removal
- Combine Harvesters
- Winches
- Sprayers
- Skid Steer Attachments
- Conveyers

General

Max.Displacement	cm3/rev [in3/rev]	375[22.88]
Max.Speed	RPM	700
Max.Torque	daNm [lb-in]	cont.:115 [1017.75] int.:505 [4469.25]
Max.Output	kW [HP]	48.7[65.3]
Max.Pressure Drop	bar [PSI]	cont.:140 [2030] int.:175[2540]
Max.Oil Flow	lpm [GPM]	16 [21.44]
Pressure fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	˚C [˚F]	-40—140[-104—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
2. Front cover
3. Shaft seal
4. O-ring
5. Flat bearing 6. Flat thrust rolling bearings
7. Output shaft
8. Shell
9. Sealing plug
10. O-ring
8 Needle roller bearing
9 Parallel Key
10 Output shaft
11 Needle roller bearing
11. Transmission shaft
12. Spacer disk
13. Stator sub assembly
14. Rear cover
16. Rear cover bolt
17. E plug
18. Signage
19. Label rivets

Ordering Code

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

CODE	DISP cm³/rev [in³/rev]
50	50 [3.05]
80	80 [4.88]
100	100 [6.10]
125	125 [7.63]
160	160 [9.76]
200	200 [12.20]
250	250 [15.25]
315	315 [19.22]
375	375 [22.88]

CODE	FLANGE
HE	4-Ø10.5 square, pilot Ø100×10 

CODE	SHAFT
RM	DIN5482 B25×22h9 

CODE	PORTS
GB	4xM5, 2× Ø7.5, G1/4

CODE	ROTATION
A	Standard
R	Opposite

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

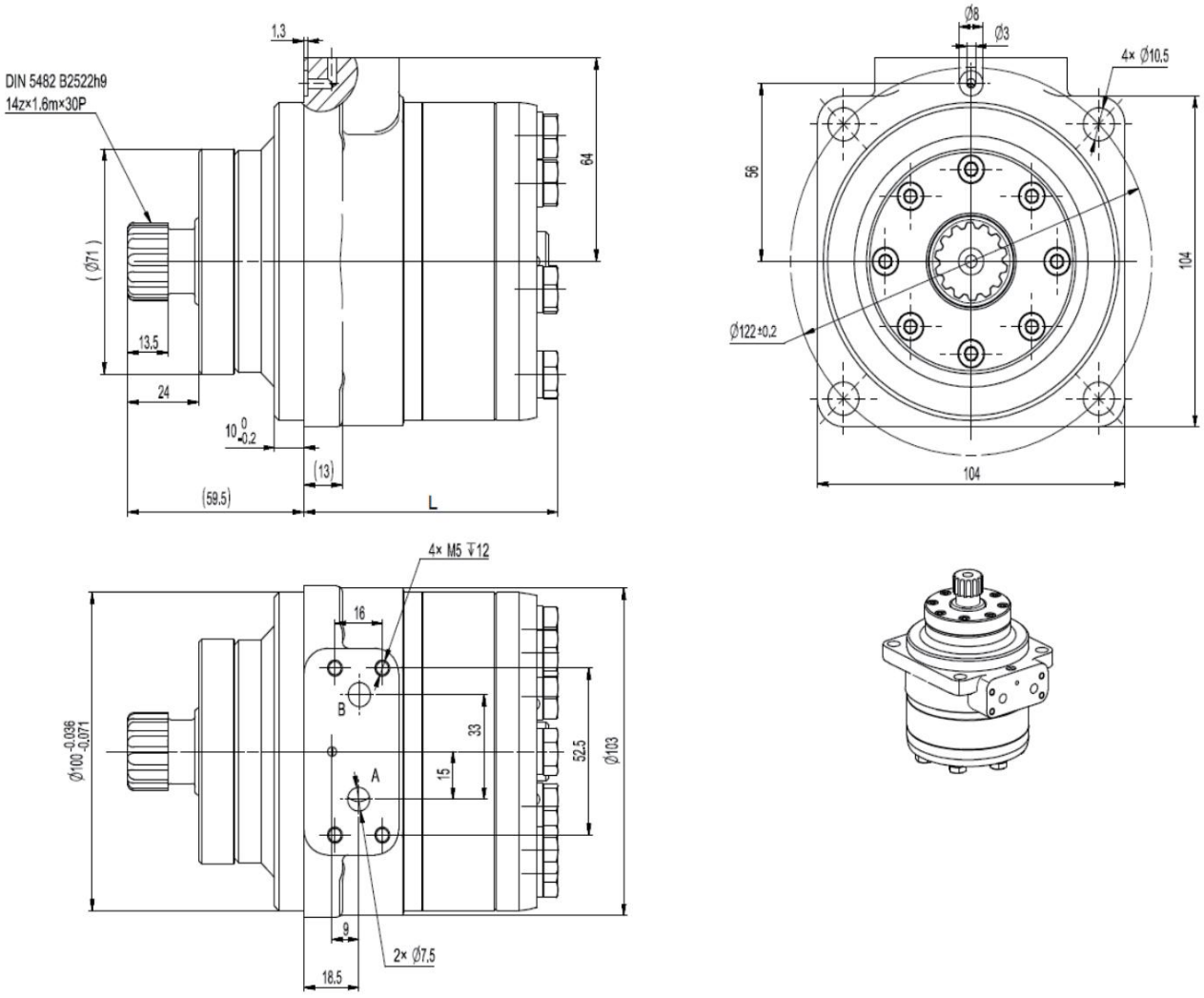
CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High temp.
S	Low temp.

GRA Specifications

Type		GRA50	GRA80	GRA100	GRA125	GRA160
Displacement cm3/rev [in3/rev]		50[3.05]	80[4.88]	100[6.10]	125[7.63]	160[9.76]
Max.Speed RPM	Cont.	580	435	400	320	250
	Int.	700	525	480	380	300
Max.Oil Flow	Cont.	30 [7.93]	35 [9.25]	40 [10.57]	40 [10.57]	40 [10.57]
lpm [GPM]	Int.	36 [9.51]	42 [11.10]	48 [12.68]	48 [12.68]	48 [12.68]
Max.Differential Pressure	Cont.	140[2030]	175[2537.5]	175[2537.5]	175[2537.5]	130[1885]
bar [PSI]	Int.	175[2537.5]	200[2900]	200[2900]	200[2900]	175[2537.5]
	Peak	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Inlet Pressure bar [PSI]	Cont.	175[2537.5]	175[2537.5]	175[2537.5]	175[2537.5]	175[2537.5]
	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 with drain line	Cont.	175[2537.5]	175[2537.5]	175[2537.5]	175[2537.5]	175[2537.5]
	Int.	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
	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]
Max.Torque	Cont.	115 [1017.75]	225 [1991.25]	280 [2478]	350 [3097.5]	330 [2920.5]
Nm [lb-in]	Int.	135 [1194.75]	255 [2256.75]	315 [2787.75]	400 [3540]	445 [3938.25]
Max.Performance kW [HP]	GRA	10.5 [14.07]	14 [18.76]	16 [21.44]	16 [21.44]	14 [18.76]

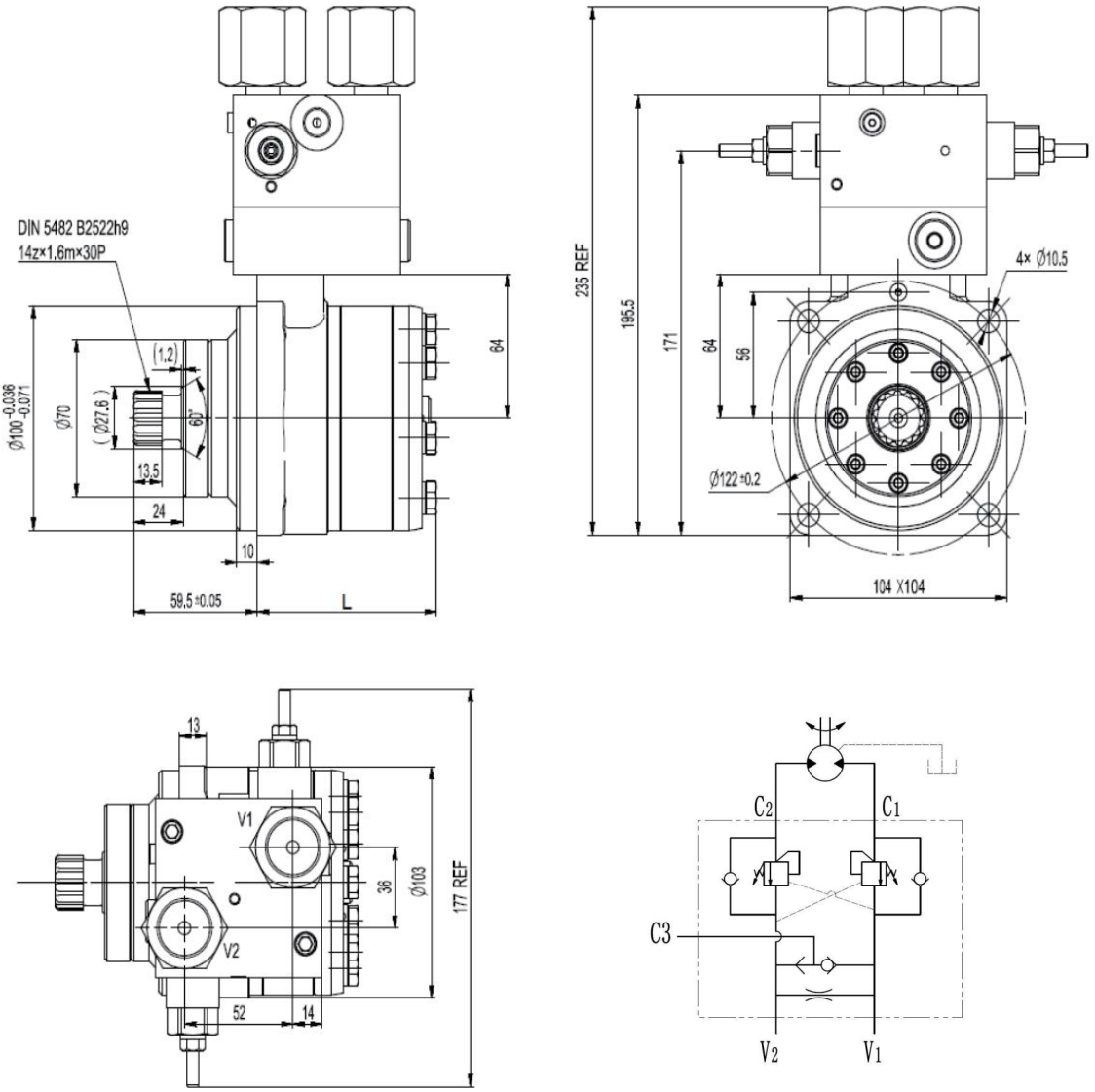
Type		GRA200	GRA250	GRA315	GRA375
Displacement cm3/rev [in3/rev]		200[12.20]	250[15.25]	315[19.22]	375[22.88]
Max.Speed RPM	Cont.	200	160	127	107
	Int.	240	195	152	129
Max.Oil Flow	Cont.	40 [10.57]	40 [10.57]	40 [10.57]	40 [10.57]
lpm [GPM]	Int.	48 [12.68]	48 [12.68]	48 [12.68]	48 [12.68]
Max.Differential Pressure	Cont.	110[1595]	90[1305]	70[1015]	55[797.5]
bar [PSI]	Int.	140[2030]	115[1667.5]	100[1450]	85[1232.5]
	Peak	225[3260]	200[2900]	150[2537.5]	130
Max. Inlet Pressure bar [PSI]	Cont.	175[2537.5]	175[2537.5]	175[2537.5]	175[2537.5]
	Int.	200[2900]	200[2900]	200[2900]	200[2900]
	Peak	225[3260]	225[3260]	225[3260]	225[3260]
Max. return pressure with drain line	Cont.	175[2537.5]	175[2537.5]	175[2537.5]	175[2537.5]
	Int.	200[2900]	200[2900]	200[2900]	200[2900]
	Peak	225[3260]	225[3260]	225[3260]	225[3260]
Max.starting pressure with unloaded shaft bar [PSI]		10[145]	10[145]	10[145]	10[145]
Max.Torque	Cont.	350 [3097.5]	355 [3141.75]	350 [3097.5]	325 [2876.25]
Nm [lb-in]	Int.	445 [3938.25]	455 [4026.75]	505 [4469.25]	505 [4469.25]
Max.Performance kW [HP]	GRA	11.2 [15.008]	9.2 [12.328]	8 [10.72]	6.8 [9.112]

GRA Dimensions and Mountings



Model	L(mm)
GRA 50	71
GRA 80	77
GRA 100	81
GRA 125	86
GRA160	91
GRA 200	99
GRA 250	104
GRA 315	111
GRA 375	116

GRA with Manifold Dimensions and Mountings



GRS Series Hydraulic Motors

Options

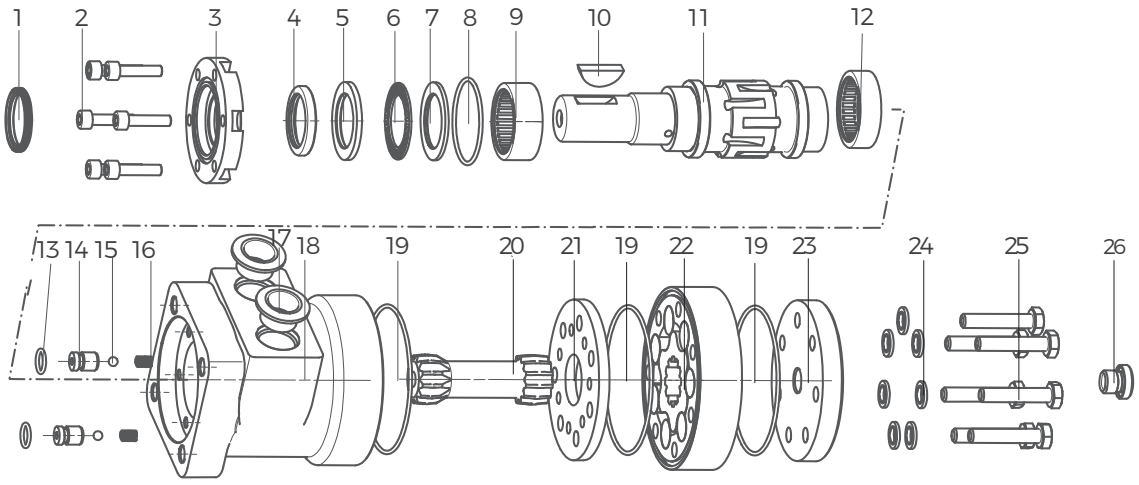
- Flange connection
- Motor with needle bearing
- Side and rear ports
- Straight, splined and tapered shafts
- Shaft seal for high and low pressure
- Metric and BSPP ports
- Speed sensing
- Other special features

Applications

- Conveyors
- Feeding equipment of robots 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[-140—284]
Optimal Viscosity range	mm^2/s [SUS]	20—75[98—347]
Filtration		ISO code: 20/16 (Min. recommended fluid filtration of 25 microns)

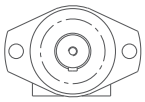
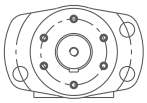
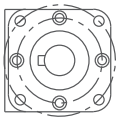
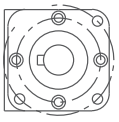


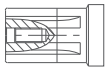
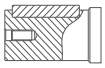
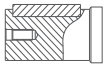
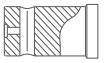
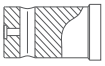
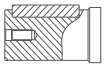
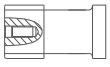
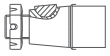
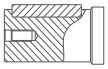
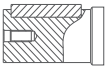
1 Anti-dust ring
2 Bolt
3 Front Cover
4 Shaft seal
5 Retainer
6 Bearing
7 Retainer
8 O-ring seal
9 Needle roller bearing
10 woodruff key
11 Output shaft
12 Needle roller bearing
13 O-ring seal
14 Check valve
15 Steel ball
16 Spring
17 Oil-resistant rubber plug
18 Housing
19 O-ring seal
20 Transmission 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 cm³/rev [in³/rev]
50	51.5 [3.14]
80	80.3 [4.90]
100	99.8 [6.09]
125	125.7 [7.67]
160	159.6 [9.74]
200	199.8 [12.19]
250	250.1 [15.26]
315	315.7 [19.26]
400	397 [24.4]

CODE	FLANGE
A2	2-Ø13.5 SAE A ,Ø106.4 pilot Ø82.5×2.8 
A3	4-Ø13.5 SAE A ,Ø106.4 pilot Ø82.5×2.8 
H4	4-3/8-16UNC square,Ø82.5 pilot Ø44.4×2.8 
H5	4-M10 square, Ø82.5 pilot Ø44.4×2.8 

CODE	SHAFT
S6	Ø25.4, woodruff key Ø25.4 × 6.35 
R4	Ø25.4, splined tooth SAE 6B 
S7	Ø25.4, 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	Ø22.2, 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	ROTATION
A	Standard
R	Opposite

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

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

Specifications

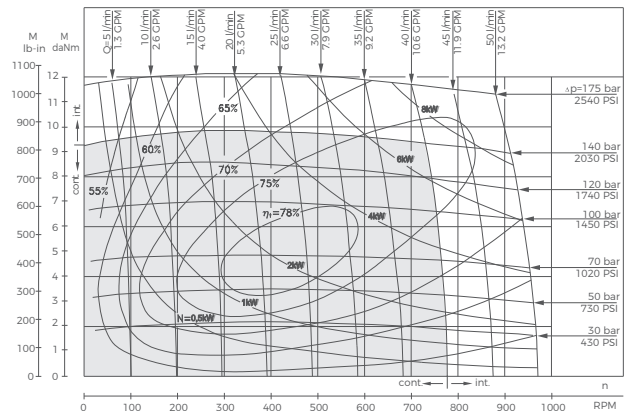
Type		GRS50	GRS80	GRS100	GRS125	GRS160
Displacement, cm³/rev [in³/rev]		51,5[3.14]	80,3[4.90]	99,8[6.09]	125,7[7.67]	159.6[9.74]
Max. Speed,	Cont.	775	750	600	457	375
RPM	Int.*	970	940	750	600	470
Max. Torque	Cont.	10[900]	20[1770]	24[2125]	30[2655]	39[3450]
daNm [lb-in]	Int.*	13[1150]	22[1947]	28[2480]	34[3010]	43[3805]
	Peak**	17[1505]	27[2390]	32[2832]	37[3275]	46[4070]
Max. Output	Cont.	7[9.5]	125[17]	13[17.4]	125[16.8]	115[15.4]
kW [HP]	Int.*	85[11.9]	15[20.1]	15[20.1]	145[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[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

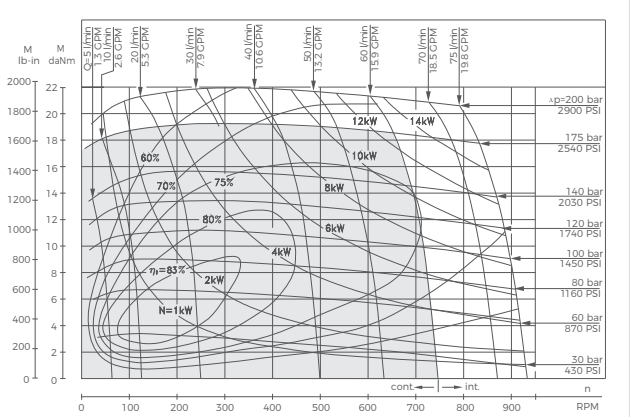
Type		GRS200	GRS250	GRS315	GRS400
Displacement, cm^3/rev [in^3/rev]		199,8[12.19]	250,1[15.26]	315,7[19.26]	397[24.4]
Max. Speed,	Cont.	300	240	190	150
RPM	Int.*	375	300	240	190
Max. Torque	Cont.	45[4000]	54[4780]	55[4870]	61[5400]
daNm [lb-in]	Int.*	50[4425]	61[5400]	69[6110]	69[6110]
	Peak**	56[4960]	71[6280]	84[7435]	87[7700]
Max. Output	Cont.	11[14.8]	10[13.4]	9[12]	78[10.5]
kW [HP]	Int.*	13[17.4]	12[16.1]	10[13.4]	106[14.2]
Max. Pressure Drop	Cont.	175[2540]	175[2540]	135[1960]	110[1600]
bar [PSI]	Int.*	200[2900]	200[2900]	175[2540]	140[2030]
	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]	GRS	8,1[18.9]	8,5[18.7]	9,2[20.3]	9,9[21.8]

Function Diagrams

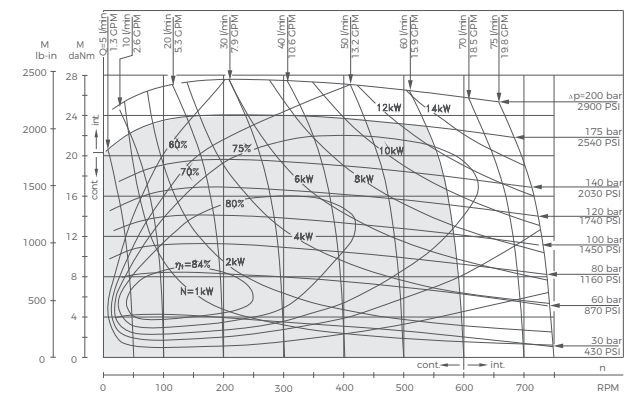
GRS50



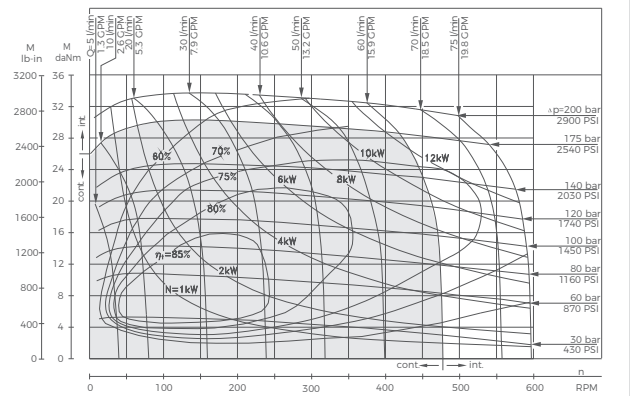
GRS80



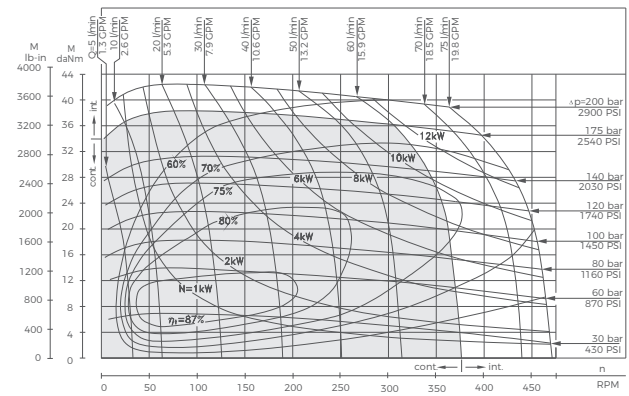
GRS100



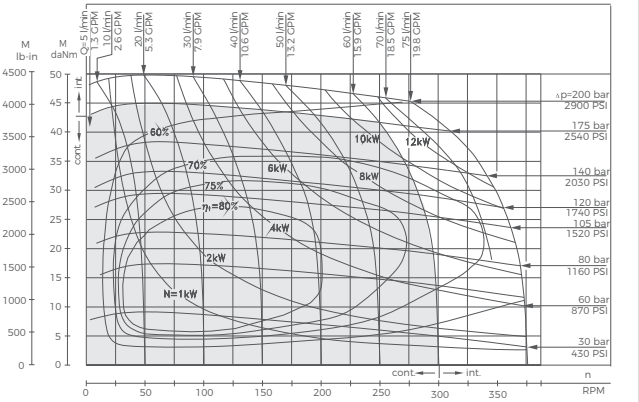
GRS125



GRS160



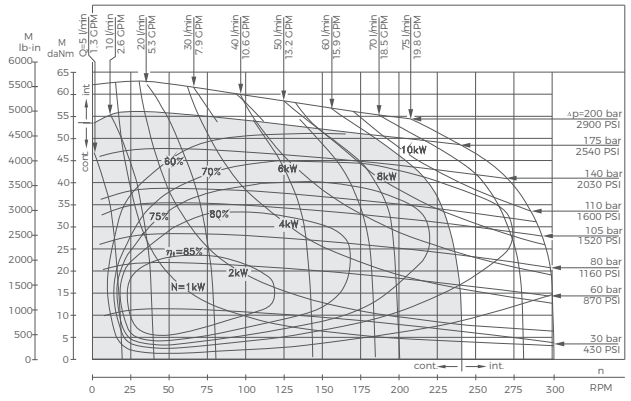
GRS200



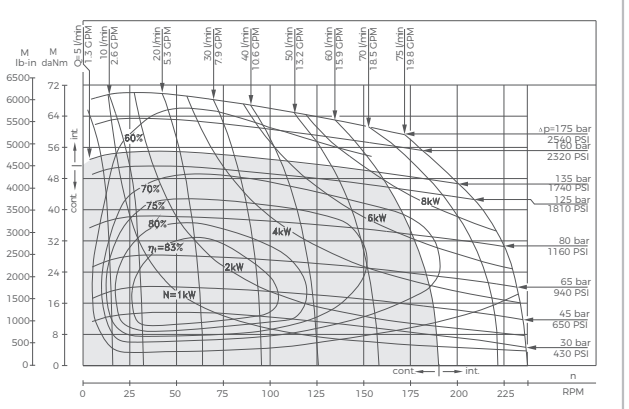
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

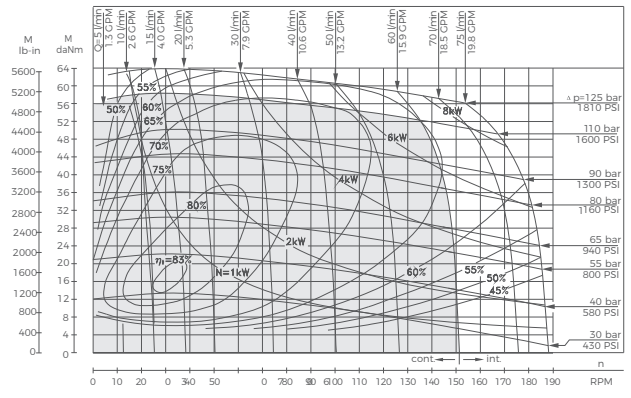
GR250



GRS315

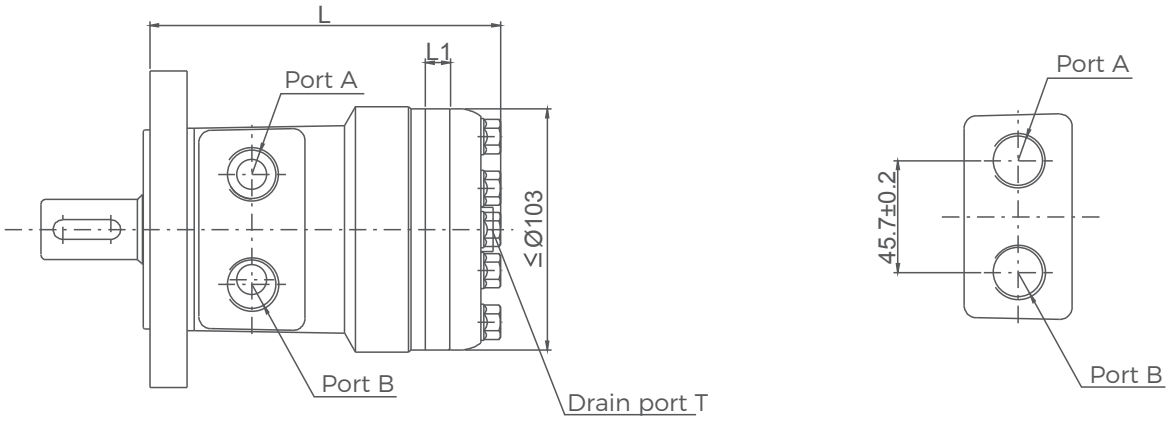


GRS400

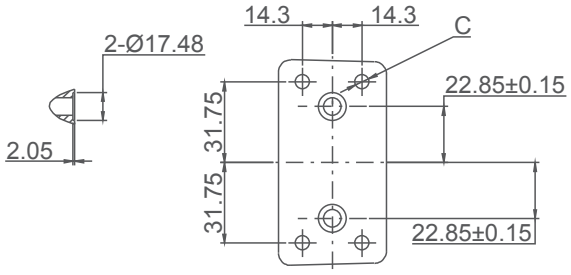


The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

GRS Dimensions and Mountings

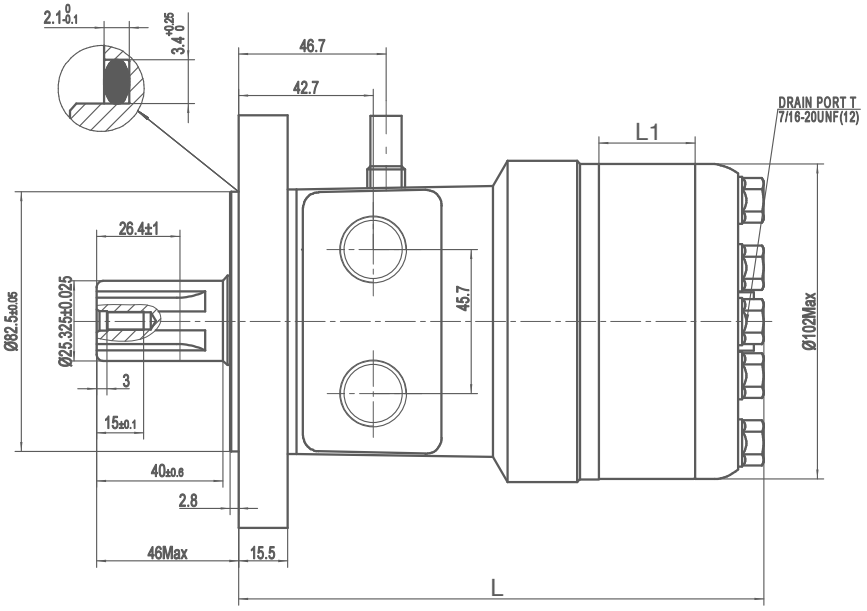


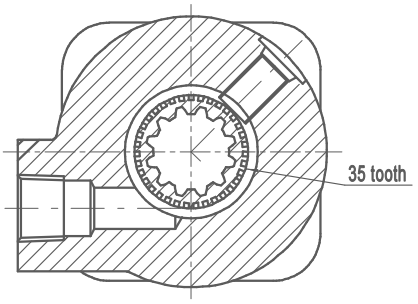
Model	L(mm)	L1(mm)
GRS50	146	10
GRS80	152	16
GRS100	156	20
GRS125	161	25
GRS160	166.5	30.5
GRS200	174	38.1
GRS250	186	50
GRS315	198	62
GRS400	213	76

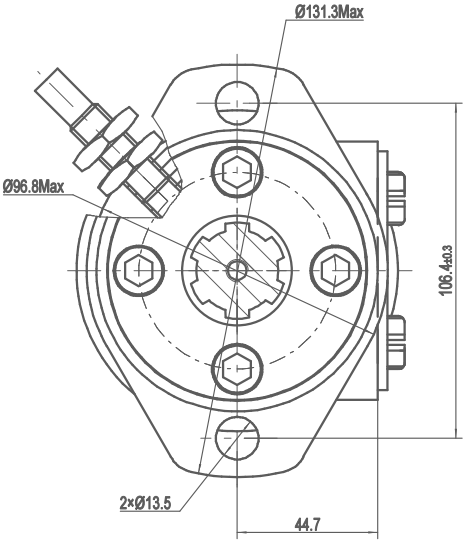


Mounting	G7 (depth)	U9 (depth)	UA (depth)	G8 (depth)	M2 (depth)	M3 (depth)	M4 (depth)	D1 (depth)	D2 (depth)
P(A, B)	G1/2(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	PT(RC)1/2(15)	M18 x 1.5(15)	M20 x 1.5(15)	M22 x 1.5(15)	10	10
T	G1/4(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)	M10 x 1(12)	M10 x 1(12)	M10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

GRS with Speed Sensor Dimensions and Mountings



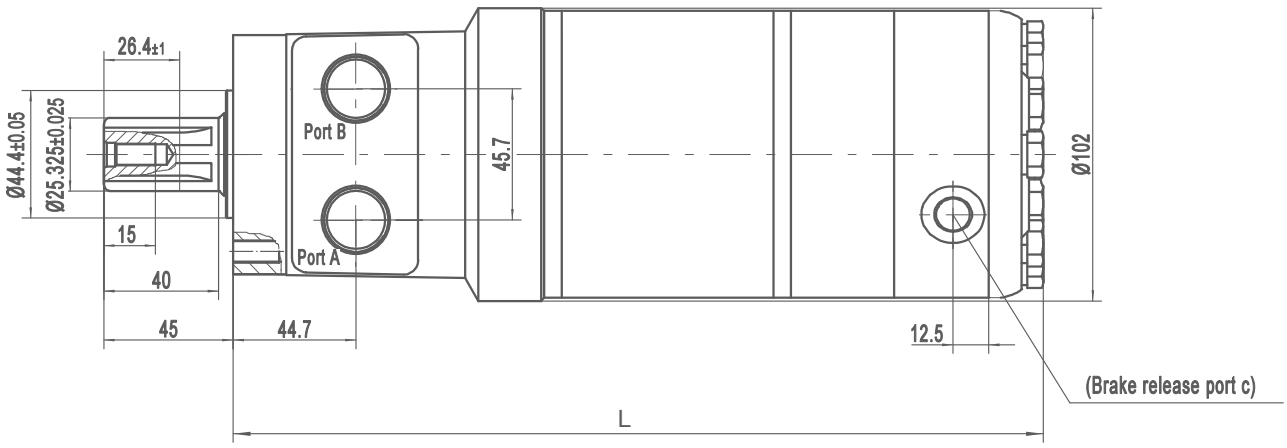


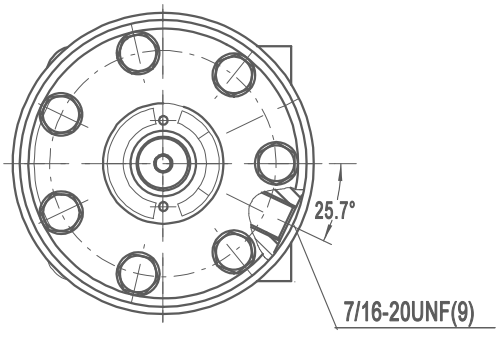


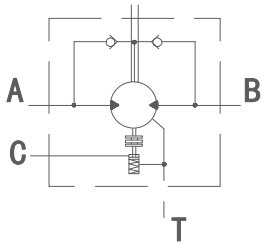
Model	L(mm)	L1(mm)
GRS50	146	10
GRS80	152	16
GRS100	156	20
GRS125	161	25
GRS160	166.5	30.5
GRS200	174	38.1
GRS250	186	50
GRS315	198	62
GRS400	213	76

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 with Brake Dimensions and Mountings



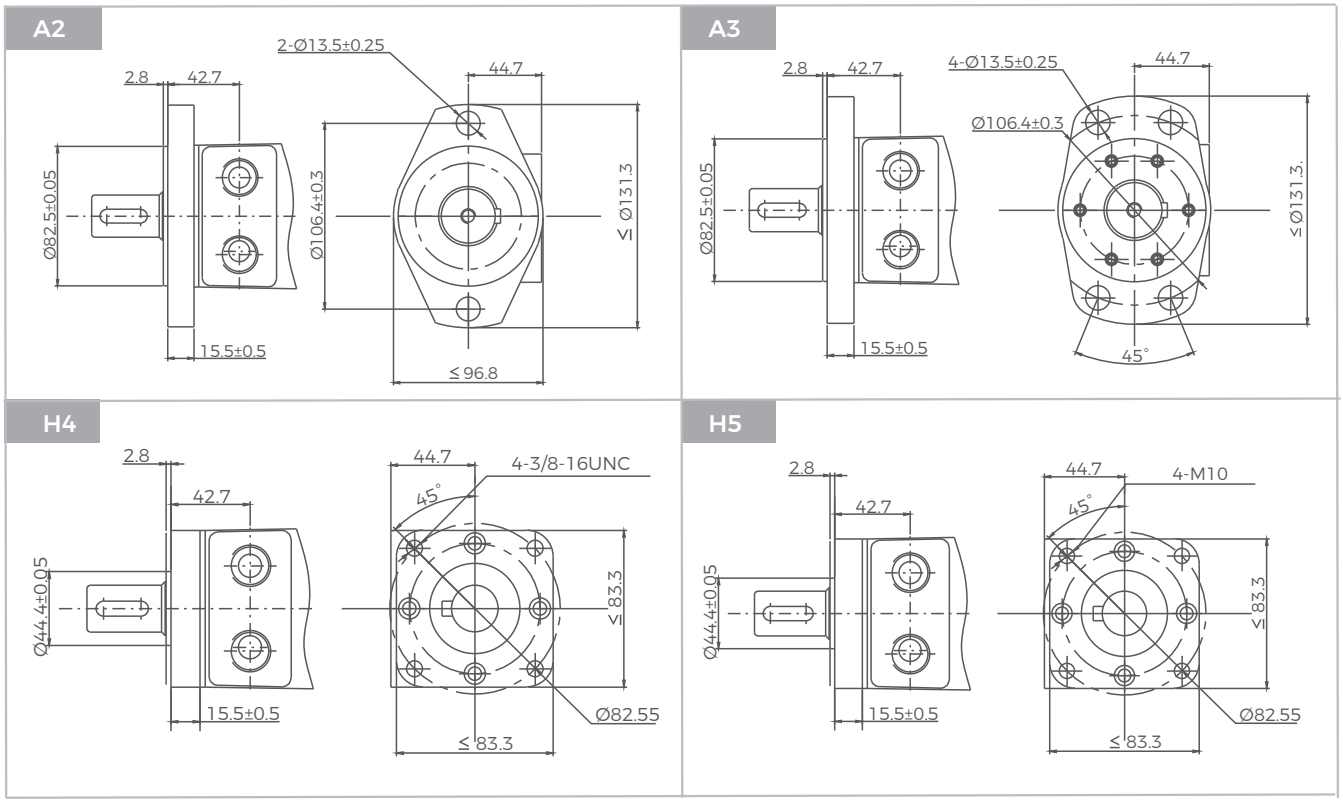




Min. opening pressure	1.7~2.2MPa
Max. inlet pressure	25MPa
Max. brake release port pressure	25MPa
Max. static torque	500~550Nm

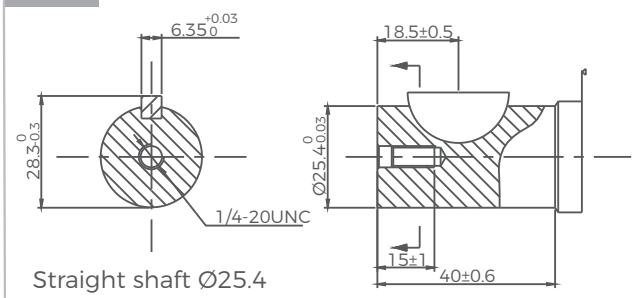
Mounting	G7 (depth)	U9 (depth)	UA (depth)	G8 (depth)	M2 (depth)	M3 (depth)	M4 (depth)	D1 (depth)	D2 (depth)
P(A, B)	G1/2(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	PT(RC)1/2(15)	M18 x 1.5(15)	M20 x 1.5(15)	M22 x 1.5(15)	10	10
T	G1/4(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)	M10 x 1(12)	M10 x 1(12)	M10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

GRS Flange Covers Dimensions



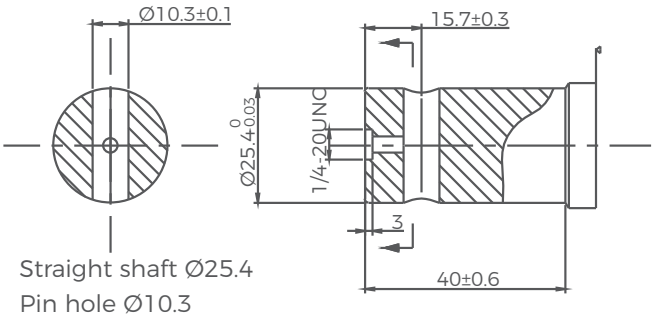
GRS Shafts Dimensions

S6



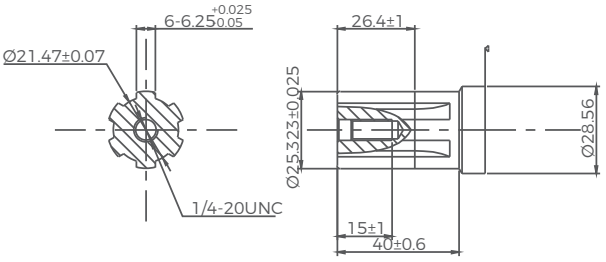
Straight shaft Ø25.4
Woodruff key Ø25.4 x 6.35

S9



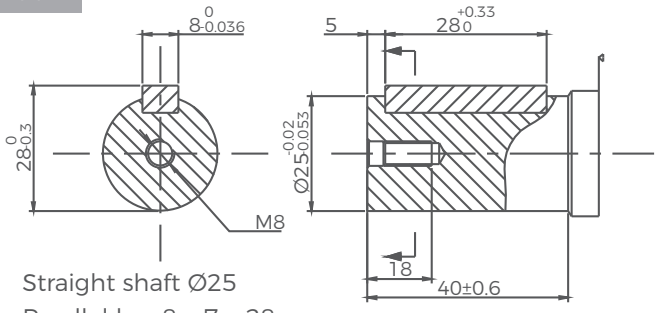
Straight shaft Ø25.4
Pin hole Ø10.3

R4



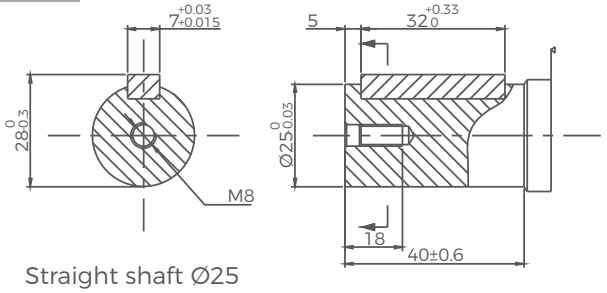
Splined shaft SAE 6B

SC



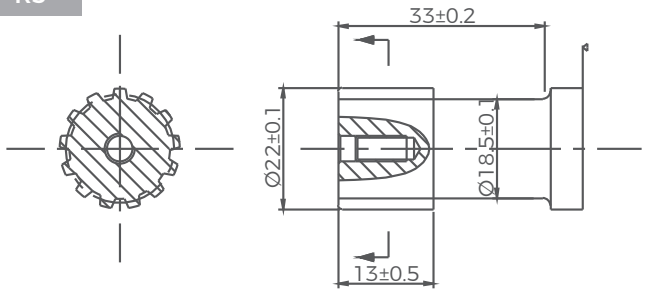
Straight shaft Ø25
Parallel key 8 x 7 x 28

SD



Straight shaft Ø25
Parallel key 7 x 7 x 32

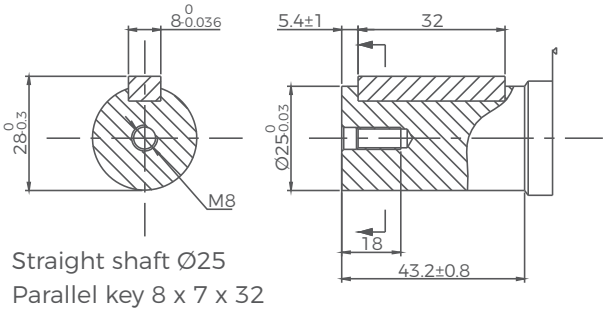
R5



Splined shaft 13-DP 16/32

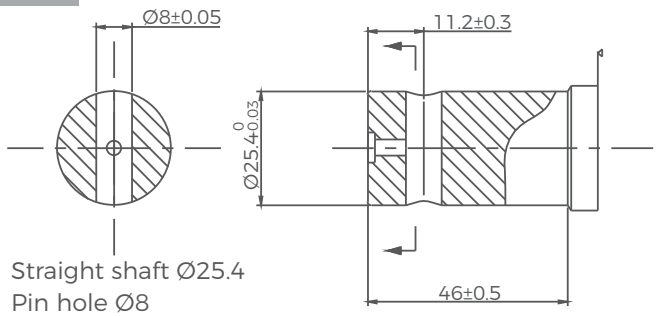
GRS Shafts Dimensions

S7



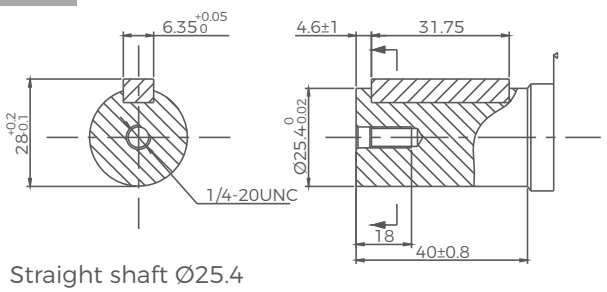
Straight shaft Ø25
Parallel key 8 x 7 x 32

SA



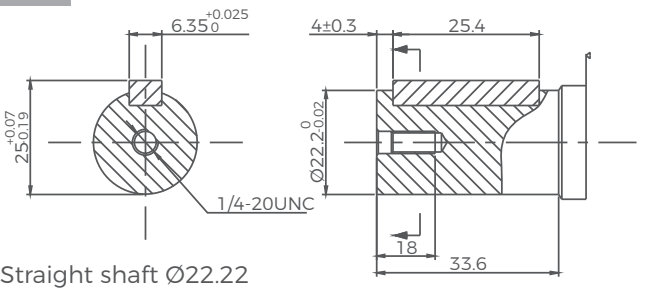
Straight shaft Ø25.4
Pin hole Ø8

S8



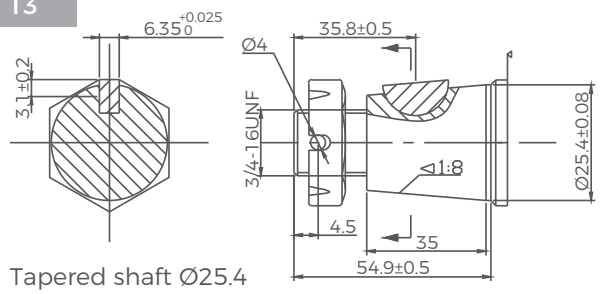
Straight shaft Ø25.4
Parallel key 6.35 x 6.35 x 31.75

SB



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

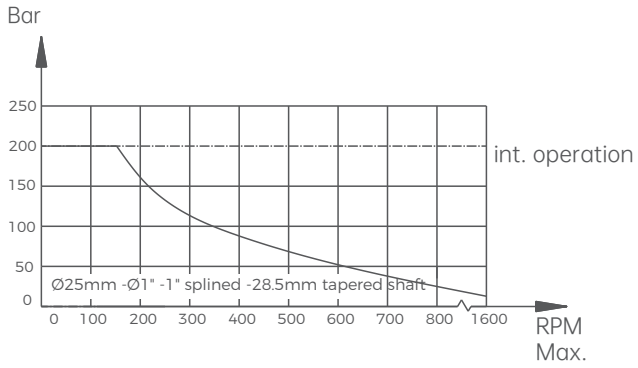
T3



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

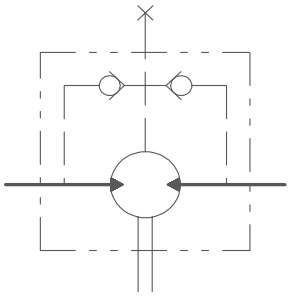
GRS Series Hydraulic Motors

Permissible shaft seal pressure



Drain Port

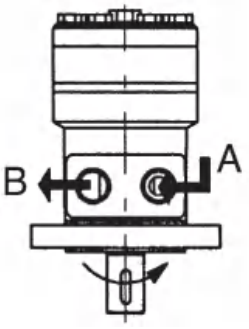
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.



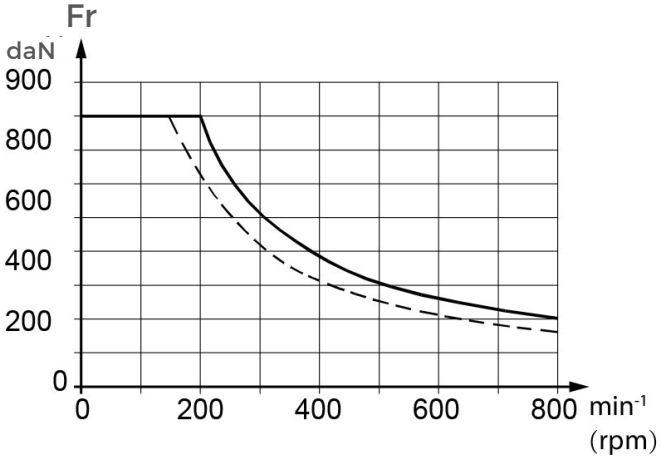
GRS with standard shaft seal, check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.
GRS with standard shaft seal, check valves and with drain connection:The shaft seal pressure equals the pressure on the drain line.

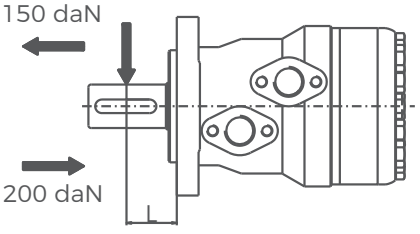
Standard direction of shaft rotation: Standard

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



Output shaft axial and 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

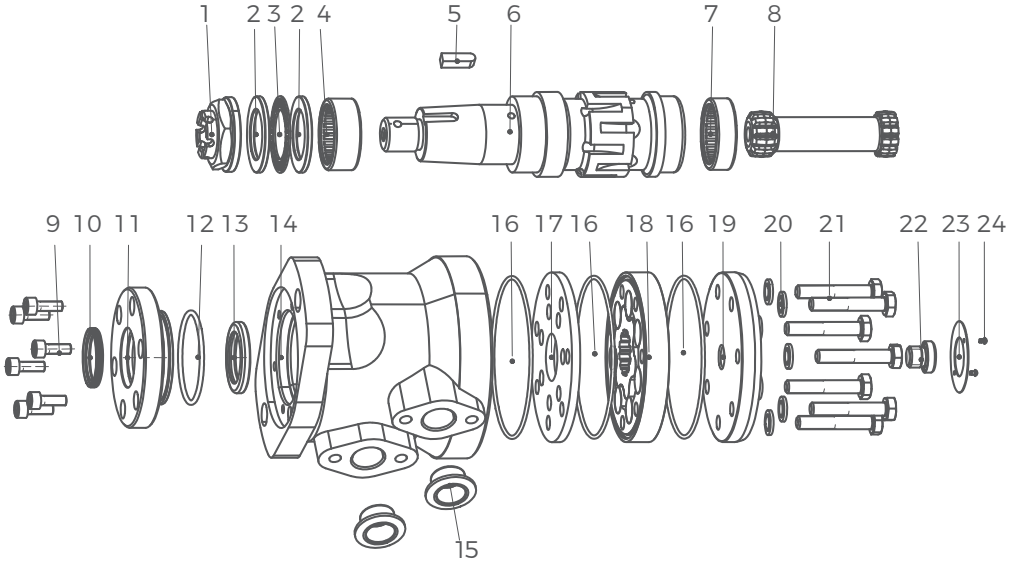
- Flange connection
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Conveyors
- Feeding equipment 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 [-104- 284]
Optimal Viscosity range	mm^3/s [SUS]	20- 75 [98- 347]
Filtration	GH	ISO code: 20/16 (Min. recommended fluid filtration of 25 microns)

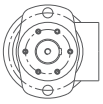


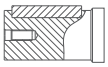
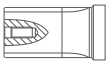
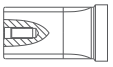
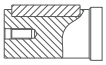
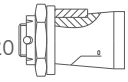
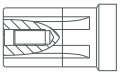
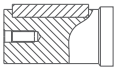
1 Slotted nuts
2 Bearing retainer
3 Thrust needle roller bearing
4 Needle roller bearings
5 Parallel Key
6 Output shaft
7 Thrust needle roller bearing
8 Transmission shaft
9 Screw
10 Skeleton anti-dust ring
11 Front cover
12 O-ring
13 Pressure Resistant Oil Seal
14 Housing
15 Oil port plug cap
16 O-ring
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 cm³/rev [in³/rev]
200	201.3 [12.3]
250	252 [15.4]
315	314.9 [19.2]
400	396.8 [24.2]
500	502.4 [30.7]

CODE	FLANGE
A5	4- Ø13.5 SAE A pilot Ø82.5×6 
A6	24Ø13.5 SAE A pilot Ø82.5×6 

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	ROTATION
A	Standard
R	Opposite

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

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

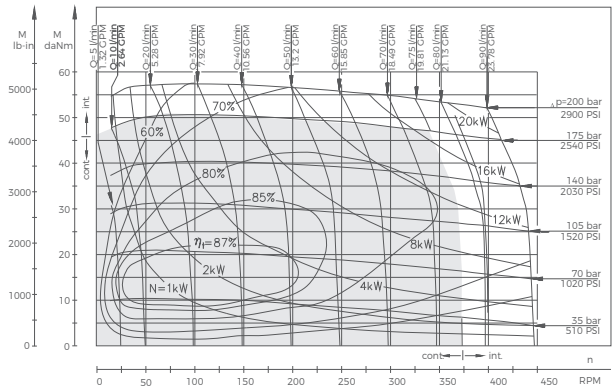
CODE	PORTS
G1	G1/2, G1/4 Manifold 4×M8
M1	M22×1.5, M14×1.5 Manifold 4×M8
U2	7/8-14UNF O-ring, 7/16-20UNF Manifold 4×5/16-18UNC
U1	1/2-14 NPTF, 7/16-20UNF Manifold 4×5/16-18UNC
G2	PT (Rc) 1/2, PT (Rc) 1/4 Manifold 4×M8

Specifications

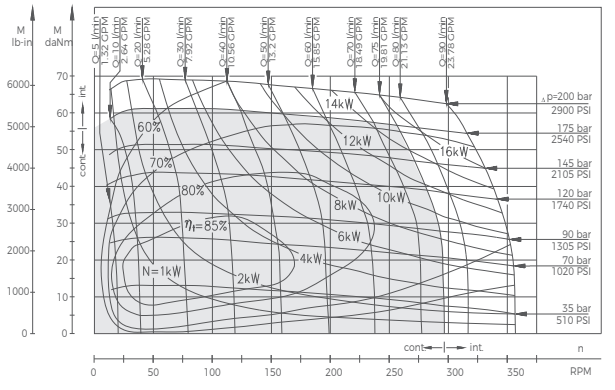
Type		GH200	GH250	GH315	GH400	GH500
Displacement, cm³/rev [in³/rev]		201,3[12.3]	252[15.4]	314,9[19.2]	396,8[24.2]	502,4[30.7]
Max. Speed,	Cont.	370	295	235	185	150
RPM	Int.*	445	350	285	225	180
Max. Torque	Cont.	514510]	61[5398]	74[6548]	84[7434]	82[7257]
daNm [lb-in]	Int.*	58[5130]	70[6195]	82[7257]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

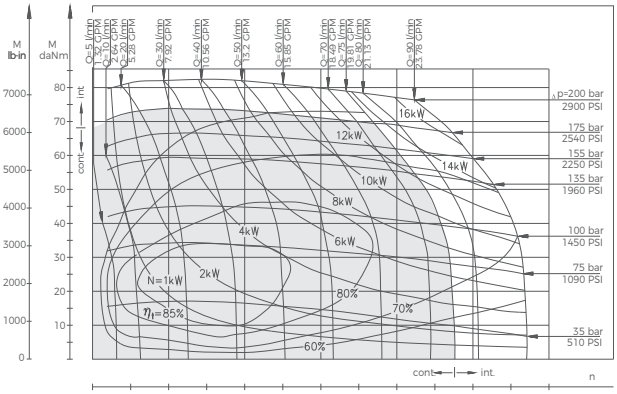
GH200



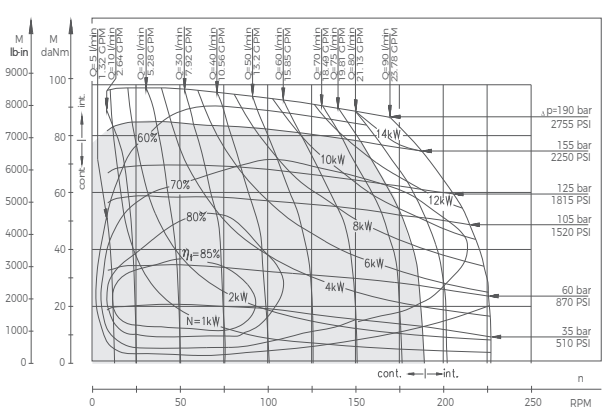
GH250



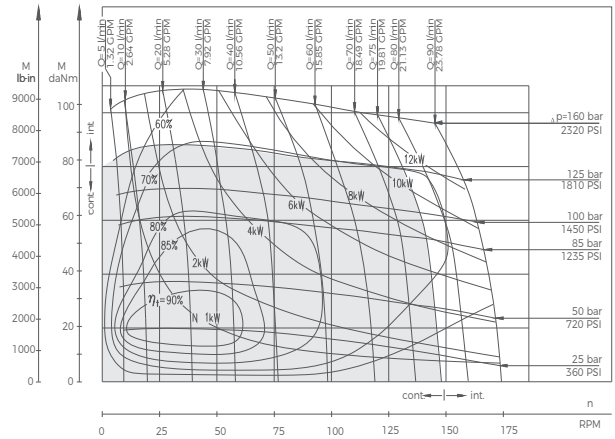
GH315



GH400

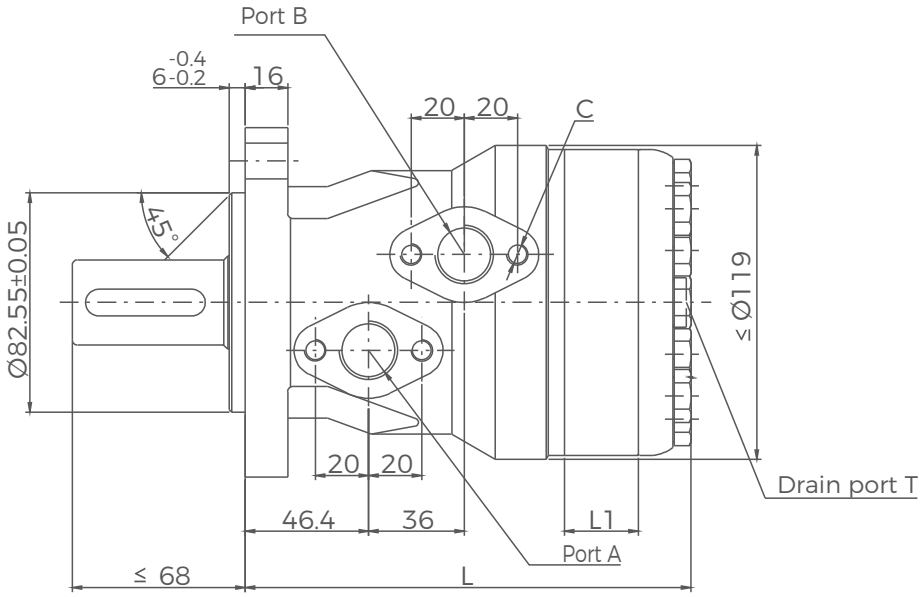


GH500



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

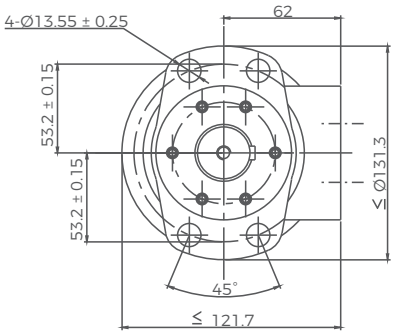


Model	L(mm)	L1(mm)
GH200	168	27
GH250	175	34
GH315	184	42
GH400	195	54
GH500	206	65

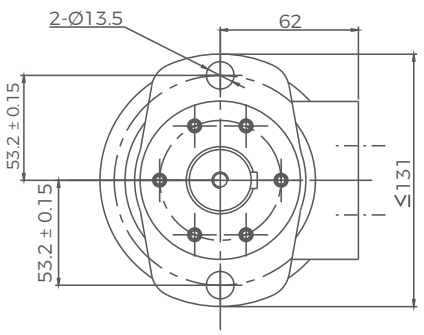
Mounting	G1 (depth)	M1 (depth)	U2 (depth)	U1 (depth)	G2 (depth)
P(A, B)	G1/2(15)	M22 x1.5(15)	7/8-14 O-ring(17)	1/2-14 NPTF(15)	PT(RC)1/2(15)
T	4-M8(13)	4-M8(13)	4-5/16-18 UNC(13)	4-5/16-18 UNC(13)	4-M8(13)
C	G1/4(12)	M14 x 1.5(12)	7/16-20 UNF(12)	7/16-20 UNF(12)	PT(RC)1/4(9.7)

GH Flange Covers Dimensions

A5

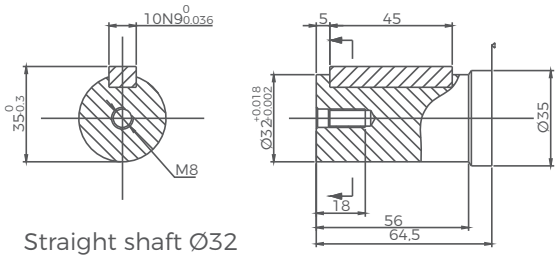


A6



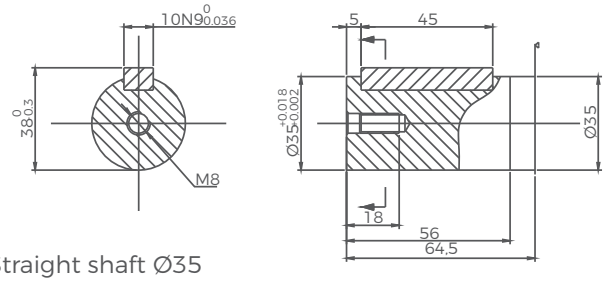
GH Shafts Dimensions

S4



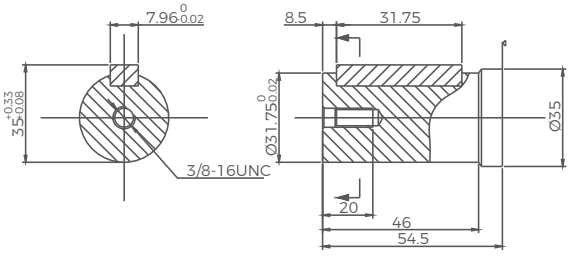
Straight shaft Ø32
Parallel key 10 x 8 x 45

SF



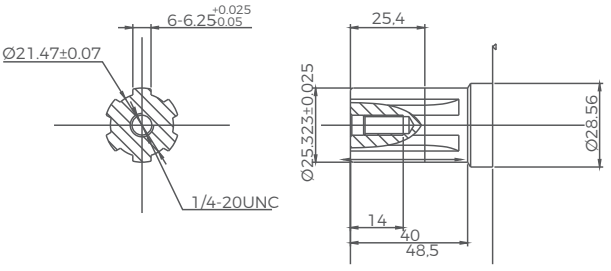
Straight shaft Ø35
Parallel key 10 x 8 x 45

SG



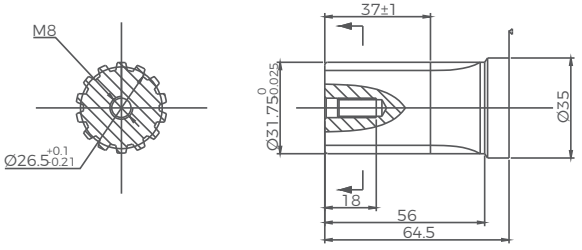
Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75

R4



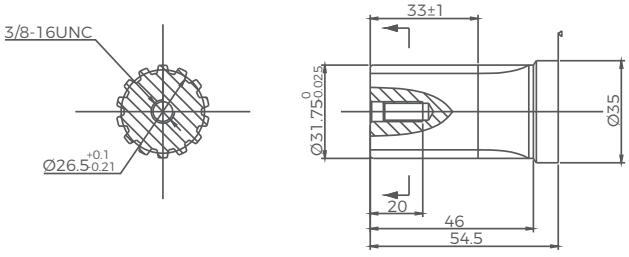
Splined shaft SAE 6B

R3



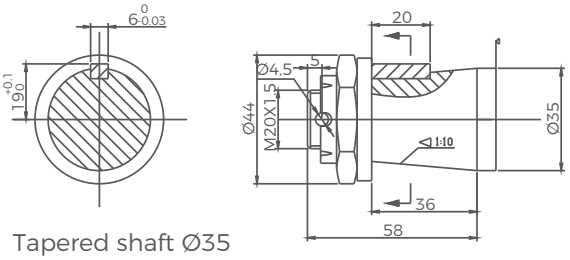
Splined shaft 14-DP 12/24

R6



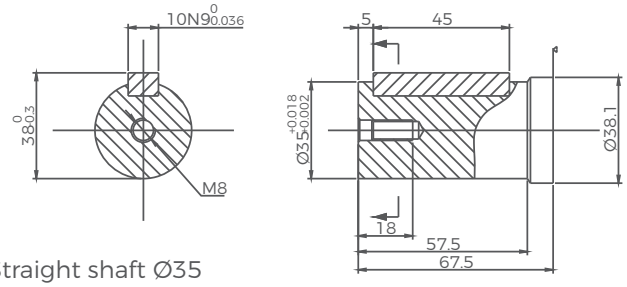
Splined shaft 14-DP 12/24

T4



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

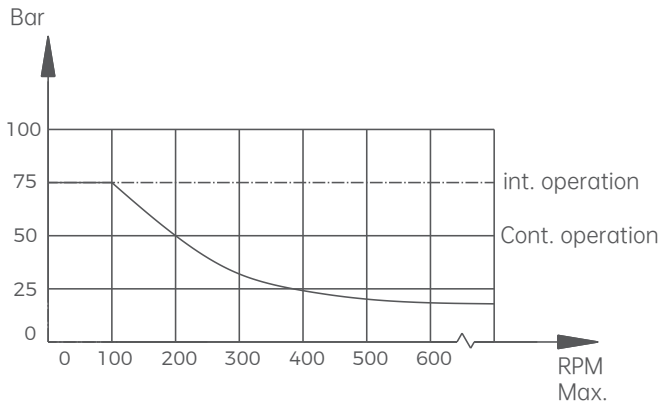
SH

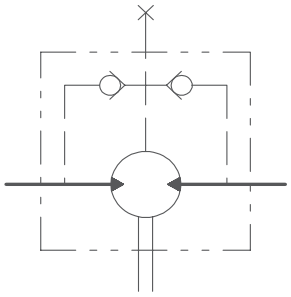


Straight shaft Ø35
Parallel key 10 x 8 x 45

GH Series Hydraulic Motors

Permissible shaft seal pressure





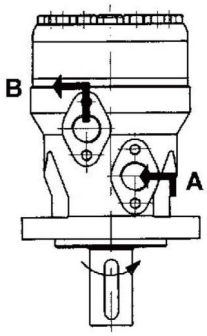
GH with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.
GH with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

Drain Port

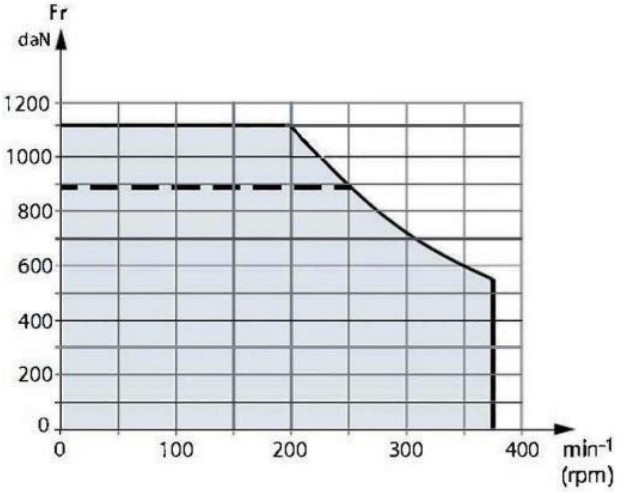
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

Standard direction of shaft rotation: Standard

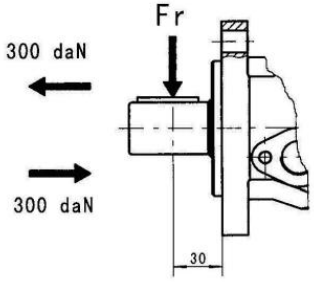
When facing shaft end of motor, shaft to rotate:
Clockwise.When port A is pressurized.
Counter-clockwise port B is pressurized.



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

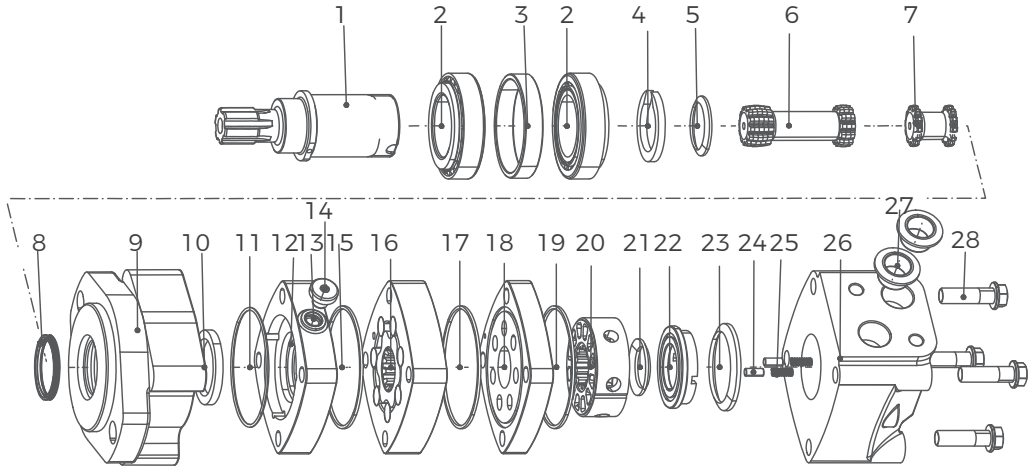
- Flange and wheel mount
- Bearingless motor
- Motor with brake
- Tachometer connection
- Speed sensing
- Side and rear ports
- Straight, splined and tapered shafts
- Shaft seal for high and low pressure
- Metric and BSPP ports
- Other special features

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 [-104-284]
Optimal Viscosity range	mm^2/s [SUS]	20-75 [98-347]
Filtration	GS	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

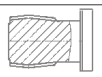
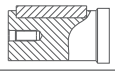
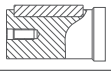
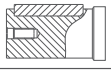
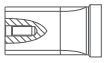
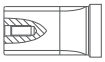
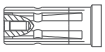
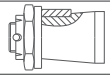
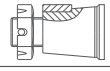
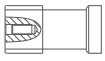
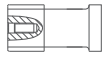
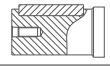
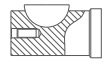
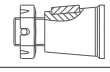
Ordering Code

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

CODE	TYPE
GS	Orbital motor
GSS	Bearingless motor

CODE	DISP cm³/rev [in³/rev]
80	80.5 [4.9]
100	100 [6.1]
125	125.7 [7.67]
160	159.7 [9.7]
200	200 [12.2]
250	250 [15.3]
315	314.9 [19.2]
400	397 [24.2]
475	474.6 [28.96]
525	522.7 [31.88]
565	564.9 [34.47]

CODE	FLANGE	
A7	2- Ø13.5 SAE A Ø106.4, pilot Ø82.5×63	
H3	4- Ø13.5 square Ø106.4, pilot Ø82.5×63	
A9	6- Ø13.5 SAE A Ø106.4, pilot Ø82.5×2.6	
W1	4- Ø13.5 wheel Ø160, pilot Ø125×8	
AA	2-Ø14.3 SAE B Ø146.05, pilot Ø101.6×9.4	
H1	4-Ø11.5 square Ø106.4, pilot Ø82.5×63	
B1	4- Ø11 circle Ø125, pilot Ø100×6	
H2	4- Ø13.5 square Ø127, pilot Ø101.6×63	

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	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	ROTATION
A	Standard
R	Opposite

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

Specifications

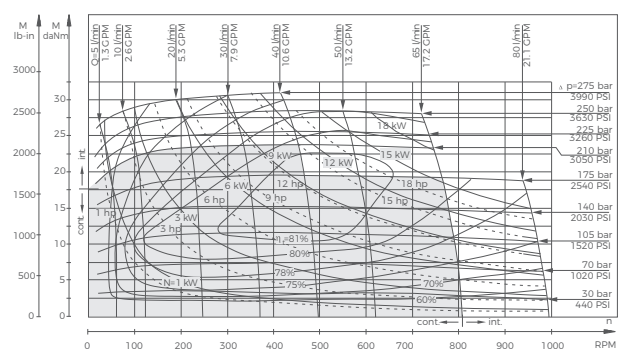
Type		GS80	GS100	GS125	GS160	GS200	GS250
Displacement, cm³/rev [in³/rev]		80,5[4.91]	100[6.1]	125,7[7.67]	159,7[9.74]	200[12.2]	250 [15.3]
Max. Speed	Cont.	810	750	600	470	375	300
RPM	Int.*	1000	900	720	560	450	360
Max. Torque	Cont.	24[2120]	30,5[2700]	37,5[3320]	49[4340]	61[5400]	72[6370]
daNm [lb-in]	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]	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]
For 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

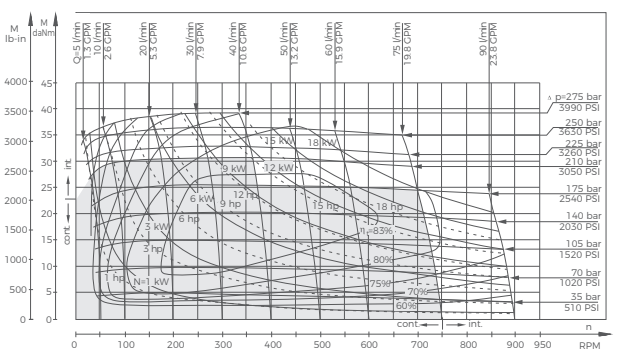
Type		GS315	GS400	GS475	GS525	GS565
Displacement, cm³/rev [in³/rev]		314,9[19.2]	397[24.2]	474,6[28.96]	522,7[31.88]	564,9[34.47]
Max. Speed	Cont.	240	190	160	145	130
RPM	Int.*	290	230	190	175	160
Max. Torque	Cont.	82,5[7300]	86,5 [7660]	85[7520]	85[7520]	85[7520]
daNm [lb-in]	Int.*	100[8850]	99[8760]	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]	GS	12,4[27.3]	13,1[29.3]	14,1[31]	14,6[32.2]	15[33.1]
For 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

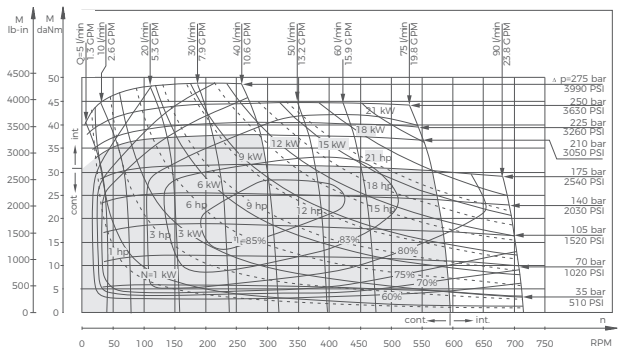
GS80



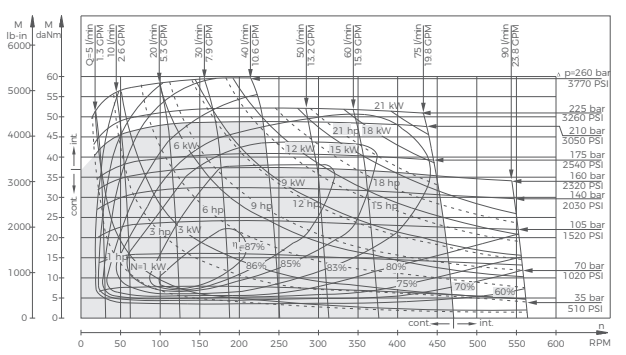
GS100



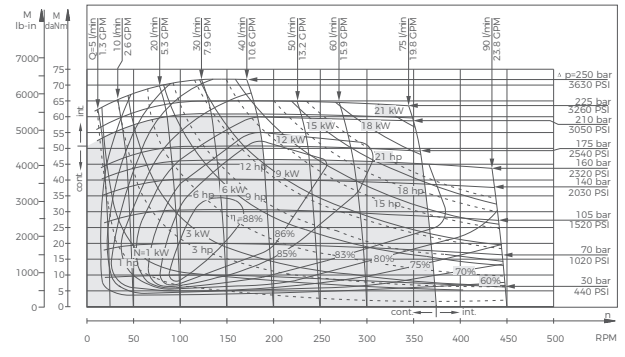
GS125



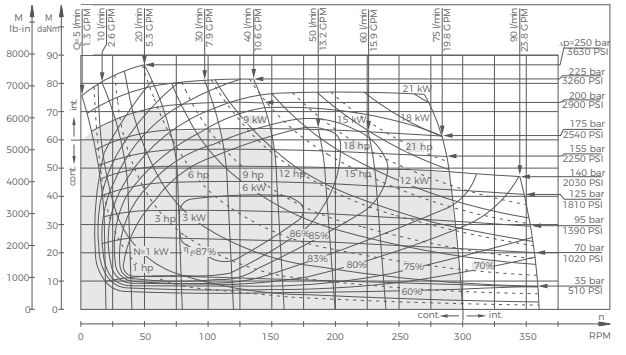
GS160



GS200



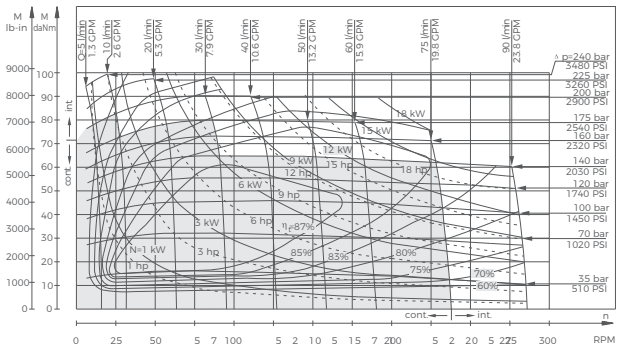
GS250



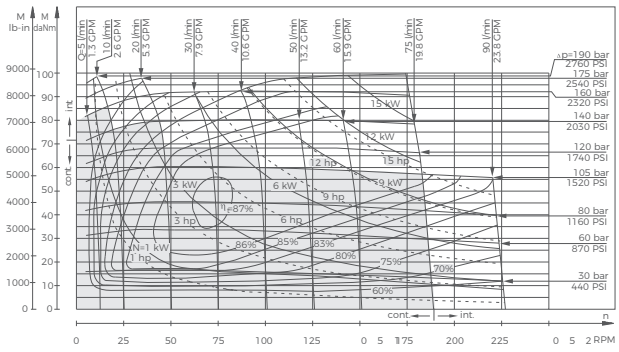
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50˚C [122˚F].

Function Diagrams

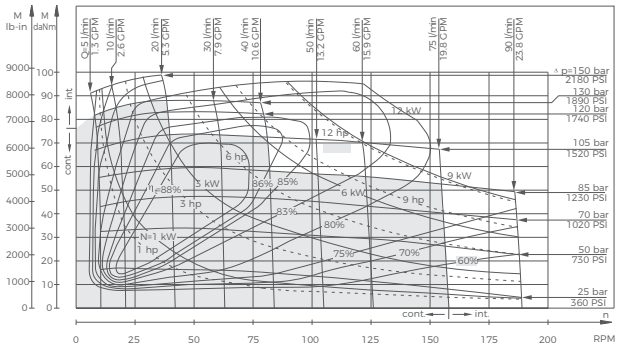
GS315



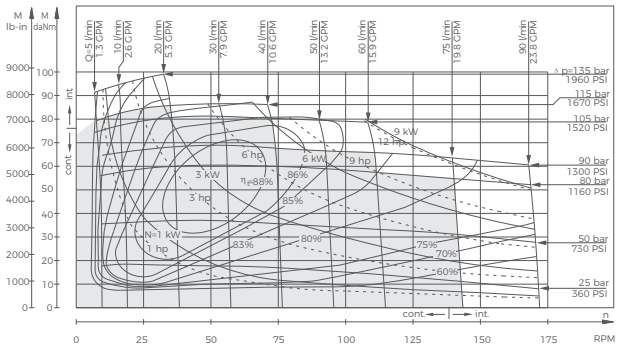
GS400



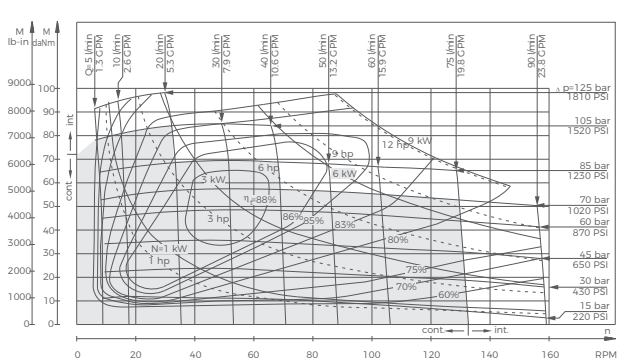
GS475



GS525

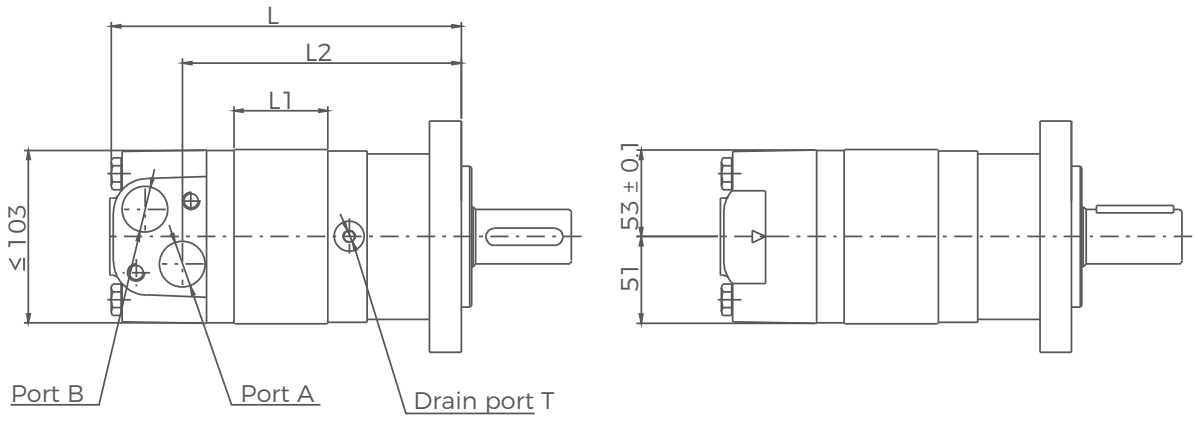


GS565

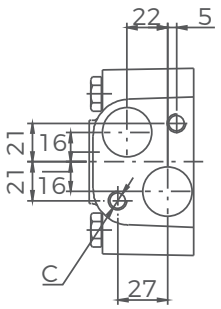


The function diagrams data is for average performance of randomly selected motors at backpressure. 5-10 bar [72.5-145 PSI] and oil with viscosity of 32 mm ²/s [150 SUS] at 50˚C [122˚F].

GS Dimensions and Mountings

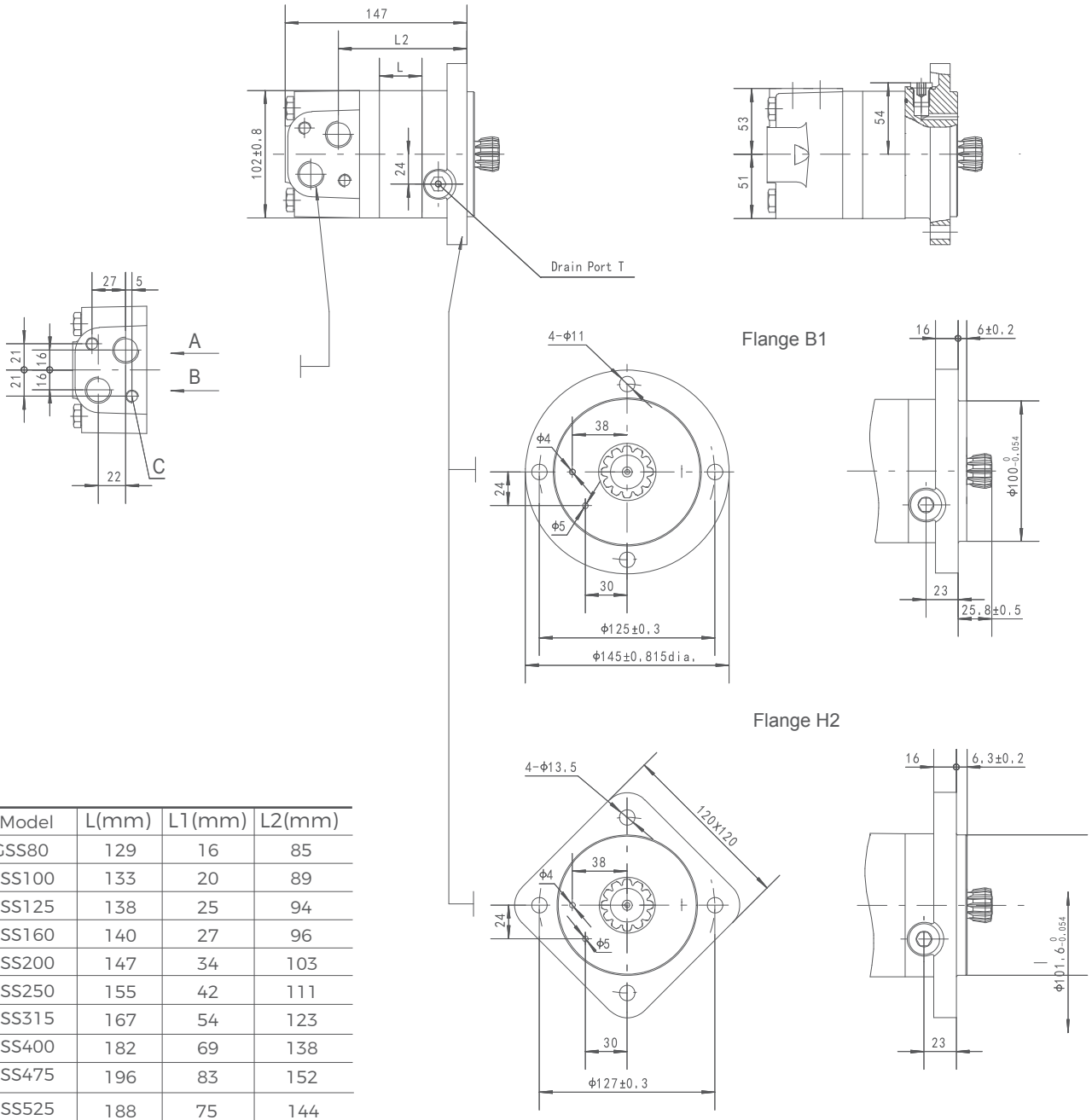


Model	L(mm)	L1(mm)	L2(mm)
GS80	170	16	126.5
GS100	174	20	130.5
GS125	179	25	135.5
GS160	181	27	137.5
GS200	188	34	144.5
GS250	196	42	152.5
GS315	208	54	164.5
GS400	223	69	179.5
GS475	237	83	193.5
GS525	229	75	185
GS565	235	80	191



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)

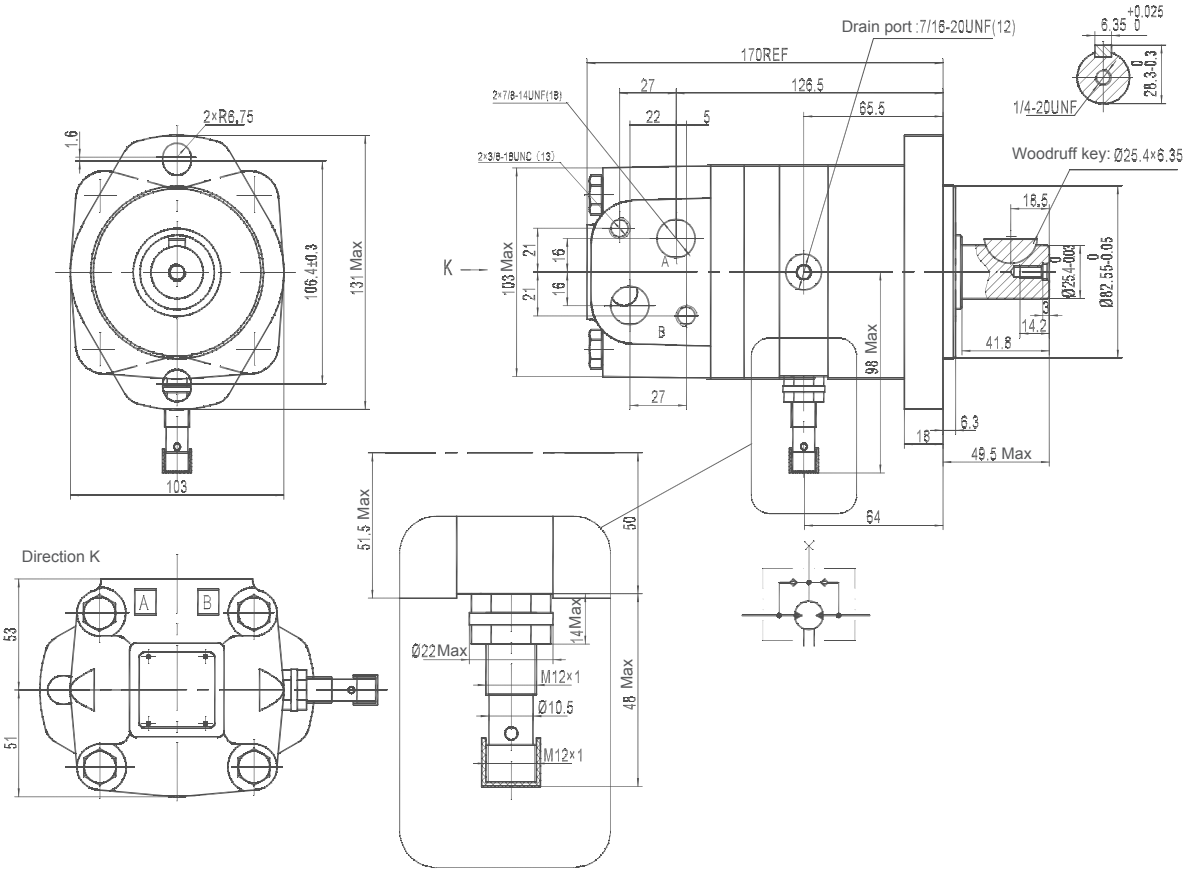
GSS Bearingless Motor Dimensions and Mounting



Model	L(mm)	L1(mm)	L2(mm)
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

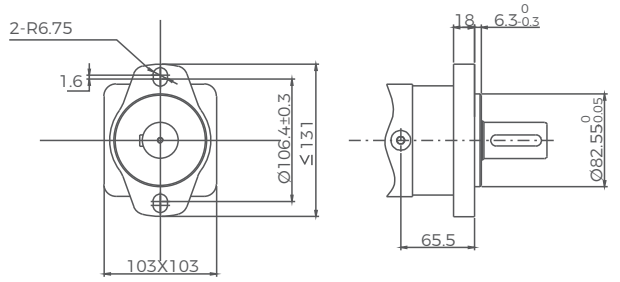
Mounting	G9 (depth)	M8 (depth)	UB (depth)	UC (depth)
P(A, B)	G1/2(15)	M22 x 1.5(15)	7/8-14 O-ring(17)	1/2-14 NPTF(15)
T	G1/4(12)	M14 x 1.5(12)	7/16-20 UNF(12)	7/16-20 UNF(12)
C	2-M10(13)	2-M10(13)	2-3/8-16 UNC(13)	2-3/8-16 UNC(13)

GS Brake Motor-Speed Sensor

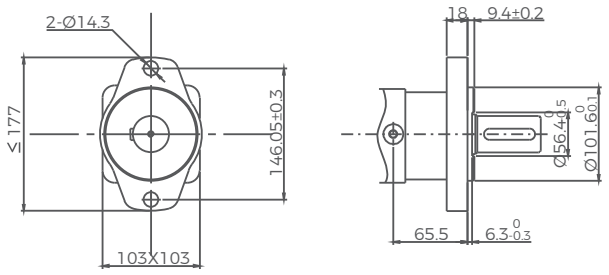


GS Flange Covers Dimensions

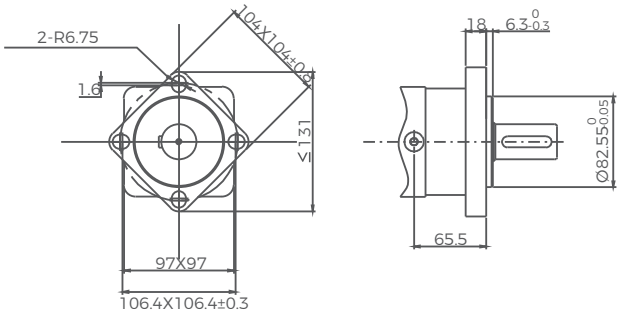
A7



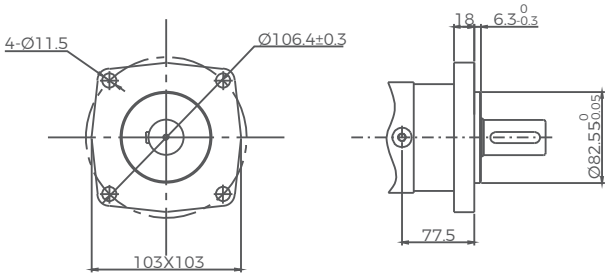
AA



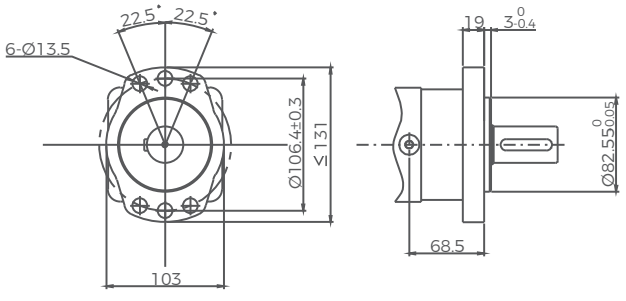
H3



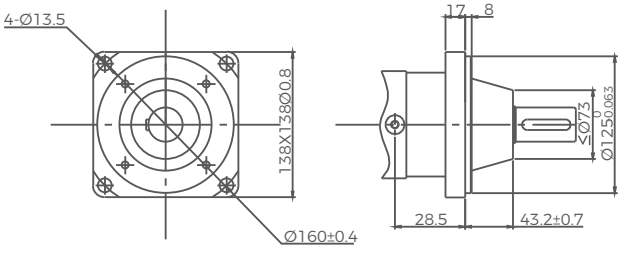
H1



A9

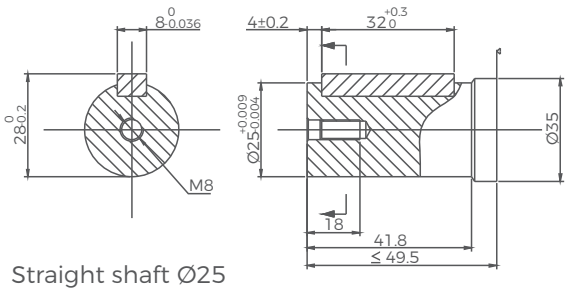


W1



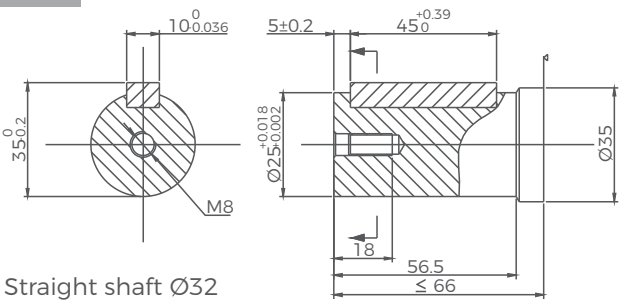
GS Shafts Dimensions

S1



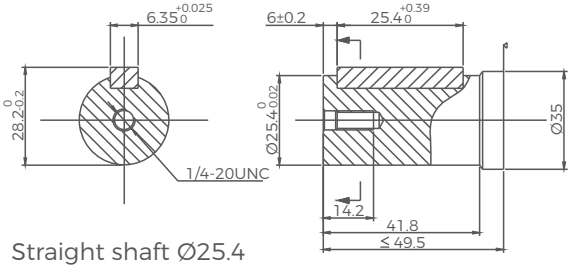
Straight shaft Ø25
Parallel key 8 x 7 x 32

S4



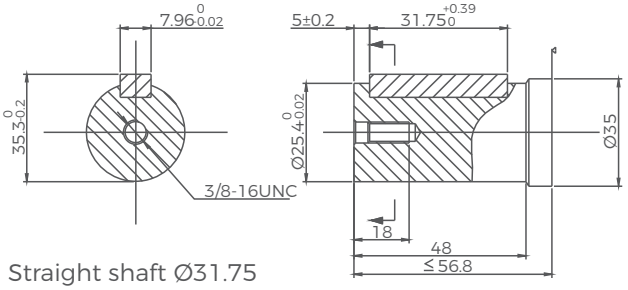
Straight shaft Ø32
Parallel key 10 x 8 x 45

S8



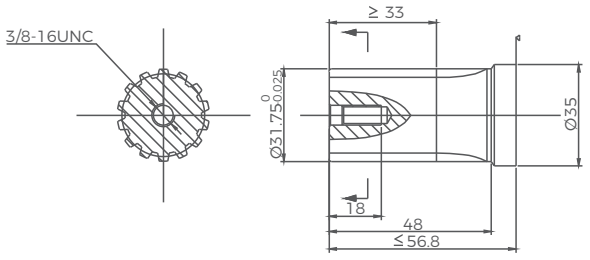
Straight shaft Ø25.4
Parallel key 6.35 x 6.35 x 25.4

SG



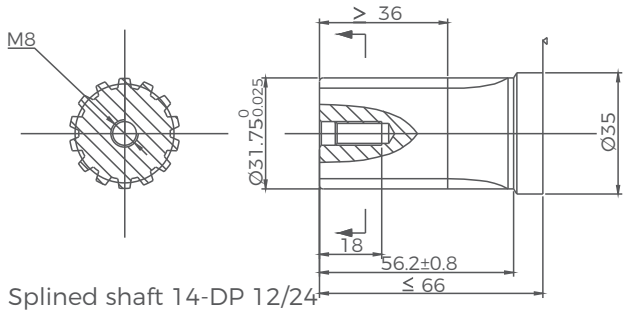
Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75

R2



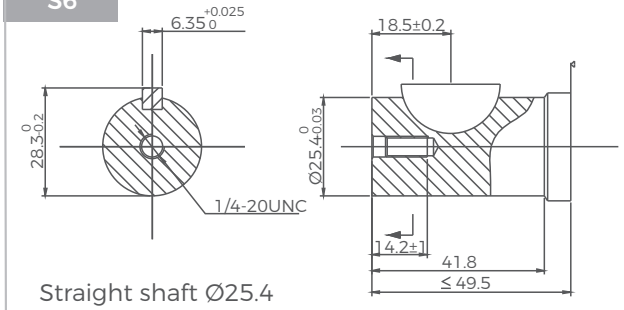
Splined shaft 14-DP 12/24

R3



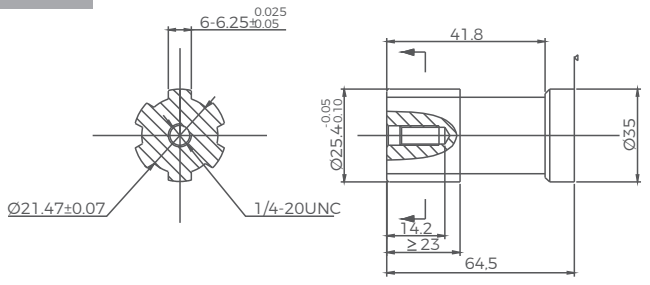
Splined shaft 14-DP 12/24

S6



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

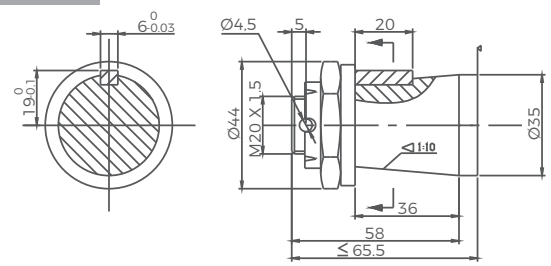
R8



Splined shaft SAE 6B

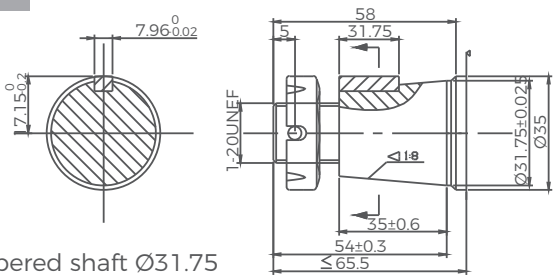
GS Shafts Dimensions

T4



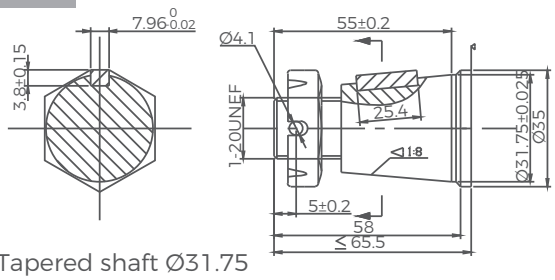
Tapered shaft Ø35
Parallel key B6 x 6 x 20

T5



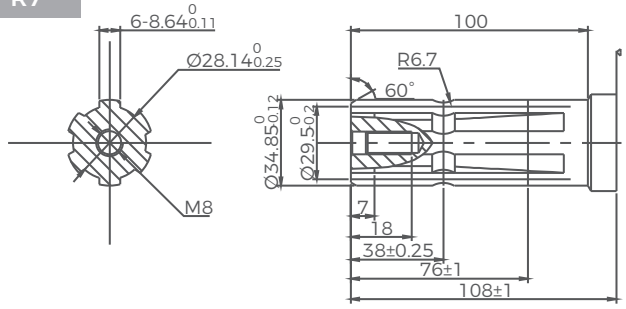
Tapered shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75
Tightening torque: 200 ± 10Nm

T2



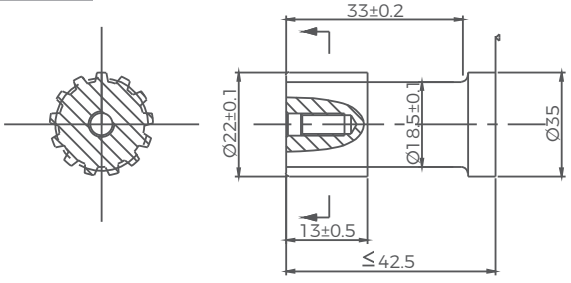
Tapered shaft Ø31.75
Parallel key 7.96 x 7.96 x 25.4
Tightening torque: 200 ± 10Nm

R7



Splined shaft 6-34.85 x 28.14 x 8.64

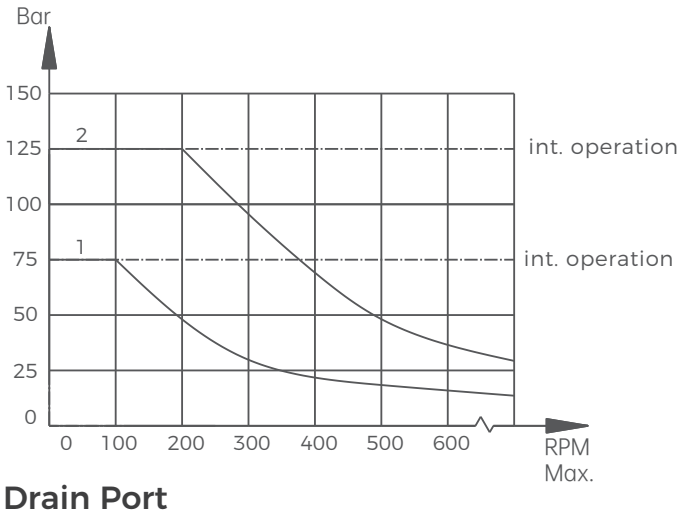
R5

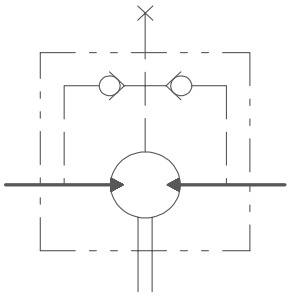


Splined shaft 13-DP 16/32

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

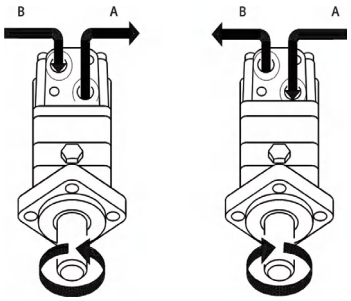
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

Standard direction of shaft ratation: Standard

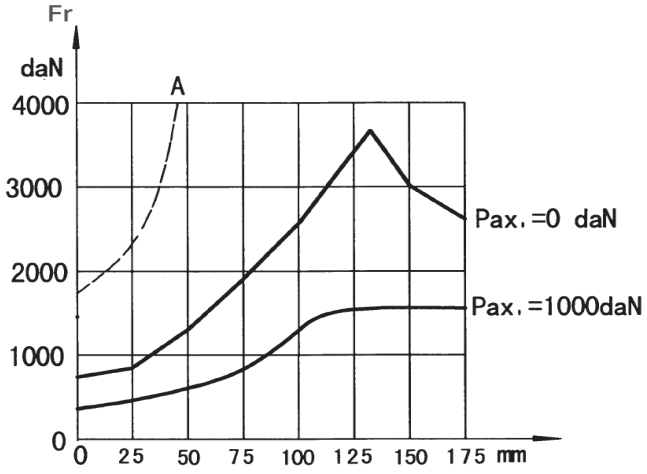
When facing shaft end of motor, shaft to rotate:

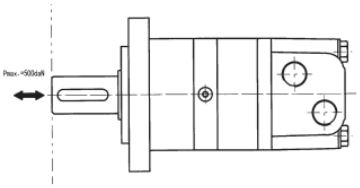
Clockwise. When port A is pressurized.

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

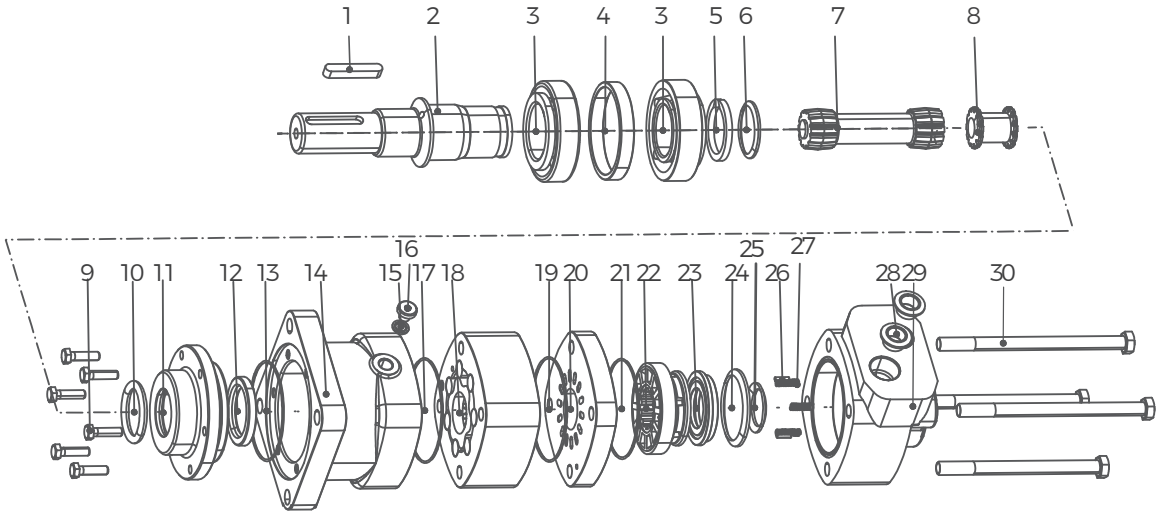
- Flange and wheel mount
- Bearingless motor
- Motor with brake
- Tachometer connection
- Speed sensing
- Side and rear ports
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

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

General

Max. Displacement	cm^3/rev [in^3/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	daNm[lbs]	Pa=1000 [2250]
Operating Fuid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	˚C [˚F]	-40—140[-104 —284]
Optimal Viscosity range	mm^2/s [SUS]	20—75[98—347]
Filtration	GT	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

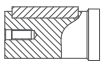
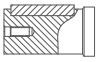
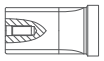
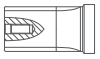
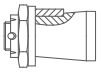
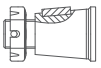
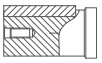
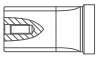
Ordering Code

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

CODE	TYPE
GT	Orbital motor
GTS	Bearingless motor

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

CODE	FLANGE
H6	4- Ø14 square Ø160, pilot Ø125×9 
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 

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	

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

CODE	ROTATION
A	Standard
R	Opposite

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

Specifications

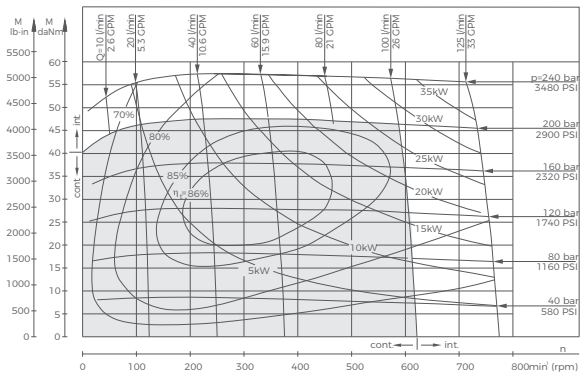
Type		GT160	GT200	GT250	GT315
Displacement, cm^3/rev [in^3/rev]		161,1[9.83]	201,4[12.29]	251,8[15.36]	326,3[19.90]
Max. Speed,	Cont.	622	620	496	382
RPM	Int.*	775	752	601	461
Max. Torque	Cont.	47[4160]	59[5220]	73[6460]	95[8410]
daNm [lb-in]	Int.*	56[4960]	71[6285]	88[7790]	114[10090]
	Peak**	66[5840]	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	At max. press. drop Cont.	34[3010]	43[3800]	53[4690]	74[6550]
daNm [lb-in]	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

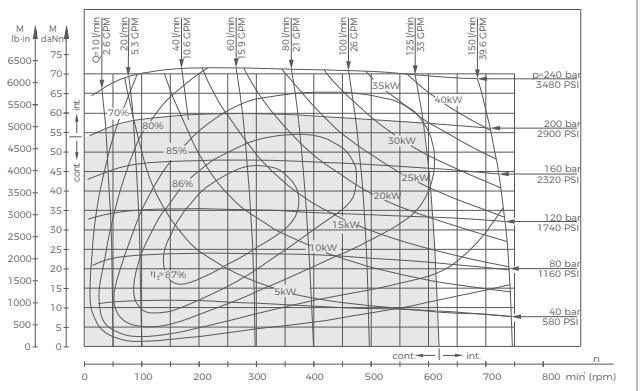
Type		GT400	GT500	GT630	GT725
Displacement, cm³/rev [in³/rev]		410,9[25.06]	523,6[31.95]	631,2[38.52]	724,3[44.2]
Max. Speed	Cont.	304	238	197	172
RPM	Int.*	368	289	234	209
Max. Torque	Cont.	108[9560]	122[10800]	130[11500]	127[11240]
daNm [lb-in]	Int.*	126[11150]	137[12125]	148[13100]	147[13010]
	Peak**	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 Unloaded Shaft, bar [PSI]		10[150]	10[150]	10[150]	10[150]
Min. Starting Torque	At max. press. drop Cont.	84[7435]	95[8410]	95[8410]	95[8410]
daNm [lb-in]	At max. press. drop Int.*	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

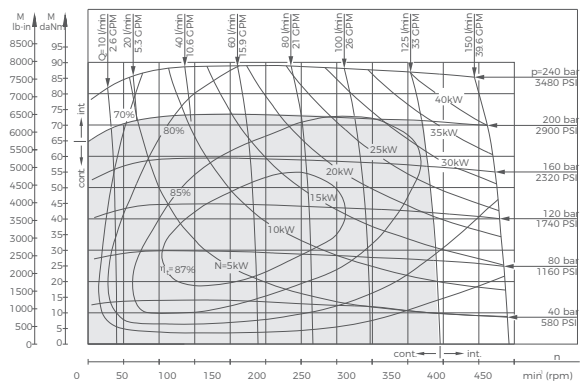
GT160



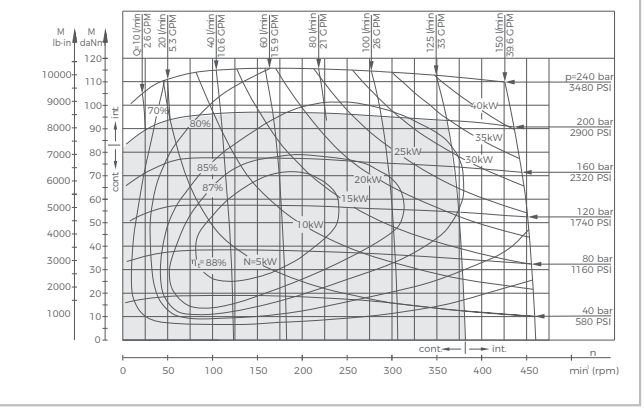
GT200



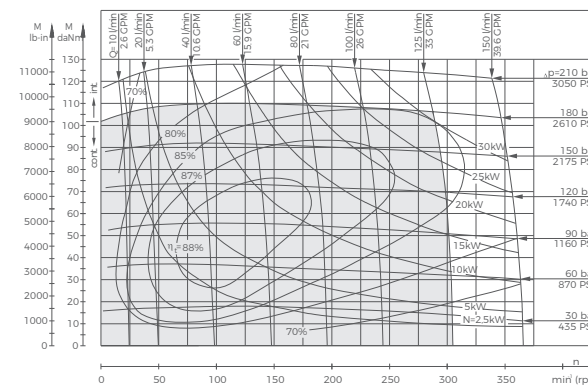
GT250



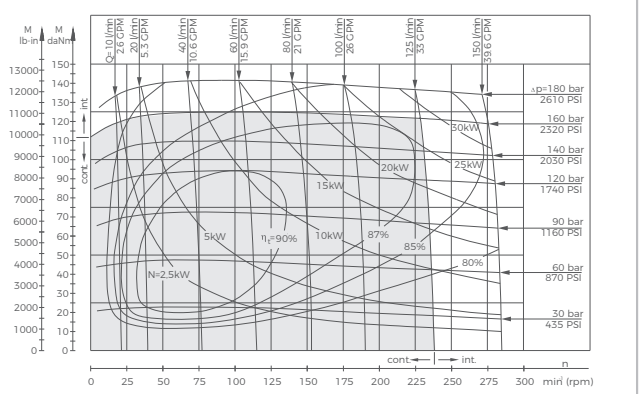
GT315



GT400



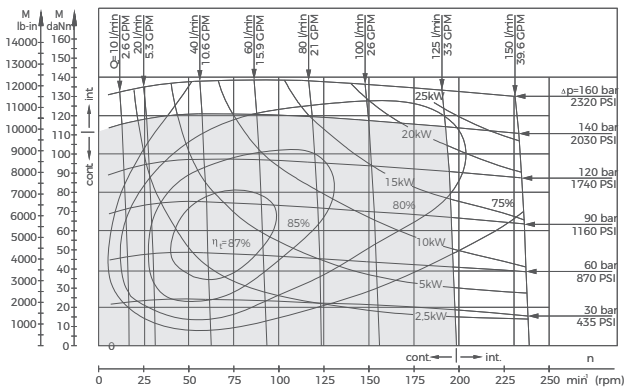
GT500



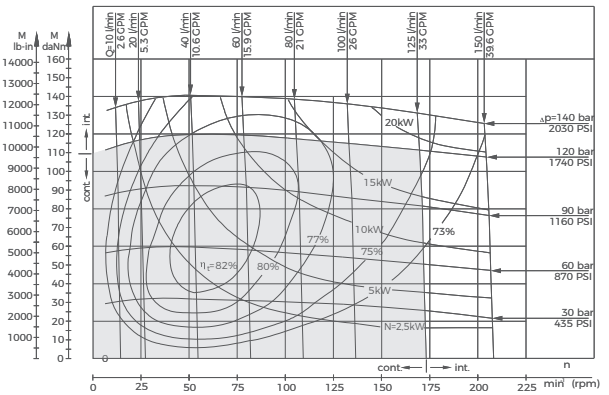
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

GT630

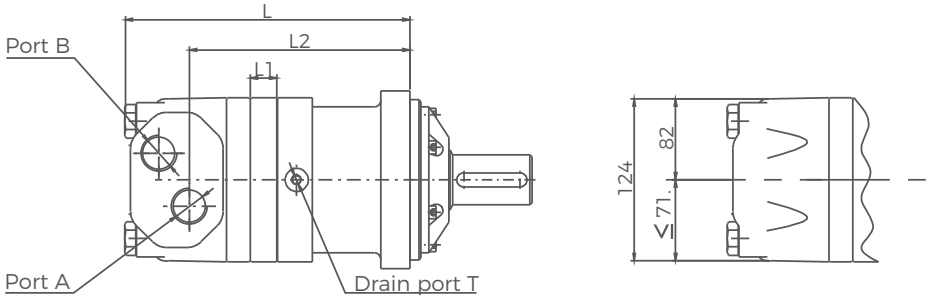


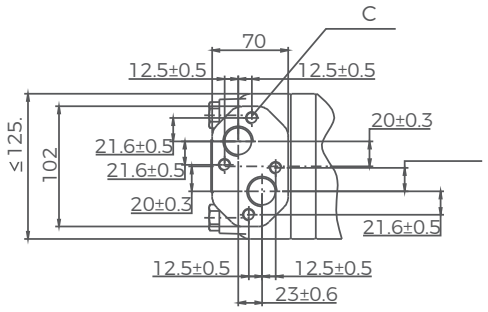
GT725



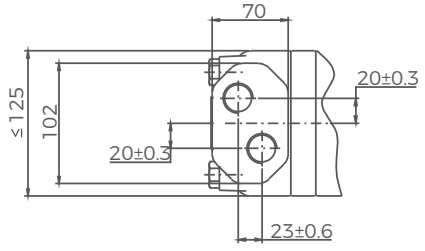
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50˚C [122˚F].

GT Dimensions and Mountings



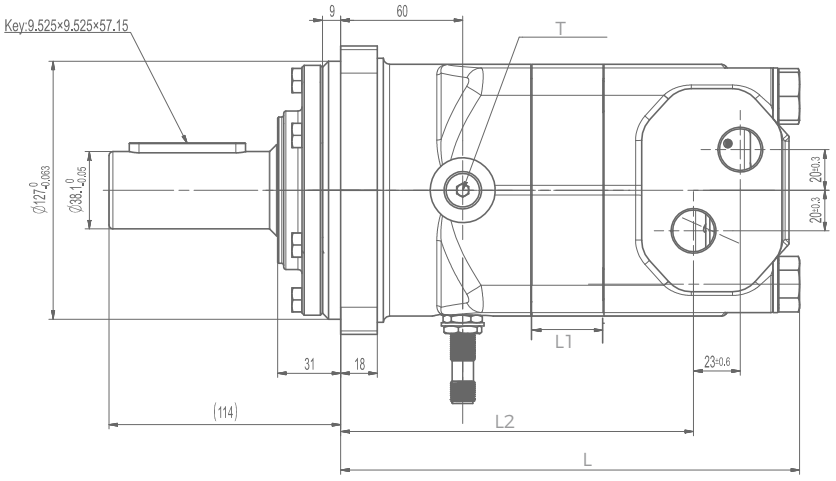


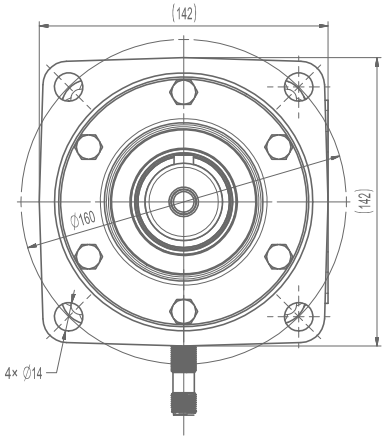
Model	L(mm)	L1(mm)	L2(mm)
GT160	193	17	142.5
GT200	197	21	146.5
GT250	204	14	152.5
GT315	210	20	158.5
GT400	217	27	165.5
GT500	225	35	173.5
GT630	237	47	185.5
GT725	248	58	196.5



Mounting	G3 (depth)	M5 (depth)	U4 (depth)	M9 (depth)	U5 (depth)	G4 (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)	G3/4(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)	G1/4(12)
C	4-M10(10)	4-M10(10)	—	—	—	—

GT with Speed Sensor Dimensions and Mountings



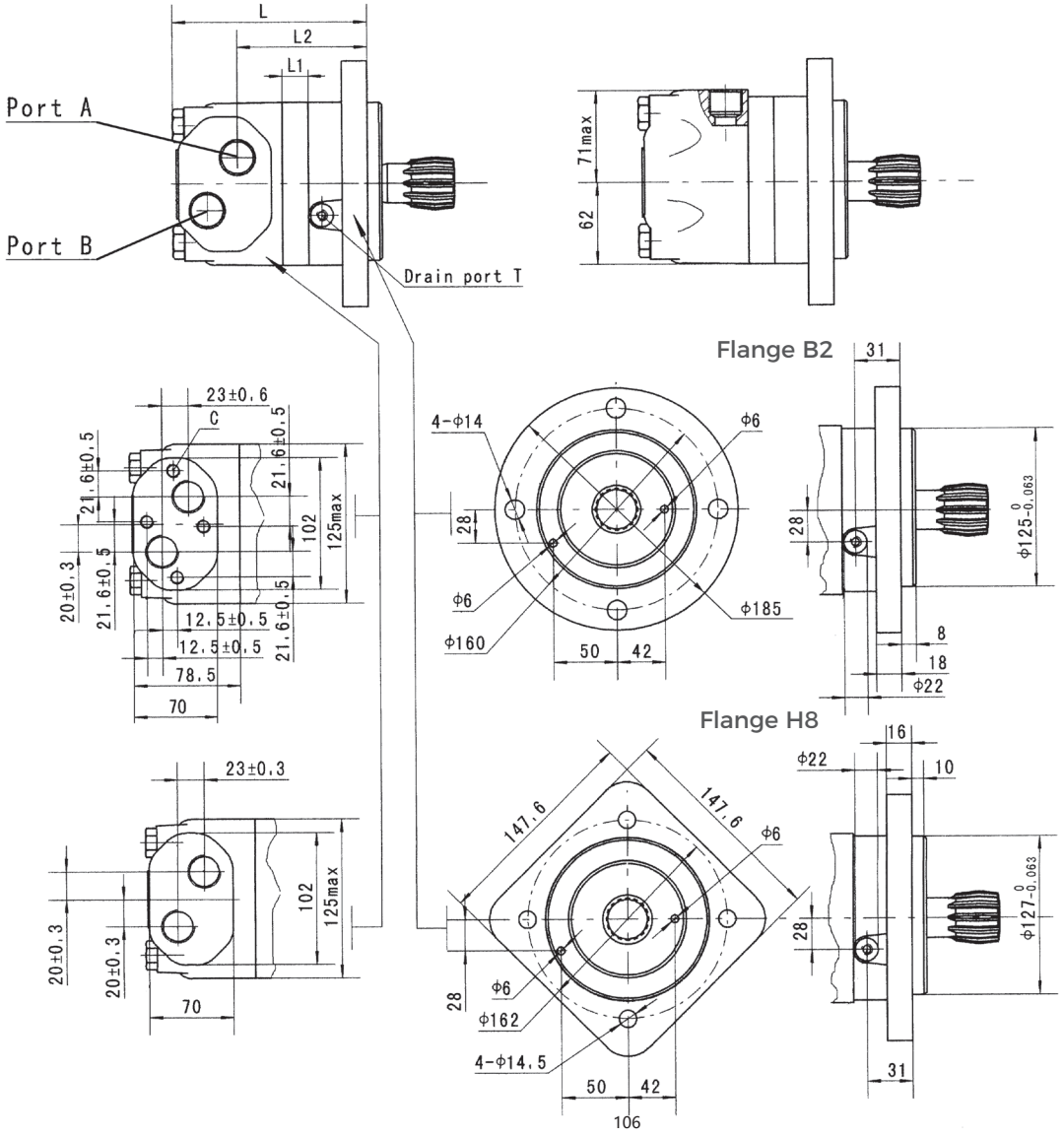


Model	L(mm)	L1(mm)	L2(mm)
GT160	193	17	142.5
GT200	197	21	146.5
GT250	204	14	152.5
GT315	210	20	158.5
GT400	217	27	165.5
GT500	225	35	173.5
GT630	237	47	185.5
GT725	248	58	196.5

Pulse per revolution (PPR)	GT
	84

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)	—	—	—

GTS Bearingless Motor Dimensions and Mounting

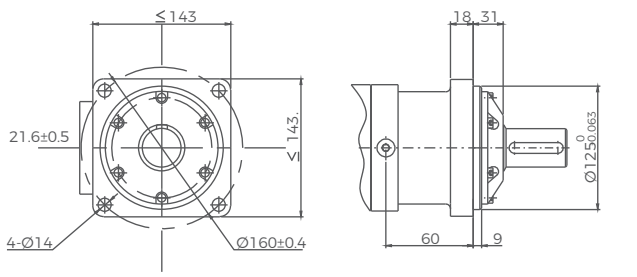


Model	L(mm)	L1(mm)	L2(mm)
GTS160	148	17	96.5
GTS200	152	21	100.5
GTS250	157	14	109
GTS315	163	20	115
GTS400	170	27	122
GTS500	178	35	130
GTS630	190	47	142
GTS725	201	58	153

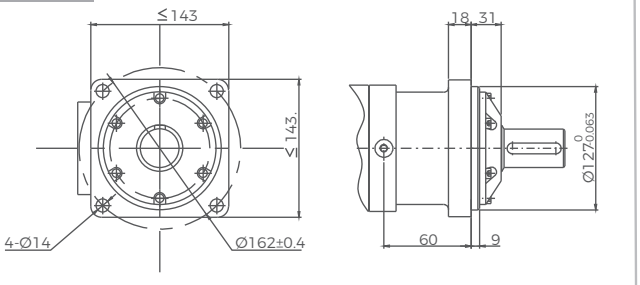
Mounting	G3 (depth)	M5 (depth)	U4 (depth)	M9 (depth)	U5 (depth)
P(A, B)	G3/4(18)	M27 x 2(18)	1-1/16-12 UN(18)	M27 x 2(18)	1-1/16-12 UN(18)
T	G1/4(12)	M14 x 1.5(12)	9/16-18 UNF(12)	M14 x 1.5(12)	7/16-20 UNF(12)
C	4-M10(10)	4-M10(10)	—	—	—

GT Flange Covers Dimensions

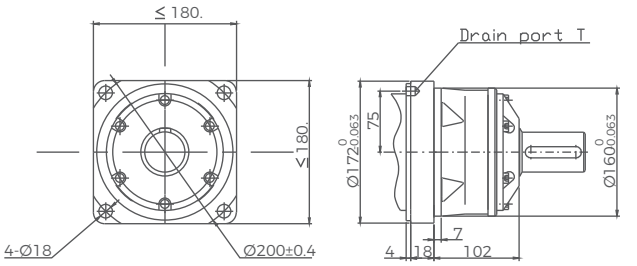
H6



H7

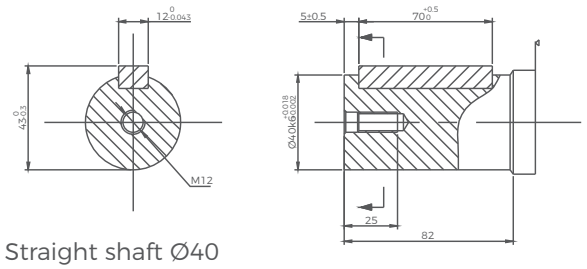


W2



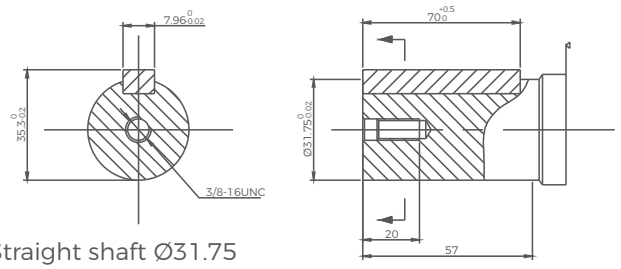
GT Shafts Dimensions

SK



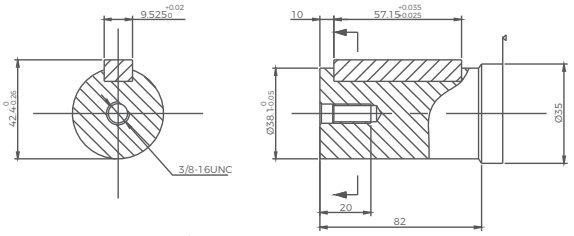
Straight shaft Ø40
Parallel key 12 x 8 x 70

SM



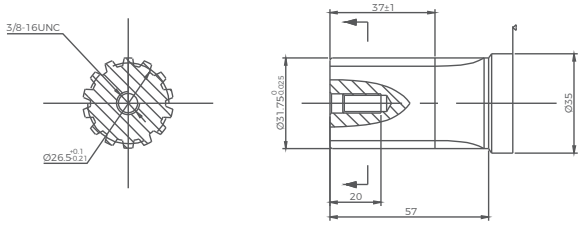
Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 40

SL



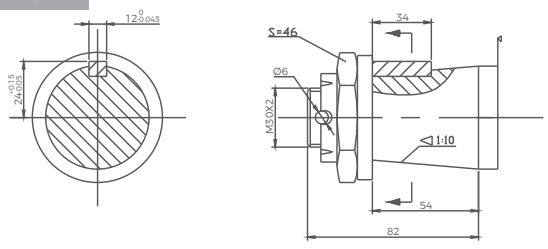
Straight shaft Ø38.1
Parallel key 9.525 x9.525 x 57.15

R3



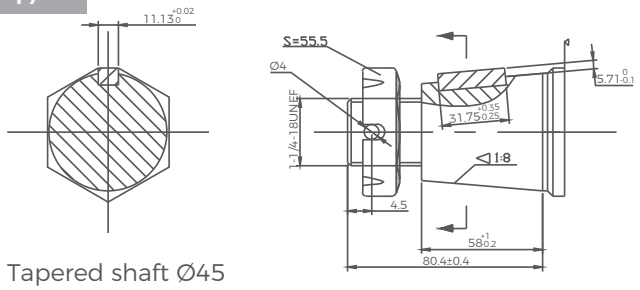
Splined shaft 14-DP 12/24

T6



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

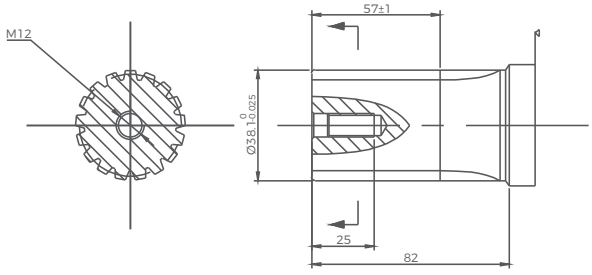
T7



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

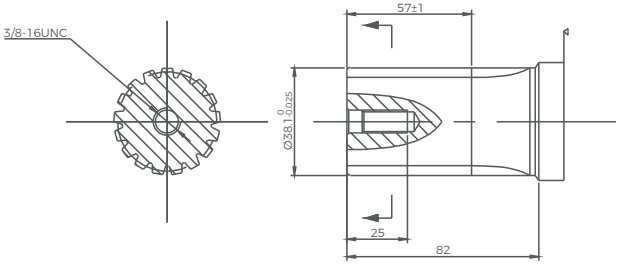
GT Shafts Dimensions

RA



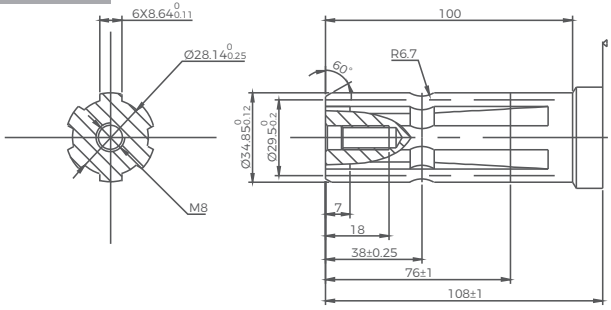
Splined shaft 17-DP 12/24

R9



Splined shaft 17-DP 12/24

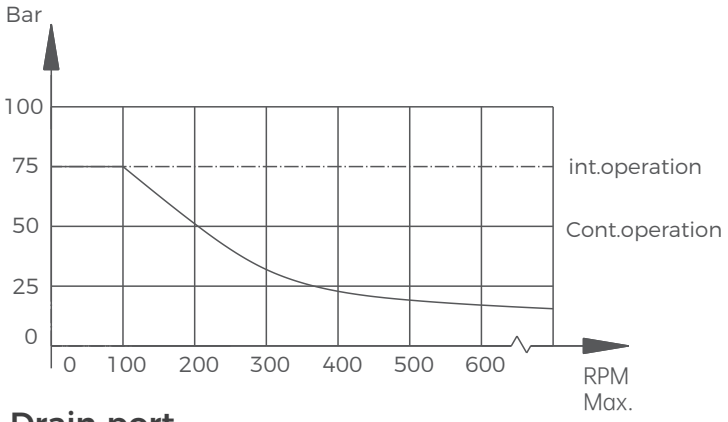
R7



Splined shaft 6-34.85 x 28.14 x 8.64

GT Series Hydraulic Motors

Permissible shaft seal pressure



Drain port

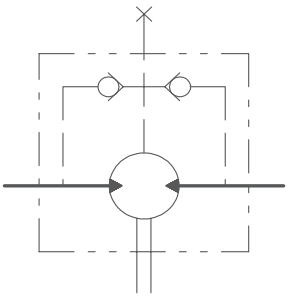
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

Standard direction of shaft ratation: Standard

When facing shaft end of motor, shaft to rotate:

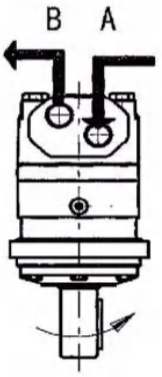
Clockwise. When port A is pressurized.

Counter-clockwise port B is pressurized.

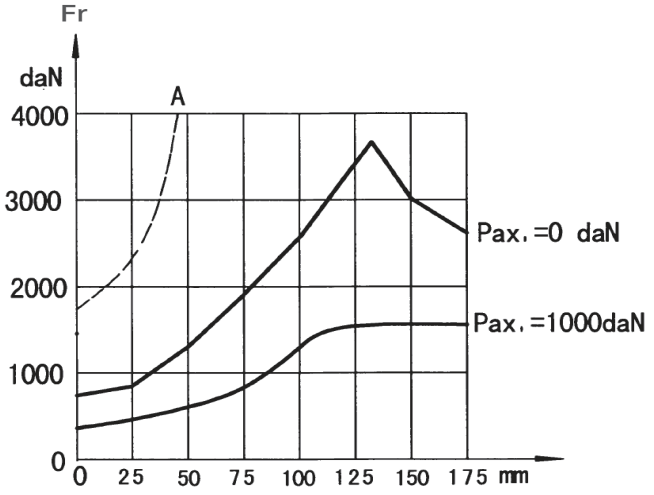


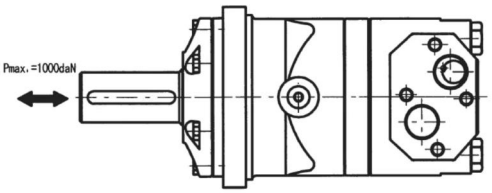
GT with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.

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



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

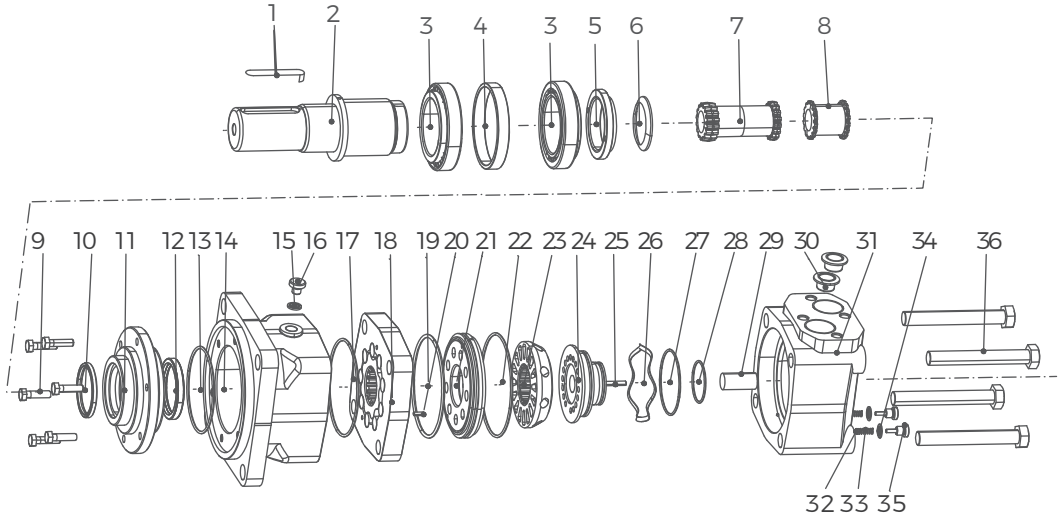
- Flange connection
- Bearingless motor
- Tachometer connection
- Side ports
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

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[-104—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

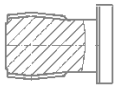
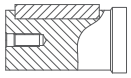
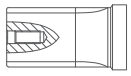
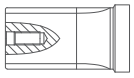
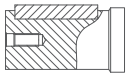
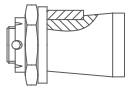
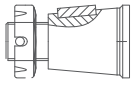
Ordering Code

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

CODE	TYPE
GV	Orbital motor
GVS	Bearingless motor

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

CODE	FLANGE
H9	4- Ø18 square Ø200, pilot Ø160×11 
W3	4- Ø18 wheel Ø224, pilot Ø180×10 
H7	4- Ø14 square Ø180, pilot Ø140×8 

CODE	SHAFT
C3	Cardan 16-DP 10/20 
SN	Ø50 parallel key 14×9×70 
RB	Ø53.975 splined key 16-DP 8/16 
RC	Ø53.975 splined key 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	ROTATION
A	Standard
R	Opposite

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

CODE	FUNCTION
A	Standard
V	High temp
S	Low temp

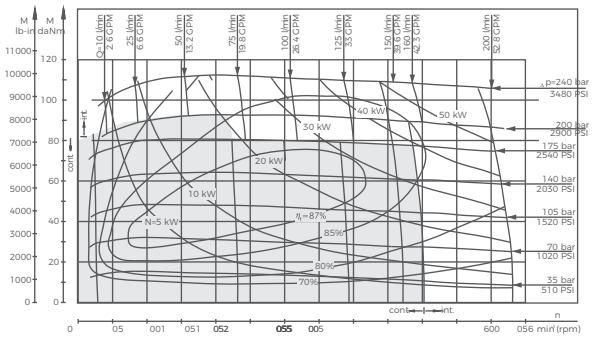
CODE	PORTS
G5	G1, G1/4 manifold 4×M12
M6	M33×2, M14×1.5 manifold 4×M12
U6	1-5/16-12UNF O-ring manifold 9/16-18UNF
G6	G1, G1/4
M7	M33×2, M14×1.5
U7	1-5/16-12UNF O-ring 7/16-20UNF

Specifications

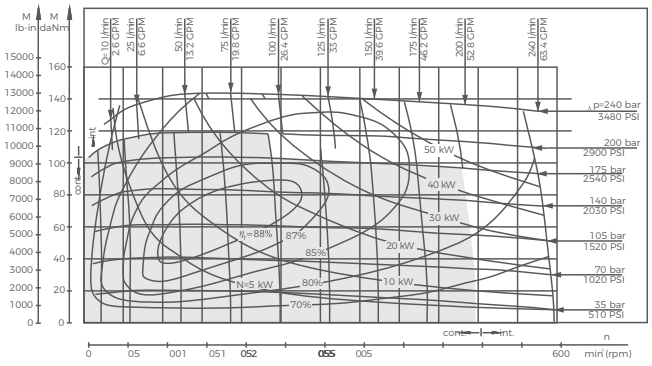
Type		GV315	GV400	GV500	GV630	GV800
Displacement, cm^3/rev [in^3/rev]		314,5[19.18]	400,9[24.45]	499,6[30.48]	629,1[38.38]	801,8[48.91]
Max. Speed	Cont.	510	500	400	320	250
RPM	Int.*	630	600	480	380	300
Max. Torque	Cont.	92[8150]	118[10450]	146[12950]	166[14700]	188[16650]
daNm [lb-in]	Int.*	111[9800]	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]
Min. Speed, RPM		10	9	8	6	5
Weight, kg [lb]	GV	31,8[70.1]	32,6[71.9]	33,5[73.8]	34,9[76.9]	36,5[80.5]
	GVS	22,7[50]	23,5[51.8]	24,4[53.8]	25,6[56.4]	27,7[61.1]

Function Diagrams

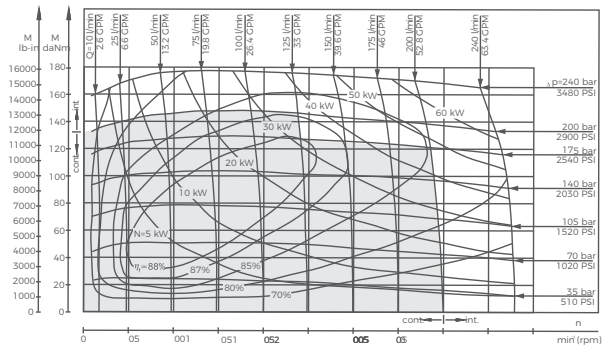
GV315



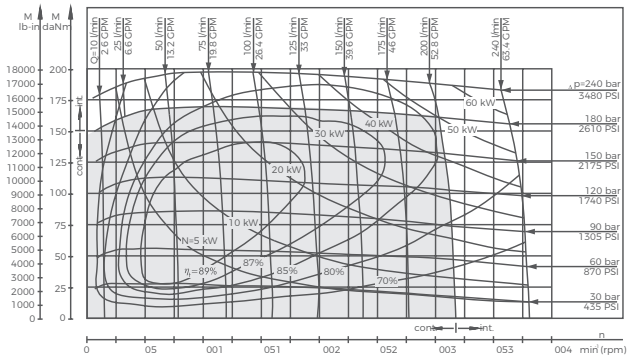
GV400



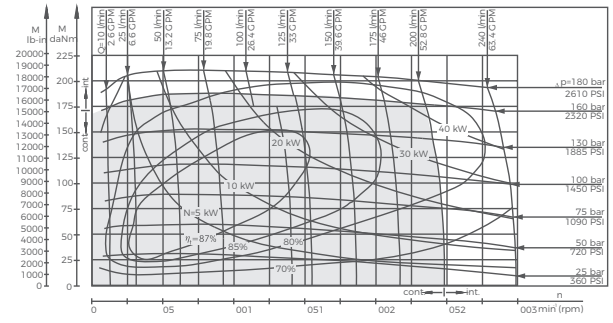
GV500



GV630

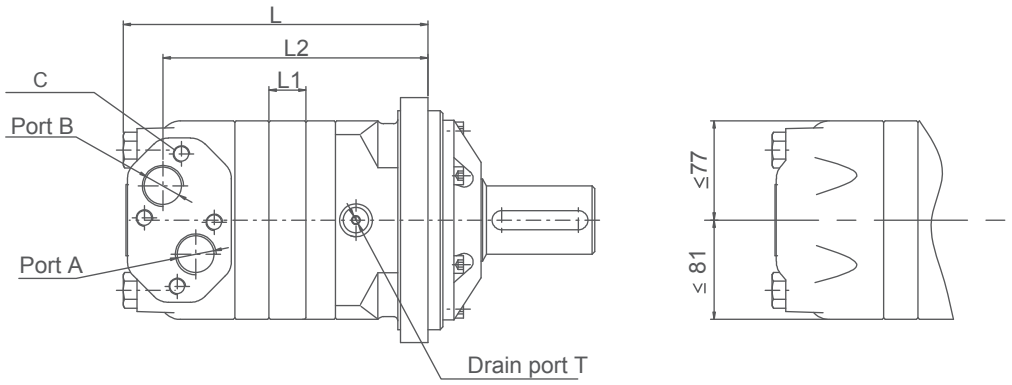


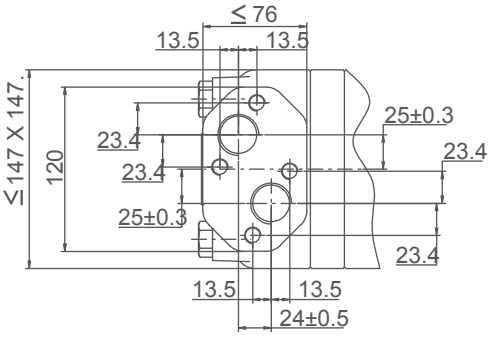
GV800

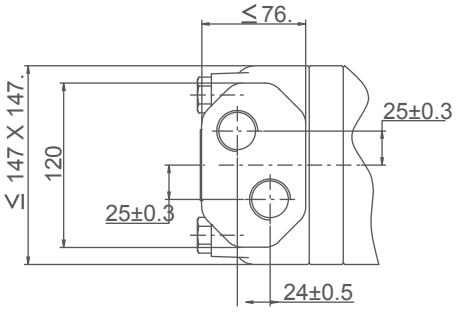


The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

GV Dimensions and Mountings



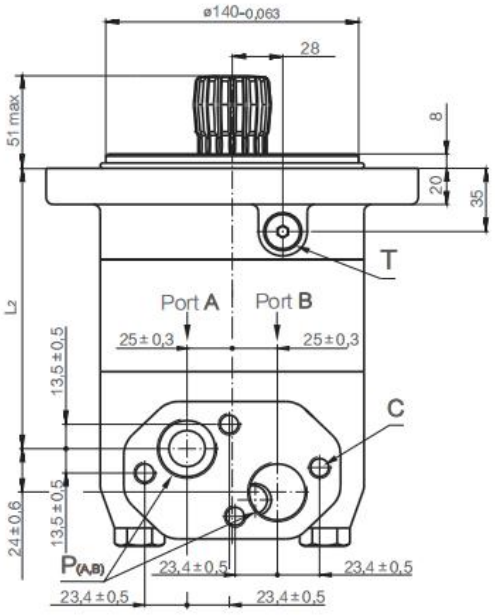




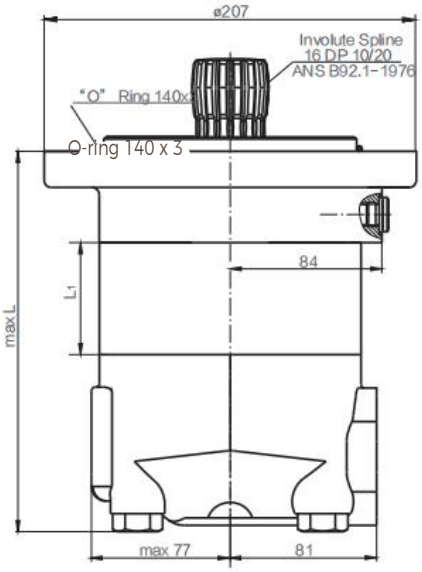
Model	L(mm)	L1(mm)	L2(mm)
GVS315	171	22	117
GVS400	179	29	124
GVS500	186	37	132
GVS630	197	47.5	143
GVS800	211	61.5	157

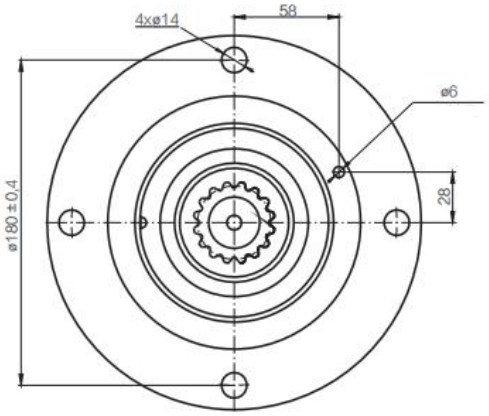
Mounting	G5 (depth)	M6 (depth)	U6 (depth)	G6 (depth)	M7 (depth)	U7 (depth)
P(A, B)	G1(18)	M33 X 12(18)	1-5/16-12UN(18)	G1(18)	M33 X 2(18)	1-5/16-12UN(18)
T	G1/4(12)	M14 X 1.5(12)	9/16-18UNF(12)	G1/4(12)	M14 X 1.5 (12)	7/16-20UNF(12)
C	4-M12(12)	4-M12(12)				

GVS Bearingless Motor Dimensions and Mountings



Flange S



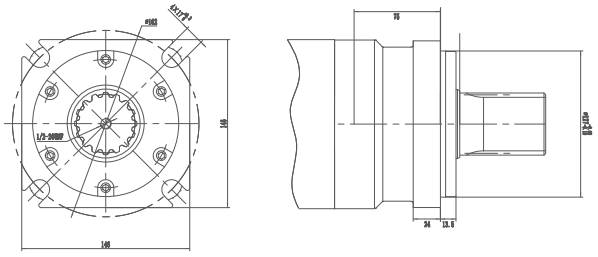


Model	L(mm)	L1(mm)	L2(mm)
GVS315	171	22	117
GVS400	179	29	124
GVS500	186	37	132
GVS630	197	47.5	143
GVS800	211	61.5	157

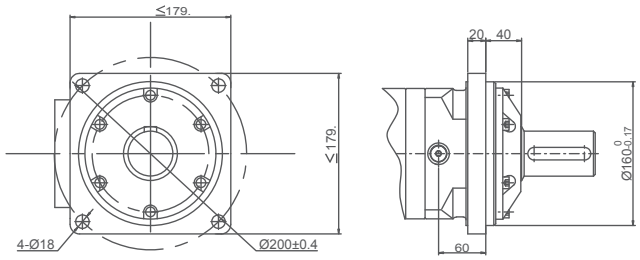
Mounting	G5 (depth)	M6 (depth)	U6 (depth)	G6 (depth)	M7 (depth)	U7 (depth)
P(A, B)	G1(18)	M33 X 12(18)	1-5/16-12UN(18)	G1(18)	M33 X 2(18)	1-5/16-12UN(18)
T	G1/4(12)	M14 X 1.5(12)	9/16-18UNF(12)	G1/4(12)	M14 X 1.5 (12)	7/16-20UNF(12)
C	4-M12(12)	4-M12(12)				

GV Falnge Covers Dimensions

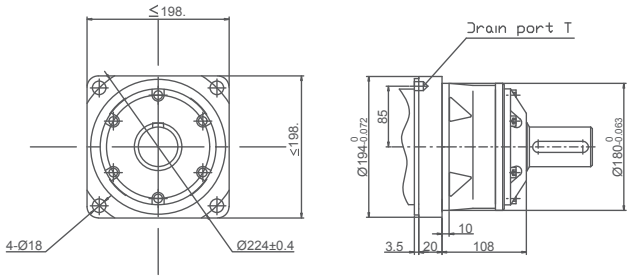
H7



H9

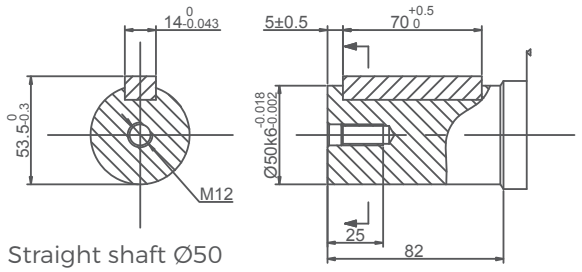


W3



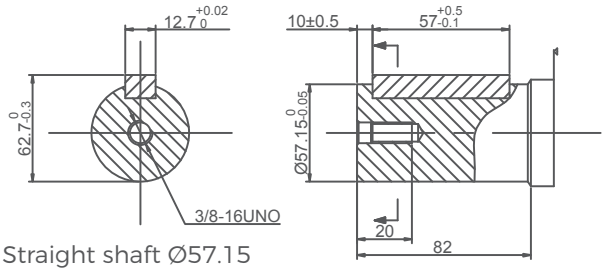
GV Shafts Dimensions

SN



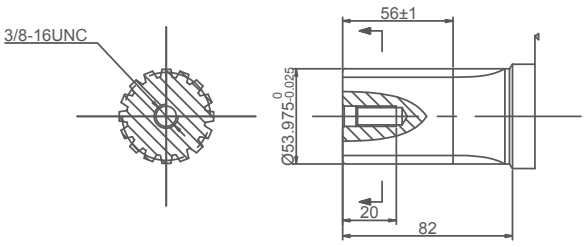
Straight shaft Ø50
Parallel key 14 x 9 x 70

SP



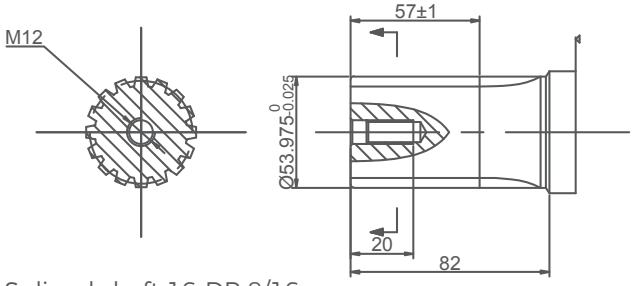
Straight shaft Ø57.15
Parallel key 12.7 x 12.7 x 57.16

RB



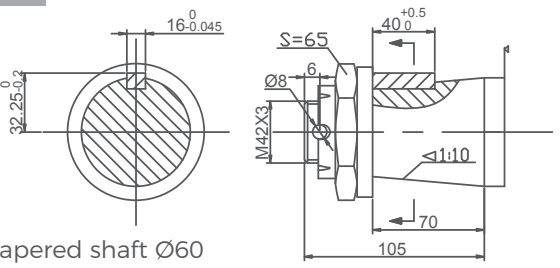
Splined shaft 16-DP 8/16

RC



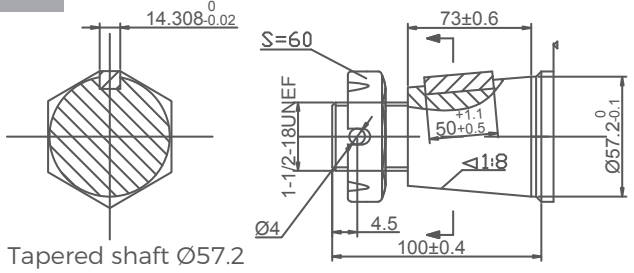
Splined shaft 16-DP 8/16

T8



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

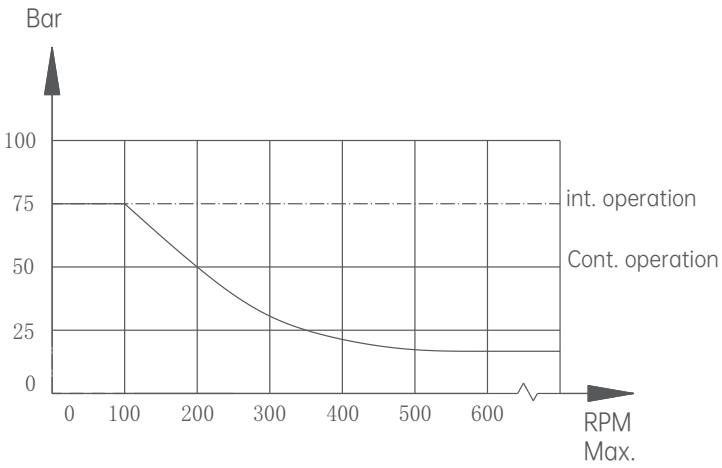
T9

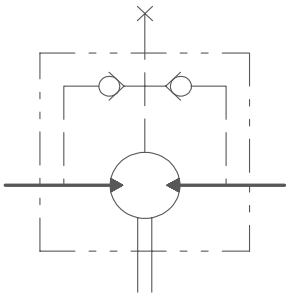


Tapered shaft Ø57.2
Parallel key 14.308 x 14.308 x 50.8
Tightening torque: 750 ± 50 Nm

GV Series Hydraulic Motors

Permissible shaft seal pressure



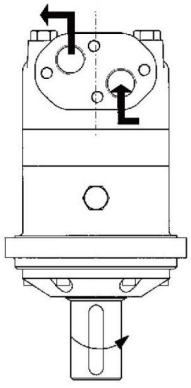


GV with standard shaft seal, check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.

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

Drain Port

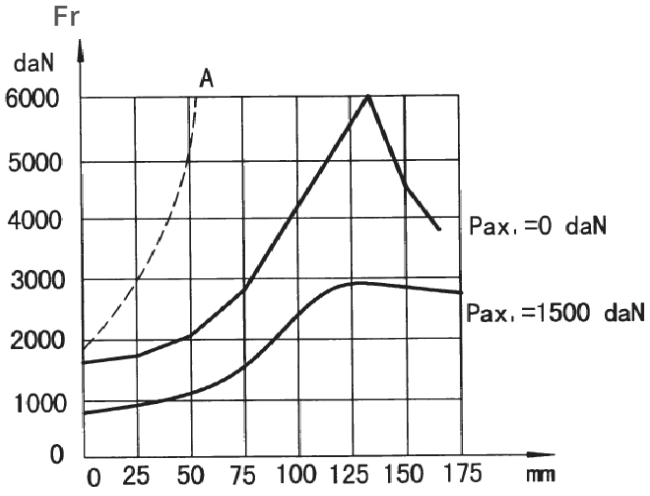
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

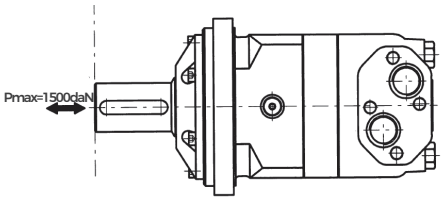


Standard direction of shaft rotation: Standard

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

Output shaft 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 tow other curves apply to a B10 bearing life of 3000 hours at 200 RPM.

GFA Series Hydraulic Motors

Options

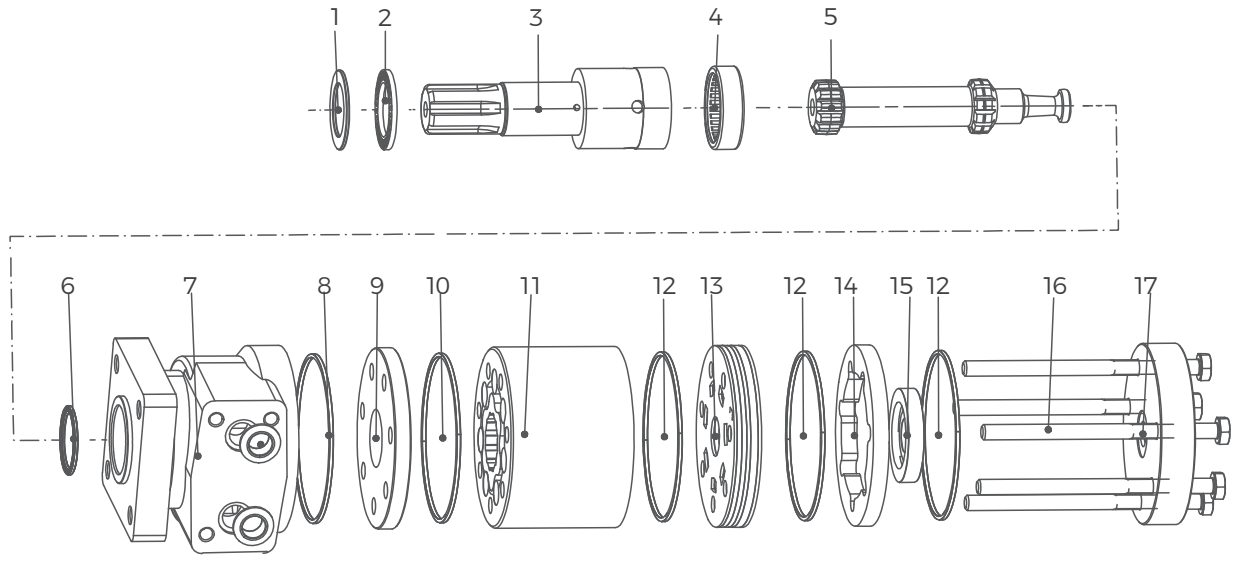
- Flange connection
- Motor with needle roller bearing
- Speed sensing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

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[-104—284]
Optimal Viscosity range	mm^2/s [SUS]	20—75[98—347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 microns)

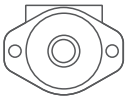
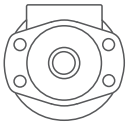
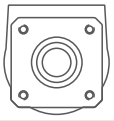
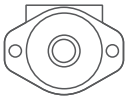
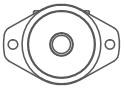


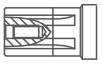
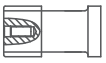
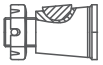
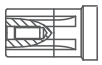
1 Bearing retainer
2 Flat bearing
3 Output shaft
4 Cylindrical needle roller bearing
5 Transmission shaft
6 Anti-dust ring
7 Housing
8 O-ring
9 Spacer
10 O-ring
11 Rotor and stator
12 O-ring
13 Distribution plate
14 Spacer
15 Distribution ring
16 Screw
17 Rear cover

Ordering Code

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

CODE	DISP cm³/rev [in³/rev]
036	36 [2.0]
045	41 [2.5]
050	49 [3.0]
065	65 [4.0]
080	82 [5.0]
100	98 [6.0]
130	130 [7.9]
165	163 [9.9]
195	195 [11.9]
230	228 [13.9]
260	260 [15.9]
290	293 [17.9]
330	328 [20.0]
365	370 [22.6]
390	392 [23.9]

CODE	FLANGE
A1	2-Hole SAE A Ø106.4 pilot Ø82.5×2.55 
A3	4-Hole SAE A Ø106.4 pilot Ø82.5×2.79 
H4	4-3/8-16UNC square Ø82.5 pilot Ø44.4×2.8 
A5	4-M10 square Ø82.5 pilot Ø44.4×2.8 
A7	2-Hole SAE B pilot Ø101.6×6.35 
H6	4-Hole wheel pilot Ø60.32×31.75 

CODE	SHAFT
S6	Ø25.4 woodruff key Ø25.4×6.35 
R4	Ø25.4, splined key 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 key 13-DP 16/32 
T3	Tapered Ø25.4 1:8 woodruff key Ø25.4×6.35 
SC	Ø25 parallel key 8×7×28 
SD	Ø25 parallel key 7×7×32 
R1	Ø25.4 splined key SAE 6B 

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	ROTATION
A	Standard
R	Opposite

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.

GFA Specifications

Type		GFA36	GFA45	GFA50	GFA65	GFA80
Displacement cm^3 /rev [in^3/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]	GFA	5.93[13.07]	6.03[13.3]	6.12[13.5]	6.26[13.8]	6.35[14.0]

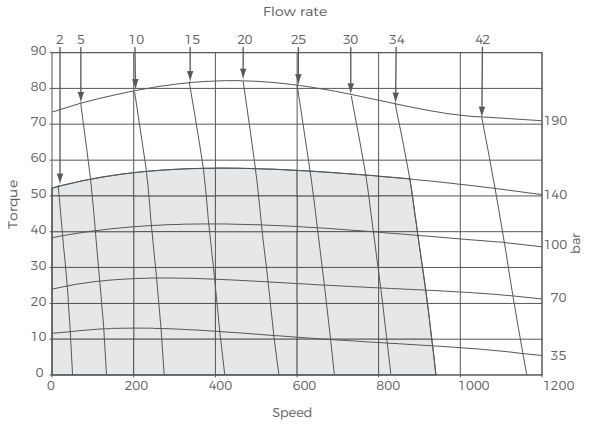
Type		GFA100	GFA0130	GFA165	GFA195	GFA230
Displacement cm^3 /rev [in^3/rev]		98[6.0]	130[8.0]	163[10.0]	195[11.9]	228[13.9]
Max. Speed RPM	Int.	582	438	348	292	328
Max. Oil Flow	Cont.	45[12]	45[12]	45[12]	45[12]	57[15]
lpm [GPM]	Int.	57[15]	57[15]	57[15]	57[15]	75[20]
Max. Differential Pressure	Cont.	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]	GFA	6.49[14.3]	6.76[14.9]	7.03[15.5]	7.35[16.2]	7.58[16.7]

Specifications

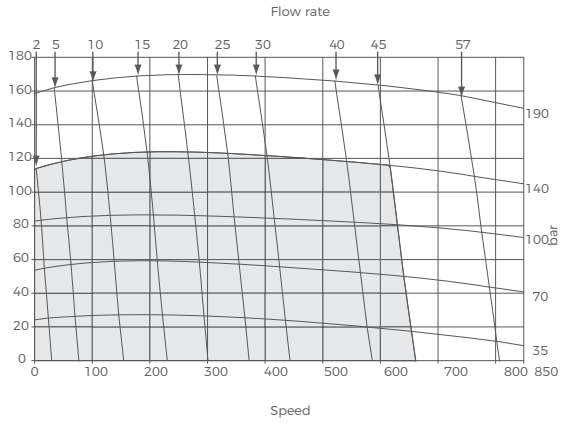
Type		GFA260	GFA295	GFA330	GFA365	GFA390
Displacement cm^3/rev [in^3/rev]		260[15.9]	293[17.9]	328[20.0]	370[22.6]	392[24.0]
Max. Speed RPM	Int.	287	256	228	203	191
Max. Oil Flow	Cont.	57[15]	57[15]	57[15]	57[15]	57[15]
lpm [GPM]	Int.	75[20]	75[20]	75[20]	75[20]	75[20]
Max. Differential Pressure	Cont.	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]	GFA	7.80[17.2]	8.07[17.8]	8.35[18.4]	8.66[19.1]	8.80[19.4]

Function Diagrams

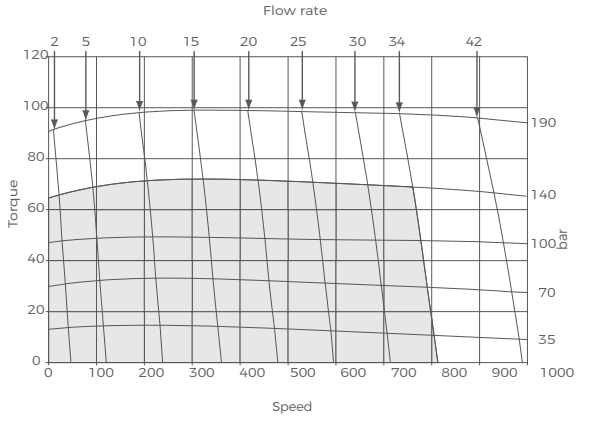
GFA36



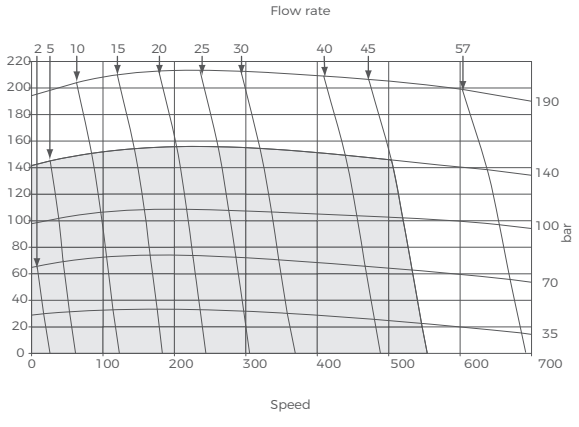
GFA65



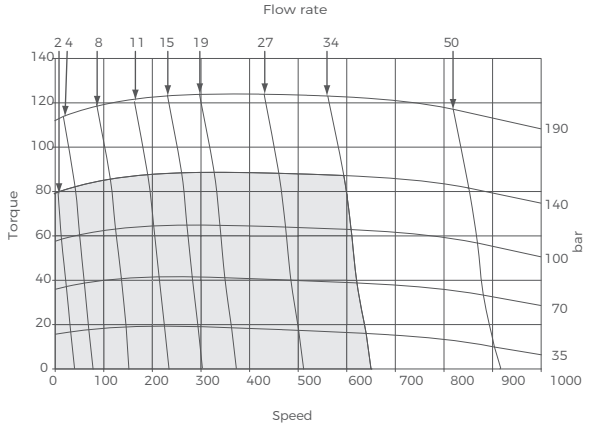
GFA45



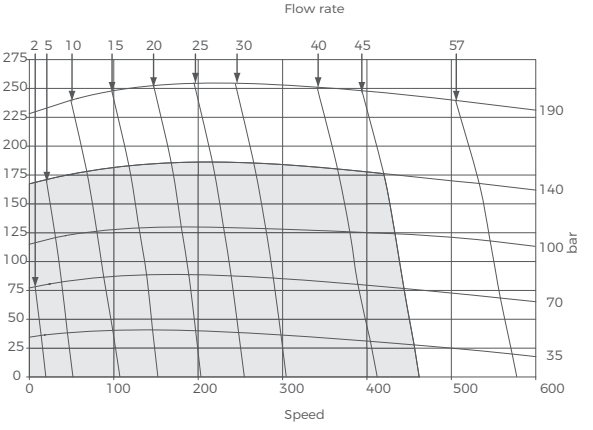
GFA80



GFA50



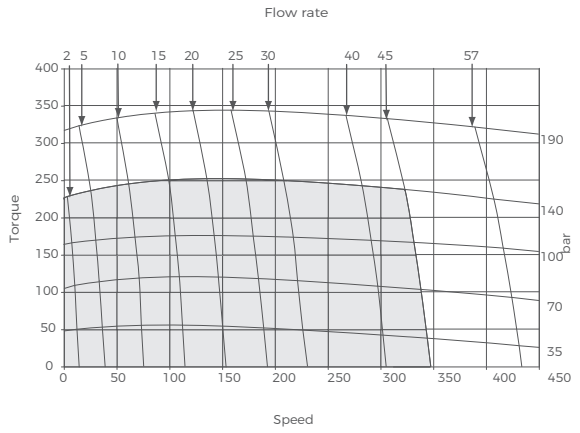
GFA100



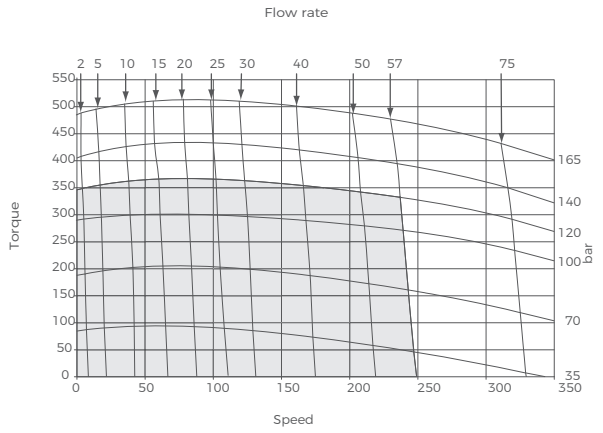
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32mm²/s [150 SUS] at 50˚C [122˚F].

Function Diagrams

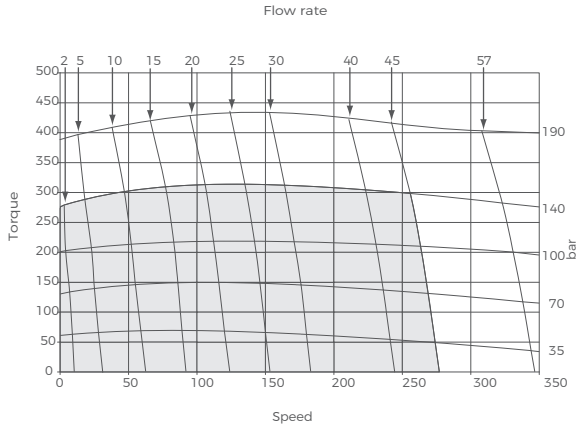
GFA130



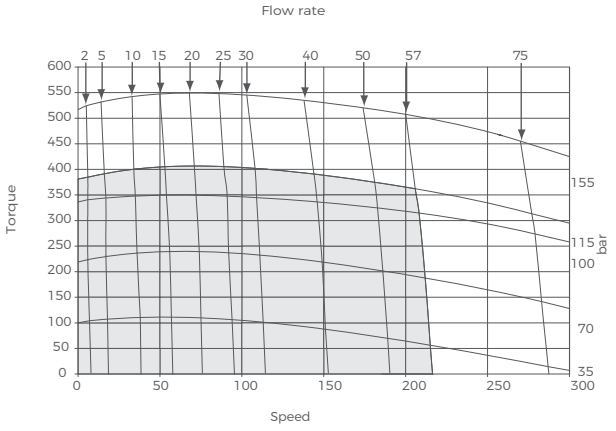
GFA230



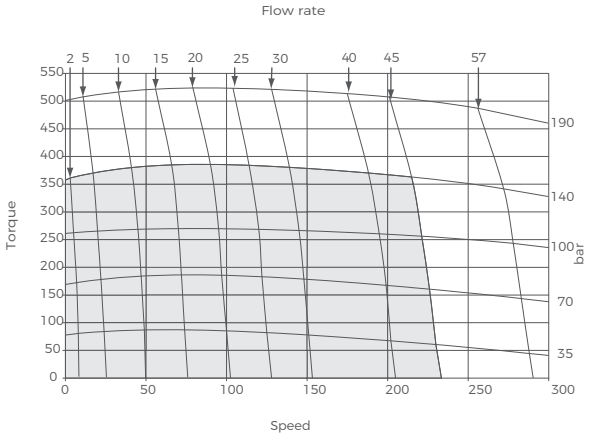
GFA165



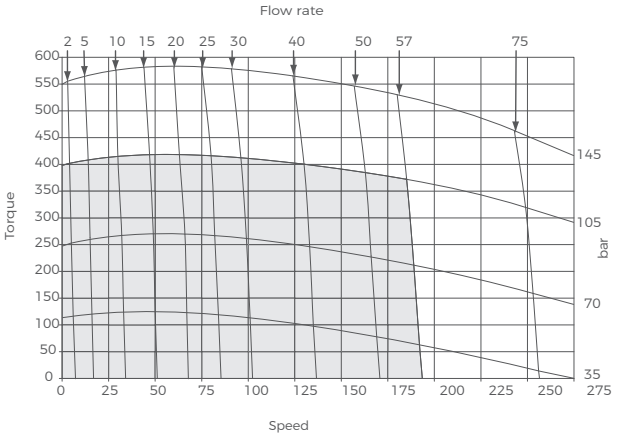
GFA260



GFA195



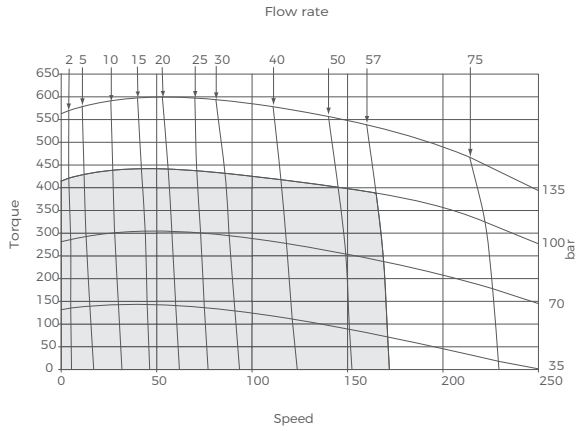
GFA295



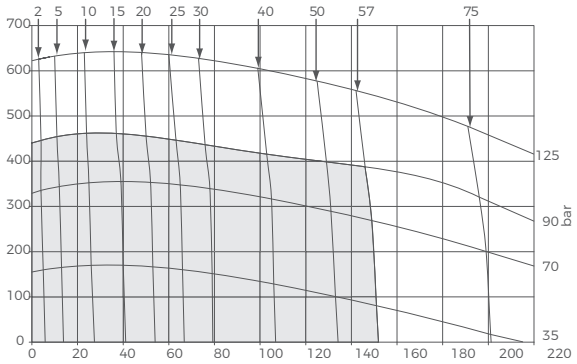
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32mm²/s [150 SUS] at 50˚C [122˚F].

Function Diagrams

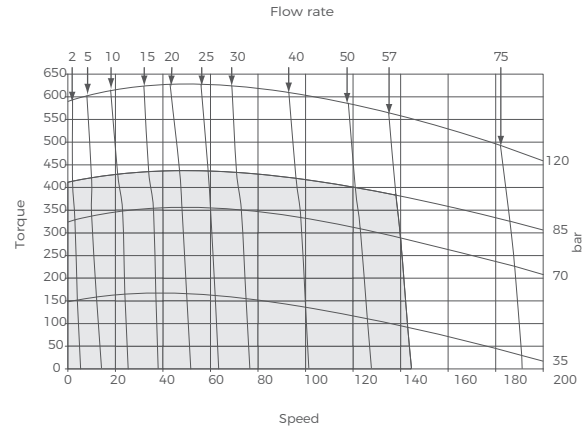
GFA330



GFA365

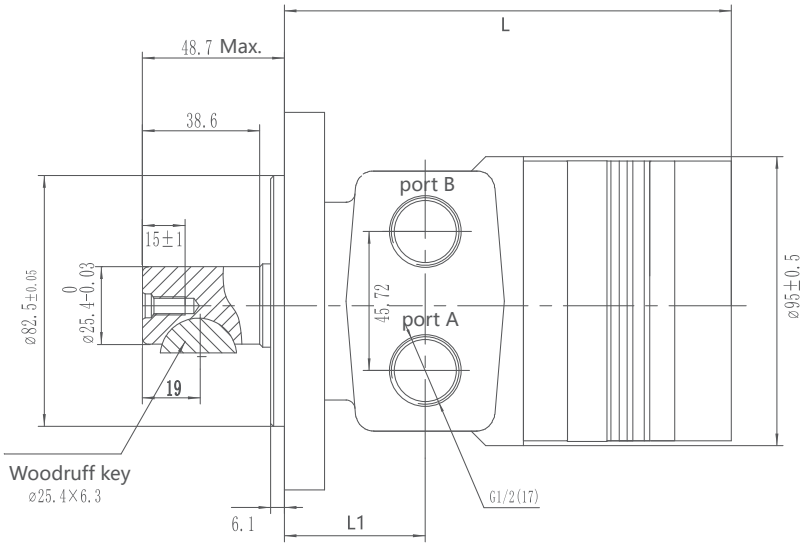


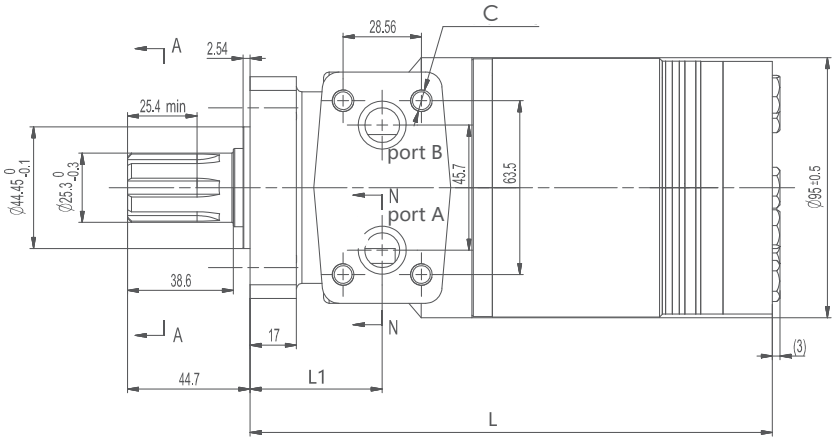
GFA390



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 32mm²/s [150 SUS] at 50˚C [122˚F].

GFA Dimensions and Mountings

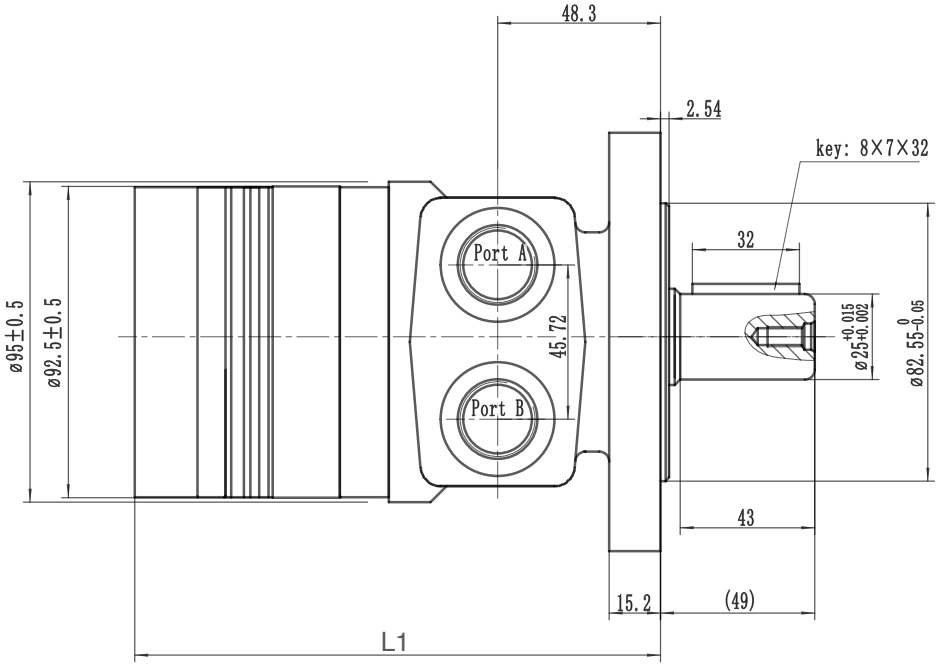


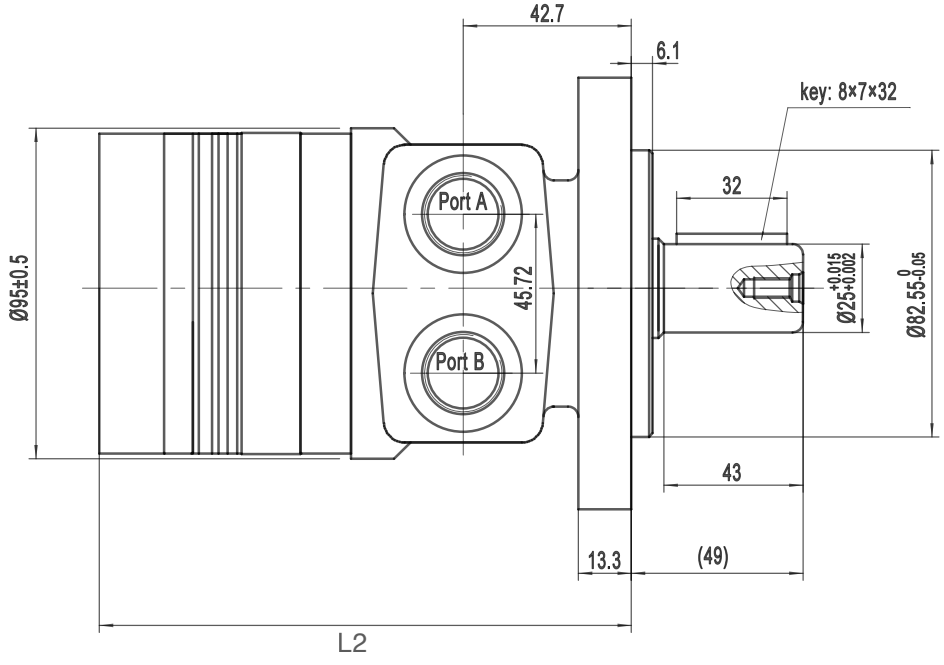


Model	L(mm)
GFA36	135
GFA45	136
GFA50	138
GFA65	141
GFA80	144
GFA100	147
GFA130	154
GFA165	160
GFA195	166
GFA230	173
GFA260	179
GFA295	185
GFA330	192
GFA365	200
GFA390	205

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 Dimensions and Mountings

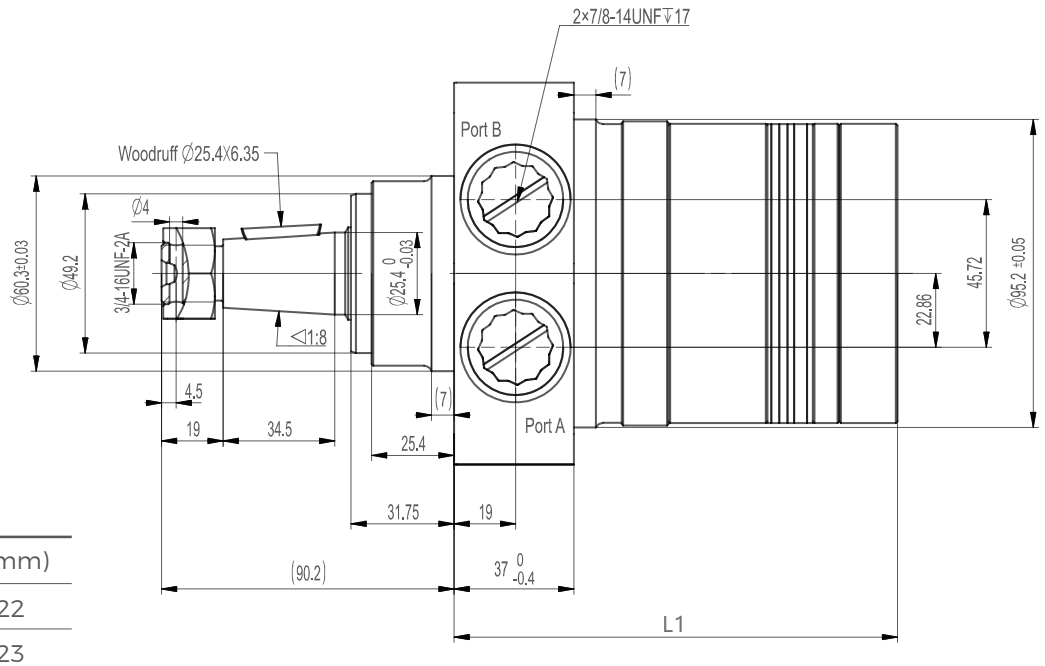




Model	L1(mm)	L2(mm)
GFA36	144	140
GFA45	145	141
GFA50	147	143
GFA65	150	146
GFA80	153	149
GFA100	165	158
GFA130	163	159
GFA165	169	165
GFA195	175	171
GFA230	182	178
GFA260	188	184
GFA295	194	189
GFA330	201	197
GFA365	209	205
GFA390	214	210

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)

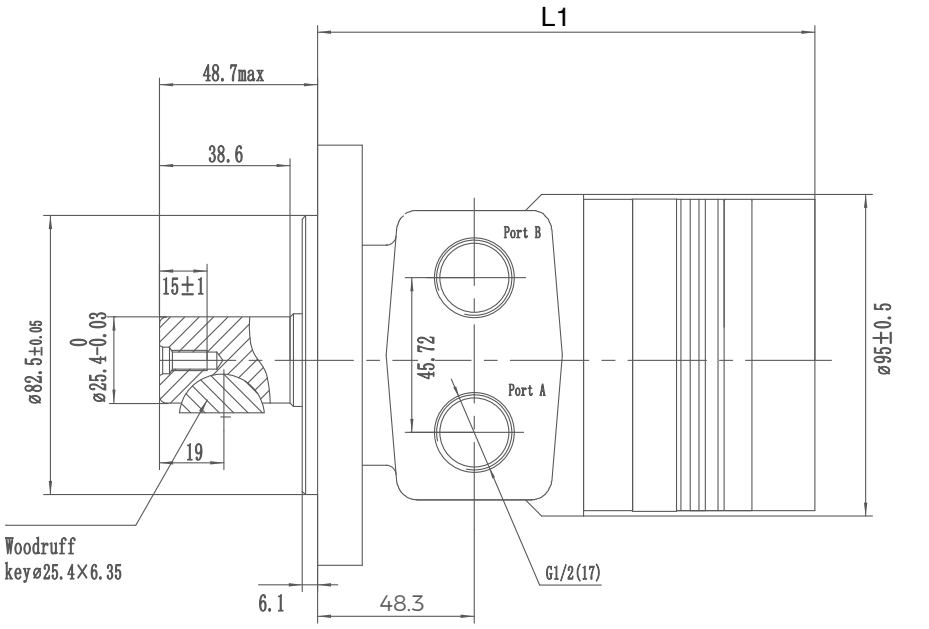
GFA Wheel Motor Dimensions and Mountings

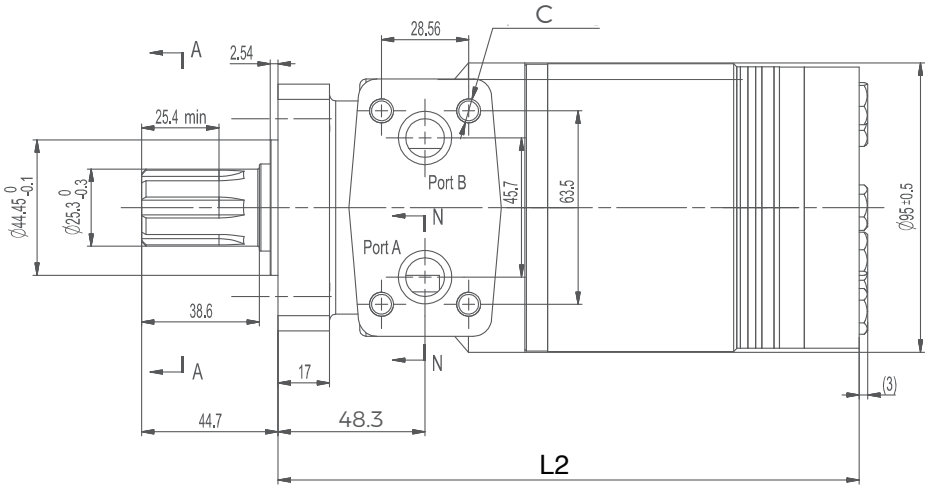


Model	L1(mm)
GFA36	122
GFA45	123
GFA50	125
GFA65	118
GFA80	121
GFA100	124
GFA130	131
GFA165	137
GFA195	143
GFA230	150
GFA260	156
GFA295	162
GFA330	169
GFA365	177
GFA390	182

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 Dimensions and Mountings



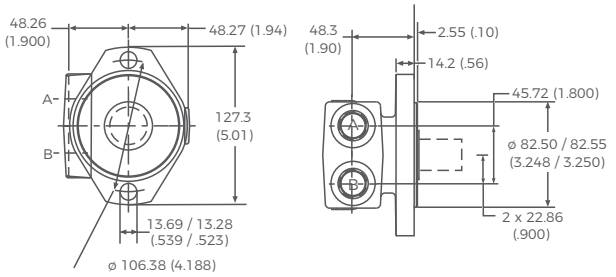


Model	L1(mm)	L2(mm)
GFA36	136	141
GFA45	137	142
GFA50	139	144
GFA65	142	147
GFA80	145	150
GFA100	148	153
GFA130	155	160
GFA165	161	166
GFA195	167	172
GFA230	174	179
GFA260	180	185
GFA295	186	191
GFA330	193	198
GFA365	201	206
GFA390	206	211

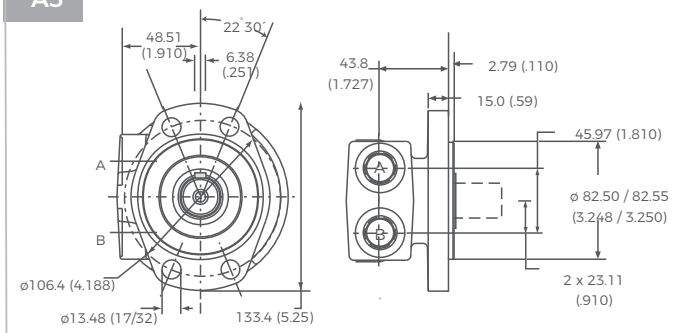
Mounting	G7 (depth)	U9 (depth)	UA (depth)	U3 (depth)	G8 (depth)	D1 (depth)	D2 (depth)
P(A, B)	G1/2(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	3/4-16 O-ring(15)	PT(RC)1/2(15)	Ø10	Ø10
T	G1/4(12)	7/16-20UNF(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)	7/16-20UNF(12)	G1/4(12)
C	—	—	—	—	—	4-5/16-18UNC(13)	4-M8(13)

GFA Flange Covers Dimensions

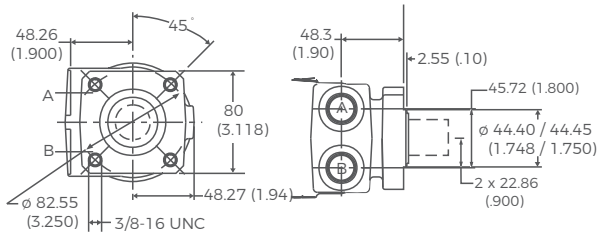
A1



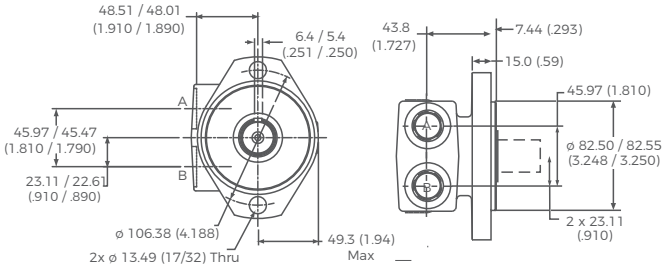
A3



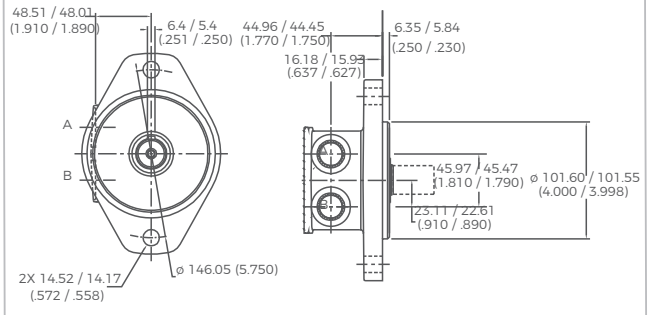
H4



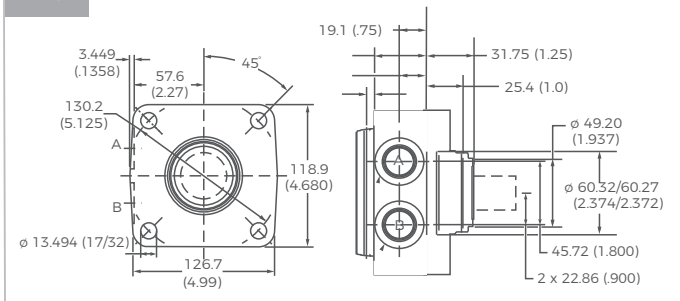
A5



A7

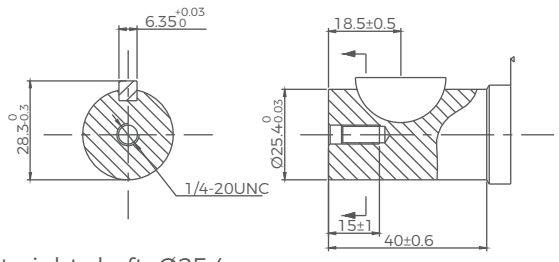


H6



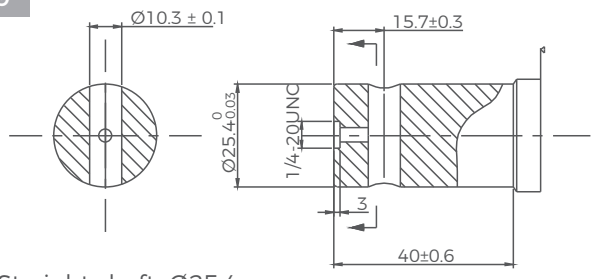
GFA Shafts Dimensions

S6



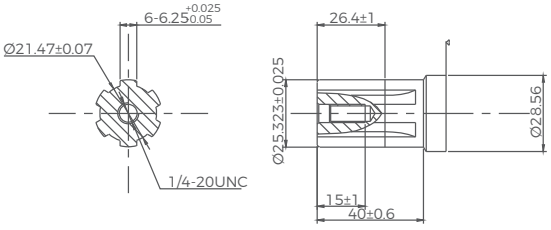
Straight shaft Ø25.4
Woodruff key Ø25.4 x 6.35

S9



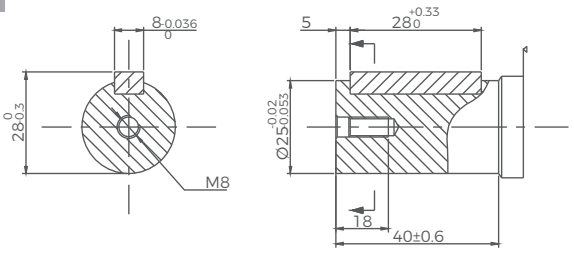
Straight shaft Ø25.4
Pin hole Ø10.3

R4



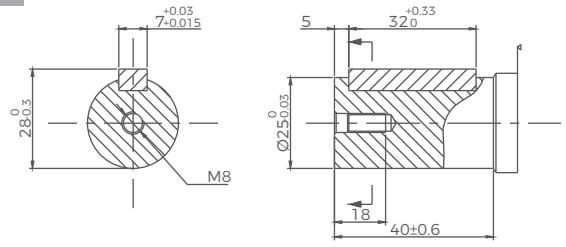
Splined shaft SAE 6B

SC



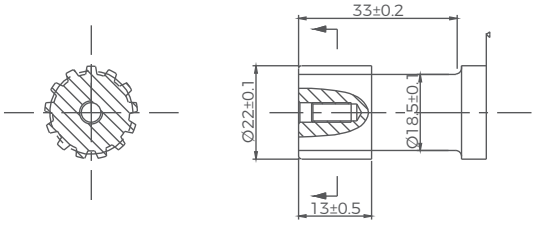
Straight shaft Ø25
Parallel key 8 x 7 x 28

SD



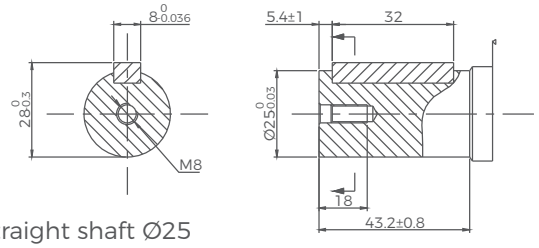
Straight shaft Ø25
Parallel key 7 x 7 x 32

R5



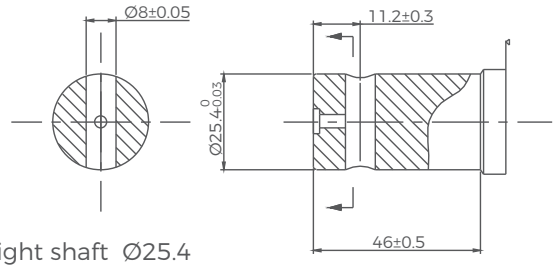
Splined shaft tooth 13-DP 16/32

S7



Straight shaft Ø25
Parallel key 8 x 7 x 32

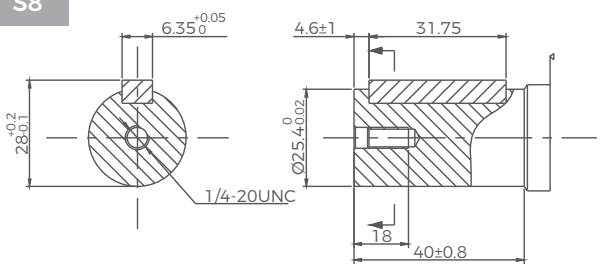
SA



Straight shaft Ø25.4
Pin hole Ø8

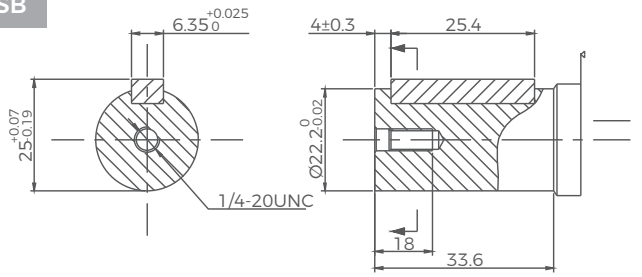
GFA Shafts Dimensions

S8



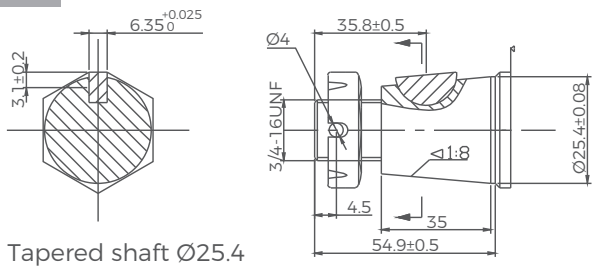
Straight shaft Ø25.4
Parallel key 6.35 x 6.35x 31.75

SB



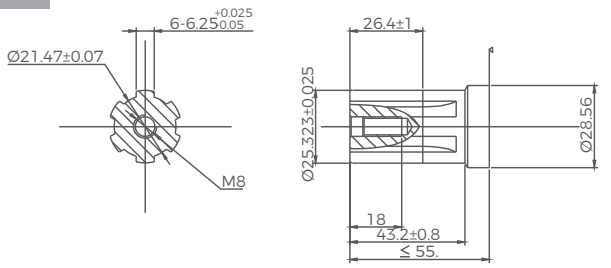
Straight shaft Ø22.22
Parallel key 6.35 x 6.35 x 25.4

T3



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

R1



Splined shaft SAE 6B

GFB Series Hydraulic Motors

Options

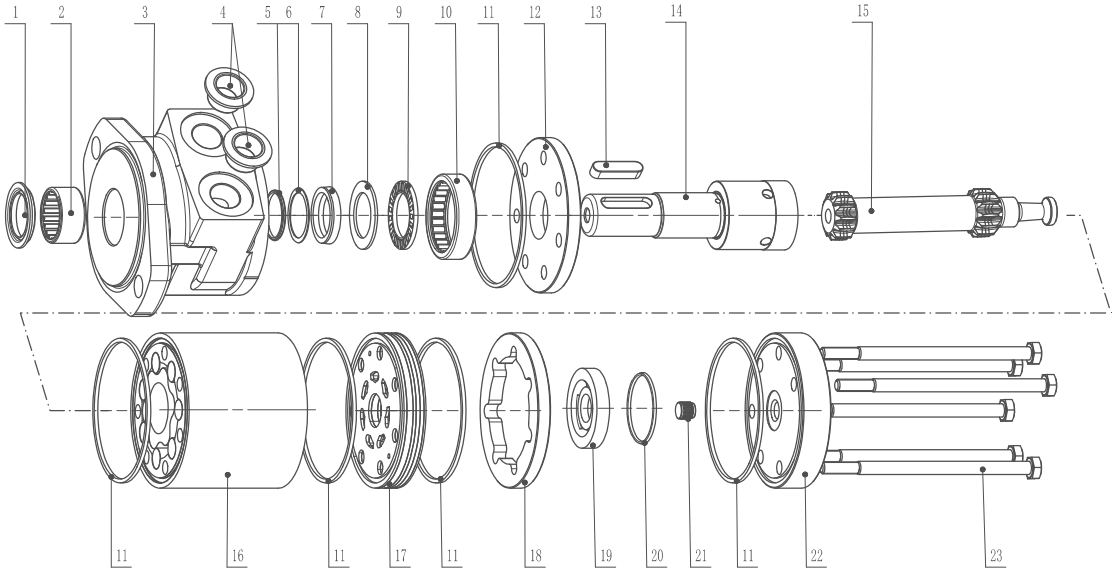
- Flange connection
- Motor with needle roller bearing
- Speed sensing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

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 [-104—284]
Optimal Viscosity range	mm^2/s [SUS]	20—75 [98—347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 microns)

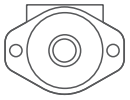
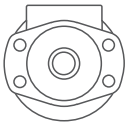
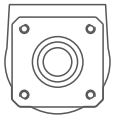
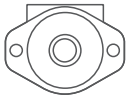
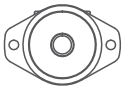


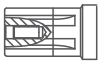
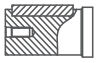
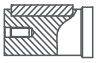
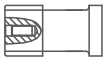
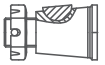
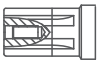
1 Dust ring
2 Needle roller bearings
3 Housing
4 Ports plug
5 Shaft seal support ring
6 Shaft seal gasket
7 Shaft seal
8 Bearing retaining ring
9 Flat bearing
10 Needle roller bearings
11 Rectangular seal ring
12 Spacer
13 Flat key
14 Output shaft
15 Transmission shaft
16 Rotor and stator
17 Welding plate
18 Spacer bush
19 Thrust plate
20 Seal ring
21 Positioning pins
22 Rear cover
23 Screw

Ordering Code

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

CODE	DISP cm/rev [in/rev]
036	36 [2.2]
045	41 [2.5]
050	49 [3.0]
065	65 [4.0]
080	82 [5.0]
100	98 [6.0]
130	130 [8.0]
165	163 [10.0]
195	195 [11.9]
230	228 [13.9]
260	260 [15.9]
290	293 [17.9]
330	328 [20.0]
365	370 [22.6]
390	392 [24.0]

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	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	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	ROTATION
A	Standard
R	Opposite

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.

GFB Specifications

Type		GFB36	GFB45	GFB50	GFB65	GFB80
Displacement cm^3 /rev [in^3/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]	GFB	5.93[13.07]	6.03[13.3]	6.12[13.5]	6.26[13.8]	6.35[14.0]

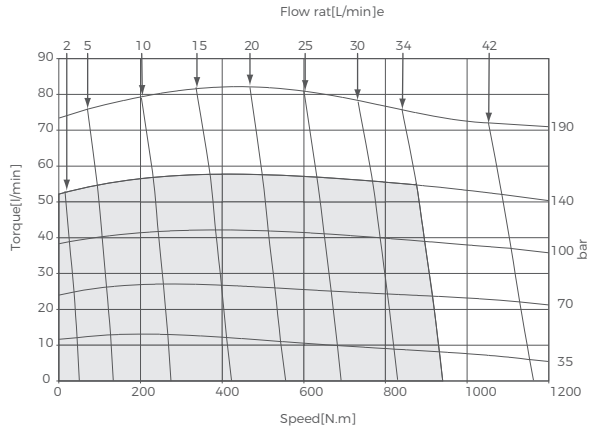
Type		GFB100	GFB130	GFB165	GFB195	GFB230
Displacement cm^3 /rev [in^3/rev]		98[6.0]	130[8.0]	163[10.0]	195[11.9]	228[13.9]
Max. Speed RPM	Int.	582	438	348	292	328
Max. Oil Flow	Cont.	45[12]	45[12]	45[12]	45[12]	57[15]
lpm [GPM]	Int.	57[15]	57[15]	57[15]	57[15]	75[20]
Max. Differential Pressure	Cont.	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]	GFB	6.49[14.3]	6.76[14.9]	7.03[15.5]	7.35[16.2]	7.58[16.7]

Specifications

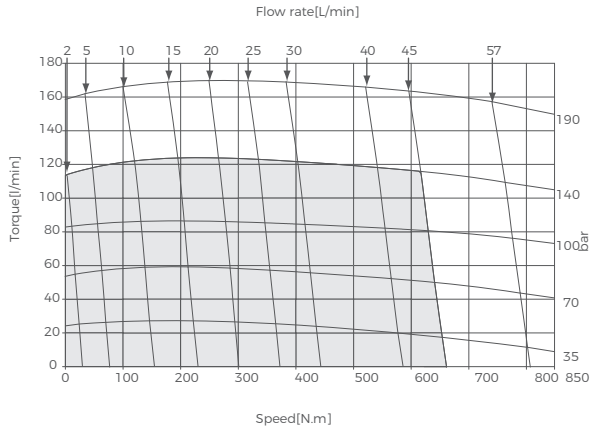
Type		GFB260	GFB295	GFB330	GFB365	GFB390
Displacement cm^3/rev [in^3/rev]		260[15.9]	293[17.9]	328[20.0]	370[22.6]	392[24.0]
Max. Speed RPM	Int.	287	256	228	203	191
Max. Oil Flow	Cont.	57[15]	57[15]	57[15]	57[15]	57[15]
lpm [GPM]	Int.	75[20]	75[20]	75[20]	75[20]	75[20]
Max. Differential Pressure	Cont.	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]	GFB	7.80[17.2]	8.07[17.8]	8.35[18.4]	8.66[19.1]	8.80[19.4]

Function Diagrams

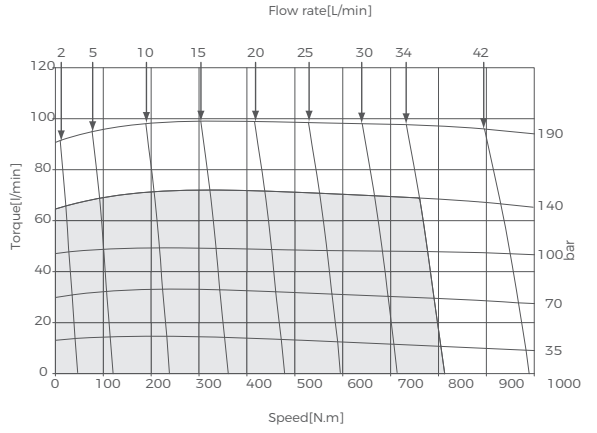
GFB36



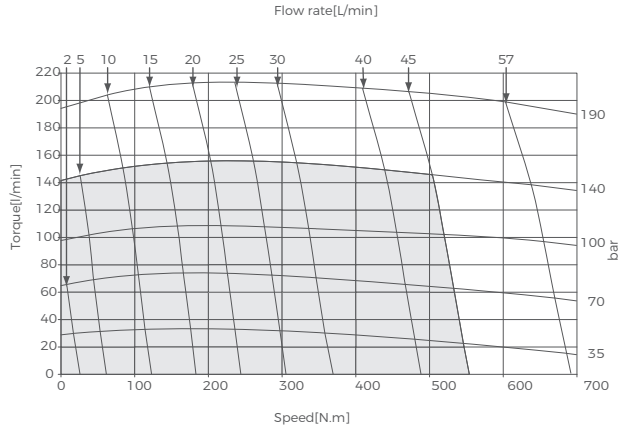
GFB65



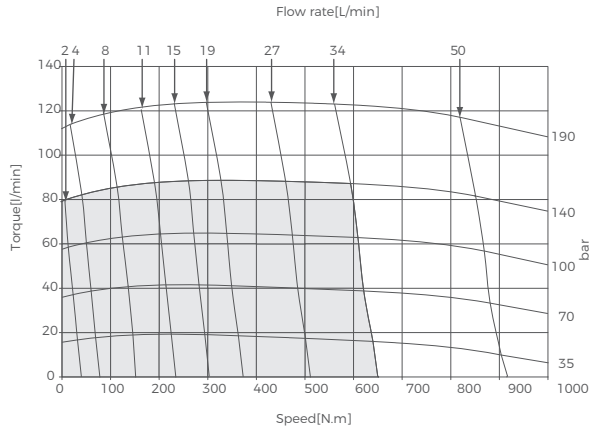
GFB45



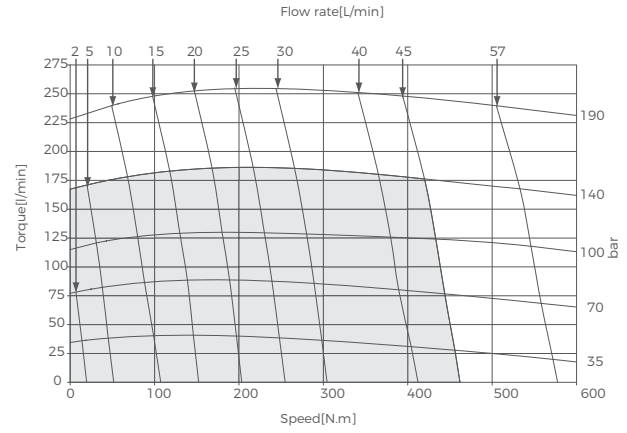
GFB80



GFB50



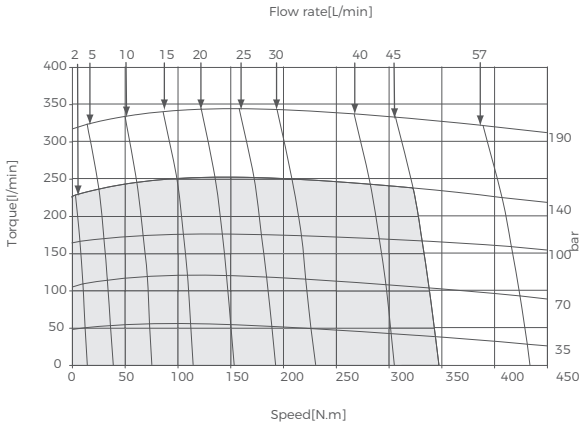
GFB100



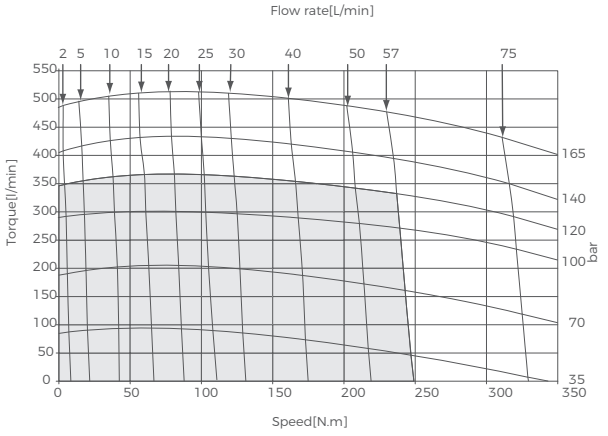
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

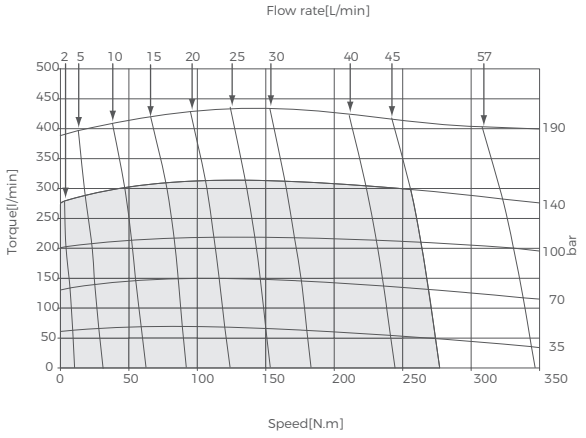
GFB130



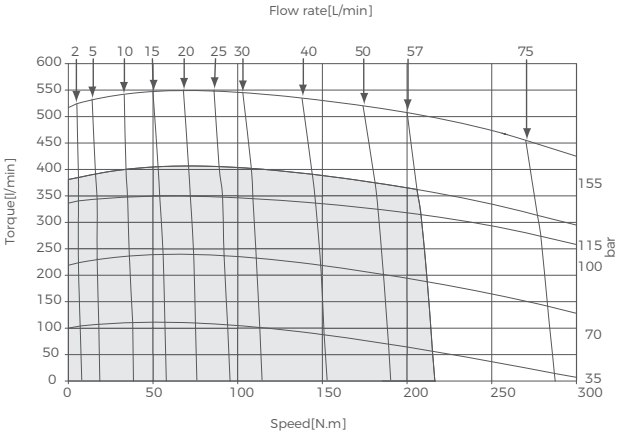
GFB230



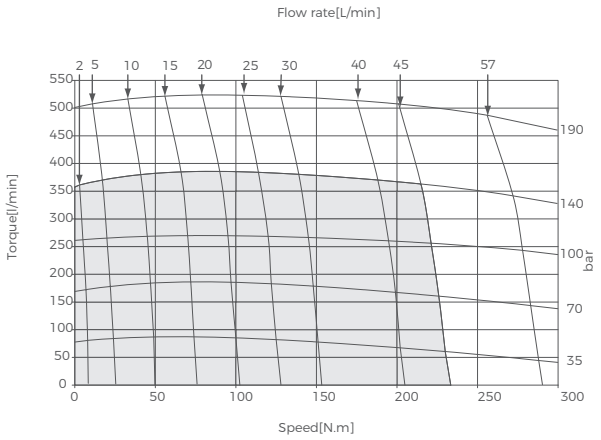
GFB165



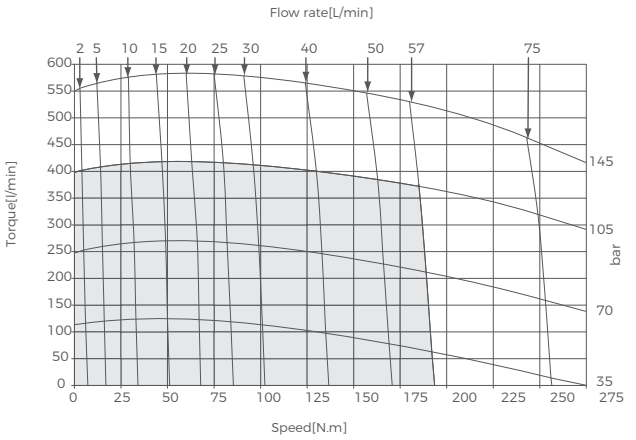
GFB260



GFB195



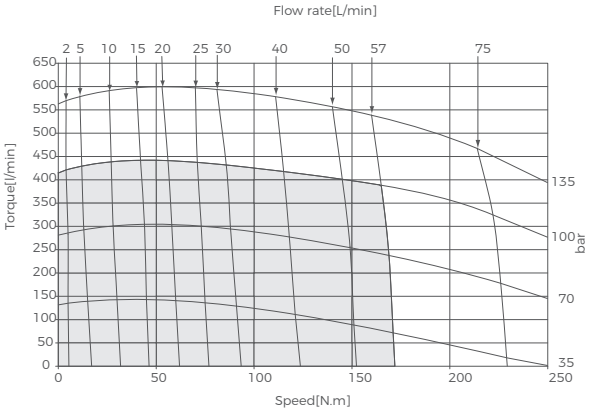
GFB295



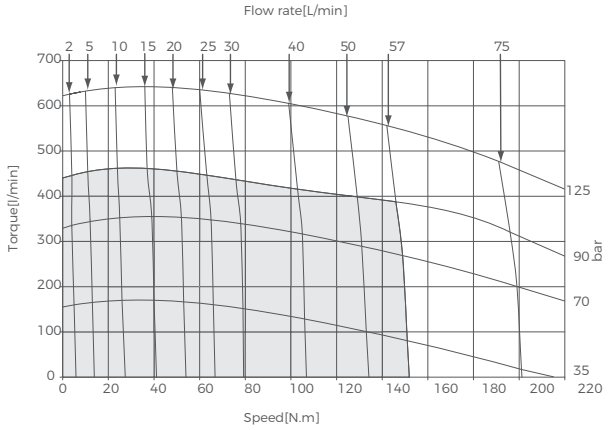
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

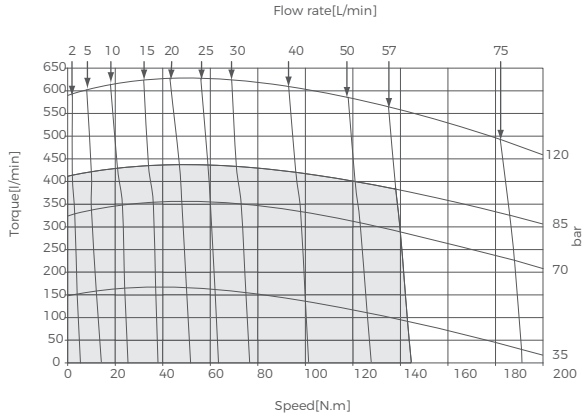
GFB330



GFB365

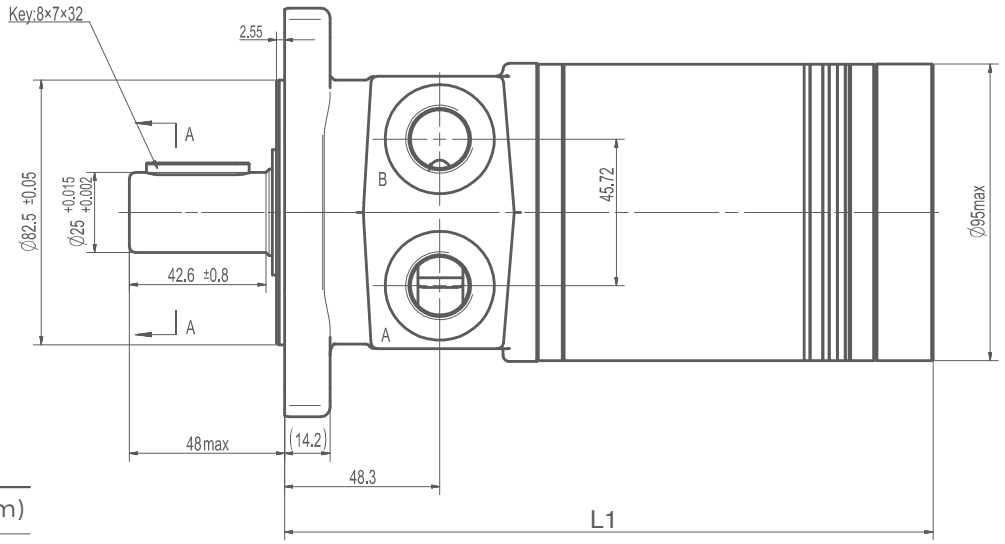


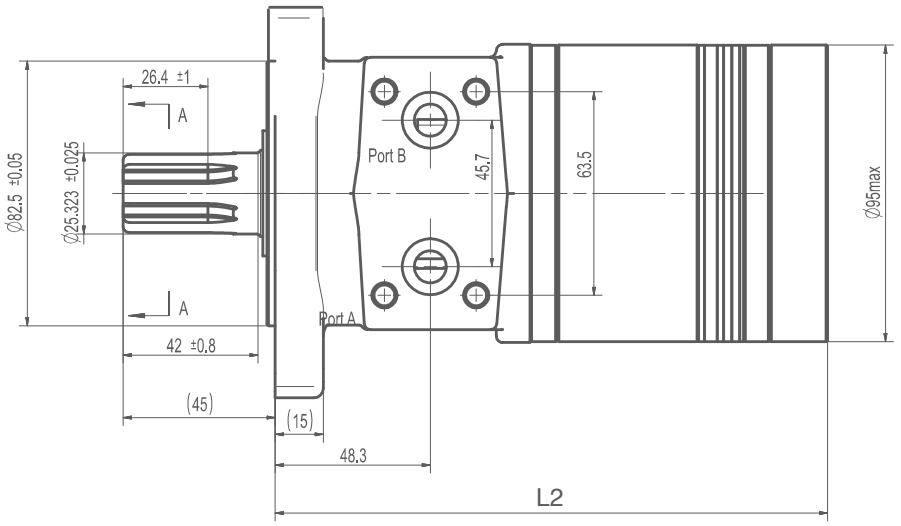
GFB390



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 32mm²/s [150 SUS] at 50˚C [122˚F].

GFB Dimensions and Mountings

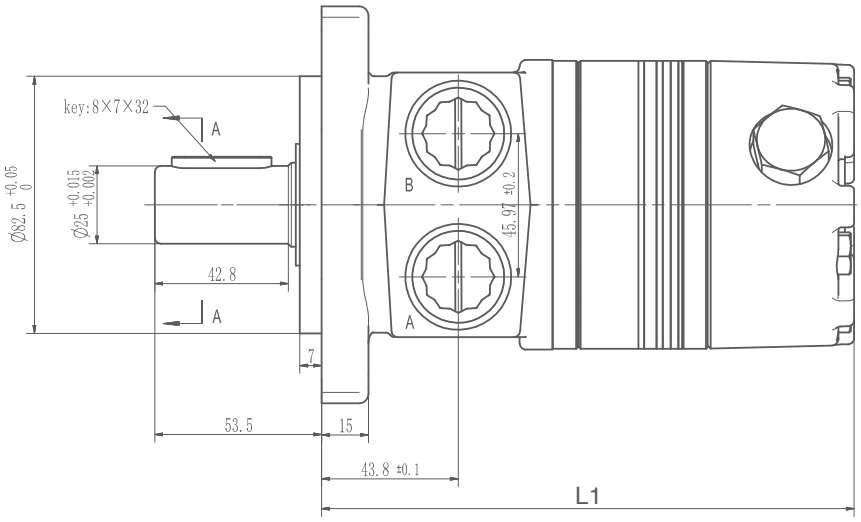


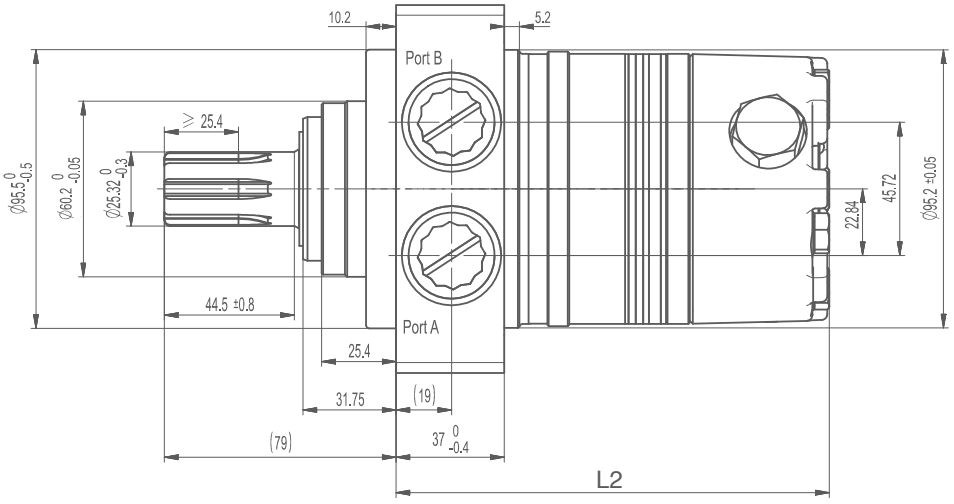


Model	L1(mm)	L2(mm)
GFB 36	132	134
GFB 45	133	135
GFB 50	135	137
GFB 65	139	140
GFB 80	141	143
GFB 100	144	146
GFB 130	151	153
GFB 165	157	159
GFB 195	163	165
GFB 230	170	172
GFB 260	176	178
GFB 295	182	184
GFB 330	189	191
GFB 365	197	199
GFB 390	202	204

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)

GFB Dimensions and Mountings



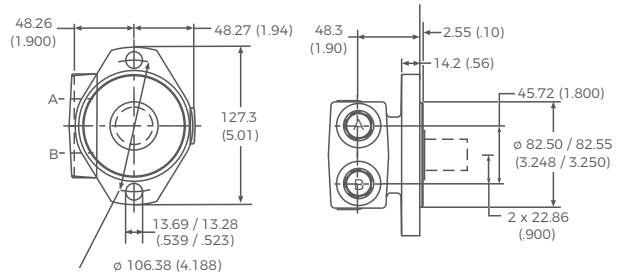


Model	L1(mm)	L2(mm)
GFB 36	159	136
GFB 45	160	137
GFB 50	162	139
GFB 65	165	142
GFB 80	168	145
GFB 100	171	148
GFB 130	178	155
GFB 165	184	161
GFB 195	190	167
GFB 230	197	174
GFB 260	203	180
GFB 295	209	186
GFB 330	216	193
GFB 365	224	201
GFB 390	229	206

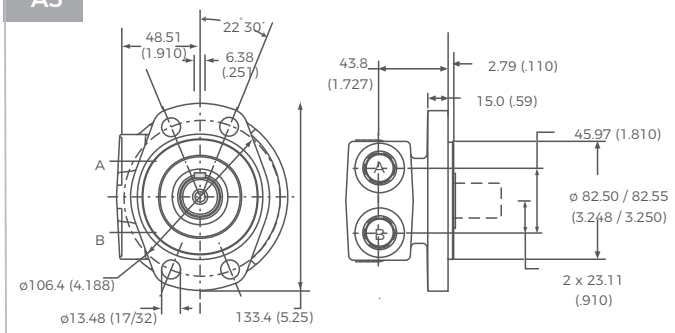
Mounting	G7 (depth)	U9 (depth)	UA (depth)	U3 (depth)	G8 (depth)	D1 (depth)	D2 (depth)
P(A, B)	G1/2(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	3/4-16 O-ring(15)	PT(RC)1/2(15)	Ø10	Ø10
T	G1/4(12)	7/16-20UNF(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)	7/16-20UNF(12)	G1/4(12)
C	—	—	—	—	—	4-5/16-18UNC(13)	4-M8(13)

GFB Flange Covers Dimensions

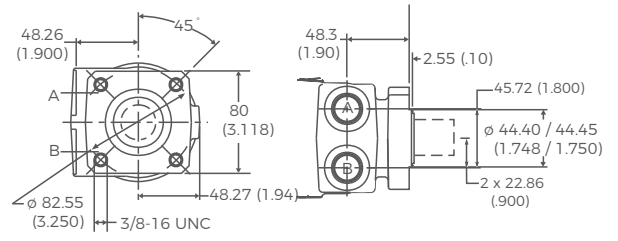
A1



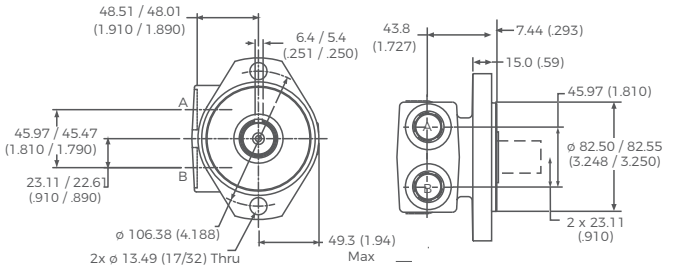
A3



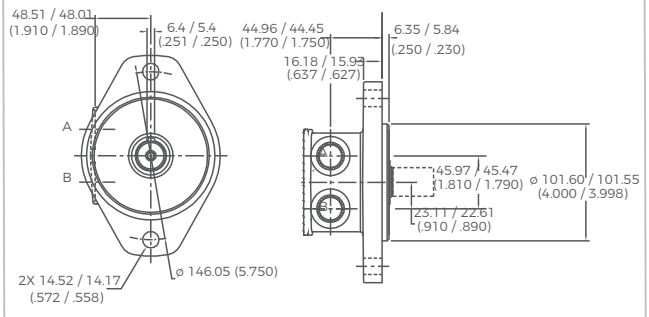
H4



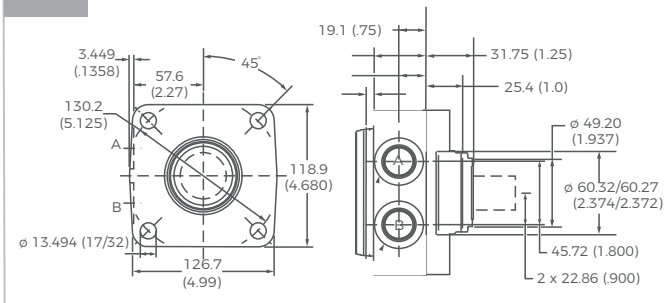
A5



A7

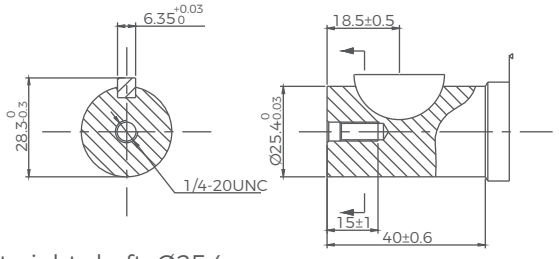


H6



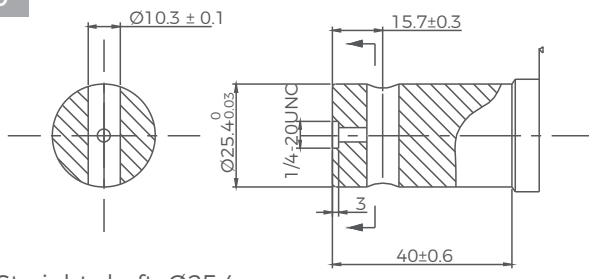
GFB Shafts Dimensions

S6



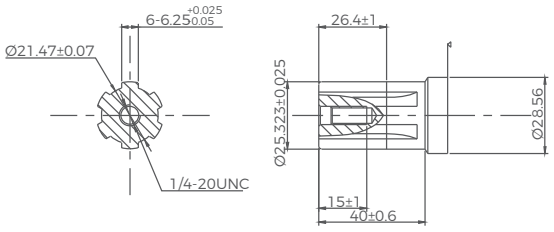
Straight shaft Ø25.4
Woodruff key Ø25.4 x 6.35

S9



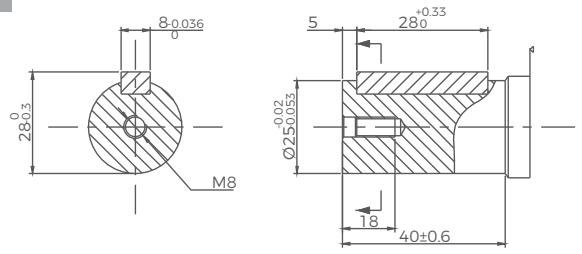
Straight shaft Ø25.4
Pin hole Ø10.3

R4



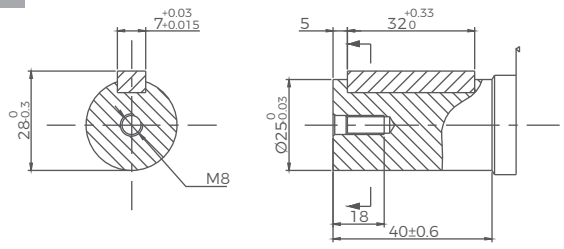
Splined shaft SAE 6B

SC



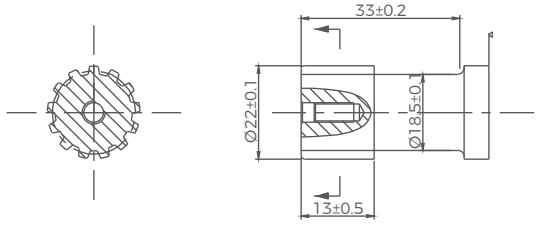
Straight shaft Ø25
Parallel key 8 x 7 x 28

SD



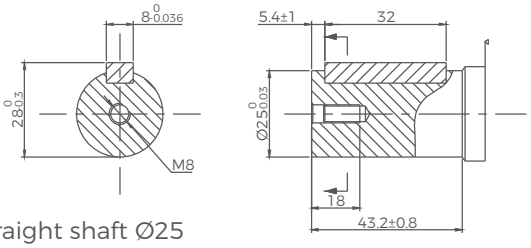
Straight shaft Ø25
Parallel key 7 x 7 x 32

R5



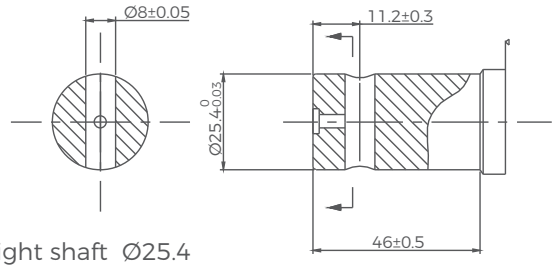
Splined shaft 13-DP 16/32

S7



Straight shaft Ø25
Parallel key 8 x 7 x 32

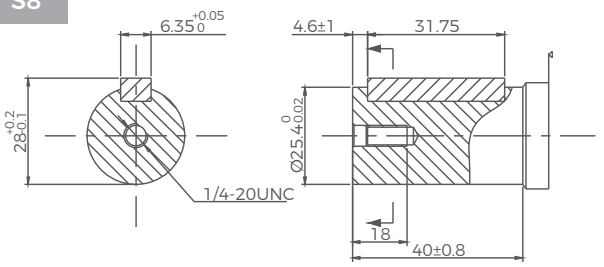
SA



Straight shaft Ø25.4
Pin hole Ø8

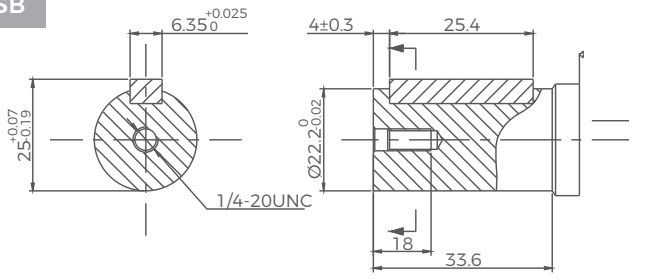
GFB Shafts Dimensions

S8



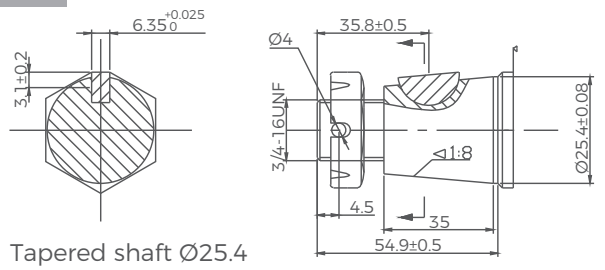
Straight shaft Ø25.4
Parallel key 6.35 x 6.35x 31.75

SB



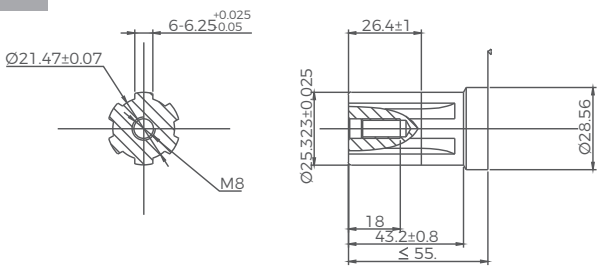
Straight shaft Ø22.22
Parallel key 6.35 x 6.35 x 25.4

T3



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

R1



Splined shaft SAE 6B

GFD Series Hydraulic Motors

Options

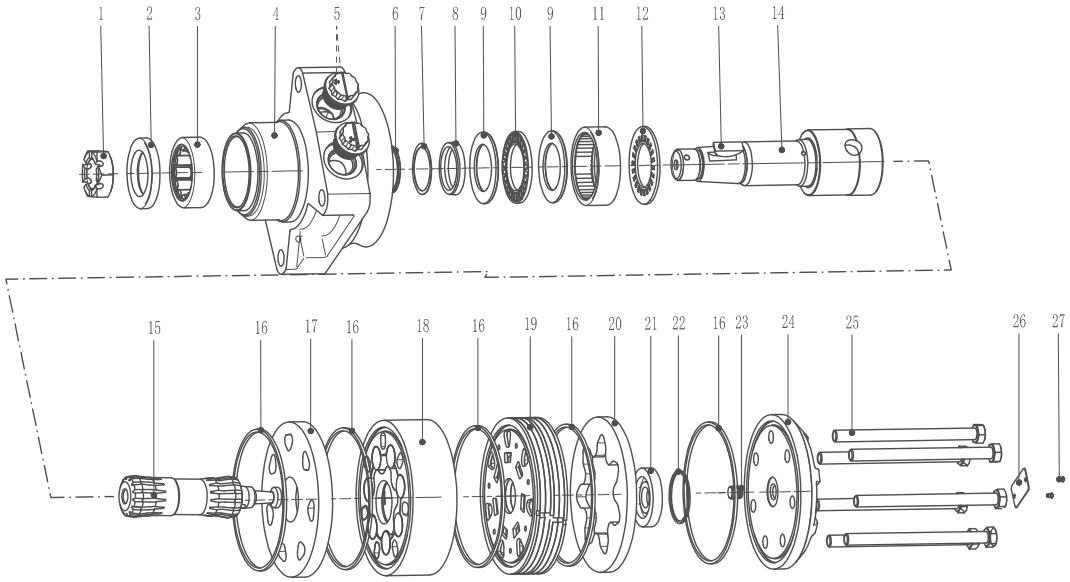
- Flange connection
- Motor with needle roller bearing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Scissor Lifts
- Snow Removal
- Augers
- Winches
- Sweepers
- Trenchers
- Skid Steer Attachments

General

Max.Displacement	cm3/rev [in3/rev]	959 [58.5]
Max.Speed	RPM	660
Max.Torque	Nm [lb-in]	cont.:1044 [9239] int.:1428 [12636]
Max.Output	kW [HP]	12.5 [16.8]
Max.Pressure Drop	bar [PSI]	cont.:207 [3000] int.:276 [4000]
Max.Oil Flow	lpm [GPM]	114 [30]
Pressure fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	˚C [˚F]	-40—140 [-104—284]
Optimal Viscosity range	mm²/s [SUS]	20—75 [98—347]
Filtration		ISO code 20/16 (Min.recommended fluid filtration of 25 microns)

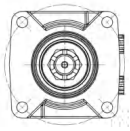
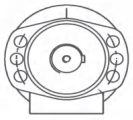


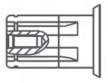
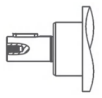
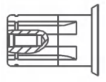
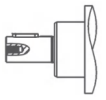
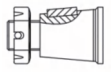
1 Slotted nut
2 Dust ring
3 Needle roller bearings
4 Housing
5 Ports plug
6 Shaft seal support ring
7 Shaft seal gasket
8 Shaft seal
9 Bearing retaining ring
10 Flat bearing
11 needle roller bearings
12 Flat bearing
13 Woodruff key
14 Output shaft
15 Transmission shaft
16 Rectangular seal ring
17 Spacer
18 Rotor and stator
19 Welding plate
20 Spacer bush
21 Thrust plate
22 Seal ring
23 Positioning pins
24 Rear cover
25 Screw
26 Nameplate
27 Rivet

Ordering Code

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

CODE	DISP cm³/rev [in³/rev]
140	141 [8.6]
170	169 [10.3]
195	195 [11.9]
240	238 [14.5]
280	280 [17.1]
310	310 [18.9]
335	337 [20.6]
405	405 [24.7]
475	477 [29.1]
530	528 [32.3]
625	623 [38.0]
785	786 [48.0]
960	959 [58.5]

CODE	FLANGE
A9	4-Ø13.5 SAE A Ø106.4 Ø82.5x2.7 
W1	Ø147.6 square 4-Ø13.5 pilot Ø82.5×39.9 
A10	6-Ø13.5 SAE A Ø106.4 pilot Ø82.5×8 

CODE	SHAFT
R8	Ø25.4 Splined 6B 
SG	Ø31.75 parallel key 7.9x7.9x36.5 5/8-18 UNF 
R6	Ø31.75 Splined 14 5/8-18 UNF 
S4	Ø32 parallel key 10x46.5 M12 X 1.75-6H 
TF	Tapered 1:8 Ø31.75 1-20 UNEF 

CODE	PORTS
UF	7/8-14UNF
MG	M16×1.5 4-M8
GC	G1/2

CODE	ROTATION
A	Standard
R	Opposite

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

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

GFD Specifications

Type		GFD140	GFD170	GFD195	GFD240	GFD280
Displacement cm3/rev [in3/rev]		141[8.6]	169[10.3]	195[11.9]	238[14.5]	280[17.1]
Max.Speed RPM	Int.	660	554	477	393	334
Max.Oil Flow	Cont.	76[20]	76[20]	76[20]	76[20]	76[20]
lpm [GPM]	Int.	95[25]	95[25]	95[25]	95[25]	95[25]
Max.Differential Pressure	Cont.	207[3000]	207[3000]	207[3000]	207[3000]	207[3000]
bar [PSI] Int.	Int.	276[4000]	276[4000]	276[4000]	276[4000]	276[4000]
Max.Supply Pressure bar [PSI]		300[4350]	300[4350]	300[4350]	300[4350]	300[4350]
Max.Torque	Cont.	390[3455]	476[4216]	556[4919]	677[5991]	796[7044]
daNm [lb-in]	Int.	530[4692]	646[5714]	753[6663]	913[8081]	1073[9499]
Max.Performance kW [HP]		33[45]	33[45]	33[45]	32[44]	31[42]
Min.Staring Torque	Cont.	315[2791]	376[3331]	451[3989]	582[5152]	675[5972]
daNm[lb-in]	Int.	418[3706]	505[4469]	611[5408]	776[6865]	870[7699]
Weight,kg [lb]	GFD	14.2[31.2]	14.5[31.9]	14.7[32.3]	15.1[33.2]	15.5[34.1]

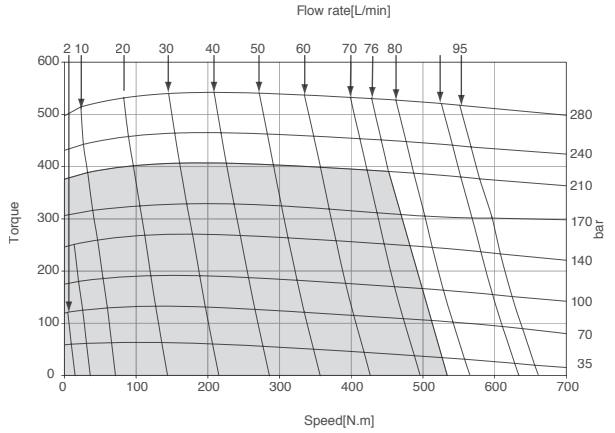
Type		GFD310	GFD335	GFD405	GFD475	GFD530
Displacement cm3/rev [in3/rev]		310[18.9]	337[20.6]	405[24.7]	477[29.1]	528[32.3]
Max.Speed RPM	Int.	303	277	232	237	213
Max.Oil Flow	Cont.	76[20]	76[20]	76[20]	76[20]	76[20]
lpm [GPM]	Int.	95[25]	95[25]	95[25]	114[30]	114[30]
Max.Differential Pressure	Cont.	207[3000]	207[3000]	2172[2500]	138[2000]	138[2000]
bar [PSI] Int.	Int.	276[4000]	276[4000]	241[3500]	207[3000]	172[2500]
Max.Supply Pressure bar [PSI]		300[4350]	300[4350]	300[4350]	300[4350]	300[4350]
Max.Torque	Cont.	924[8184	964[8533]	942[8336]	887[7853]	983[8701]
daNm [lb-in]	Int.	1229[10817]	1297[11479]	1342[11877]	1372[12145]	1253[11086]
Max.Performance kW [HP]		31[41]	30[41]	27[37]	28[38]	23[31]
Min.Staring Torque	Cont.	778[6882]	843[7458]	791[7002]	740[6549]	874[7737]
daNm[lb-in]	Int.	1005[8893]	1117[9889]	1145[10133]	1120[9909]	1091[9657]
Weight,kg [lb]	GFD	15.7[34.5]	15.9[35.0]	16.5[36.3]	17.2[37.8]	17.9[39.4]

Specifications

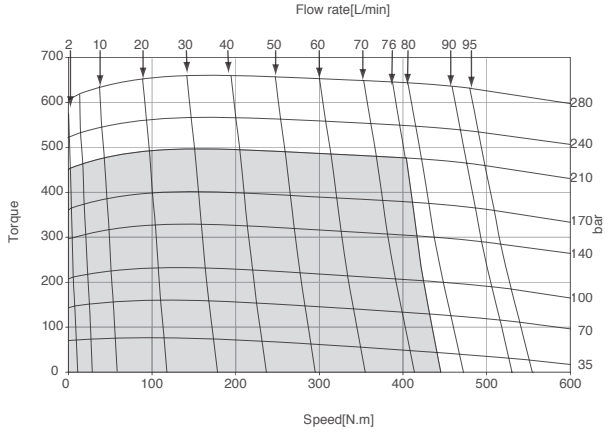
Type		GFD625	GFD785	GFD960
Displacement cm3/rev [in3/rev]		623[38.0]	786[48.0]	859[58.5]
Max.Speed RPM	Int.	182	143	118
Max.Oil Flow	Cont.	76[20]	76[20]	76[20]
lpm [GPM]	Int.	114[30]	114[30]	114[30]
Max.Differential Pressure	Cont.	121[1750]	103[1500]	69[1000]
bar [PSI] Int.	Int.	155[2250]	138[2000]	103[1500]
Max.Supply Pressure bar [PSI]		300[4350]	300[4350]	300[4350]
Max.Torque	Cont.	986[8727]	1044[9239]	773[6843]
daNm [lb-in]	Int.	1291[11424]	1428[12636]	1268[11227]
Max.Performance kW [HP]		20[27]	17[23]	12[16]
Min.Staring Torque	Cont.	895[7924]	991[8772]	763[6752]
daNm[lb-in]	Int.	1165[10312]	1341[11876]	1177[10419]
Weight,kg [lb]	GFD	18.6[40.9]	20.2[44.4]	21.9[48.2]

Function Diagrams

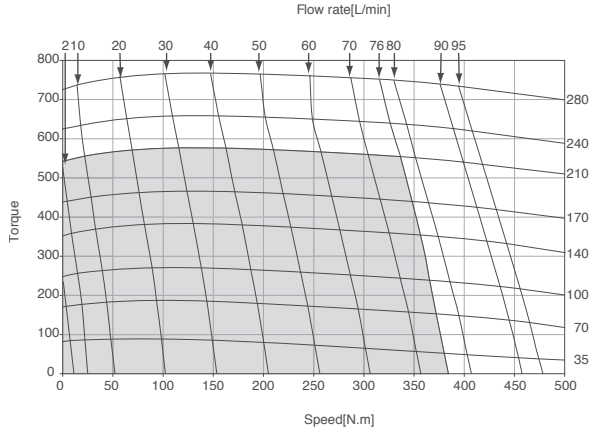
GFD140



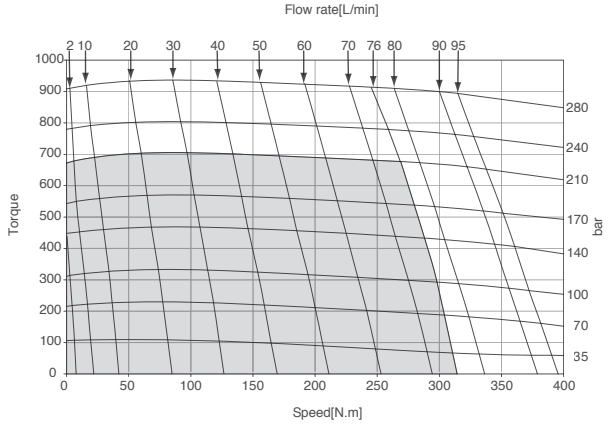
GFD170



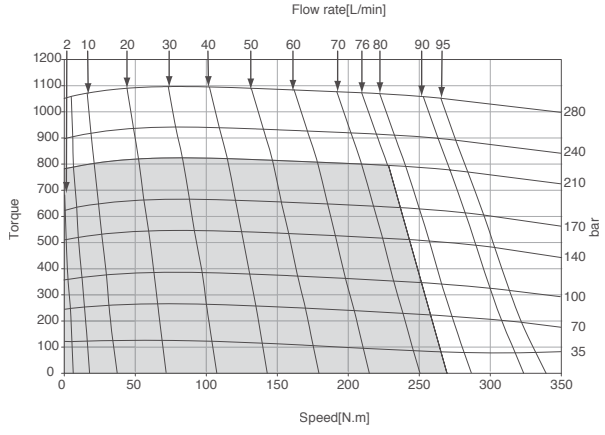
GFD195



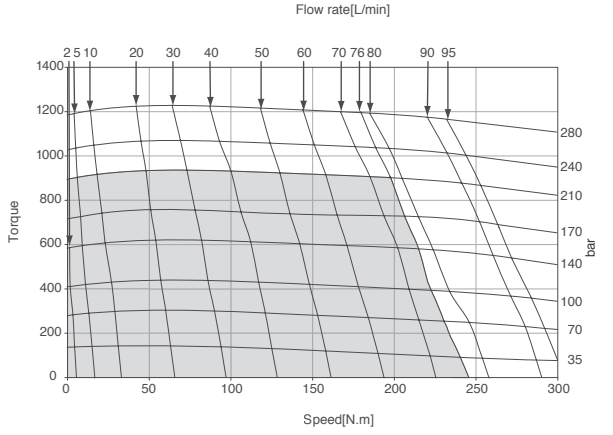
GFD240



GFD280



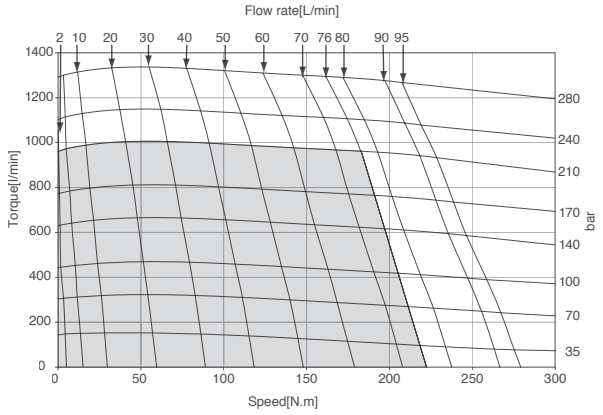
GFD310



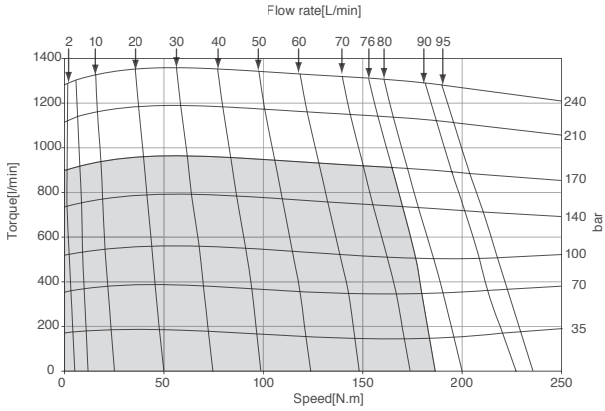
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32mm² /s [150 SUS] at 50°C [122°F].

Function Diagrams

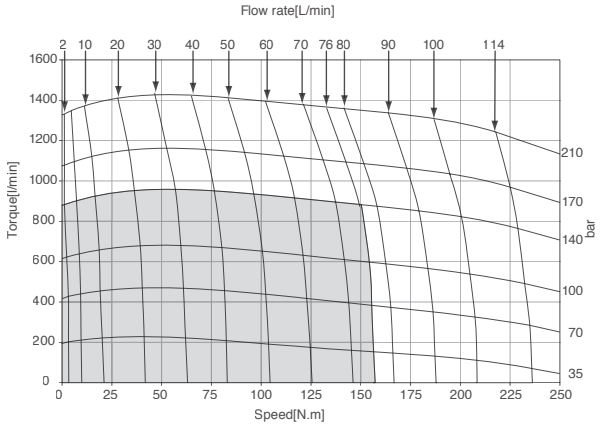
GFD335



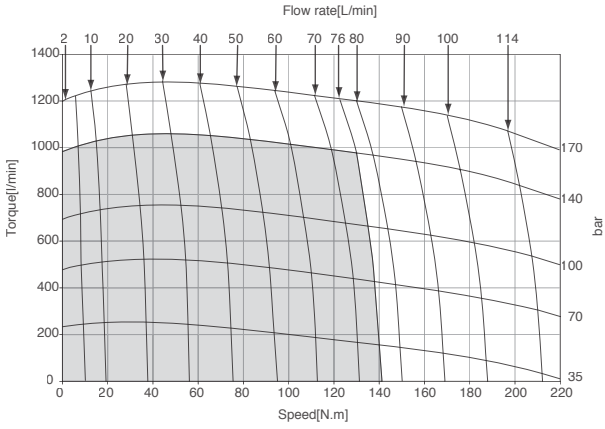
GFD405



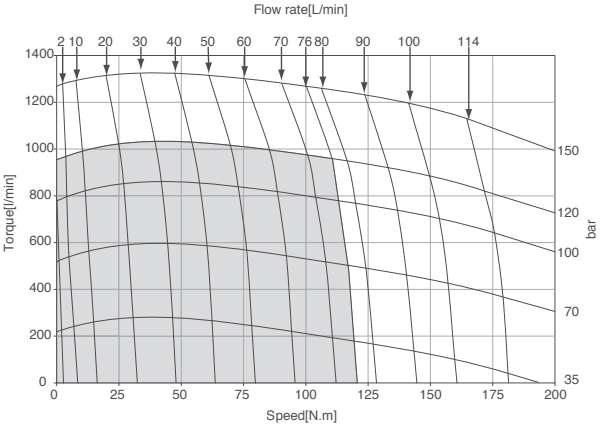
GFD475



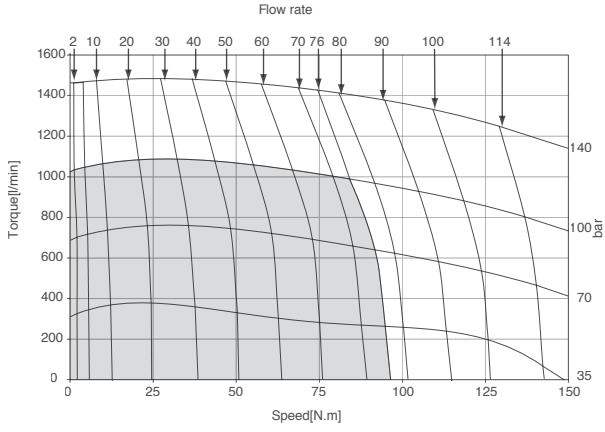
GFD530



GFD625



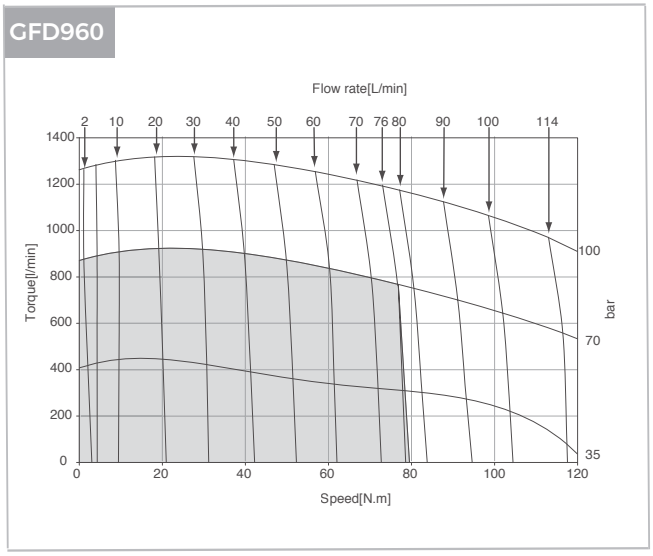
GFD785



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 32mm²/s [150 SUS] at 50°C [122°F].

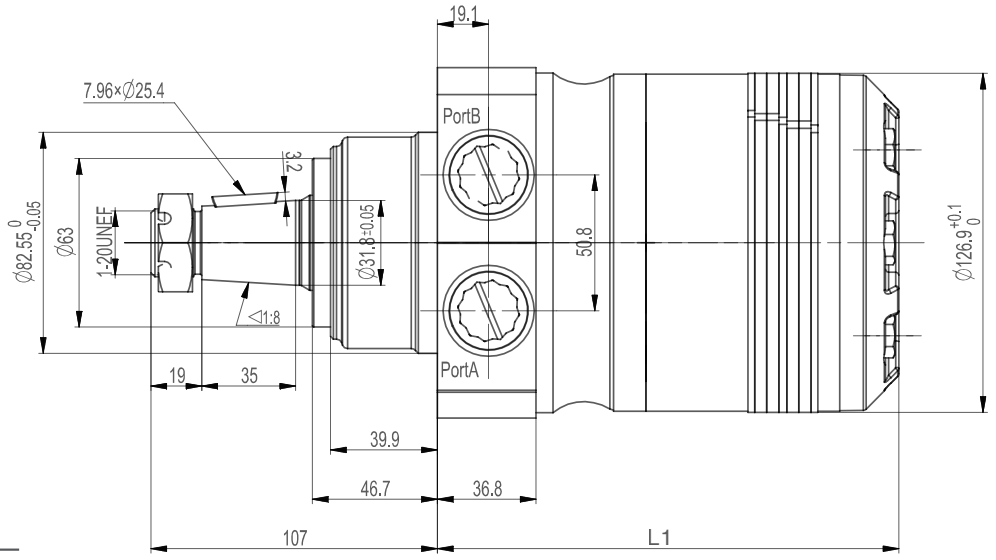
Function Diagrams

GFD960



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 32mm²/s [150 SUS] at 50°C [122°F].

GFD Dimensions and Mountings

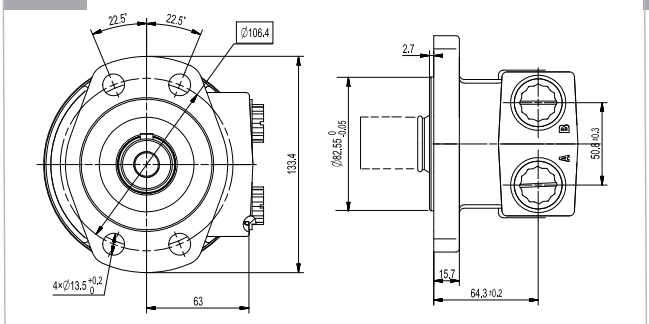


Model	L1(mm)	L2(mm)
GFD140	150	196
GFD170	154	199
GFD195	157	202
GFD240	161	207
GFD280	166	211
GFD310	170	215
GFD335	173	218
GFD405	180	225
GFD475	188	234
GFD530	195	240
GFD625	204	250
GFD785	223	267
GFD960	242	288

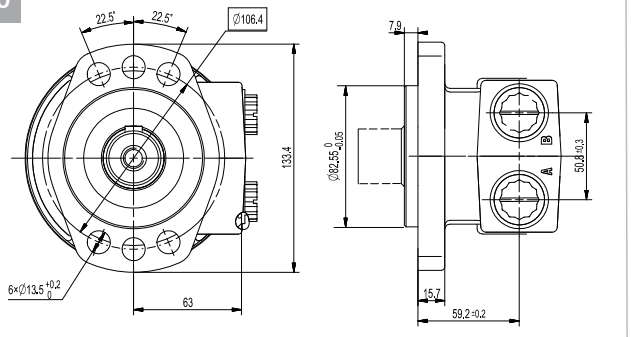
Mounting	UF (depth)	MG (depth)	GC (depth)
P(A, B)	2 x 7/8UNF	2 x M62 x1.5(13)	2 x G1/2(15)
C		4-M8(13)	

GFD Flange Covers Dimensions

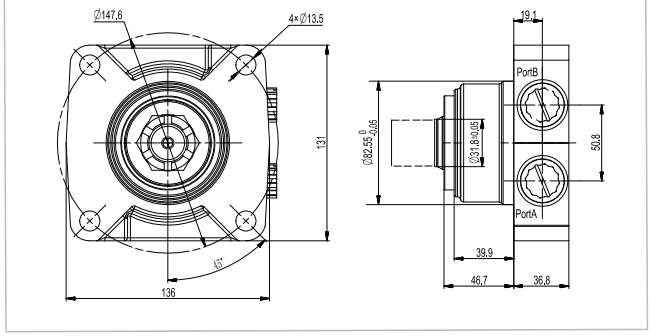
A9



A10

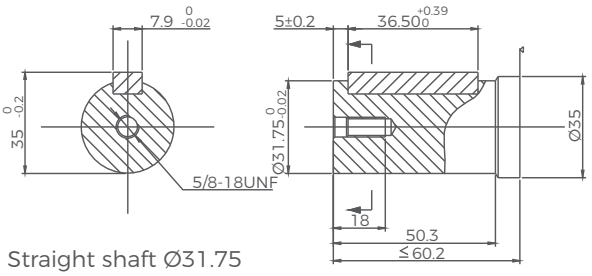


W1



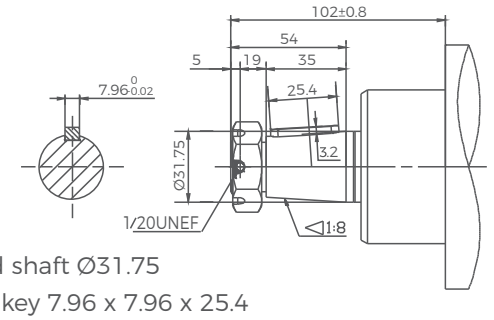
GFD Shafts Dimensions

SG



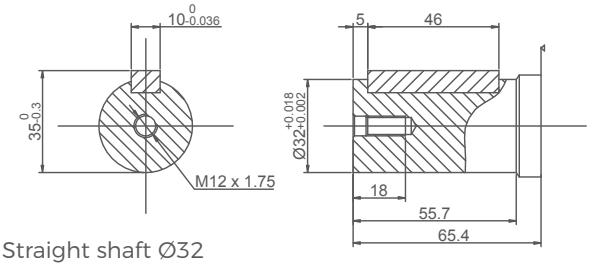
Straight shaft Ø31.75
Parallel key 7.9 x 7.9 x 36.5

TF



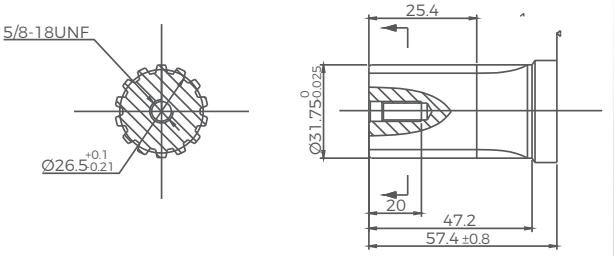
Tapered shaft Ø31.75
Parallel key 7.96 x 7.96 x 25.4

S4



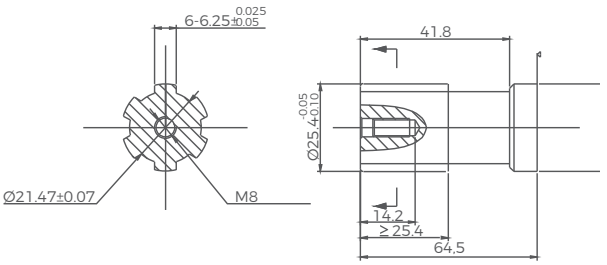
Straight shaft Ø32
Parallel key 10 x 8 x 46

R6



Splined shaft 14-DP 12/24

R8



Splined shaft SAE 6B

GFE Series Hydraulic Motors

Options

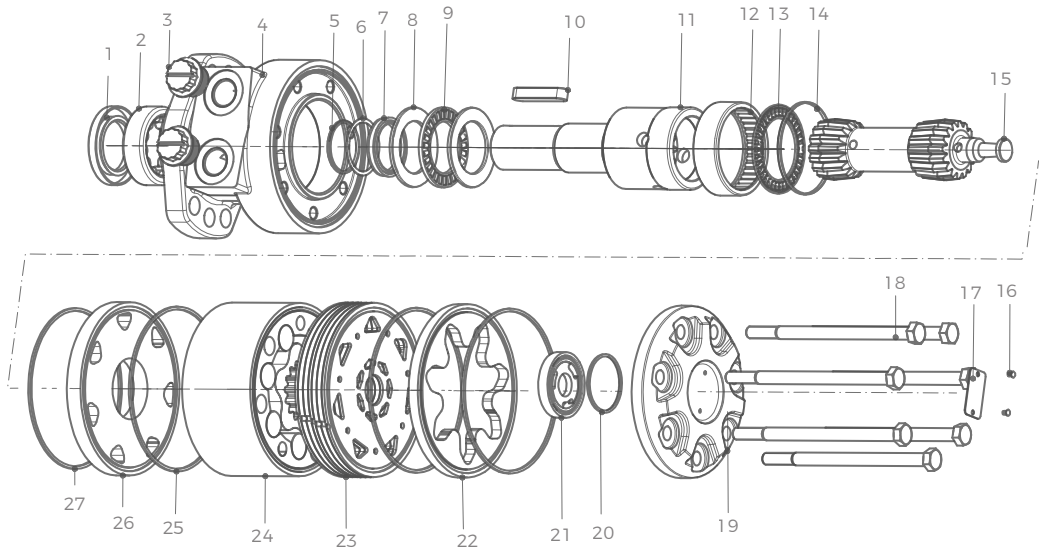
- Flange connection
- Motor with needle roller bearing
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Snow Removal
- Salt and Sand Spreaders
- Oil and Gas Blender Trucks
- Scissor Lifts
- Augers
- Combine Header Drives
- Conveyers
- Combine Harvesters

General

Max.Displacement	cm^3/rev [in^3/rev]	959[58.05]
Max.Speed	RPM	317
Max.Torque	daNm [lb-in]	cont.:1652[14624] int.:2028[17948]
Max.Output	kW [HP]	30[40]
Max.Pressure Drop	bar [PSI]	cont.:241[3500] int.:276[4000]
Max.Oil Flow	lpm [GPM]	114[30.0]
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)

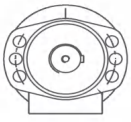


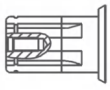
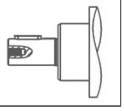
1 Dust seal
2 Needle roller bearing
3 Plug
4 Housing
5 Shaft seal support
6 Shaft seal gasket
7 Shaft seal
8 Plane bearing retaining ring
9 Plane needle roller bearings
10 Flat key
11 Output shaft
12 Roller bearings
13 Plane thurst needle roller bearings
14 Outer ring of planar thrust needle roller bearing
15 transmission shaft
16 Name plate rivet
17 Name plate
18 Hexagon bolts
19 Back cover
20 Distribution plate sealing ring
21 Distribution plate
22 Spacer sleeve
23 Welding plate assembly
24 Rotor stator assembly
25 Rectangular sealing NBR
26 Spacer
27 Rectangular sealing

Ordering Code

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

CODE	DISP cm³/rev [in³/rev]
240	238 [14.5]
280	280 [17.1]
310	310 [18.9]
335	337 [20.6]
360	360 [22.2]
405	405 [24.7]
475	477 [29.1]
530	528 [32.3]
625	623 [38.0]
785	786 [48.0]
960	959 [58.5]

CODE	FLANGE
W1	Ø147.6 square 4- Ø13.5 front pilot Ø88.85X46.7 rear pilo Ø127X4 
A10	6- Ø13.5 square Ø106.4 pilot Ø82.5×7.87 

CODE	SHAFT
R2	Ø31.75 splined tooth 14 M12x1.75 
S4	Ø32 parallel key 10x8x46 

CODE	PORTS
G1	G1/2
UF	7/8-14UNF
D5	Ø12.7 4X5/16-18UNC(13)

CODE	ROTATION
A	Standard
R	Opposite

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

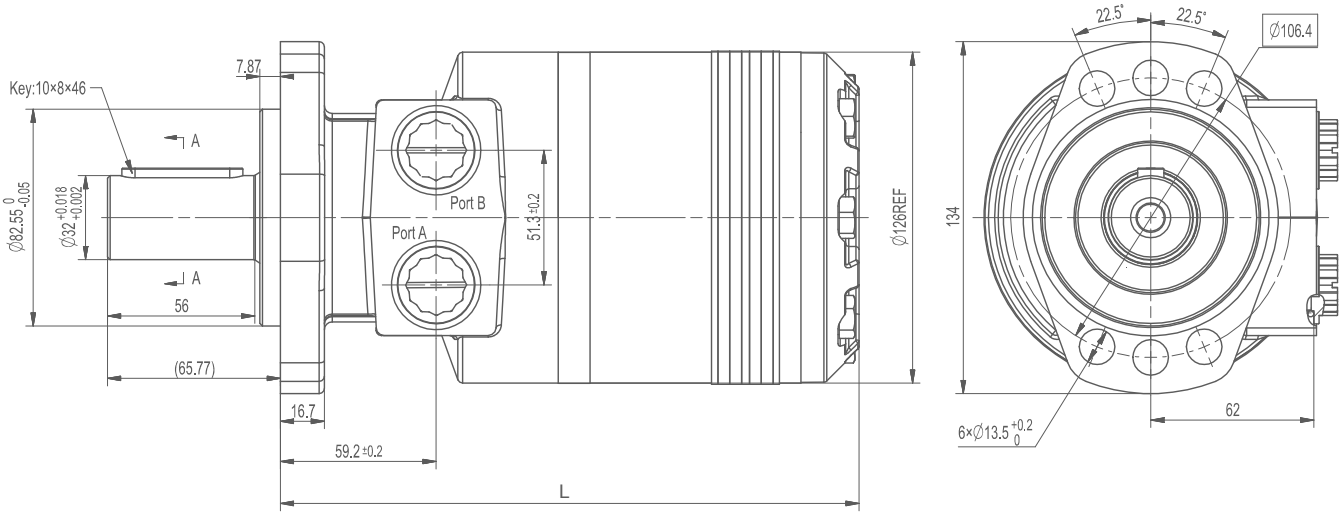
CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High temp.
S	Low temp.

GFE Specifications

Type		GFE0240	GFE0280	GFE0310	GFE0335	GFE0360
Displacement cm3/rev [in3/rev]		238[14.5]	280[17.1]	310[18.9]	337[20.6]	360[22.2]
Max.Speed RPM	Int.	317	267	236	209	196
Max.Oil Flow	Cont.	76[20]	76[20]	76[20]	76[20]	76[20]
lpm [GPM]	Int.	95[25]	95[25]	95[25]	95[25]	95[25]
Max.Differential Pressure	Cont.	241[3500]	241[3500]	241[3500]	241[3500]	241[3500]
bar [PSI] Int.	Int.	276[4000]	276[4000]	276[4000]	276[4000]	276[4000]
Max.Supply Pressure bar [PSI]		300[4350]	300[4350]	300[4350]	300[4350]	300[4350]
Max.Torque	Cont.	794[7027]	936[8286]	1037[9175]	1128[9981]	1205[10665]
daNm [lb-in]	Int.	913[8031]	1073[9470]	1229[10465]	1297[11834]	1377[12189]
Max.Performance kW [HP]		30[40]	29[39]	29[39]	28[37]	28[37]
Min.Staring Torque	Cont.	593[5250]	699[6190]	773[6841]	843[7457]	900[7968]
daNm[lb-in]	Int.	678[6000]	799[7075]	883[7819]	963[8522]	1029[9107]
Weight,kg [lb]	GFE	14.8[327]	15.2[33.5]	15.4[33.9]	15.5[34.2]	15.8[34.8]

Type		GFE310	GFE0475	GFE0530	GFE0625	GFE0785	GFE0960
Displacement cm3/rev [in3/rev]		405[24.7]	477[29.1]	528[32.3]	623[38.0]	786[48.0]	959[58.5]
Max.Speed RPM	Int.	184	204	173	151	120	102
Max.Oil Flow	Cont.	76[20]	76[20]	76[20]	76[20]	76[20]	76[20]
lpm [GPM]	Int.	95[25]	114[30]	114[30]	114[30]	114[30]	114[30]
Max.Differential Pressure	Cont.	241[3500]	241[3500]	224[3250]	190[2750]	152[2200]	124[1800]
bar [PSI] Int.	Int.	276[4000]	276[4000]	259[3750]	224[3250]	186[2700]	159[2300]
Max.Supply Pressure bar [PSI]		300[4350]	300[4350]	300[4350]	300[4350]	300[4350]	300[4350]
Max.Torque	Cont.	1353[11971]	1593[14101]	1643[14537]	1635[14469]	1652[14624]	1647[14580]
daNm [lb-in]	Int.	1546[13681]	1821[16115]	1895[16774]	1932[17100]	2028[17948]	2105[18630]
Max.Performance kW [HP]		29[39]	37[49]	32[43]	28[38]	22[30]	19[26]
Min.Staring Torque	Cont.	1011[8944]	1190[10535]	1227[10861]	1221[10810]	1234[10926]	1231[10893]
daNm[lb-in]	Int.	1155[10222]	1360[12040]	1416[12532]	1443[12776]	1515[13409]	1504[13314]
Weight,kg [lb]	GFE	16.1[35.4]	16.6[36.7]	17.3[38.1]	18.0[39.6]	19.8[43.6]	20.8[45.9]

GFE Dimensions and Mountings

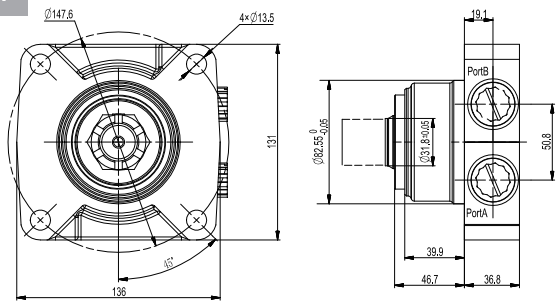


Model	L1(mm)
GFE 240	202.4
GFE 280	206.8
GFE 310	209.8
GFE 335	212.3
GFE 360	215.6
GFE 405	218.7
GFE 475	225.8
GFE 530	230.9
GFE 625	239.8
GFE 785	256.0
GFE 960	272.5

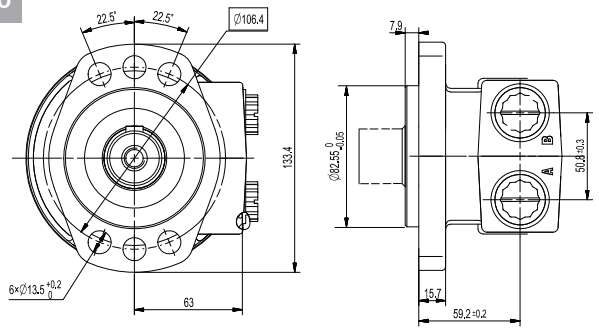
Mounting	G1 (depth)	UF (depth)	D5 (depth)
P(A, B)	G1/2	7/8-14 UNF	12.7
C			4x5/16-18UNC(13)

GFE Flange Covers Dimensions

W1

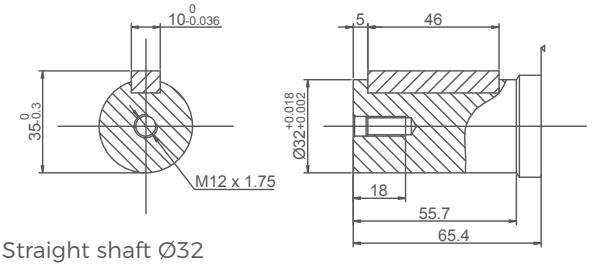


A10



GFE Shafts Dimensions

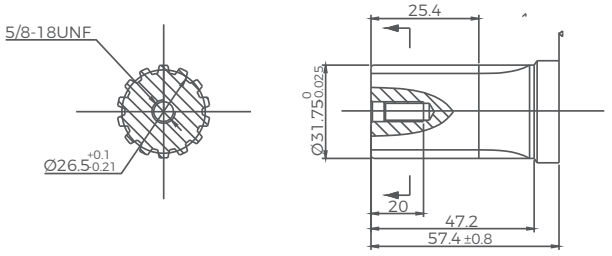
S4



Straight shaft Ø32

Parallel key 10 x 8 x 46

R2



Splined shaft 14-DP 12/24

GFF Series Hydraulic Motors

Options

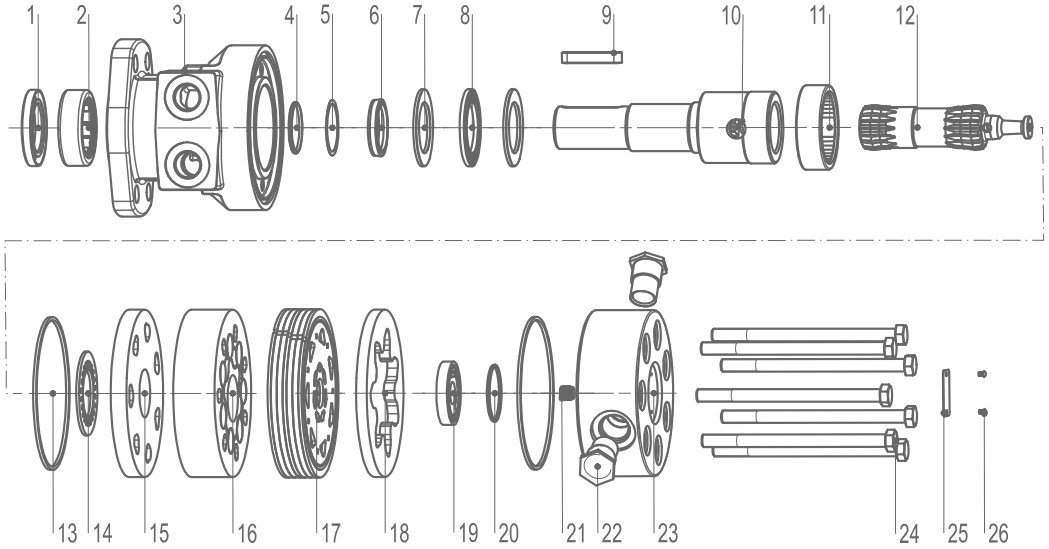
- Flange connection
- Motor with needle roller bearing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Trenchers
- Skid Steer Attachments
- Scissor Lifts
- Sweepers
- Wood Chippers
- Conveyers
- Combine Harvesters

General

Max.Displacement	cm^3/rev [in^3/rev]	477[29.1]
Max.Speed	RPM	693
Max.Torque	daNm [lb-in]	cont.:68.1[6027] int.:85.1[7528]
Max.Output	kW [HP]	17.4[23.3]
Max.Pressure Drop	bar [PSI]	cont.:207[3000] int.:276[4000]
Max.Oil Flow	lpm [GPM]	100[37.85]
Pressure fluid		Mineral based-HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	˚C [˚F]	-40—140[-104—284]
Optimal Viscosity range	mm^2/s [SUS]	20—75[98—347]
Filtration		ISO code 20/16 (Min.recommended fluid filtration of 25 microns)

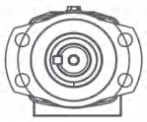


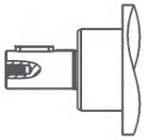
1 Dust seal
2 Needle roller bearing
3 Housing
4 Shaft seal support
5 Shaft seal gasket
6 Shaft sealring
7 Plane bearing retaining ring
8 Plane needle roller bearings
9 Flat key
10 Output shaft
11 Roller bearings
12 transmission shaft
13 Rectangular sealing ring
14 Plane thrust needle roller bearings
15 Spacer
16 Rotor stator assembly
17 Welding plate assembly
18 Spacer
19 Distribution plate
20 Port plate sealing ring
21 Signage
22 Rectangular sealing ring
23 Back cover
24 Hexagon bolts
25 Rear cover positioning pin
26 Sign rivets

Ordering Code

GFF | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP cm³/rev [in³/rev]
80	81 [4.9]
100	100 [6.1]
130	128 [7.8]
140	141 [8.6]
170	169 [10.3]
195	197 [12.0]
240	238 [14.5]
280	280 [17.1]
360	364 [22.2]
405	405 [24.7]
475	477 [29.1]

CODE	FLANGE
A9	4- Ø13.5 SAE Ø106.4 Ø82.5x2.7 

CODE	SHAFT
S4	Ø32 parallel key Key10x8x46 

CODE	PORTS
G1	G1/2

CODE	ROTATION
A	Standard
R	Opposite

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.

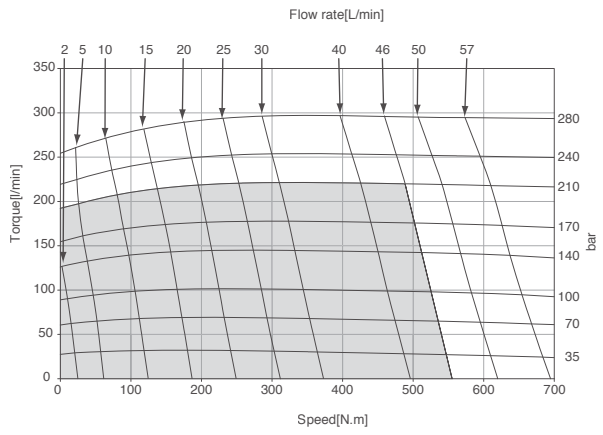
GFF Specifications

Type		GFF80	GFF100	GFF130	GFF140	GFF170	GFF195
Displacement cm³/rev [in³/rev]		81[4.9]	128[7.8]	128[7.8]	141[8.6]	169[10.3]	197[12.0]
Max.Speed RPM	Int.	693	583	583	530	444	381
Max.Oil Flow	Cont.	46[12]	57[15]	57[15]	57[15]	57[15]	57[15]
lpm [GPM]	Int.	57[15]	76[20]	76[20]	76[20]	76[20]	76[20]
Max.Differential Pressure	Cont.	207[3000]	138[2000]	138[2000]	138[2000]	138[2000]	138[2000]
bar [PSI] Int.	Int.	276[4000]	207[3000]	207[3000]	207[3000]	207[3000]	207[3000]
Max.Supply Pressure bar [PSI]		300[4350]	300[4350]	300[4350]	300[4350]	300[4350]	300[4350]
Max.Torque	Cont.	22,0[1948]	22,9[2031]	22,9[2031]	25,4[2248]	31,7[2808]	36,4[3222]
daNm [lb-in]	Int.	29,6[2621]	35,6[3148]	35,6[3148]	39,3[3477]	48,9[4324]	56,2[4971]
Max.Performance kW [HP]		21.5[28.8]	21.7[29.1]	21.7[29.1]	21.8[29.2]	22.7[30.5]	22.4[30.1]
Min.Staring Torque	Cont.	15,8[1401]	18,0[1596]	18,0[1596]	19,6[1739]	24,3[2152]	30,2[2671]
daNm[lb-in]	Int.	20,5[1811]	27,8[2460]	27,8[2460]	30,8[2728]	38,5[3404]	46,8[4142]
Weight,kg [lb]	GFF	13.6[29.9]	13.8[30.4]	13.8[30.4]	13.9[30.6]	14.2[31.2]	14.5[31.9]

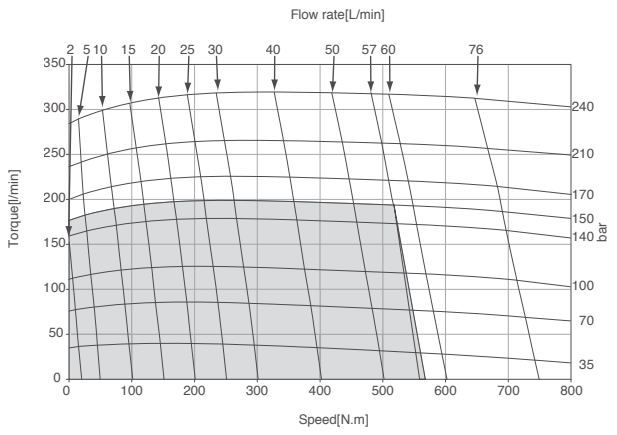
Type		GFF240	GFF280	GFF360	GFF365	GFF405	GFF475
Displacement cm³/rev [in³/rev]		238[14.5]	280[17.1]	364[22.2]	364[22.2]	405[24.7]	477[29.1]
Max.Speed RPM	Int.	394	334	258	258	231	195
Max.Oil Flow	Cont.	76[20]	76[20]	76[20]	76[20]	76[20]	76[20]
lpm [GPM]	Int.	95[20]	95[25]	95[25]	95[25]	95[25]	95[25]
Max.Differential Pressure	Cont.	138[2000]	138[2000]	130[1880]	97[1400]	128[1850]	113[1645]
bar [PSI] Int.	Int.	207[3000]	207[3000]	190[2750]	152[2200]	172[2750]	138[2000]
Max.Supply Pressure bar [PSI]		300[4350]	300[4350]	300[4350]	300[4350]	300[4350]	300[4350]
Max.Torque	Cont.	42,7[3782]	50,9[4502]	59,4[5257]	43,7[3871]	65,5[5800]	68,1[6027]
daNm [lb-in]	Int.	67,0[5928]	79,4[7029]	88,0[7788]	74,0[6456]	91,6[8106]	85,1[7528]
Max.Performance kW [HP]		27.7[37.1]	27.8[37.3]	20.0[26.8]	20.0[26.8]	22.1[29.7]	17.4[23.3]
Min.Staring Torque	Cont.	36,6[3242]	43,8[3876]	51,7[4575]	39,8[3521]	57,5[5091]	60,3[5334]
daNm[lb-in]	Int.	57,2[5058]	67,2[5946]	77,9[6898]	65,0[5749]	78,9[6978]	74,0[6548]
Weight,kg [lb]	GFF	14.9[32.8]	15.2[33.4]	16.0[35.2]	16.0[35.2]	16.5[35.6]	17.2[37.8]

Function Diagrams

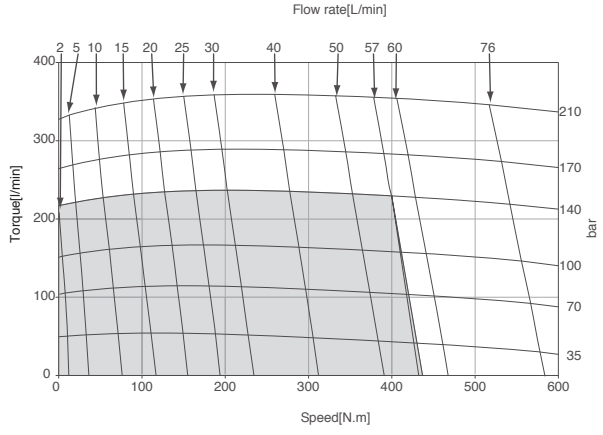
GFF80



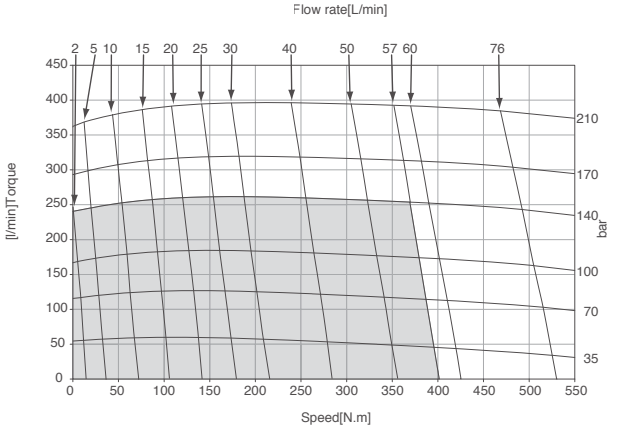
GFF100



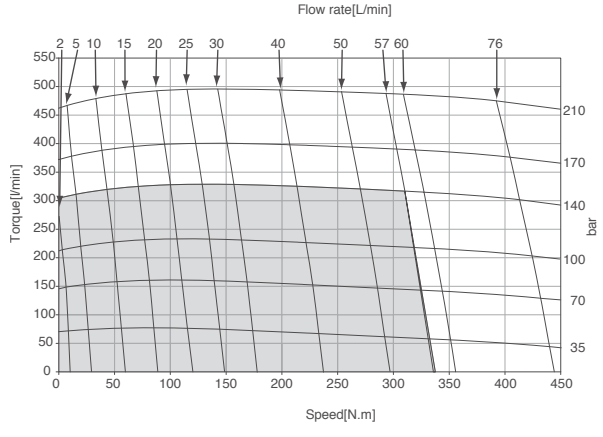
GFF130



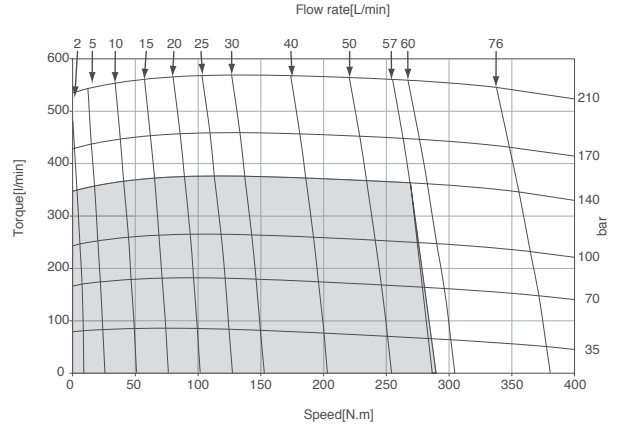
GFF140



GFF170



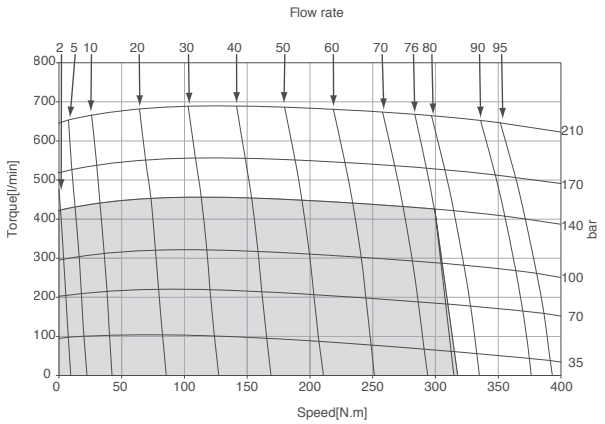
GFF195



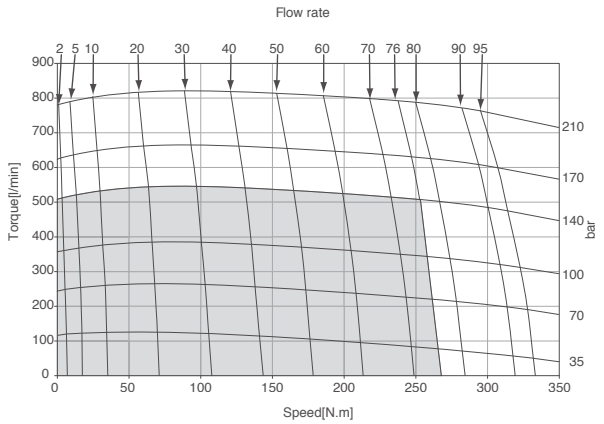
The function diagrams data is for average performance of randomly selected motors at backpressure. 5—10 bar [72.5—145 PSI] and oil with viscosity of 32mm²/s [150 SUS] at 50˚C [122˚F].

Function Diagrams

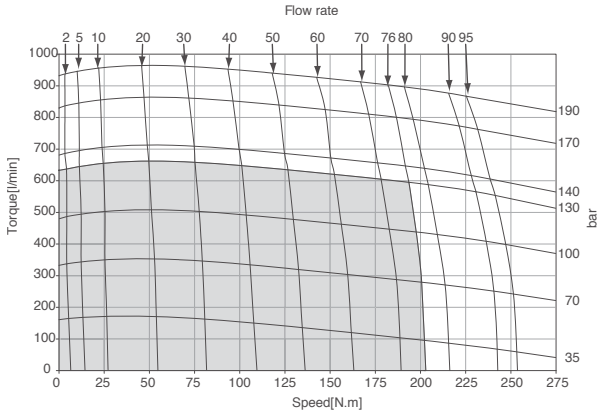
GFF240



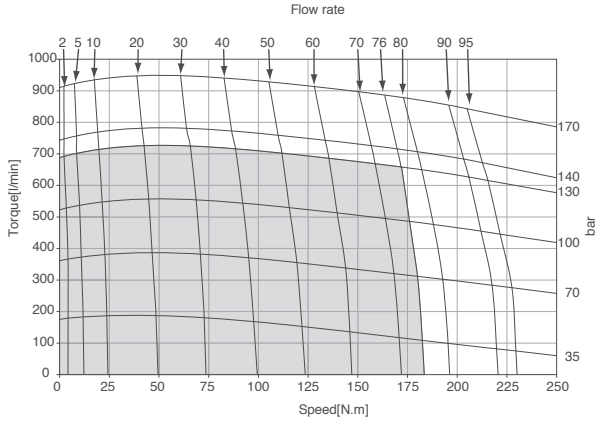
GFF280



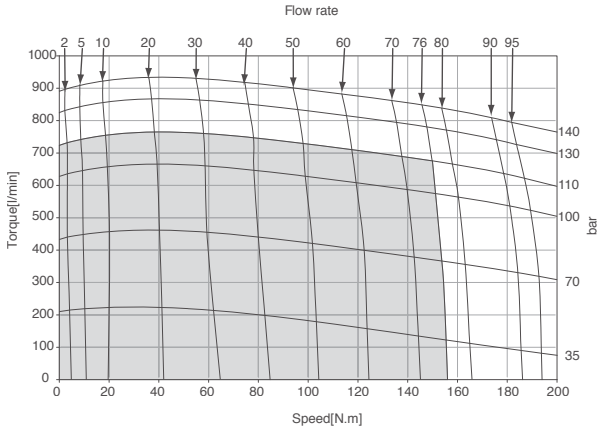
GFF360



GFF405

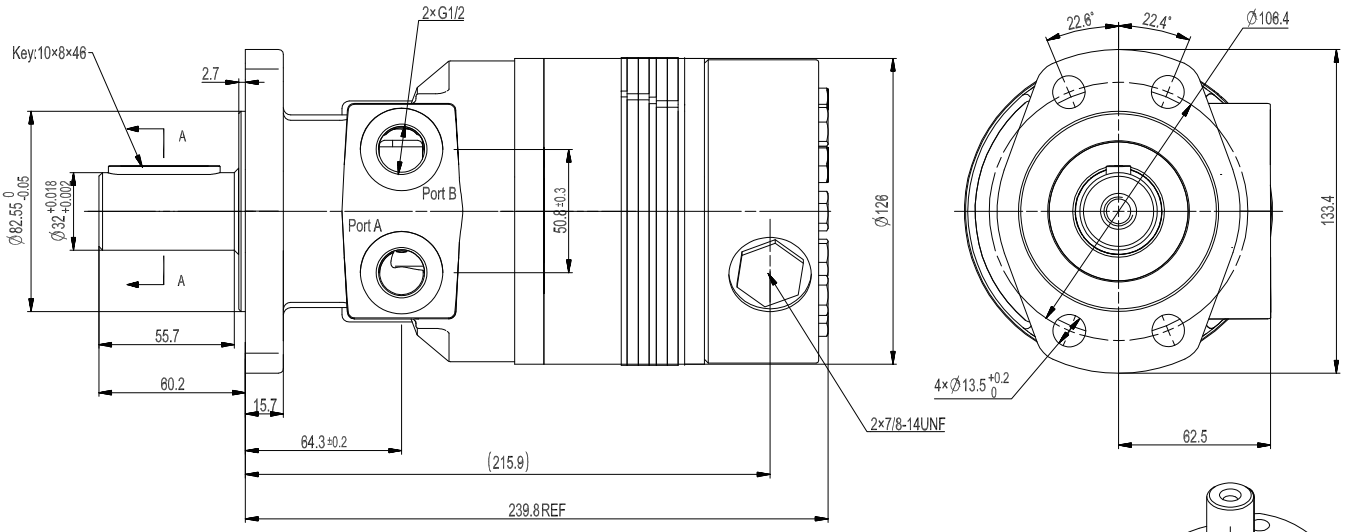


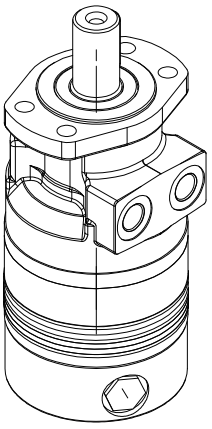
GFF475



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 32mm²/s [150 SUS] at 50°C [122°F].

GFF Dimensions and Mountings



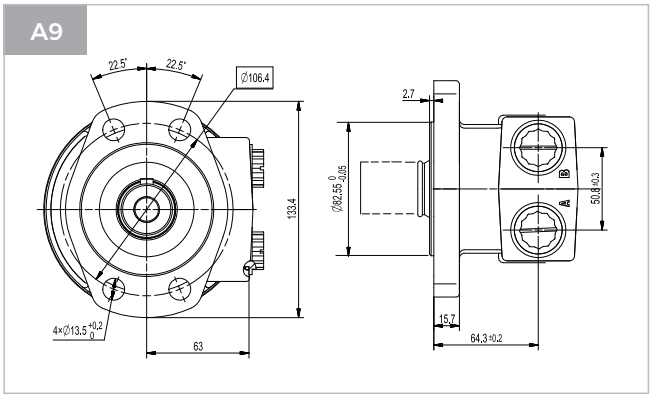


Model	L(mm)
GFF80	191
GFF100	191
GFF130	194
GFF140	196
GFF170	199
GFF195	202
GFF240	207
GFF280	211
GFF360	221
GFF405	225
GFF475	234

Mounting	G1 (depth)
P(A, B)	G1/2

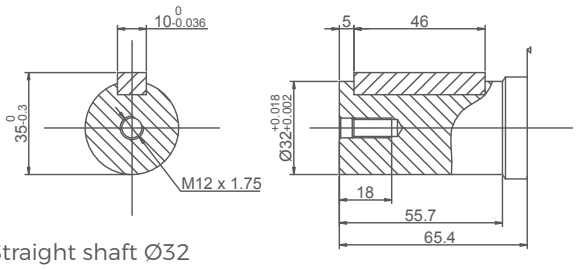
GFF Flange Covers Dimensions

A9



GFF Shafts Dimensions

S4



Straight shaft Ø32

Parallel key 10 x 8 x 46

GFK Series Hydraulic Motors

Options

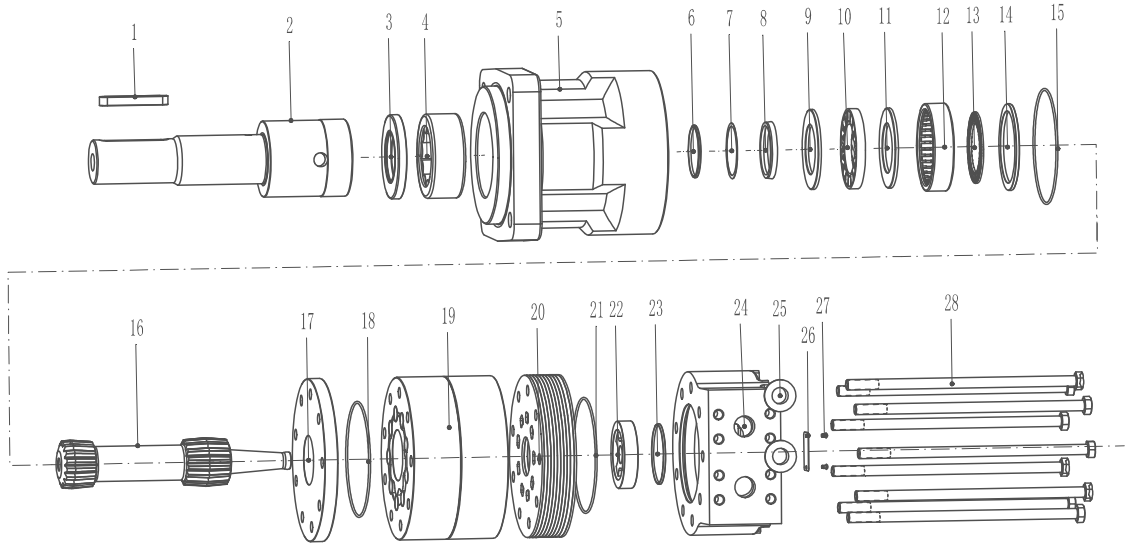
- Flange connection
- Motor with needle roller bearing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Sweepers
- Snow Removal
- Combine Harvesters
- Winches
- Sprayers
- Skid Steer Attachments
- Conveyers

General

Max.Displacement	cm³/rev [in³/rev]	1000[61.0]
Max.Speed	RPM	523
Max.Torque	daNm [lb-in]	cont.:241.3[21360] int.:266[23540]
Max.Output	kW [HP]	48.7[65.3]
Max.Pressure Drop	bar [PSI]	cont.:241[3500] int.:310[4500]
Max.Oil Flow	lpm [GPM]	227[60.0]
Pressure fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	˚C [˚F]	-40—140[-104—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 Needle roller bearing
3 Plug
4 Housing
5 Shaft seal support
6 Shaft seal gasket
7 Shaft seal
8 Plane bearing retaining ring
9 Plane needle roller bearings
10 Flat key
11 Output shaft
12 Roller bearings
13 Outer ring of planar thrust needle roller 14bearing
14 transmission shaft
15 Name plate rivet
16 Name plate
17 Spacer disk
18 Back cover
19 Distribution plate sealing ring
20 Distribution plate
21 Spacer sleeve
22 Welding plate assembly
23 Sealing ring
24 Rectangular sealing NBR
25 Spacer
26 Rectangular sealing

Ordering Code

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

CODE	DISP cm³/rev [in³/rev]
250	250 [15.3]
315	315 [19.2]
400	400 [24.4]
500	500 [30.5]
630	630 [38.4]
800	800 [48.8]
1000	1000 [61.0]

CODE	FLANGE
W1	4-Hole SAE pilot Ø125-11.6

CODE	SHAFT
SK	Ø40 parallel key M12 x 1.75 - 6H

CODE	PORTS
D5	2 X Ø19 8×3/8-16UNC(20)

CODE	ROTATION
A	Standard
R	Opposite

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.

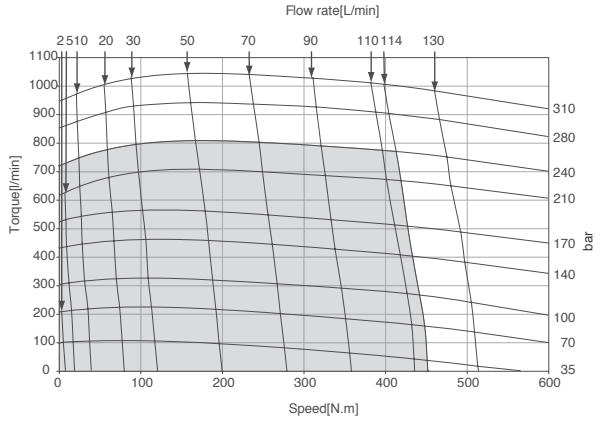
GFK Specifications

Type		GFK250	GFK315	GFK400	GFK500
Displacement cm³/rev [in³/rev]		250[15.3]	315[19.2]	400[24.4]	500[30.5]
Max.Speed RPM	Int.	523	413	373	298
Max.Oil Flow	Cont.	114[30]	114[30]	114[30]	114[30]
lpm [GPM]	Int.	133[35]	133[35]	151[40]	151[40]
Max.Differential Pressure	Cont.	241[3500]	241[3500]	207[3000]	207[3000]
bar [PSI] Int.	Int.	310[4500]	310[4500]	276[4000]	276[4000]
Max.Supply Pressure bar [PSI]		328[4750]	328[4750]	328[4750]	328[4750]
Max.Torque	Cont.	81.4[7204]	102.9[9105]	115.3[10201]	143.9[12736]
daNm [lb-in]	Int.	104.3[9234]	131.4[11625]	152.4[13484]	191.4[16940]
Max.Performance kW [HP]		48.5[65.0]	47.4[63.5]	48.7[65.3]	48.1[64.5]
Min.Staring Torque	Cont.	68.9[6100]	94.9[8400]	104.9[9280]	132.2[11700]
daNm[lb-in]	Int.	87.9[7780]	121.7[10770]	141[12480]	178.3[15780]
Weight,kg [lb]	GFK	32.0[70.6]	32.7[72.0]	33.5[73.8]	34.5[76.0]

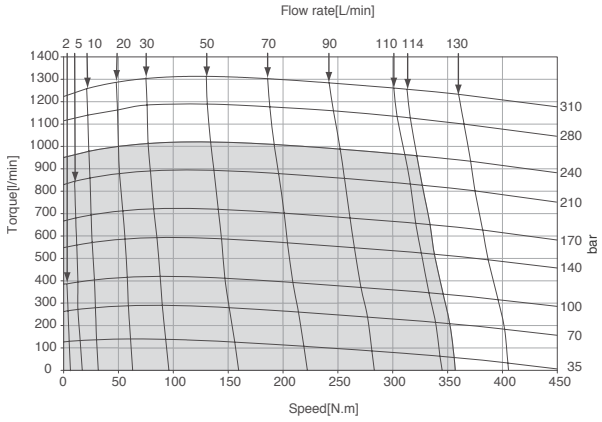
Type		GFK630	GFK800	GFK1000
Displacement cm³/rev [in³/rev]		630[38.4]	800[48.8]	1000[61.0]
Max.Speed RPM	Int.	237	276	218
Max.Oil Flow	Cont.	114[30]	151[40]	151[40]
lpm [GPM]	Int.	151[40]	227[60]	227[60]
Max.Differential Pressure	Cont.	207[3000]	190[2750]	172[2500]
bar [PSI] Int.	Int.	224[3250]	207[3000]	190[2750]
Max.Supply Pressure bar [PSI]		328[4750]	328[4750]	328[4750]
Max.Torque	Cont.	161.7[14313]	191.6[16960]	241.3[21360]
daNm [lb-in]	Int.	171.6[15187]	230[20360]	266[23540]
Max.Performance kW [HP]		33.7[45.2]	44.4[59.5]	35.4[47.5]
Min.Staring Torque	Cont.	149.7[13250]	174.5[15440]	198.1[17535]
daNm[lb-in]	Int.	162.1[14350]	190.2[16834]	218[19290]
Weight,kg [lb]	GFK	35.7[78.8]	37.2[82.1]	39.1[86.3]

Function Diagrams

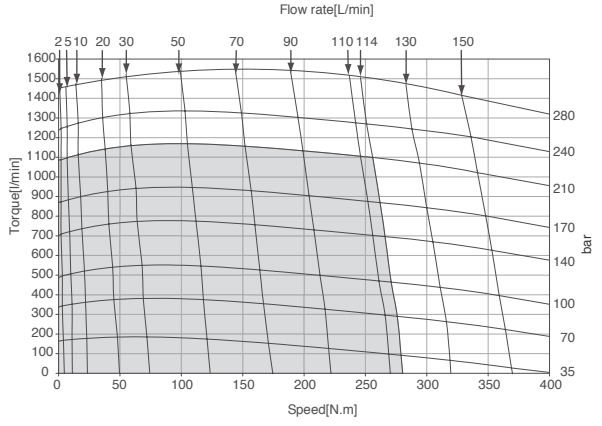
GFK250



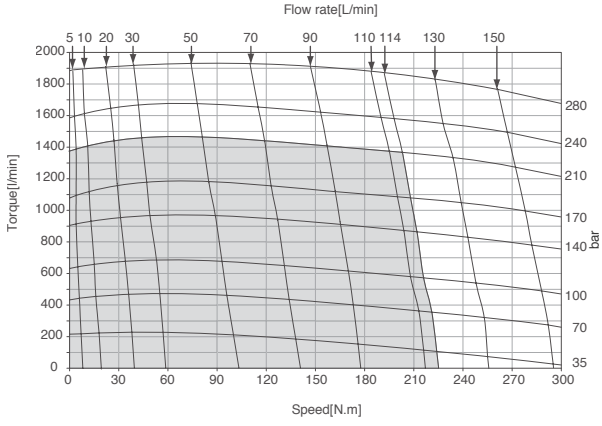
GFK315



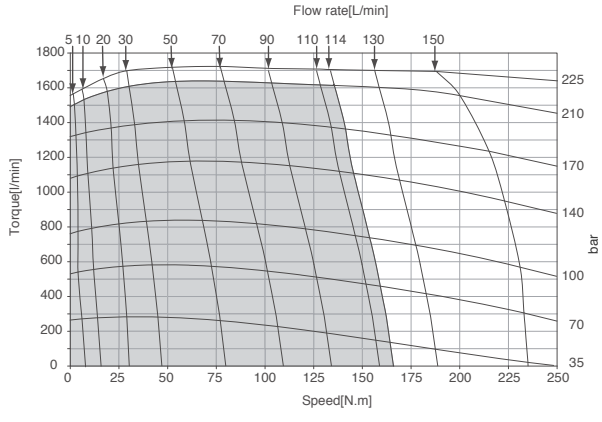
GFK400



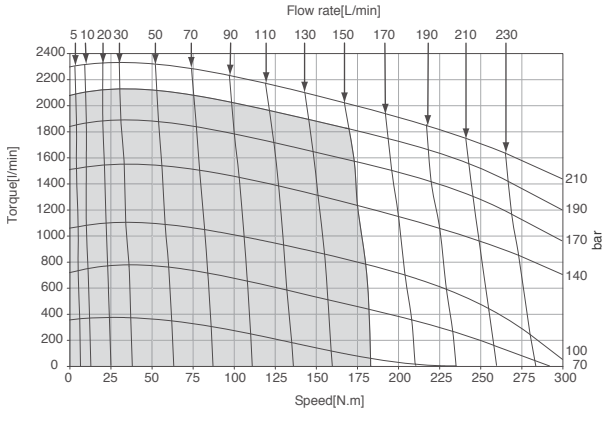
GFD500



GFD630



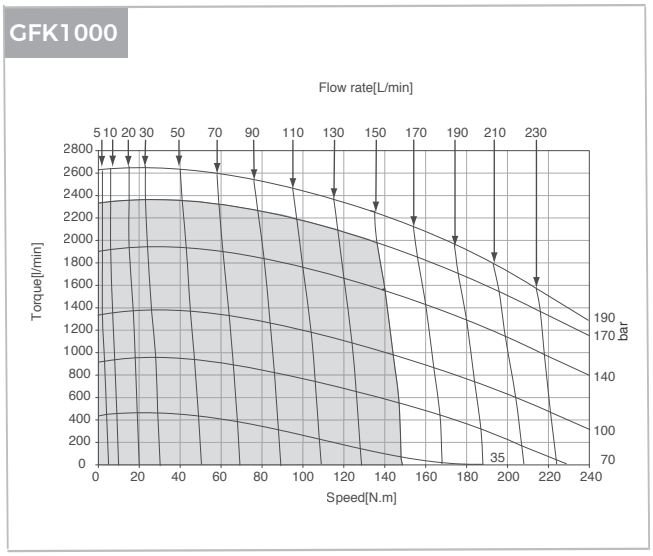
GFD800



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].

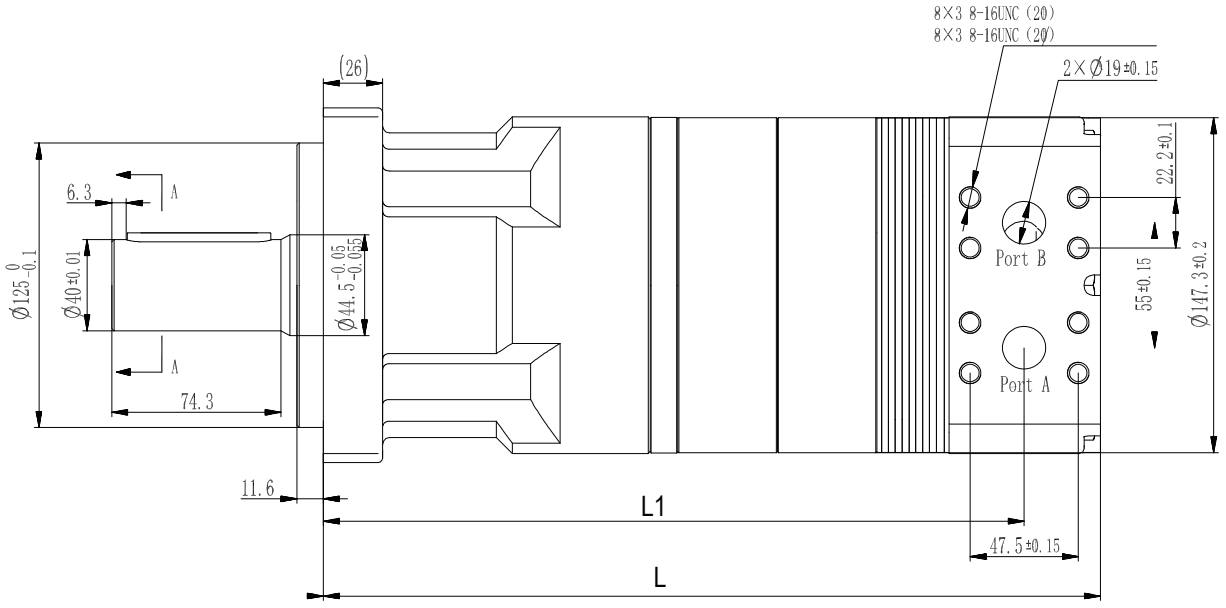
Function Diagrams

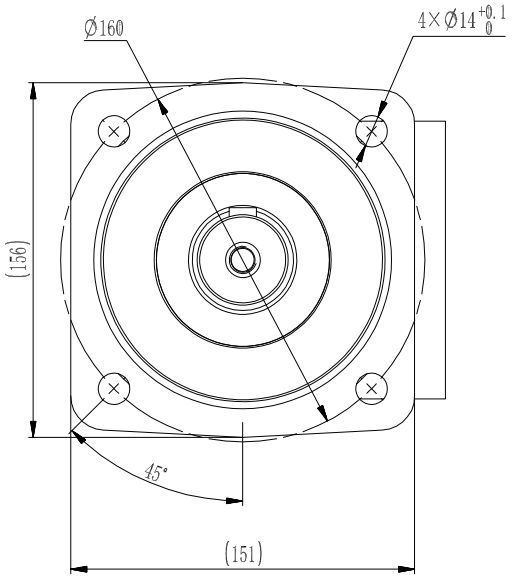
GFK1000



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].

GFK Dimensions and Mountings



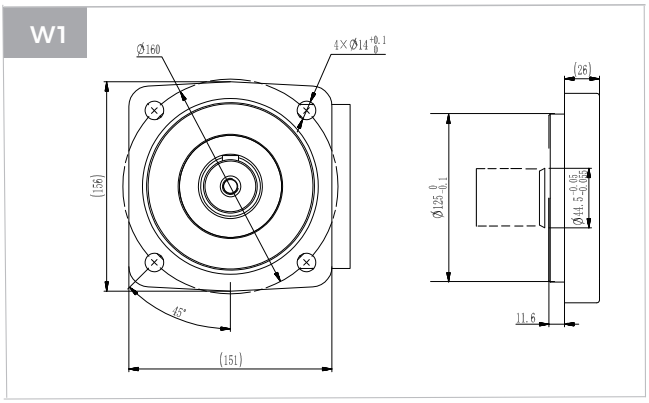


Model	L1(mm)	L2(mm)
GFK 250	277	243.5
GFK 315	282	248.5
GFK 400	290	256.5
GFK 500	297	263.5
GFK 630	310	276.5
GFK 800	323	289.5
GFK 1000	340	306.5

Mounting	D5 (depth)
P(A, B)	2 X Ø19 8 X 3/8-16UNC

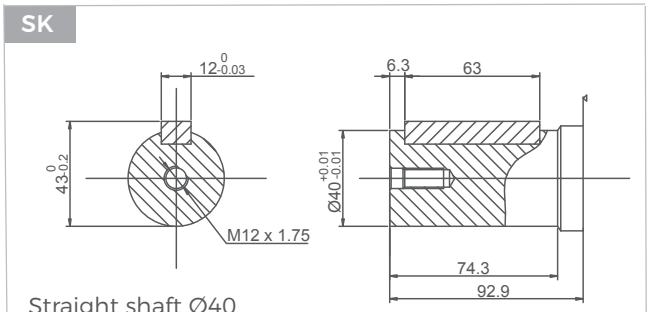
GFK Flange Covers Dimensions

W1



GFK Shafts Dimensions

SK



Straight shaft Ø40

Parallel key 12 x 8 x 63

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

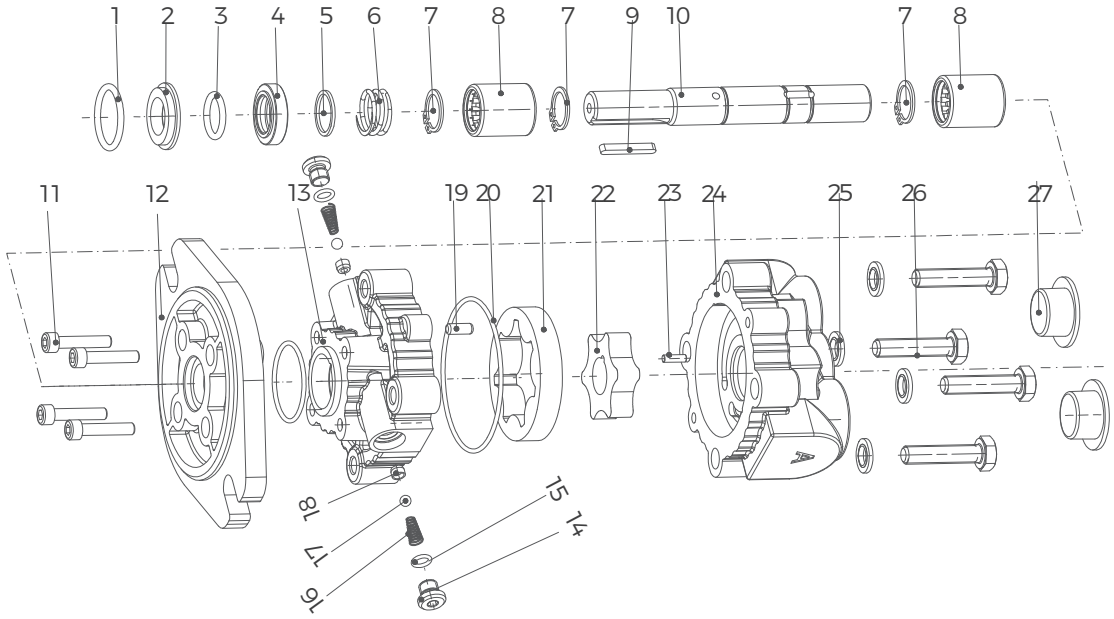
Applications

- 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[-104—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.

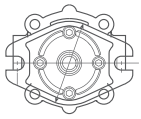
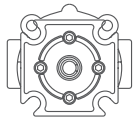
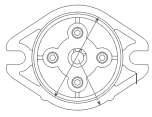


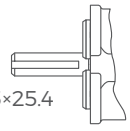
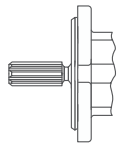
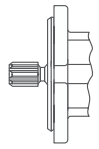
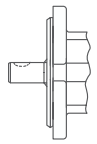
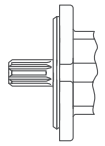
1 O-ring
2 Mechanical static ring
3 O-ring
4 Mechanical dynamic ring
5 Washer
6 Compression spring
7 Non-standard clamp
8 Needle roller bearing
9 Parallel Key
10 Transmission shaft
11 Screw
12 Front cover
13 Intermediate
14 Plug
15 O-ring
16 Spring
17 Steel ball
18 Valve base
19 Positioning pins
20 O-ring
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 cm³/rev [in³/rev]
3.6	3.57 [0.218]
6.1	6.094 [0.372]
7.4	7.374 [0.450]
9.5	9.50 [0.580]
11.5	11.471 [0.700]

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

CODE	SHAFT
SQ	9/16 Dia. parallel key 3.175×3.175×25.4 
RD	9/16 Dia. 8-DP 16/32 long shaft 
RF	5/8 Dia. spline shafe 9-16/32 
SR	7/16 Dia. woodruff key 3/32×1/2 
RG	9/16 Dia. spline shaft 8-DP 16/32 

CODE	ROTATION
A	Standard
R	Opposite

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

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

CODE	PORTS
A	Rear
B	Side

Specifications

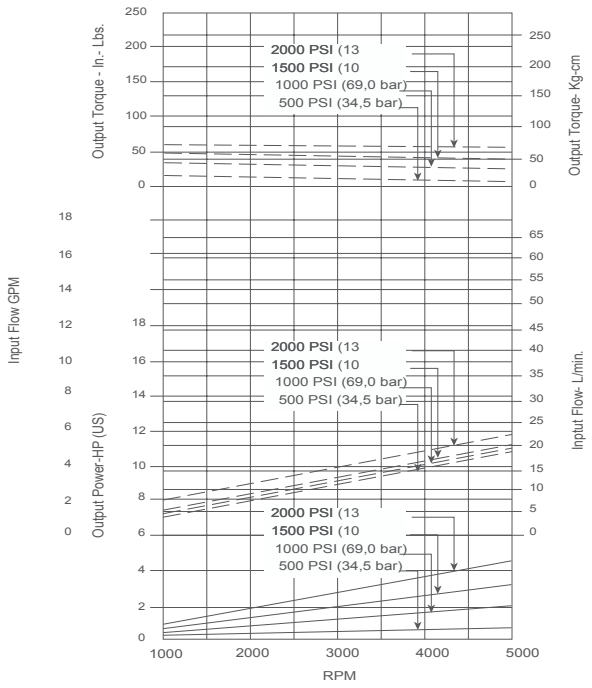
Type	GGM3.6	GGM6.1	GGM7.4
Displacement in³/rev [cm³/rev]	0.218 (3.57)	0.372 (6.094)	0.450 (7.374)
Max. Rated RPM	5000	5000	5000
Rated Flow Per 1000 RPM (Nominal)	0.95GPM(3.6 L/min)	1.61GPM(6.1 L/min)	1.95GPM(7.4 L/min)
Max. Continuous Pressure	2000PSI(138.0 bar)	2000PSI(138.0 bar)	2000PSI (138.0 bar)
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 lbs (1.25 kg)	3.0 lbs (1.36 kg)	3.1 lbs (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]	0.580 (9.50)	0.700 (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 lbs (1.50 kg)	3.5 lbs (1.59 kg)
Shaft Side Load**	70 lbs (31.7 kg)	30 lbs (13.5 kg)

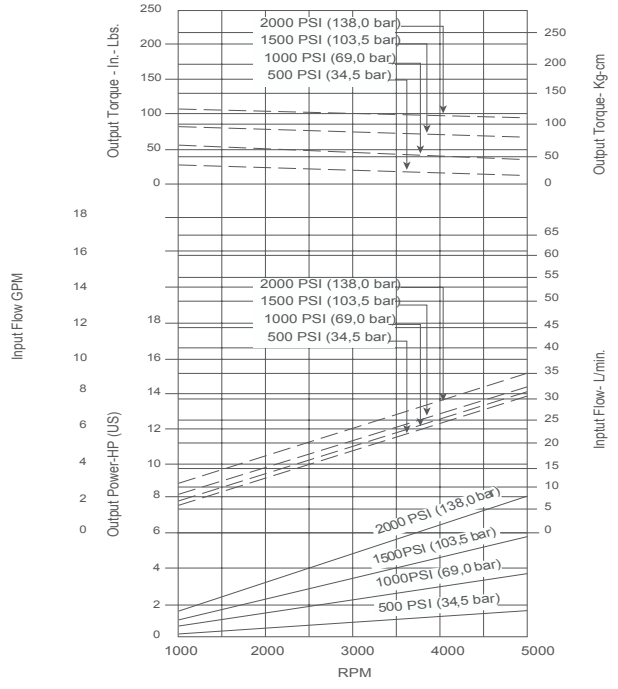
* THEORETICAL
** SIDE LOAD: Maximum Permissible Shaft Side Load at 2500 RPM and 1000 PSI (69.0 bar)
(B-10 Bearing Life of 1000 Hrs.)
OIL TEMPERATURE: Maximum recommended oil temperature 180° F (82.2° C)
OIL VISCOSITY: Recommended viscosity 150 SUS (3.65 engler).
(32 centistokes) Minimum recommended viscosity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

Function Diagrams

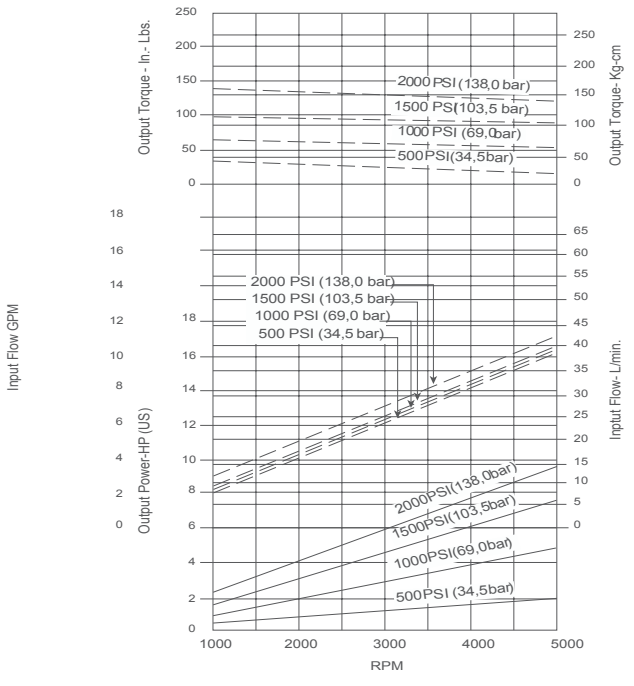
GGM3.6



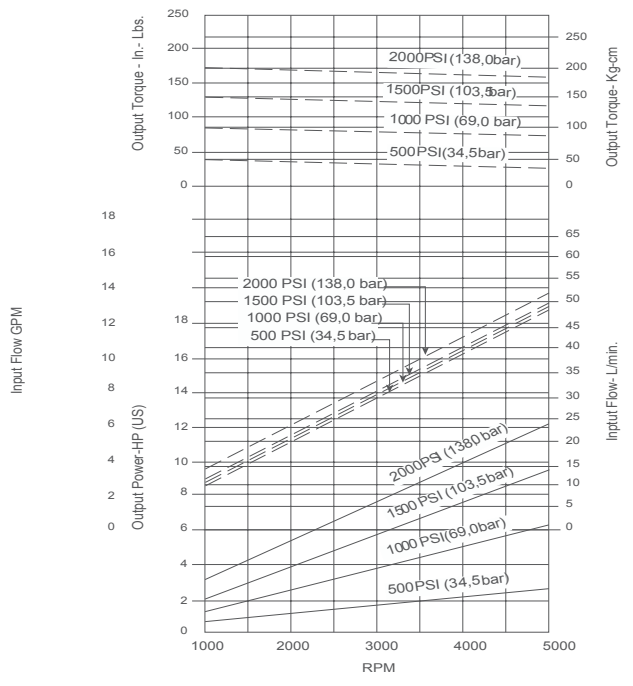
GGM6.1



GGM7.4

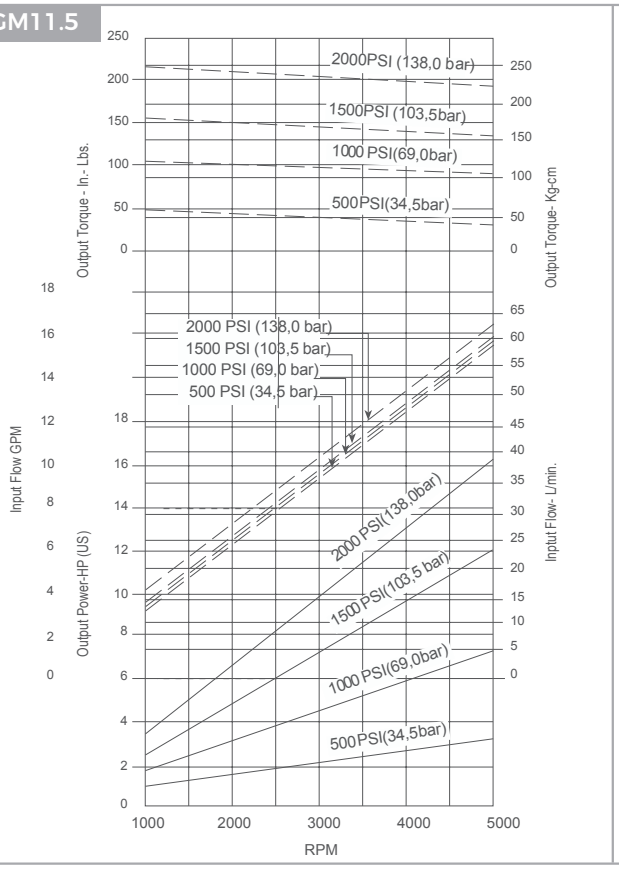


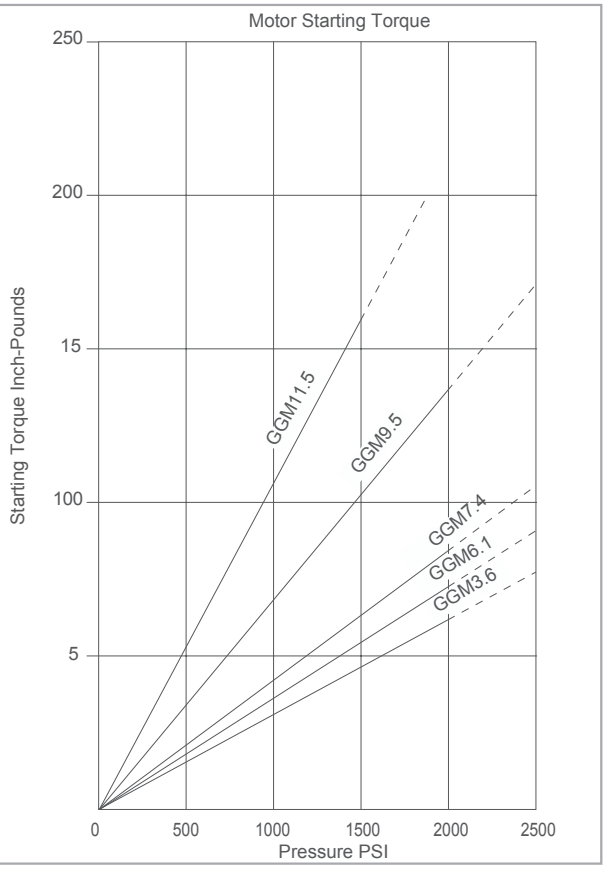
GGM9.5



Function Diagrams

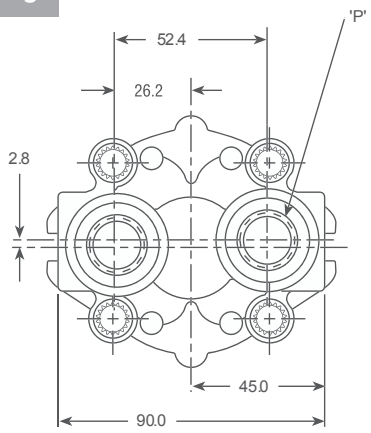
GGM11.5



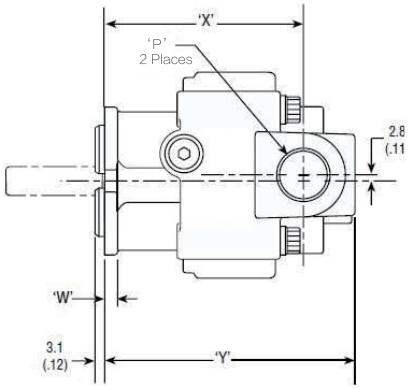


GGM Dimensions and Mountings

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)

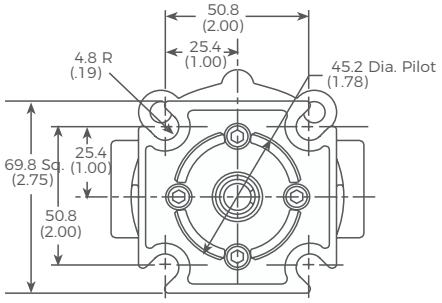
Flange	"W"
2 holes"SAE A-A"	6.3
4 holes	6.3
2 holes "SAE A"	9.5

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

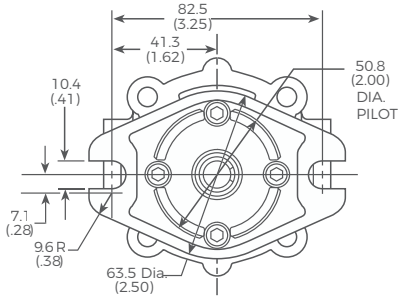
HA

4-Bolt



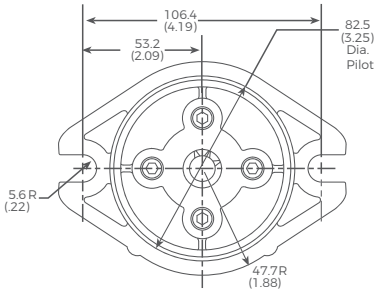
HB

SAE 'AA' 2-Bolt



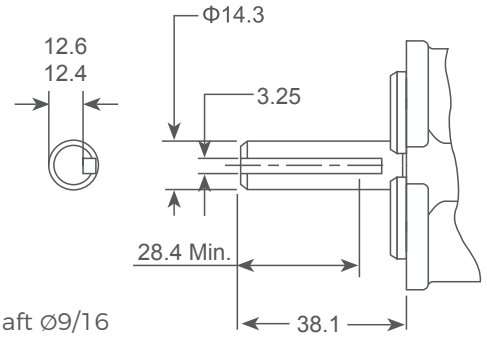
HC

SAE 'A' 2-Bolt



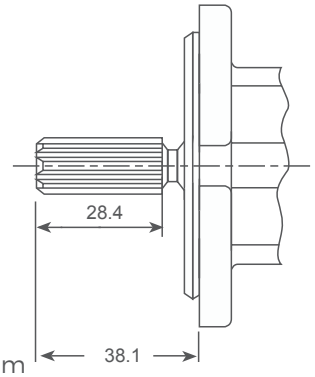
GGM Shafts Dimensions

SQ



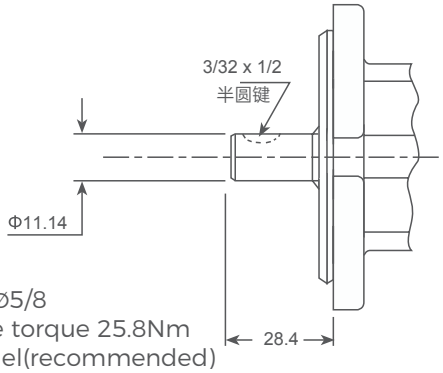
Flat key shaft Ø9/16
Max. allowable torque 52.9Nm

RD



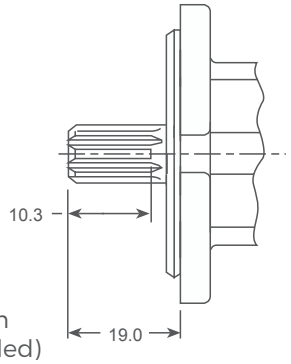
Spline shaft 8 teeth Ø9/16
Flat tooth side fit-Class 2
Max. allowable torque 52.9Nm

SR



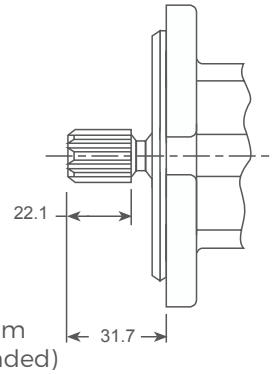
Flat key shaft Ø5/8
Max. allowable torque 25.8Nm
Standard model(recommended)

RG



Spline shaft g teeth Ø9/16
Flat tooth side fit-Class 2
Max. allowable torque 52.9Nm
Standard model (recommended)

RF



Spline shaft 9 teeth Ø5/8
Flat tooth side fit-Class 1
Max. allowable torque 70.5Nm
Standard model (recommended)

GKM Series Hydraulic Motors

Options

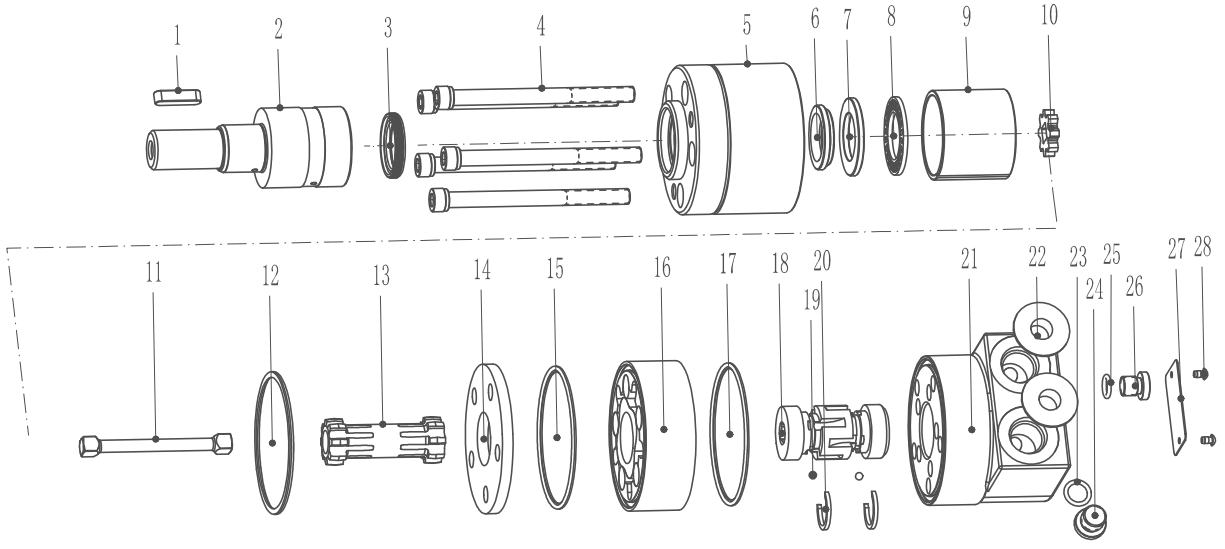
- Flange connection
- Motor with needle roller bearing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Agricultural augers, harvesters, seeders
- Car wash tire spray wands and brushes
- Marine bow thrusters
- Food processing
- Snow blower chute rotator
- Conveyors

General

Max.Displacement	cm^3/rev [in^3/rev]	50 [3.0]
Max.Speed	RPM	1992
Max.Torque	daNm [lb-in]	cont.:84[743] int.:62[549]
Max.Output	kW [HP]	86[765]
Max.Pressure Drop	bar [PSI]	cont.:165[2400] int.:140[2030]
Max.Oil Flow	lpm [GPM]	25[6.5]
Pressure fluid		Mineral based-HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	˚C [˚F]	-34—82[-93—180]
Optimal Viscosity range	mm^2/s [SUS]	Premium quality, anti-wear type hydraulic oil with a viscosity of not less than 13 cSt [70 SUS] at operating temperature.
Filtration		Per ISO Cleanliness Code 4406, level 20/18/13



1 Flat key
2 Output shaft
3 Anti-dust cover
4 Screw
5 Front housing
6 Skeleton oil seal
7 Bearing retaining ring
8 Plane needle roller bearings
9 DU bearing
10 Spline spacers
11 Valve core connecting rod
12 Special-shaped sealing ring
13 Transmission shaft
14 Spacer
15 Special-shaped sealing ring
16 Rotor and stator
17 Special-shaped sealing ring
18 Flow control valve core
19 Steel ball
20 Valve core retaining spring
21 rear housing
22 Oil port plug
23 O-Ring
24 3/8 - 24UNF plug
25 O-Ring
26 5/16 - 24 UNF plug
27 Nameplate
28 Rivet

Ordering Code

GKM | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP cm³/rev [in³/rev]
8	8.2 [0.50]
12.5	12.9 [0.79]
20	19.8 [1.21]
32	31.6 [1.93]
50	50 [3.0]

CODE	FLANGE
B5	3-M6 x 1 - 6H Circle, pilot Ø31.5x45 
B4	3-1/4-28 UNF - 2B Circle, pilot Ø31.5x45 
AD	2-Ø9 Rhomb, pilot Ø63x2 

CODE	SHAFT
SG	Ø16 parallel key 5 x 5 x 6 
TF	Ø15.85 parallel key 4.8 x 4.8 x 19.05 
S4	Ø16.51 splined tooth B17x14 DIN 5482B 

CODE	PORTS
GA	G3/8, G1/8
UB	rear port 9/16-18UNF, 3/8-24UNF
GB	G3/8, G1/8
U9	rear port 9/16-18UNF, 3/8-24UNF

CODE	ROTATION
A	Standard
R	Opposite

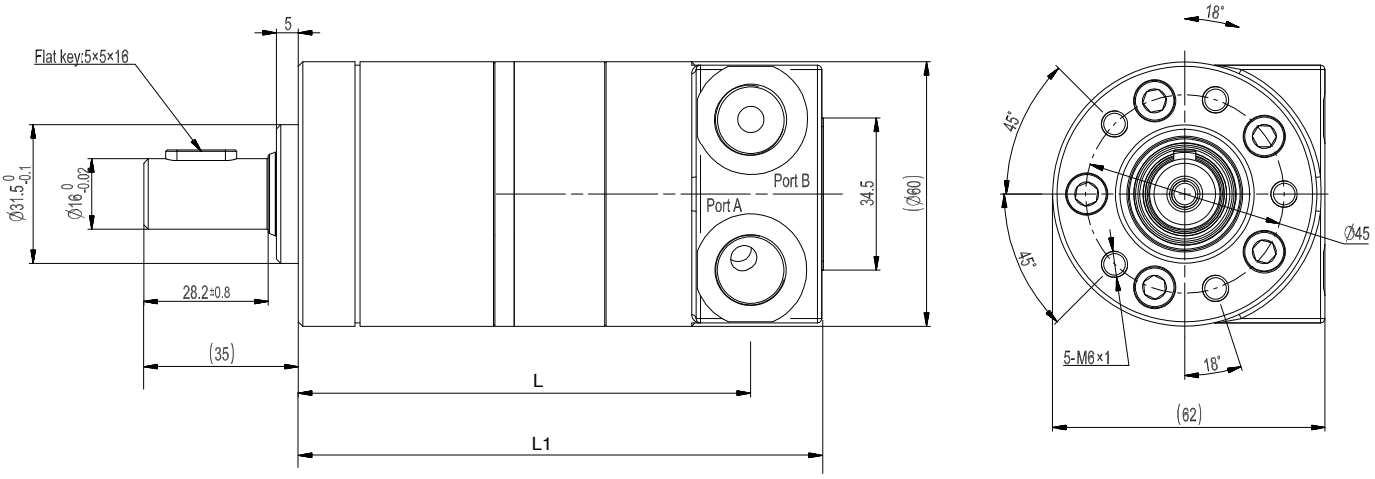
CODE	PAINT
A	No paint
B	Blue
C	Black
S	Silver grey

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

GKM Specifications

Type		GKM8	GKM12.5	GKM20	GKM32	GKM50
Displacement cm³/rev [in³/rev]		8.2[0.50]	12.9[0.79]	19.8[1.21]	31.6[1.93]	50.0[3.00]
Max.Speed RPM	Int.	1992	1575	1043	650	393
Max.Oil Flow	Cont.	17[4.5]	21[5.5]	21[5.5]	21[5.5]	21[5.5]
lpm [GPM]	Int.	21[5.5]	25[6.5]	25[6.5]	25[6.5]	25[6.5]
Max.Differential Pressure	Cont.	140[2030]	140[2030]	140[2030]	121[1750]	97[1400]
bar [PSI] Int.	Int.	165[2400]	165[2400]	165[2400]	150[2175]	140[2030]
Max.Supply Pressure bar [PSI]		220[3190]	220[3190]	220[3190]	190[2756]	150[2175]
Max.Torque	Cont.	16[141]	25[225]	38[333]	50[446]	62[549]
daNm [lb-in]	Int.	19[164]	30[263]	46[405]	62[546]	84[743]
Max.Performance kW [HP]		22[193]	36[321]	48[425]	83[733]	86[765]
Weight,kg [lb]		2[4.4]	2.1[4.6]	2.2[4.8]	2.3[5.0]	2.4[5.4]

GKM Dimensions and Mountings



Side

Model	L(mm)	L1(mm)
8	103.9	87.4
12.5	106.9	90.4
20	112.5	94.7
32	118.9	102.4
50	130.0	113.9

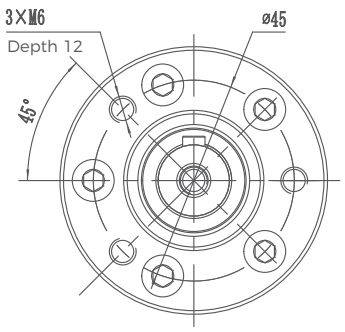
End port

Model	L(mm)
8	103.9
12.5	106.9
20	112.5
32	118.9
50	130.0
160	132.3

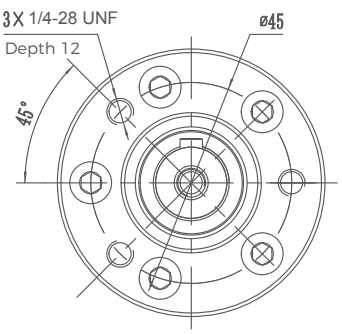
Mounting	GA (depth)	U8 (depth)	GB (depth)	U9 (depth)
P(A, B)	G3/8(12)	9/16-18UNF(12)	Rear oil port G3/8(12)	Rear oil port 9/16-18UNF(12)
T	G1/8(8)	3/8-24UNF(8)	G1/8(8)	3/8-24UNF(8)

GKM Flange Covers Dimensions

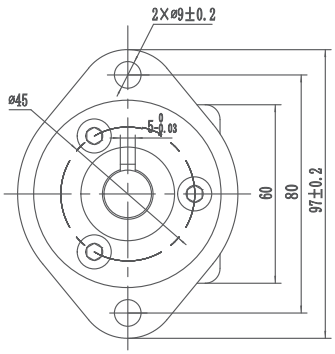
B4



B5

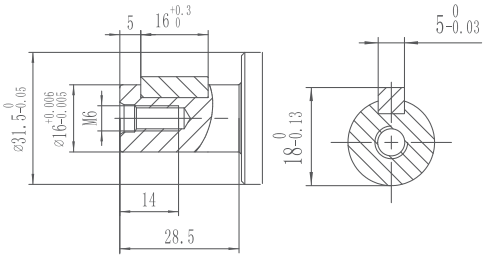


AD



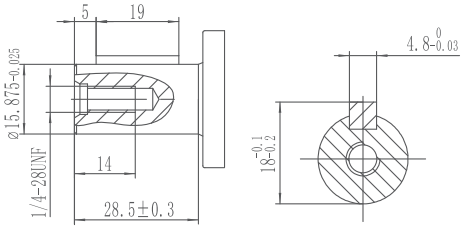
GKM Shafts Dimensions

SG



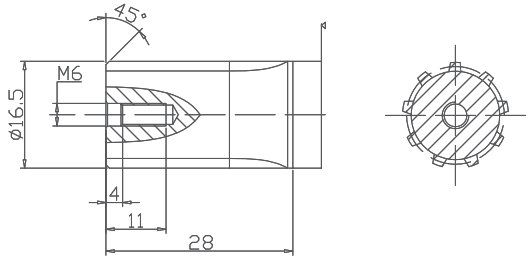
Straight shaft Ø16
Parallel key 5 x 5 x 16

TF



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

S4



Splined shaft Ø16.5
B7 x 14 DIN5482

GKA Series Hydraulic Motors

Options

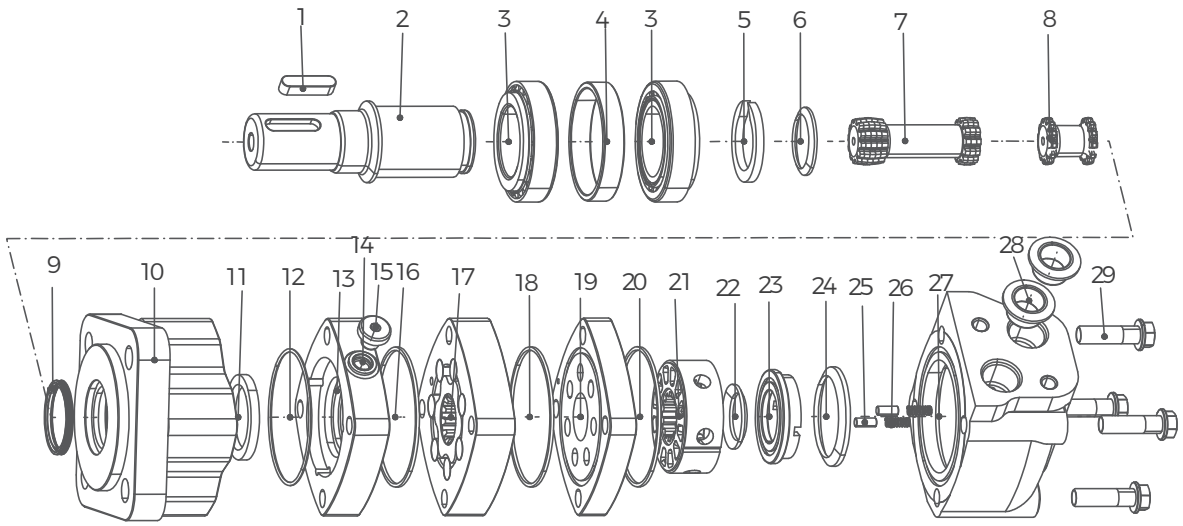
- Flange and circle
- Bearingless motor
- Motor with brake
- Tacho connection
- Speed sensing
- Side and rear ports
- Strainght, splined and tapered shafts
- Shaft seal for high and low pressure
- Metric and BSPP ports
- Other special features

Applications

- Conveyors
- Paver
- Metal working machines
- Special vechicles
- Agricultural machines
- Food industries
- Mining machines

General

Max. Displacement	cm^3/rev [in^3/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 [-104-284]
Optimal Viscosity range	mm^2/s [SUS]	20-75 [98-347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 microns)

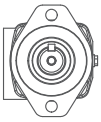
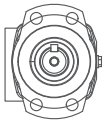


1 Parallel Key
2 Output shaft
3 Tapered roller bearing
4 Bearing retainer ring
5 Washers
6 Special shape ring
7 Transimission shaft
8 Coupling shaft
9 Anti-dust ring
10 Front Cover
11 Shaft seal
12 O-ring
13 Connecting body
14 Sealing gasket
15 Plug
16 O-ring
17 Rotor and stator
18 Special shape ring
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 cm³/rev in³/rev
34	34 [2.1]
41	41 [2.5]
66	66 [4.0]
80	80 [4.9]
90	90 [5.5]
100	100 [6.2]
130	130 [8.0]
160	160 [9.6]
195	195 [11.9]
245	245 [14.9]
305	305[18.7]
495	395[24.0]
490	490[29.8]

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

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 1:8 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 
RQ	Ø30 Splined 6-30×25×8 

CODE	ROTATION
A	Standard
R	Opposite

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	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

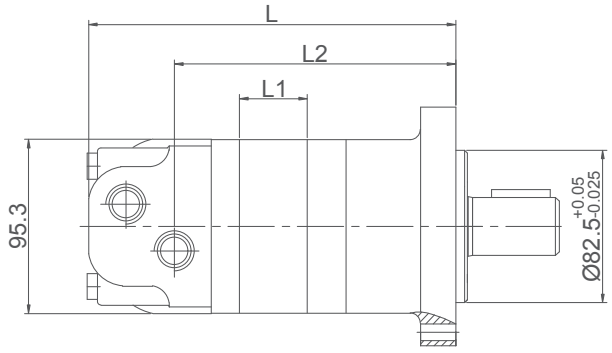
Specifications

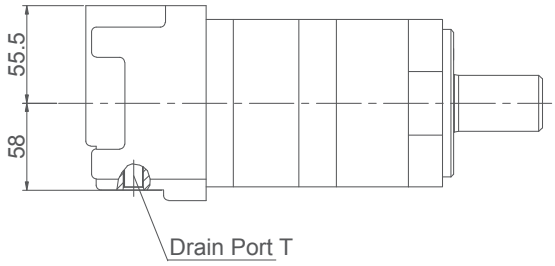
Type		GKA34	GKA41	GKA66	GKA80	GKA90
Displ. cm³/rev [in³/rev]		34[2.1]	41[2.5]	66[4.0]	80[4.9]	90[5.5]
Max. Speed	Cont.	1215	1104	1075	908	836
RPM	Int.*	1215	1216	1214	908	1042
Flow	Cont.	42[11]	45[12]	72[19]	75[20]	75[20]
lpm [GPM]	Int.*	42[11]	53[14]	87[23]	75[20]	95[25]
Torque	Cont.	9,8[864]	11,2[988]	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]

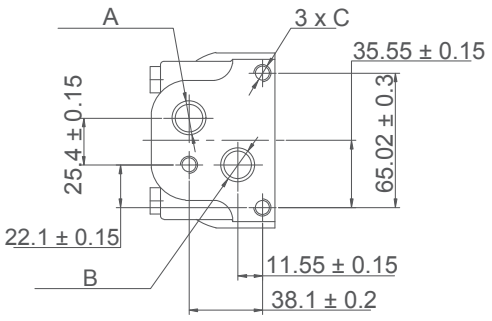
Type		GKA100	GKA130	GKA160	GKA195	GKA245
Displ. cm³/rev [in³/rev]		100[6.2]	130[8.0]	160[9.6]	195[11.9]	245[14.9]
Max. Speed	Cont.	742	576	477	385	308
RPM	Int.*	924	720	713	577	462
Flow	Cont.	75[20]	75[20]	75[20]	75[20]	75[20]
lpm [GPM]	Int.*	95[25]	95[25]	115[30]	115[30]	115[30]
Torque	Cont.	29,5[2630]	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]

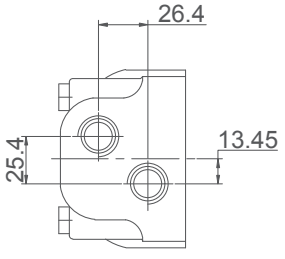
Type		GKA305	GKA395	GKA490
Displ. cm³/rev [in³/rev]		305[18.7]	395[24.0]	490[29.8]
Max. Speed	Cont.	246	191	153
RPM	Int.*	265	335	230
Flow	Cont.	75[20]	75[20]	75[20]
lpm [GPM]	Int.*	115[30]	115[30]	115[30]
Torque	Cont.	76,5[6750]	77,5[6840]	84,5[7470]
daNm [lb - in]	Int.*	88,5[7820]	92,5[2250]	93,6[8225]
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





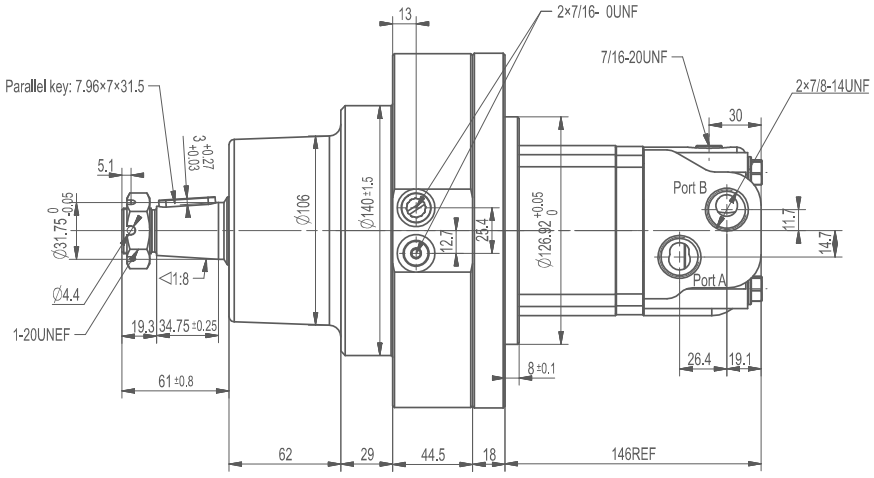


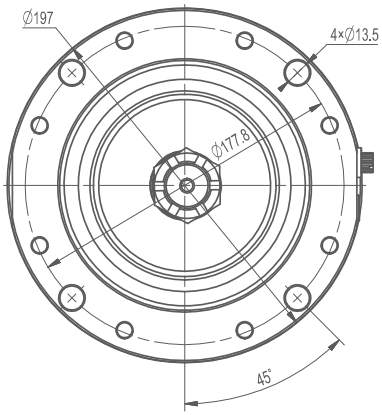


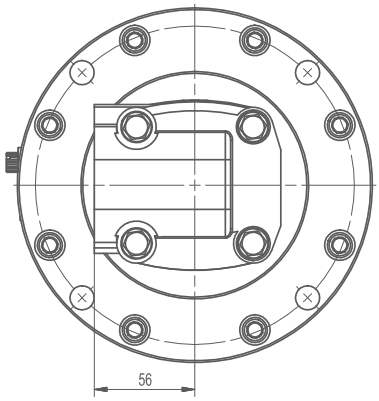
Model	L(mm)	L1(mm)	L2(mm)
GKA34	182	14.5	133.5
GKA41	185	17.8	136.5
GKA66	189.5	22.5	141.5
GKA80	196	28.9	148
GKA90	196	28.9	148
GKA100	202.5	35.6	154.5
GKA130	211.5	44.6	163.5
GKA160	223	56	175
GKA195	235.3	72	188.3
GKA245	256.5	89.3	208.5
GKA305	277.8	107.8	212.5
GKA395	296.5	125.5	237.5
GKA490	313.8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







DISPLACEMENT	293cm³/rev
MAX.CONTINUOUS RATING PRESSURE	20.5MPa
BRAKE TORQUE	1130Nm
THE BRAKE RELEASE PRESSURE	2.8MPa,Max
RELEASE PRESSURE	20.7MPa,Max
WORKING TEMPERATURE	82˚C
PAINT	BLACK

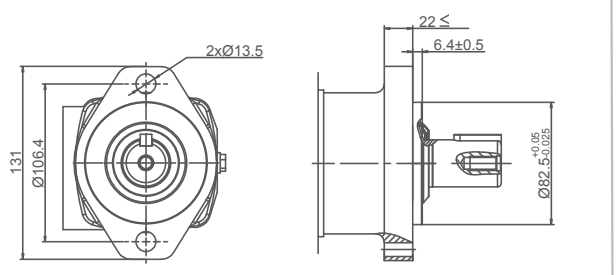
Nominal working temperature is 30-60˚C,max.working temperature is 82˚C

the temperature range of HNBR seal is -40 to 150˚C

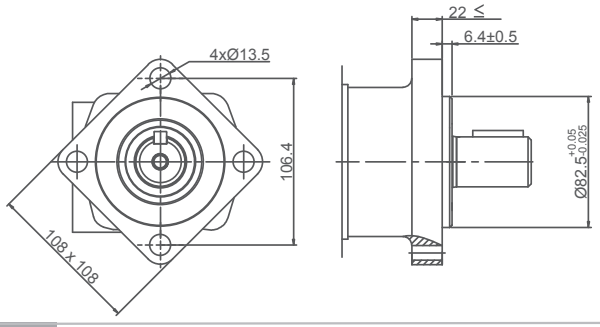
Initial brake release pressure is 2.8MPa.Full release pressure is 3.0MPa

GKA Flange Covers Dimensions

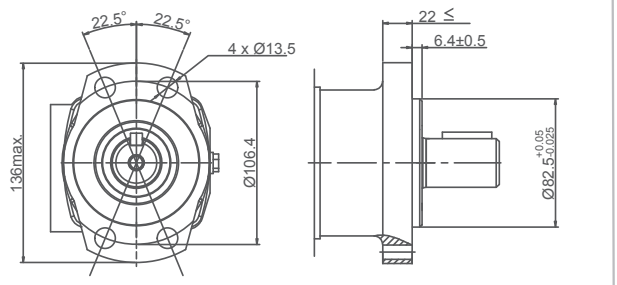
A7



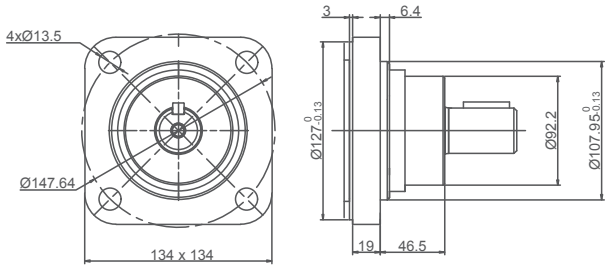
H3



A9



W1



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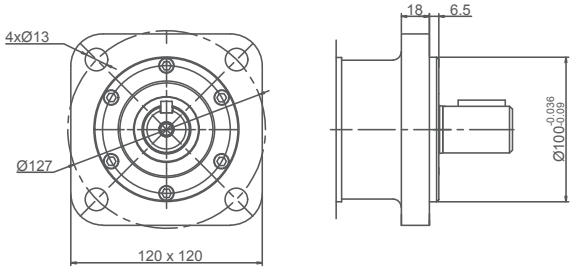
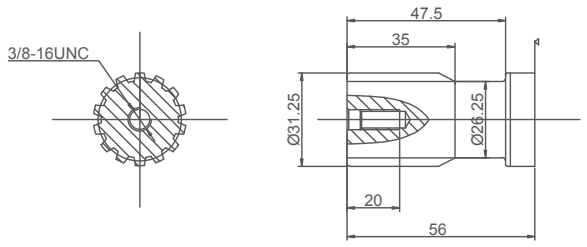


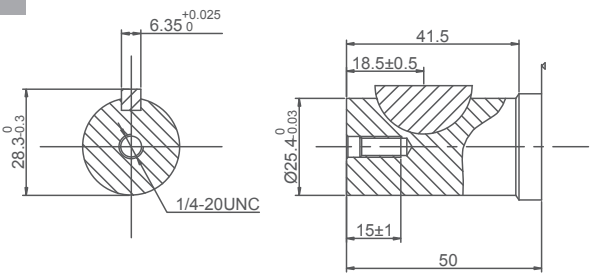
GKA Shafts Dimensions

R6



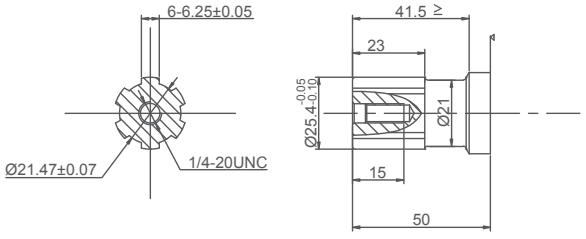
Splined shaft 14-DP 12/24

S6



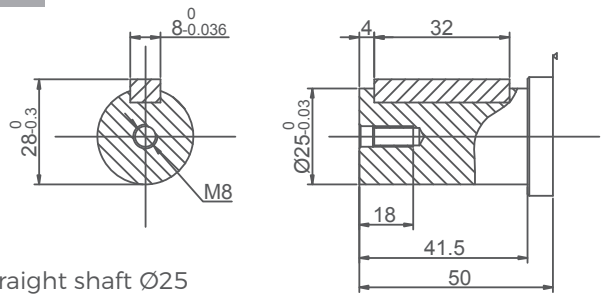
Straight shaft Ø25.4
Woodruff key 25.4 x 6.35

R8



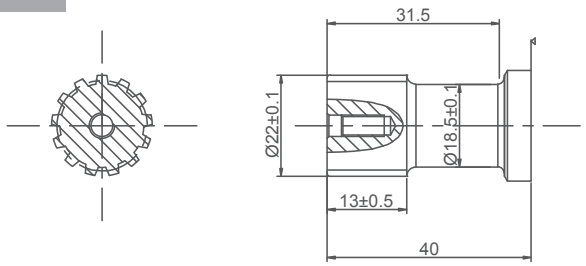
Splined shaft Ø25.4 SAE 6B

S1



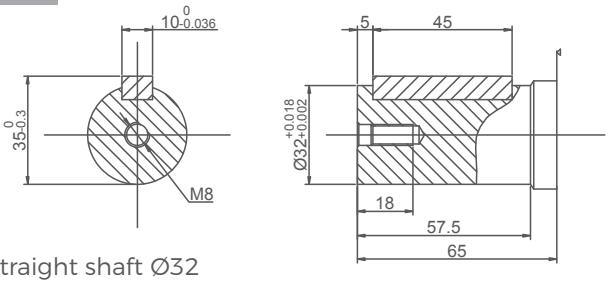
Straight shaft Ø25
Parallel key 8 x 7 x 32

R5



Splined shaft 13-DP 16/32

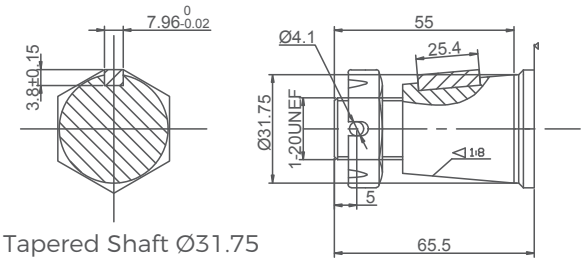
S4



Straight shaft Ø32
Parallel key 10 x 8 x 45

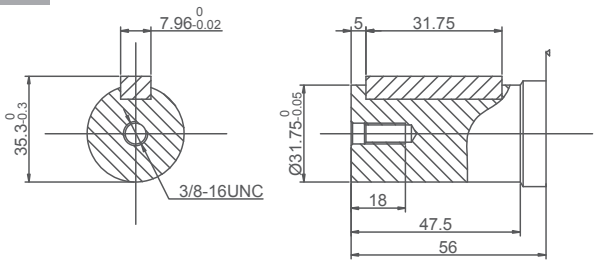
GKA Shafts Dimensions

T2



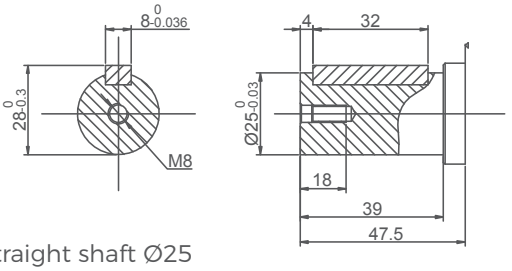
Tapered Shaft Ø31.75
Parallel key 7.96 x 7.96 x 25.4
Tightening torque: 200 ± 10 Nm

SG



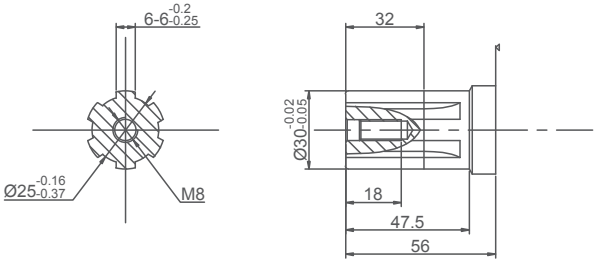
Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75

A1



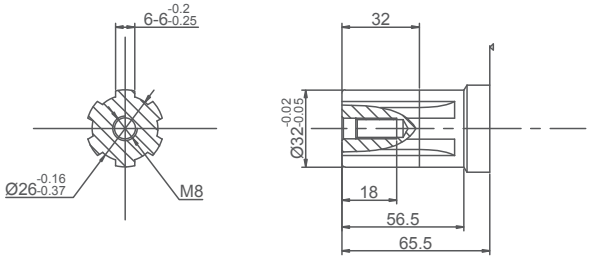
Straight shaft Ø25
Parallel key 8 x 7 x 32

RL



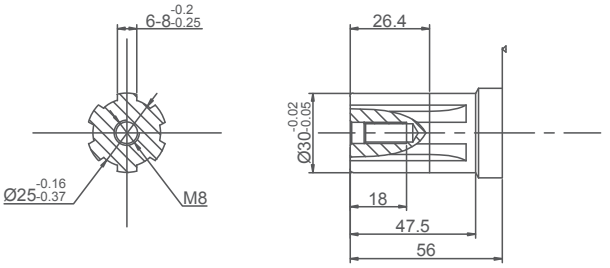
Splined shaft 6 - 30 x 25 x 6

Z



Splined shaft 6 - 32 x 26 x 6

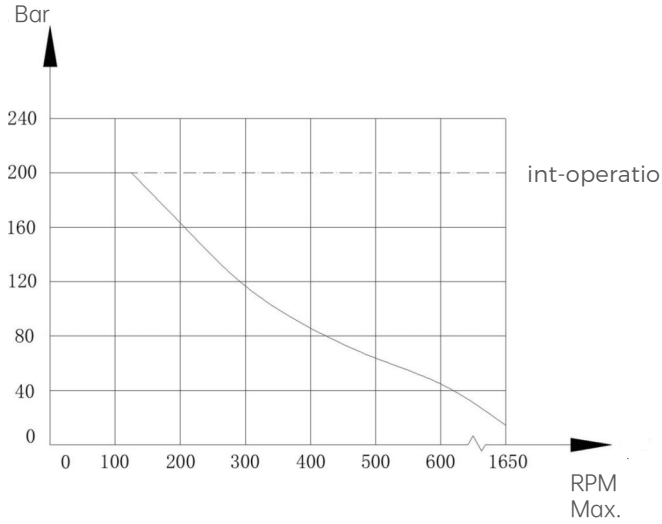
RQ



Splined shaft 6 - 30 x 25 x 8

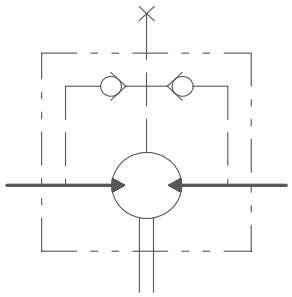
GKA Series Hydraulic Motors

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.

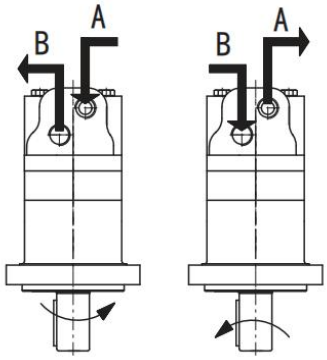


GKA with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.

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

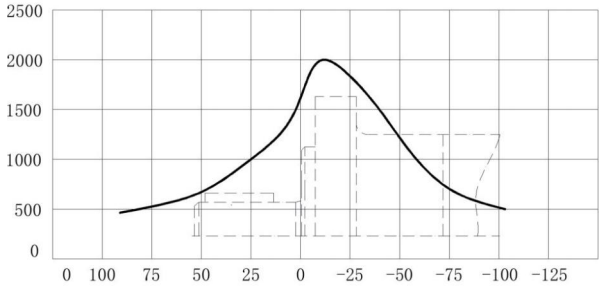
Standard direction of shaft rotation: Standard

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



Output shaft axial and radial force

Fr: Radial force



Distance between force and flange surface (mm)

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

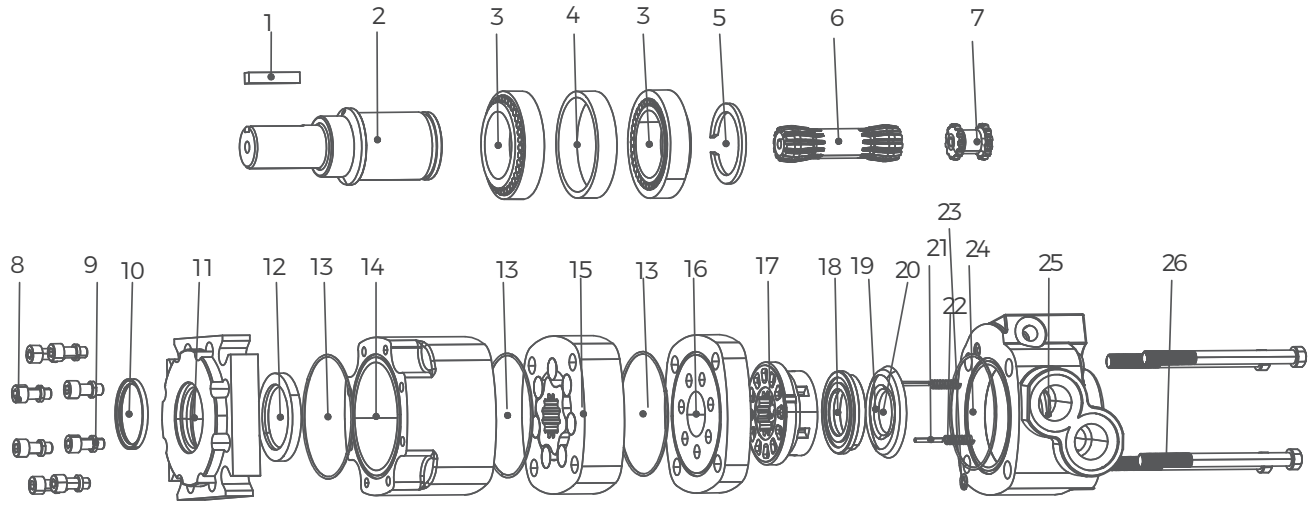
- Flange connection
- Bearingless motor
- Speed sensing
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

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

General

Max. Displacement	cm^3/rev [in^3/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 [-104-284]
Optimal Viscosity range	mm^2/s [SUS]	20-75 [98-347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 microns)



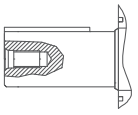
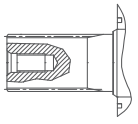
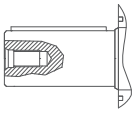
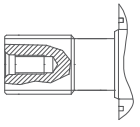
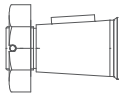
1 Flat key
2 Output shaft
3 Tapered roller bearing
4 Bearing outer retainer ring
5 Washers
6 Transmission shaft
7 Coupling shaft
8 Bolt
9 Spring washer
10Anti-dust ring
11 Flange
12 Shaft seal
13 Sealing gasket
14 Rear housing
15 Rotor and stator
16 Balance plate
17 Flow distribution plate
18 Flow pressure 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 cm³/rev [in³/rev]
110	110 [6.7]
130	130 [7.9]
160	160 [9.9]
205	205 [12.5]
245	245 [15.0]
280	280 [17.1]
310	310 [19.0]
395	395 [24.0]
495	495 [30.0]
625	625 [38.0]

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	SHAFT	
SM	Ø31.75 parallel key 7.96×7.96×41	
RT	Ø31.7 Splined 14-DP 12/24	
SA	Ø40 paralle key 12×8×70	
RV	Ø38.1 Splined 17-DP 12/24	
TE	Tapered1:8 Ø41.25 parallel key 11.13×11.13×31.4	

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	ROTATION
A	Standard
R	Opposite

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

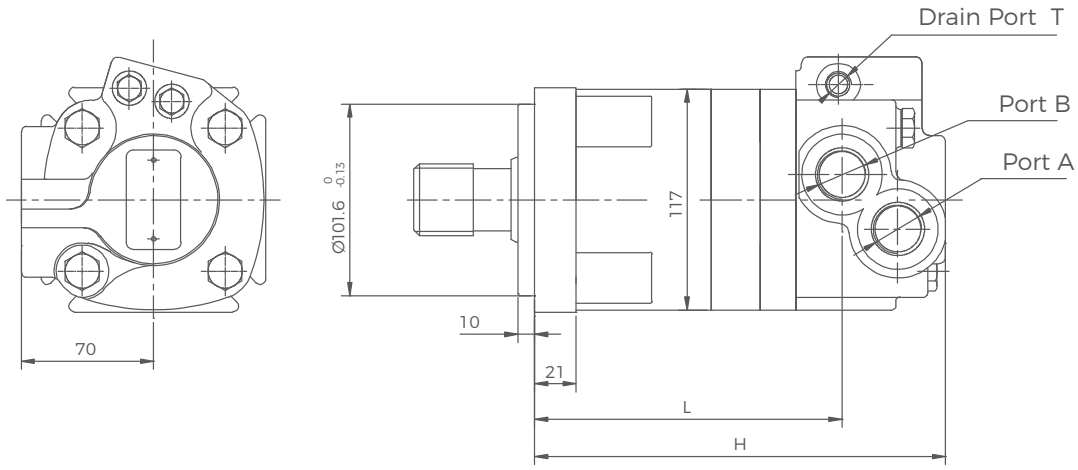
CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High Temp.
S	Low Temp.

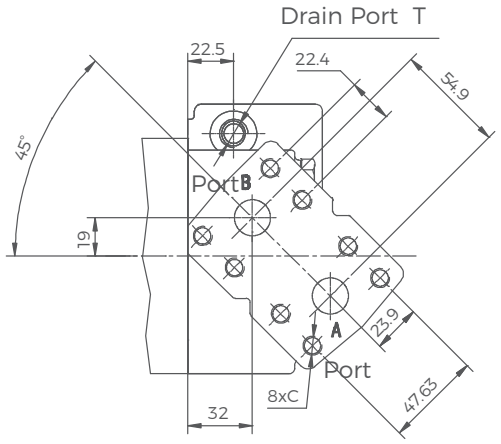
Specifications

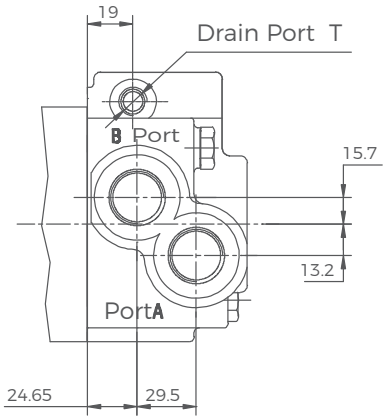
Type		GKB100	GKB130	GKB160	GKB205	GKB245
Displ. cm³/rev [in³/rev]		110[6.7]	130[7.9]	160[9.9]	205[12.5]	245[15.0]
Max. Speed	Cont.	626	722	582	459	383
RPM	Int.*	697	862	693	546	532
Flow	Cont.	75[20]	95[25]	95[25]	95[25]	95[25]
lpm [GPM]	Int.*	95[25]	115[30]	115[30]	115[30]	130[35]
Torque	Cont.	32,2[2850]	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





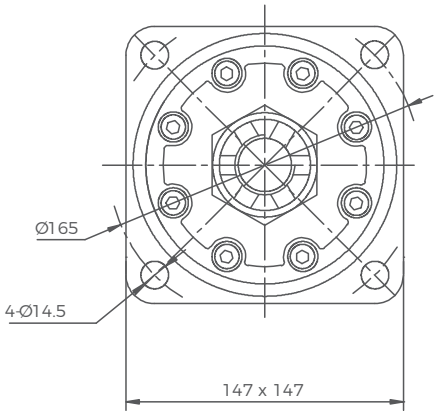


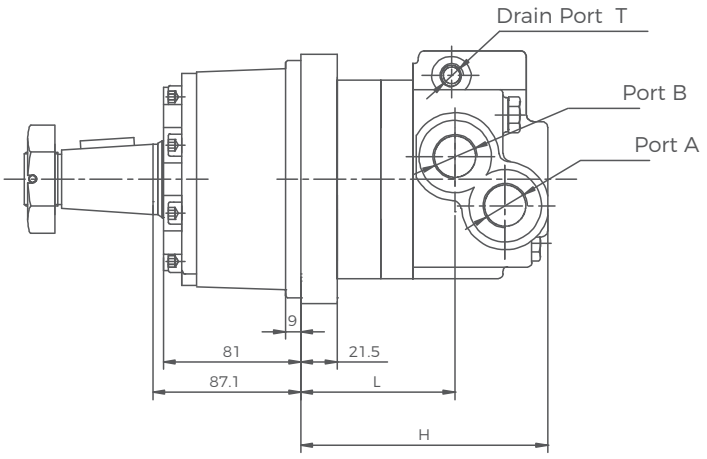
Model	1-1/16-12 or G3/4 Threaded Ports		3/4 Split Flange Oil Ports	
	H	L	H	L
GKB110	214.4	158.3	246.3	166.7
GKB130	218.4	162.3	250.4	170.8
GKB160	224.7	168.7	256.7	177.1
GKB205	233.2	177.2	265.2	185.6
GKB245	224.7	168.7	256.7	177.1
GKB310	233.2	177.2	265.2	185.6
GKB395	243.9	187.9	275.9	196.3
GKB495	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-Ø19.05
T	7/16-20 O-ring	9/16-18 UNF O-ring	M22 x 1.5	7/16-20 UNF
C	—	—	—	3x3/8-16NNC

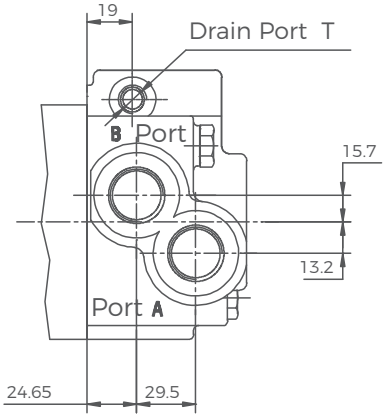
GKB Wheel Motor Dimensions and Mountings

Flange W7





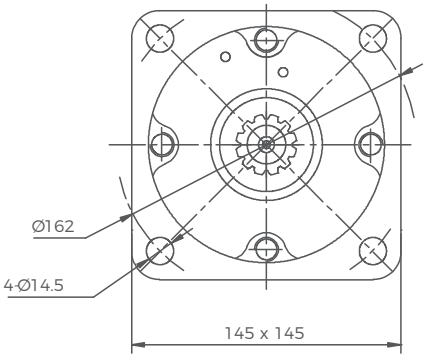
Model	1-1/16-12 or G3/4 Threaded Ports		3/4 Split Flange Oil Ports	
	H	L	H	L
GKB110	143.3	87.4	174.5	95.1
GKB130	147.3	91.5	178.5	99.1
GKB160	153.6	97.8	184.9	105.5
GKB205	162.2	106.3	193.4	114.0
GKB245	153.6	97.8	184.9	105.5
GKB310	162.2	106.3	193.4	114.0
GKB395	172.8	117.0	204.1	124.7
GKB495	185.8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

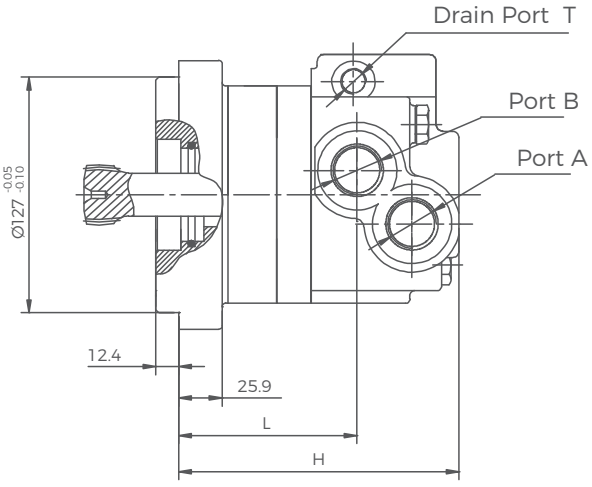


Mounting	U5 (depth)	UK (depth)	MD (depth)	UL (depth)
P(A, B)	1-1/16-12 O-ring	7/8-14 UNF O-ring	M22 x 1.5	2-Ø19.05
T	7/16-20 O-ring	9/16-18 UNF O-ring	M22 x 1.5	7/16-20 UNF
C	—	—	—	3x3/8-16NNC

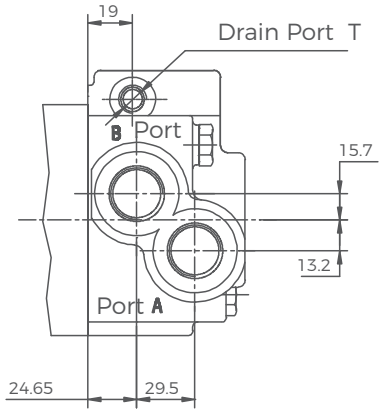
GKB Bearingless Motor Dimensions and Mountings

Flange HM





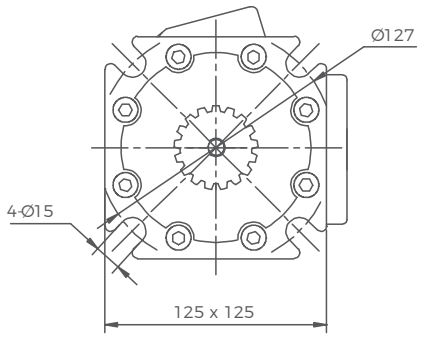
Model	1-1/16-12 or G3/4 Threaded Ports		3/4 Split Flange Oil Ports	
	H	L	H	L
GKB110	146.8	91.0	178.7	99.4
GKB130	150.8	95.1	182.8	103.5
GKB160	157.1	101.4	189.1	109.8
GKB205	165.7	109.9	197.6	118.3
GKB245	157.1	101.4	189.1	109.8
GKB310	165.7	109.9	197.6	118.3
GKB395	176.3	120.6	208.3	129.0
GKB495	189.2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



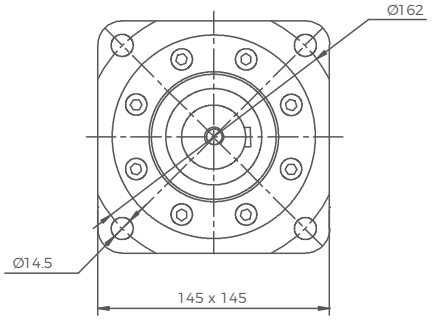
Mounting	U5 (depth)	UK (depth)	MD (depth)	UL (depth)
P(A, B)	1-1/16-12 O-ring	7/8-14 UNF O-ring	M22 x 1.5	2-Ø19.05
T	7/16-20 O-ring	9/16-18 UNF O-ring	M22 x 1.5	7/16-20 UNF
C	—	—	—	3 x 3/8-16UNC

GKB Flange Covers Dimensions

H9

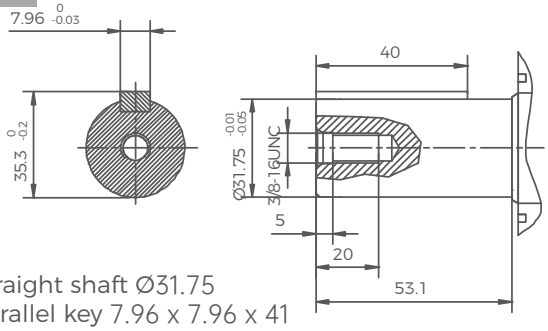


HL



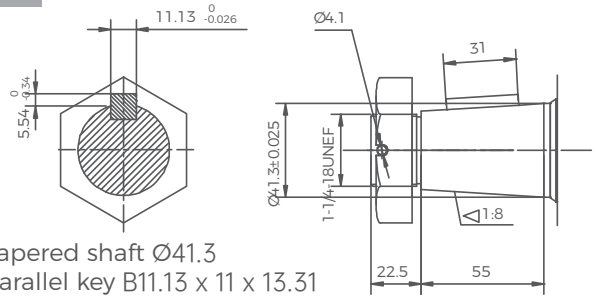
GKB Shafts Dimensions

SM



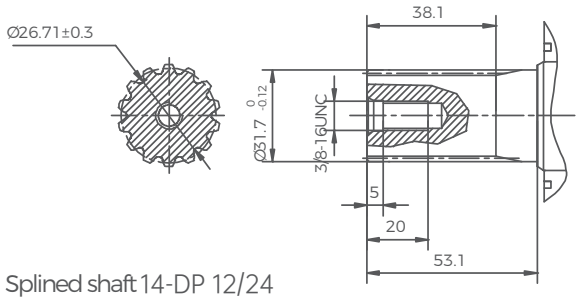
Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 41

TE



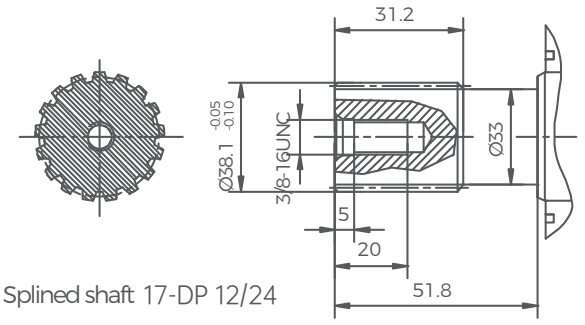
Tapered shaft Ø41.3
Parallel key B11.13 x 11 x 13.31
Tightening torque 500 ± 10 Nm

RT



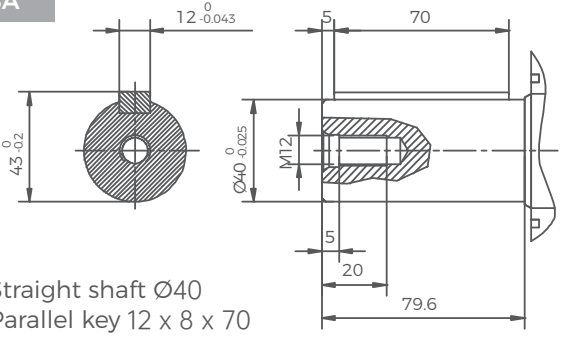
Splined shaft 14-DP 12/24

RV



Splined shaft 17-DP 12/24

SA

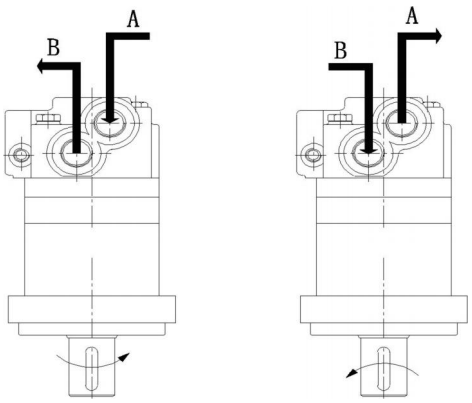


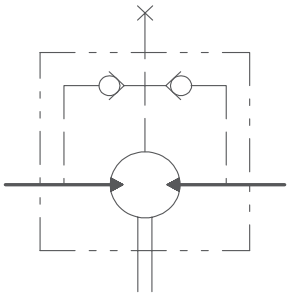
Straight shaft Ø40
Parallel key 12 x 8 x 70

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

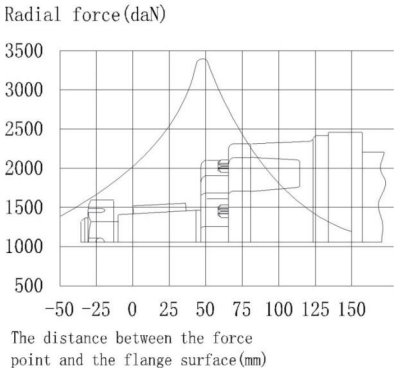
Output shaft axial and radial force

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.

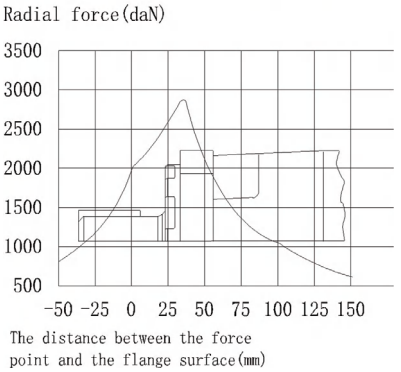
RPM	Coefficients
50	1.23
100	1.00
200	0.81
300	0.72
400	0.66
500	0.62
600	0.58
700	0.56
800	0.54

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

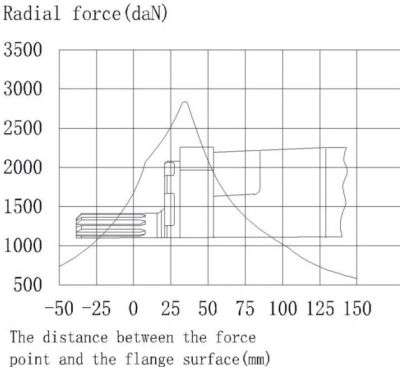
Wheel motor with tapered shaft



Standard motor with cylindrical shaft



Standard motor with spline shaft



GKC Series Hydraulic Motors

OPTIONS

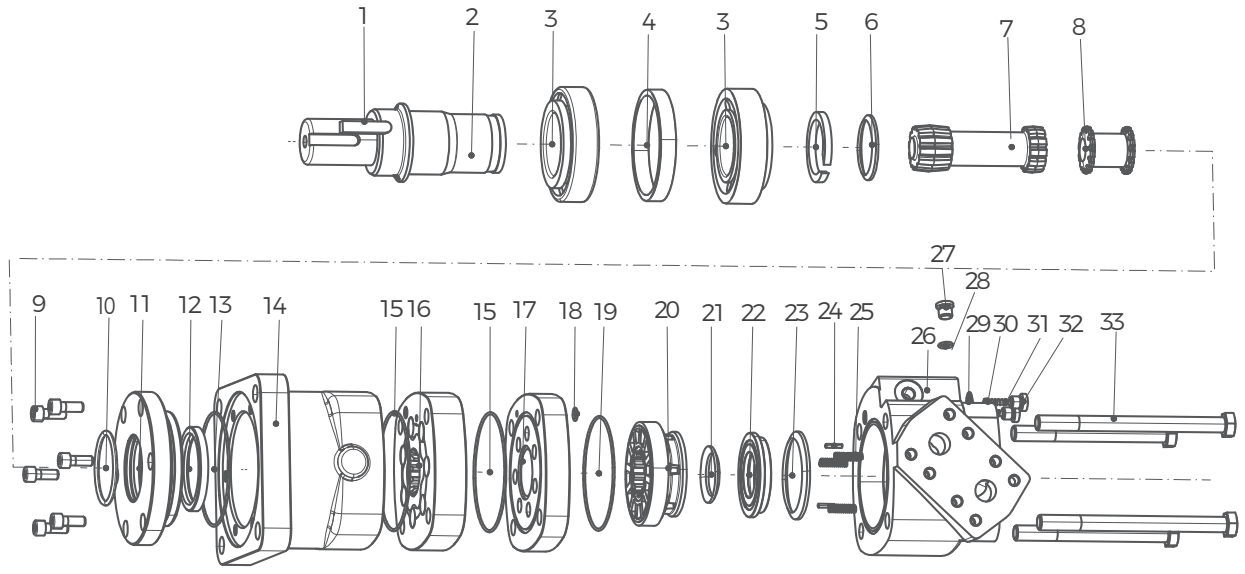
- Flange connection
- Straight, splined and tapered shaft
- Metric and BSPP ports
- Other special features

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[-104 — 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 cm³/rev [in³/rev]
195	195 [11.9]
245	245 [15.0]
310	310 [19.0]
390	390 [23.9]
490	490 [30.0]
625	625 [38.0]
735	735 [45.0]
805	805 [49.0]
985	985 [60.0]

CODE	FLANGE
CC	4- Ø14.2 square Ø162, pilot Ø 127x13.2 

CODE	SHAFT
Y1	Ø35 parallel key 12x12x63
G2	Ø38.1 parallel key 9.53x9.53x41.9
FE	Ø38.1 splined tooth 14-DP 12/24
T1	Tapered 1: 8 Ø45 parallel key 11.13x11.13x31.75

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

CODE	ROTATION
A	Standard
R	Opposite

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

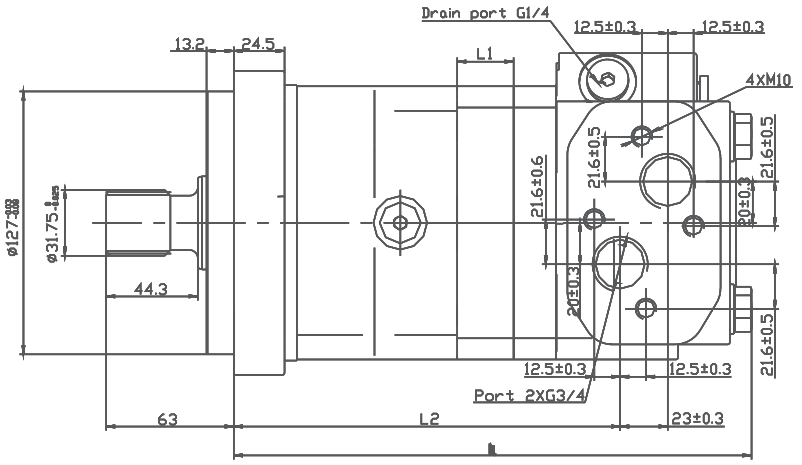
CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High temp.
S	Low temp.

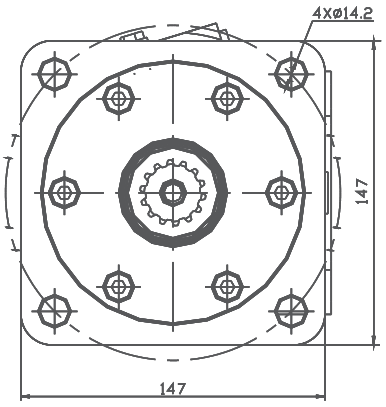
Specifications

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

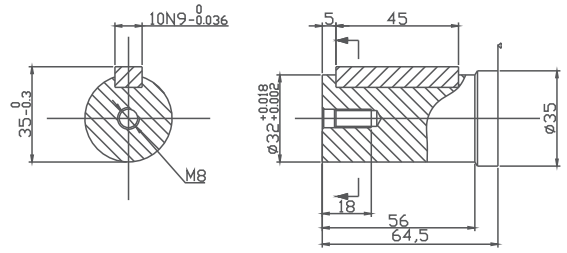




Model	L(mm)	L1(mm)	L2(mm)
GKC195	247	21.7	182
GKC245	252	27.3	187
GKC310	278	34.5	200
GKC395	287	43.4	209.5
GKC490	298	54.4	221
GKC625	313	69.1	235
GKC735	325	79.1	245
GKC805	333	88.9	255
GKC985	353	109	274.6

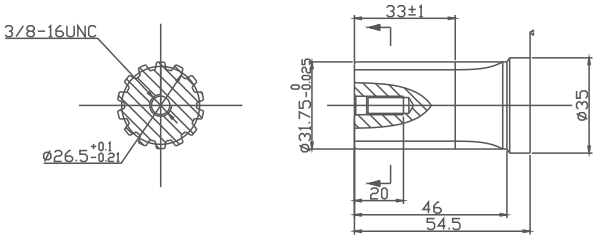
GKC Shafts Dimensions

G2



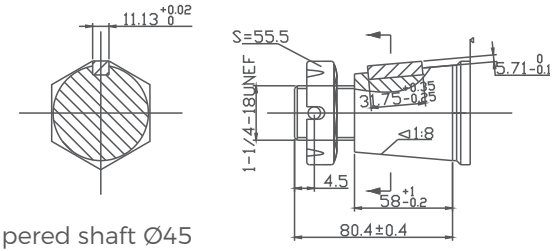
Straight shaft Ø32
Parallel key 9.525 x 9.525 x 41.9

FE



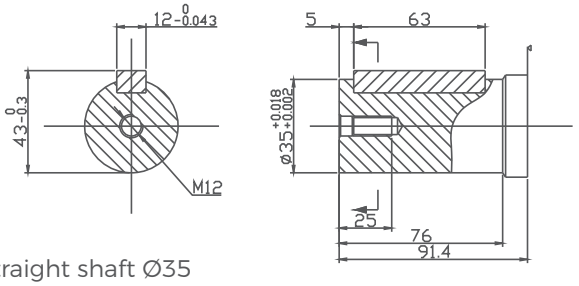
Spline shaft 14-DP 12/24

T1



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

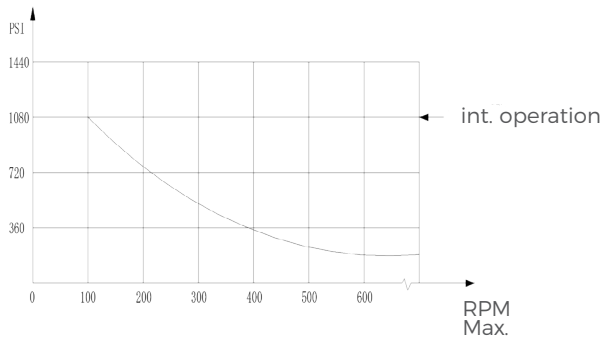
Y1

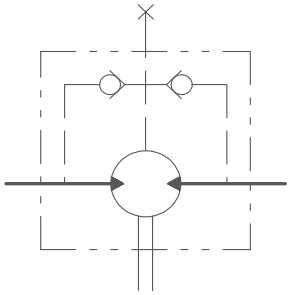


Straight shaft Ø35
Parallel key 12 x 12 x 63

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

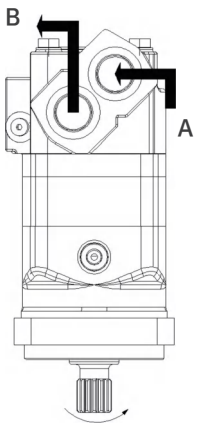
In applications without a motor drain line, the pressure exerted on the shaft seal is marginally in excess of the return line pressure. When the Drain line is used, the pressure exerted on the shaft seal is equal to the return line pressure.

Standard direction of shaft rotation: Standard

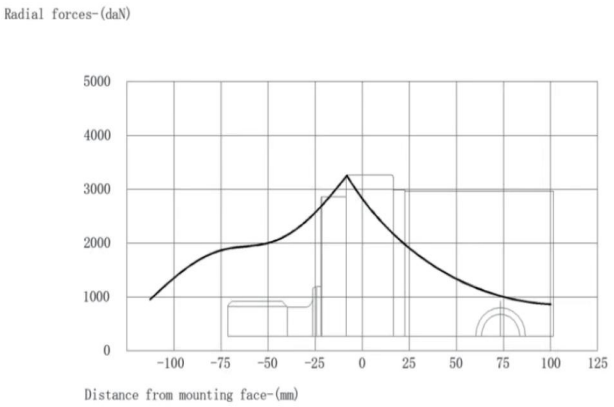
When facing the shaft end of the motor, the shaft rotates:

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 12x10^6 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.

GKS Series Hydraulic Motors

Options

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

Applications

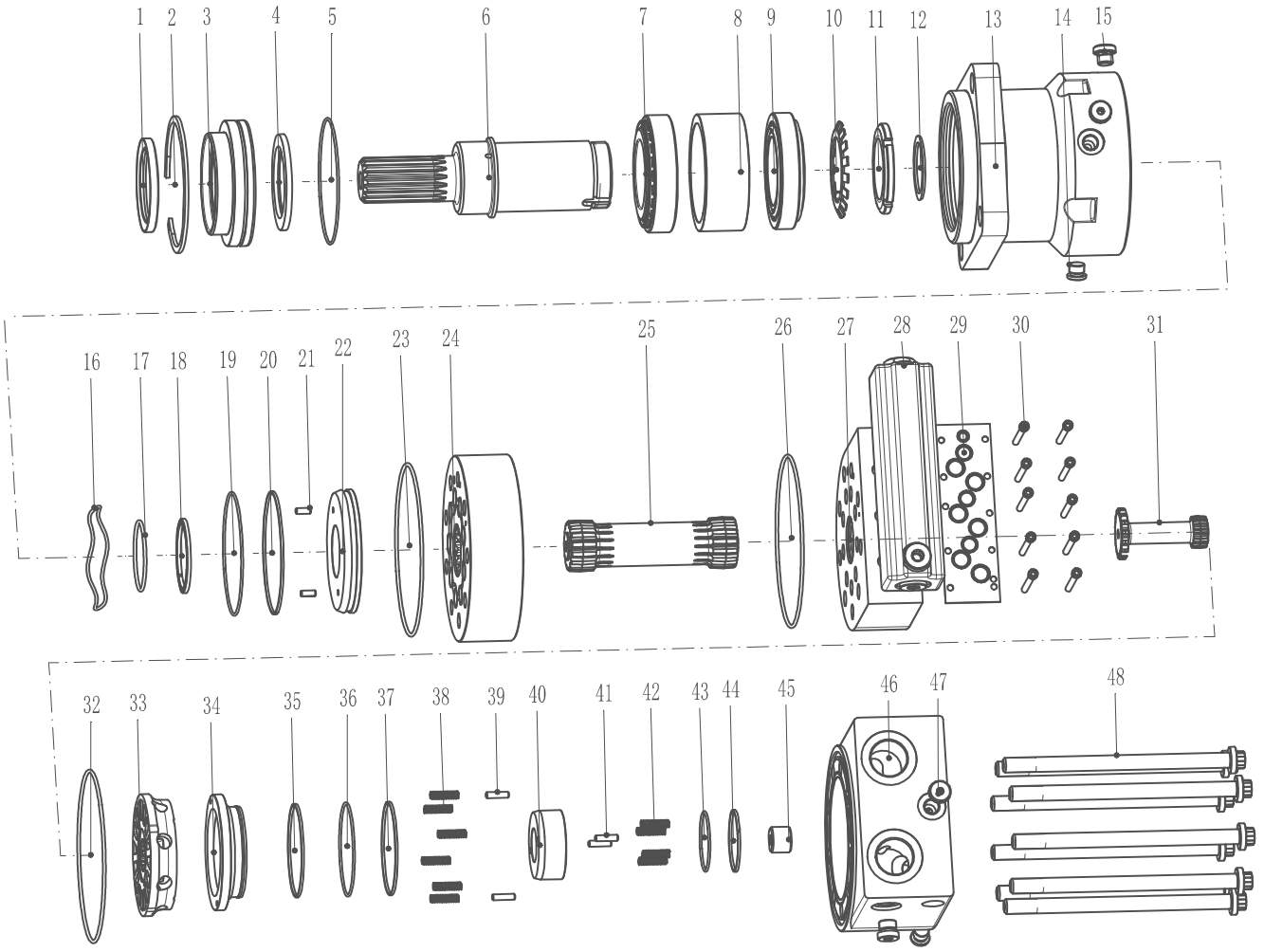
- Harvesters
- Augers
- Sprayers
- Grinders and Mixers
- Horizontal/Vertical Drilling
- Material Handling

General

Single-Speed		
Max.Displacement	cm^3/rev [in^3/rev]	677 [41.3]
Max.Speed	RPM	cont.:495 int.:770
Max.Torque	daNm [lb-in]	cont.:2,469 [21,856] int.:2,893 [25,602]
Max.Pressure Drop	bar [PSI]	cont.:310 [4,500] int.:345 [5,000] peak:379 [5,500]
Max.Oil Flow	lpm [GPM]	cont.:170 [45] int.:265 [70]
Temperature Range	˚C [˚F]	MAX 82˚C [180˚F]
Optimal Viscosity range	mm^2/s [SUS]	Premium quality, anti-wear type hydraulic oil with a viscosity of not less than 13 cSt [70 SUS] at operating temperature.
Filtration		Per ISO Cleanliness Code, 4406: 20/18/13.

General

Two Speed		
Max.Displacement	cm^3/rev [in^3/rev]	677 [41.3]
	RPM	High Speed Mode:743
Max.Speed		Low Speed Mode:495
Max.Torque	daNm [lb-in]	High Speed Mode
		cont.:1,646 [14,571] int.:1,929 [17,068]
		Low Speed Mode
		cont.:2,469 [21,856] int.:2,893 [25,602]
Max.Pressure Drop	bar [PSI]	cont.:310 [4,500] int.:345 [5,000] peak:379 [5,500]
Max.Oil Flow	lpm [GPM]	170 [45]
Temperature Range	˚C [˚F]	MAX 82˚C [180˚F]
Optimal Viscosity range	mm^2/s [SUS]	Premium quality, anti-wear type hydraulic oil with a viscosity of not less than 13 cSt [70 SUS] at operating temperature.
Filtration		Per ISO Cleanliness Code, 4406: 20/18/13.



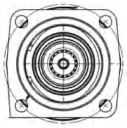
1 Dust seal
2 Hole retaining ring
3 Bearing cover
4 Shaft seal
5 O-ring
6 Output shaft
7 Tapered roller bearing
8 Bearing spacer
9 Tapered roller bearing
10 Lock washer
11 Lock nut
12 Dottle pin
13 Front housing
14 1/2-20UNF Plug
15 G1/4 Plug
16 Wave spring
17 O-ring
18 Dottle pin
19 O-ring
20 Spacer
21 Elastic cylindrical pin
22 Piston
23 O-ring
24 Rotor and stator
25 Transmission shaft
26 O-ring
27 Balancing disc
28 Two speed motor manifold
29 Manifold partition assembly
30 Bolt 3/16-32UNF
31 Drive shaft
32 O-ring
33.Valve Plate
34.Rear Housing Pressure Ring
35.Spacer Sleeve
36.O-Ring
37 Spacer
38 Spring
39 Spring cylindrical pin
40 Rear housing pressing cap
41 Spring cylindrical pin
42 Spring
43 O-ring
44 Spacer
45 Washer
46 Rear housing
47 9/16-18UNF plug
48 Bolt

Ordering Code

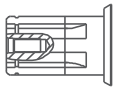
GKS SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP cm³/rev [in³/rev]
344	343.8 [20.98]
400	400.0 [24.40]
434	434.2 [26.50]
480	479.5 [29.26]
677	677.3 [41.33]

CODE	FLANGE
SA	Standard, 4 bolt: 127.00 pilot dia. 17.02 dia. Bolt circle dia. 161.92



CODE	SHAFT
A1	Splined shaft 17 DP 12/24 M12



CODE	PORTS
U1	1-1/16-12 UN-2B 9/16-18 UNF-2B
U5	G1 (BSP) O-ring G1/4 (BSP) O-ring

CODE	ROTATION
A	Standard
R	Opposite

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

CODE	FUNCTION
A	Standard
N	Big radial force
F	Free running
L	Low speed
V	High temp.
S	Low temp.

GWD Series Hydraulic Motors

Options

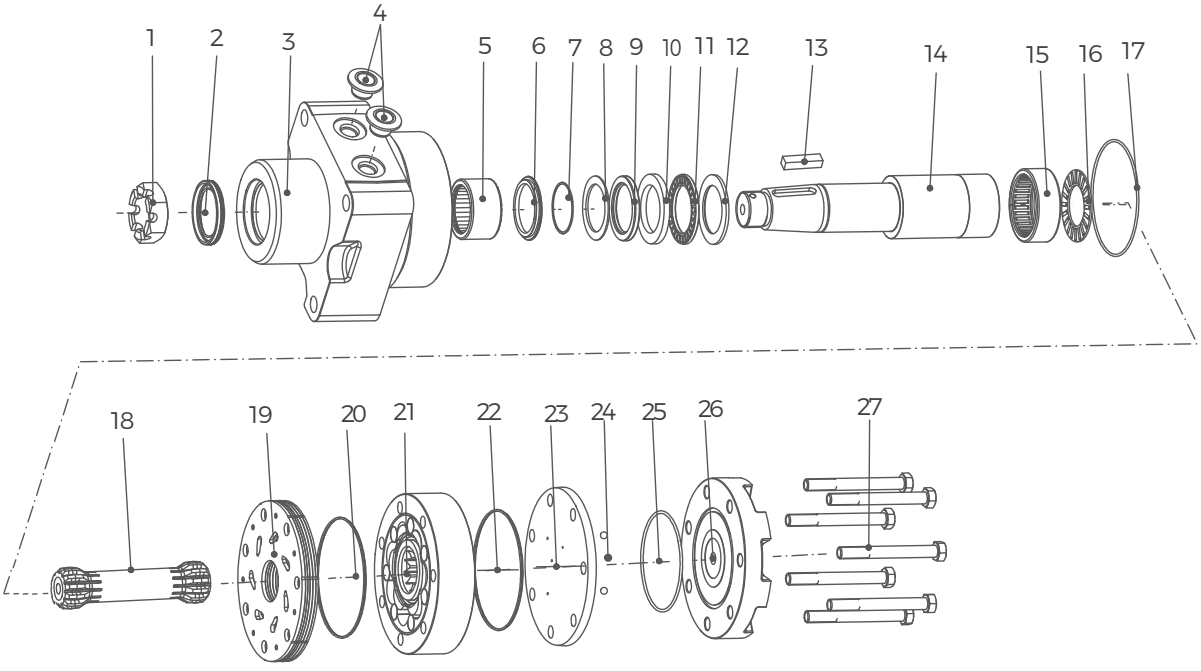
- Rotor flow distribution, geroler type
- Geroler type
- Motor with needle bearing
- Align the ports on the side
- Straight, splined and tapered shafts
- High pressure seal
- Metric, SAE and BSPP ports

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.: 207 [3000] int.: 241 [3500]
Max. Oil Flow	lpm [GPM]	95 [25.1]
Pressure fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	°C [°F]	-40-140 [-104-284]
Optimal Viscosity range	mm^2/s [SUS]	20-75 [98-347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 microns)

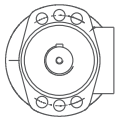
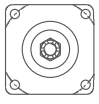


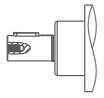
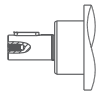
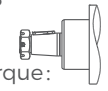
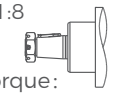
1 Castle nut
2 Shaft seal
3 Housing
4.Port Plug
5.Thrust Ball Bearing
6.Bearing Pedestal
7 O-ring
8 Washer
9 shaft seal
10.Bearing Stop Ring
11.Plane Bearing
12.Bearing Stop Ring
13 Flat key
14 Output shaft
15 Rear needle roller bearing
16.Plane Bearing
17.O-Ring
18.Transmission Shaft
19 Distribution plate
20 Special shape ring
22 Special shape ring
23.Balance Disk
24.Steel Ball
25.O-Ring
26 Rear cover
27 Screw

Ordering Code

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

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

CODE	FLANGE
W4	Wheel Ø147.6 front pilot 4- Ø13.1 rear pilot Ø127×3 
W5	Wheel Ø147.6 front pilot 4- Ø13.1 rear pilot Ø127×6 
A9	6- Ø13.5 SAE Ø106.4 pilot Ø82.5×3 
W6	Ø106.4 wheel 4- Ø13.5 pilot Ø82.5×5 

CODE	SHAFT
SH	Ø35 parallel key 10×8×45 
SL	Ø38 parallel key 9.5×9.5×38.1 
TB	Tapered Ø35 1:10 parallel key 7.96×7×31.5 Nut Fastening Torque: 325 Nm 
TA	Tapered Ø38.1 1:8 parallel key 7.96×7×36.5 Nut Fastening Torque: 415-540 Nm 
T2	Tapered Ø31.75 1:8 parallel key 7.96×7×25.4 Nut Fastening Torque: 200±10 Nm 
RQ	Ø25.3 Splined 6-25.3×21×6.2 

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

CODE	ROTATION
A	Standard
R	Opposite

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

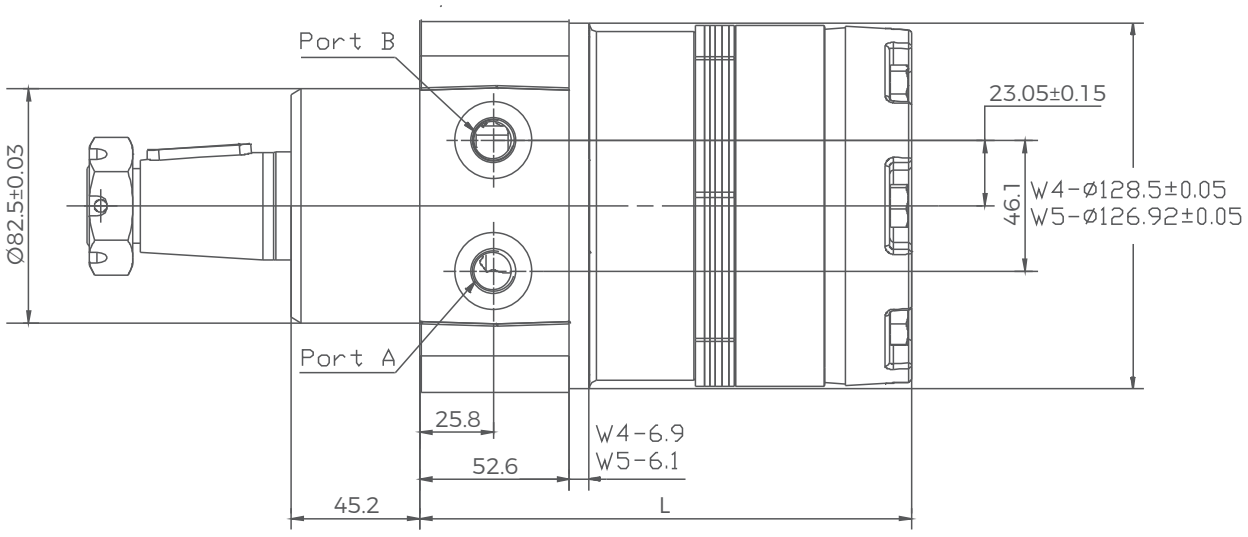
CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High temp.
S	Low temp.

Specifications

Type		GWD120	GWD160	GWD200	GWD230	GWD260	GWD300
Disp. cm³ /rev.		121	162	204	232	261	300
Max. Speed RPM	Cont	360	370	300	260	260	250
	Int.	490	470	370	320	350	320
Max. Flow LPM	Cont	45	61	68	68	76	83
	Int.	61	76	83	83	91	95
Max. Torque Nm	Cont	327	475	542	611	712	825
	Int.	383	542	633	712	791	938
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

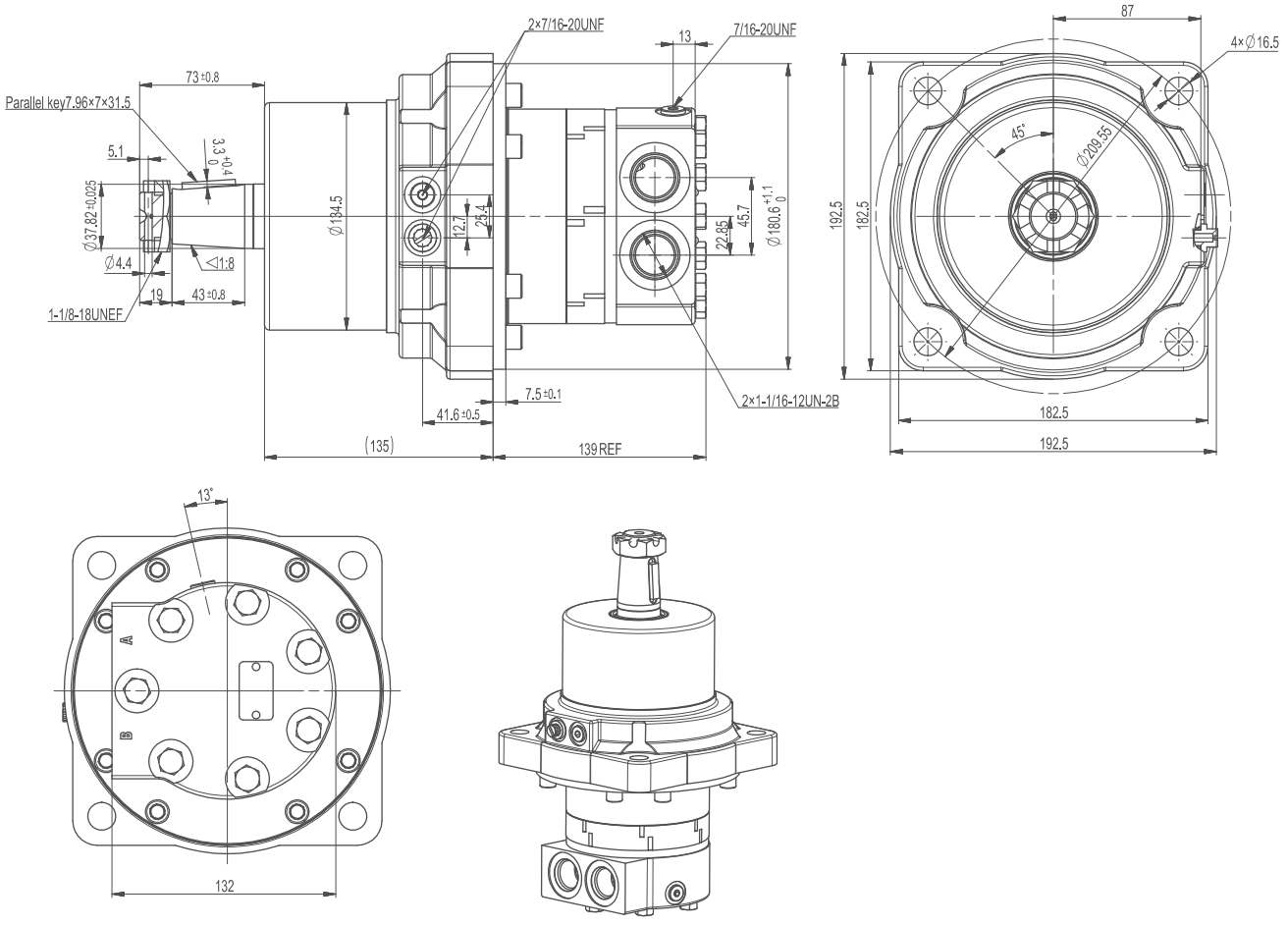
Type		GWD350	GWD375	GWD470	GWD540	GWD620	GWD750
Disp. cm³ /rev.		348	363	465	536	631	748
Max. Speed RPM	Cont	220	200	160	140	120	100
	Int.	270	250	200	170	150	130
Max. Flow LPM	Cont	76	76	76	76	76	76
	Int.	95	91	91	91	91	91
Max. Torque Nm	Cont	921	1006	1096	983	1014	1062
	Int.	1045	1158	1184	1243	1291	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	kg
GWD120	156	13.3
GWD160	156	13.3
GWD200	159	13.7
GWD230	162	13.8
GWD260	165	14.1
GWD300	168	14.4
GWD350	172	15.5
GWD375	174	15.0
GWD470	182	15.5
GWD540	188	16.1
GWD620	196	16.8
GWD750	206	17.5

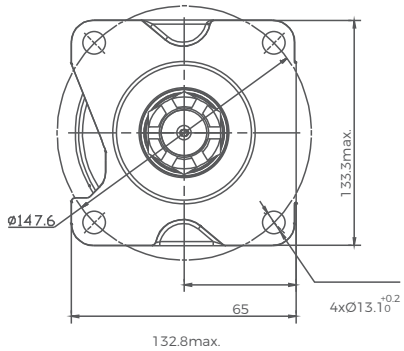
GWD with Brake Dimensions and Mountings



DISPLACEMENT	540cm³/rev
MAX.CONTINUOUS RATING PRESSURE	20.5MPa
RATED BRAKE TORQUE	2600Nm
THE BRAKE RELEASE PRESSURE	4MPa, Max.
RELEASE PRESSURE	20.7MPa, Max.
WORKING TEMPERATURE	82°C
Brake Spring Quantity	25
PAINT	BLACK

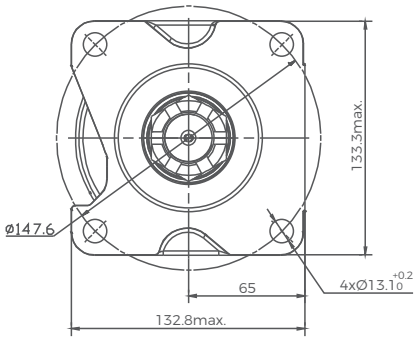
GWD Flange Covers Dimensions

W4



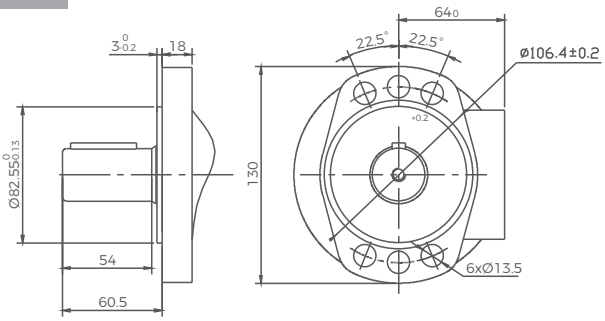
Front pilot Ø82.5 x 42
Rear pilot Ø127 x 3

W5



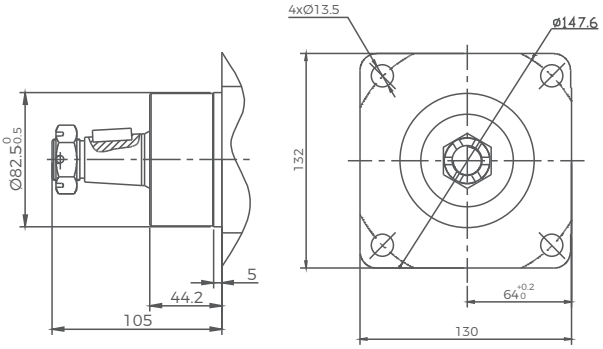
Front pilot Ø82.5 x 42
Rear pilot Ø127 x 6

A9



Pilot Ø82.5 X 3

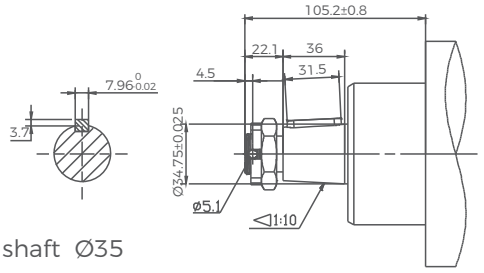
W6



Pilot Ø82.5 X 5

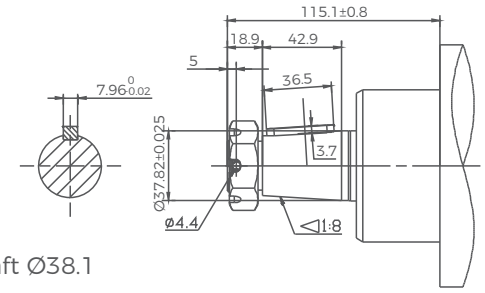
GWD Shafts Dimensions

TB



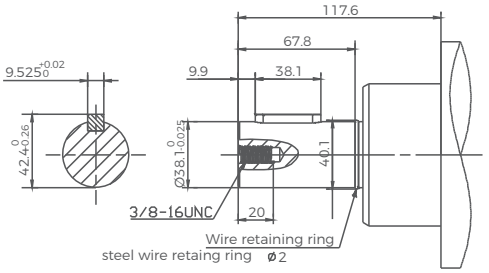
Tapered shaft Ø35
Parallel key 7.96 x 7 x 31.5
Tightening torque: 325 Nm

TA



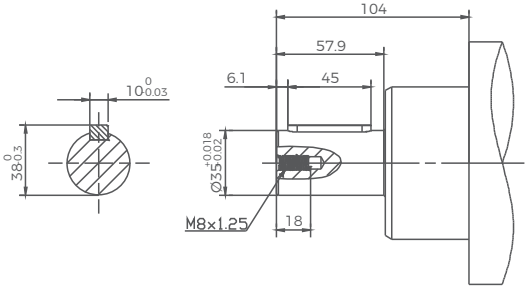
Tapered shaft Ø38.1
Parallel key 7.96 x 7 x 36.5
Tightening torque: 410-540 Nm

SL



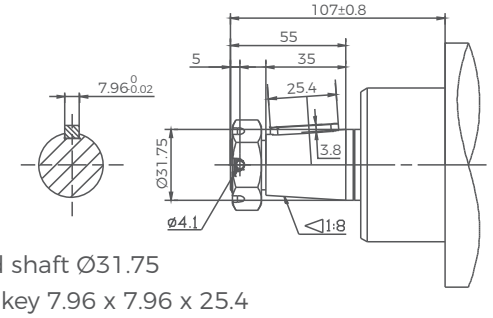
Straight shaft Ø38.1
Parallel key 9.5 x 9.5 x 38.1

SH



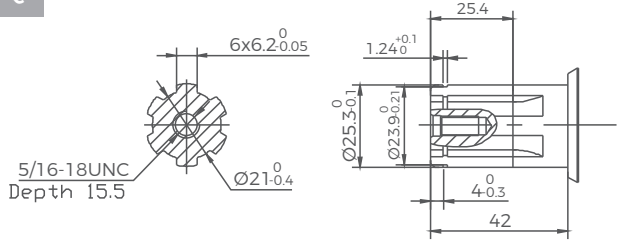
Straight shaft Ø35
Parallel key 10 x 8 x 45

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

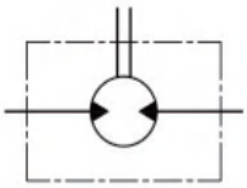
Shaft Rotation Direction: Standard

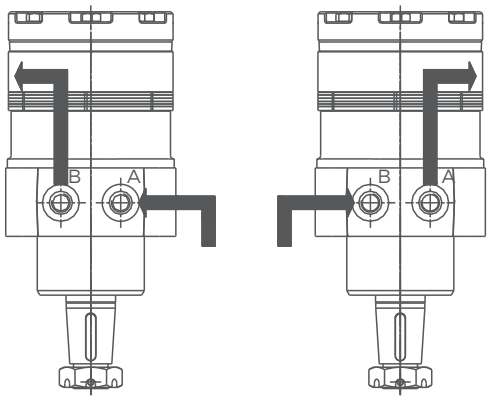
When looking at the shaft end of motor, shaft will rotate:

-Clockwise.

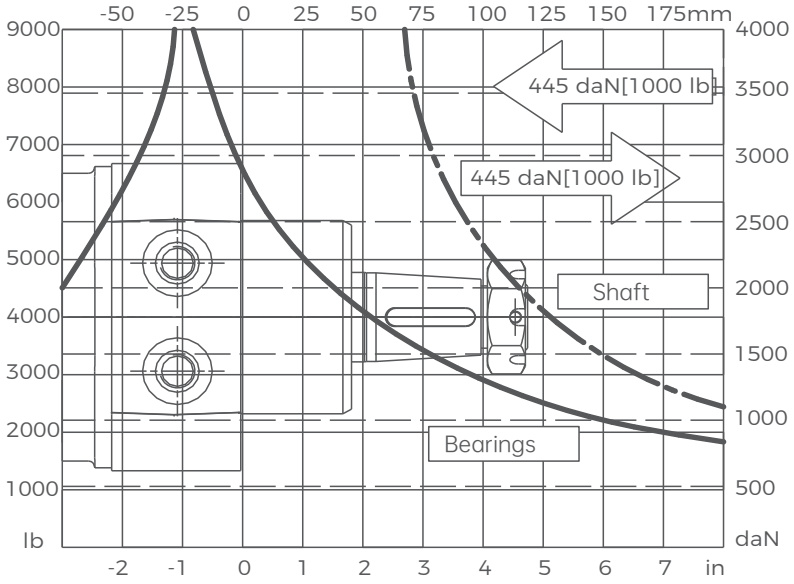
When port B is pressurized.

-Counter-clockwise when port A is pressurized.





W4 & W5 Wheel Mounts



GWH Series Hydraulic Motors

Options

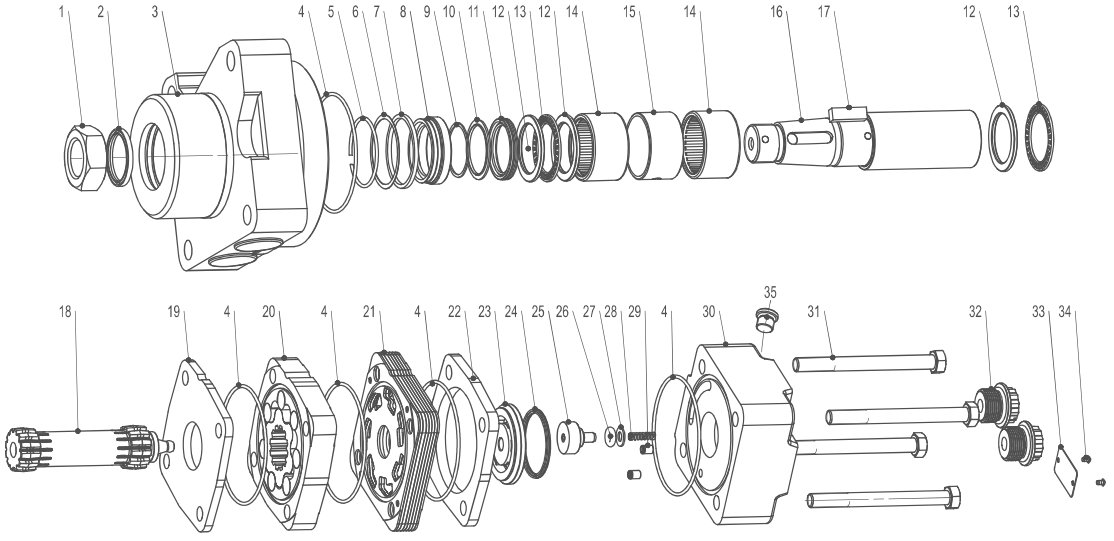
- Flange connection
- Motor with needle roller bearing
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Agricultural Equipment
- Utility & Off-Road Vehicles
- Material Handling machines
- Forklifts
- Street sweepers
- Mining machines

General

Max.Displacement	cm^3/rev [in^3/rev]	409[24.9]
Max.Speed	RPM	830
Max.Torque	daNm [lb-in]	cont:946[8400] int:1019[9050]
Max.Pressure Drop	bar [PSI]	cont:207[3000] int:276[4000]
Max.Oil Flow	lpm [GPM]	95[25]
Min. Speed	[RPM]	5
Pressure fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	˚C [˚F]	-40-140[-104-284]
Optimal Viscosity range	mm^2/s [SUS]	20-75[98-347]
Filtration		ISO code 20/16 (Min.recommended fluid filtration of 25 microns)



1. Hexagon Nut
2. Dust Seal
3. Housing
4. 0-Ring
5. Wire Spring Retaining Ring
6. Gasket
7. Rectangular Seal
8. Combined Oil Seal Bracket
9. Shaft Seal Retainer
11. Shaft Seal
12. Thrust Washer
13. Plain Bearing
14. Needle Roller Bearing with Retainer
15. Spacer Ring
16. Output shaft
17. Square Key
18. Drive Shaft
19. Partition Plate
20. Rotor Subassembly
21. Welded Valve Plate Assembly
22. Spacer Sleeve
23. Valve Plate
24. Seal Ring
25. Brake Pad Assembly
26. 0-Ring
27. Quad-Ring Retainer
28. spring
29. Check Valve
30. Rear Cover
31. Hexagon Head Bolt
32. Oil Port Cap (with O-Ring)
33. Nameplate
34. Nameplate Rivet
35. 0-Joint

Ordering Code

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

CODE	DISP cm³/rev [in³/rev]
50	52 [3.2]
80	76 [4.6]
90	89 [5.4]
110	111 [6.8]
125	127 [7.7]
160	164 [10.0]
200	205 [12.5]
250	254 [15.5]
300	293 [17.9]
400	409 [24.9]

CODE	FLANGE
W9	Wheel Ø147.62 4-Ø13.1 Front pilot Ø82.5x41 Rear pilot Ø126.92x5 
W10	Wheel Ø147.62 4- Ø13.1 Front pilot Ø82.5x45.2 Rear pilot Ø126.92x 5 

CODE	SHAFT
TC	Tapered Ø31.75 Parallel key 7.96 x7 x 24 

CODE	PORTS
UF	7/8-14UNF

CODE	ROTATION
A	Standard
R	Opposite

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.

GWH Specifications

Type		GWH050	GWH080	GWH090	GWH110	GWH125
Displacement cm³/rev [in³/rev]		52[3.2]	76[4.6]	89[5.4]	111[6.8]	127[7.7]
Max. Speed,	Cont.	680	800	680	680	580
[RPM]	Int.	830	950	840	850	740
Max. Torque	Cont.	135[1200]	191[1700]	225[2000]	298[2650]	338[3000]
daNm [lb-in]	Int.	158[1400]	222[1975]	270[2400]	349[3100]	394[3500]
Max. Pressure Drop Cont.	cont.	207[3000]	207[3000]	207[3000]	207[3000]	207[3000]
Drop	int.	242[3500]	242[3500]	242[3500]	242[3500]	242[3500]
bar [PSI]	Peak**	276[4000]	276[4000]	276[4000]	276[4000]	276[4000]
Max. Oil Flow	Cont.	38 [10]	53[14]	61 [16]	76 [20]	76 [20]
lpm [GPM]	int.	45[12]	64[17]	76[20]	95 [25]	95[25]

Type		GWH050	GWH080	GWH090	GWH110	GWH125
Displacement cm³/rev [in³/rev]		164[10.0]	205[12.5]	254[15.5]	293[17.9]	409[24.9]
Max. Speed,	Cont.	460	370	290	250	180
[RPM]	Int.	580	460	370	320	230
Max. Torque	Cont.	44[3975]	569[5050]	704[6250]	811[7200]	946[8400]
daNm [lb-in]	Int.	512[4550]	653[5800]	799[7100]	929[8250]	1019[9050]
Max. Pressure Drop Cont.	cont.	207[3000]	207[3000]	207[3000]	207[3000]	173[2500]
Drop	int.	242[3500]	242[3500]	242[3500]	242[3500]	189[2750]
bar [PSI]	Peak**	276[4000]	276[4000]	276[4000]	276[4000]	207[3000]
Max. Oil Flow	Cont.	76[20]	76 [20]	76 [20]	76 [20]	76 [20]
lpm [GPM]	int.	95[25]	95 [25]	95[25]	95[25]	95[25]

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

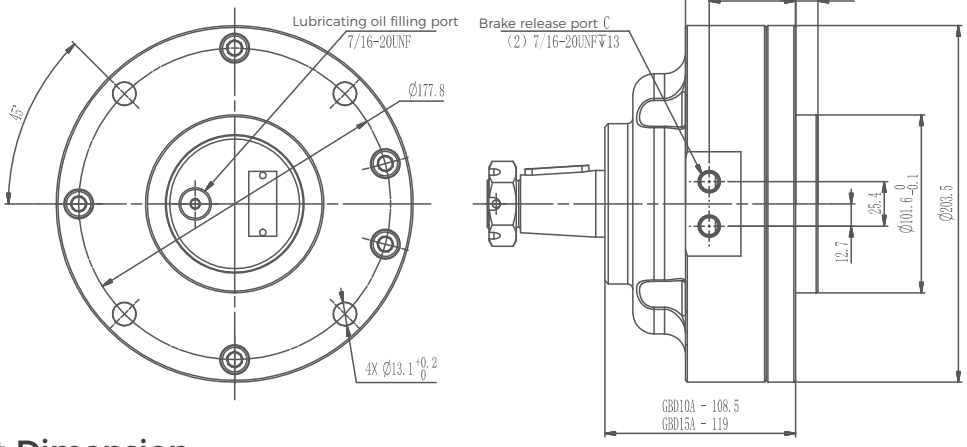
Applications

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

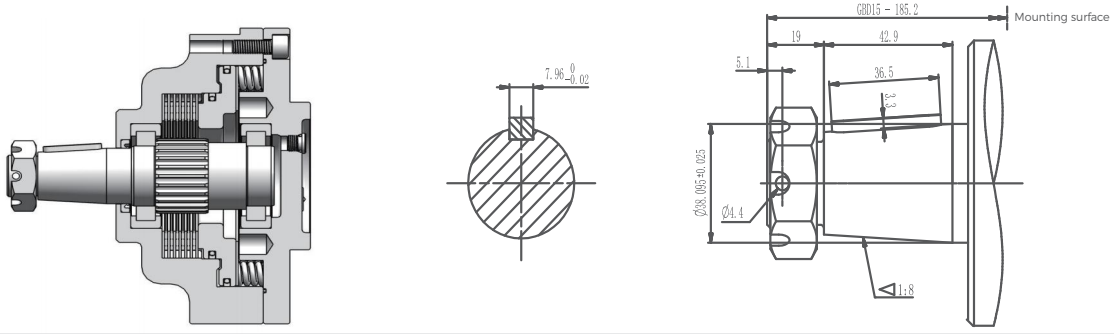
General

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 | ROTATION | PAINT | FUNCTION

CODE	TOEQUE
10	1150 Nm
15	1500 Nm

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

CODE	SHAFT
TA	Tapered Ø38.1 1:8 parallel key 7.96x7x36.5

CODE	PORTS
UG	7/16-20 UNF

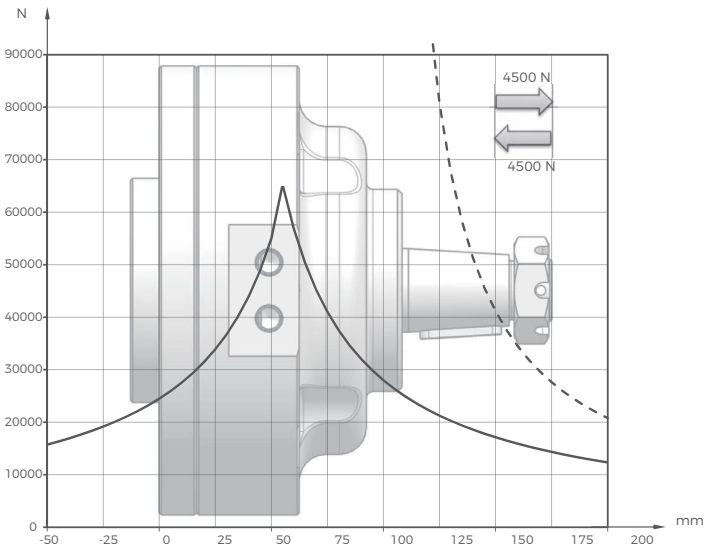
CODE	ROTATION
A	Standard
R	Opposite

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

Permissible Shaft Load/Bearing Curve



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.