

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

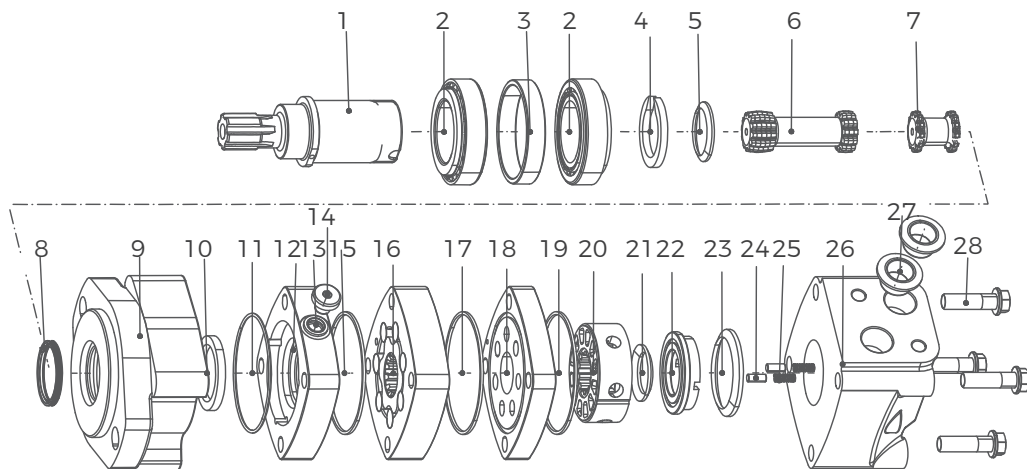
Applications

- 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
Pmissible Shaft Loads	daNm [lbs]	Pa=500 [1125]
Pressure fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	°C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range	mm ² /s [SUS]	20÷75 [98÷347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 microns)



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

Ordering Code

GS SERIES		DISP	FLANGE	SHAFT	PORTS	ROTATION	PAINT	FUNCTION	
CODE	TYPE	CODE	DISP	CODE	FLANGE	CODE	PORTS	CODE	PAINT
GS	Orbital motor	80	80.5cm ³ /rev [4.9in ³ /rev]	A7	2-Ø13.5 rhomb Ø106.4, pilot Ø82.5×6.3 	C9	G1/2, G1/4 manifold 2×M10	A	No paint
GSS	Bearingless motor	100	100cm ³ /rev [6.1in ³ /rev]	H3	4-Ø13.5 square Ø106.4, pilot Ø82.5×6.3 	M8	M22×1.5, M14×1.5 manifold 2×M10	B	Blue
		125	125.7cm ³ /rev [7.67in ³ /rev]	A9	6-Ø13.5 rhomb Ø106.4, pilot Ø82.5×2.6 	UB	7/8-14UNF O-ring, 7/16-20UNC manifold 2×3/8-16UNC	C	Black
		160	159.7cm ³ /rev [9.74in ³ /rev]	W1	4-Ø13.5 wheel Ø160, pilot Ø125×8 	UC	1/2-14 NPTF, 7/16-20UNF manifold 2×3/8-16UNC	S	Silver grey
		200	200cm ³ /rev [12.2in ³ /rev]	AA	2-Ø14.3 rhomb Ø146.05, pilot Ø101.6×9.4 				
		250	250cm ³ /rev [15.3in ³ /rev]	H1	4-Ø11.5 square Ø106.4, pilot Ø82.5×6.3 	CODE	SHAFT		
		315	314.9cm ³ /rev [19.2in ³ /rev]	B1	4-Ø11 circle Ø125, pilot Ø100×6 	C1	Cardan 12-DP 12/24 	A	Standard
		400	397cm ³ /rev [24.2in ³ /rev]	H2	4-Ø13.5 square Ø127, pilot Ø101.6×6.3 	S4	Ø32 parallel key 10×8×45 	F	Free running
		475	474.6cm ³ /rev [28.96in ³ /rev]			S8	Ø25.4 parallel key 6.35×6.35×25.4 	L	Low speed
		525	522.7cm ³ /rev [31.88in ³ /rev]			SG	Ø31.75 parallel key 7.96×7.96×31.75 	V	High temp.
		565	564.9cm ³ /rev [34.47in ³ /rev]			R2	Ø31.75 splined tooth 14-DP 12/24 	S	Low temp.
						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	ROTATION
								A	Standard
								R	Opposite

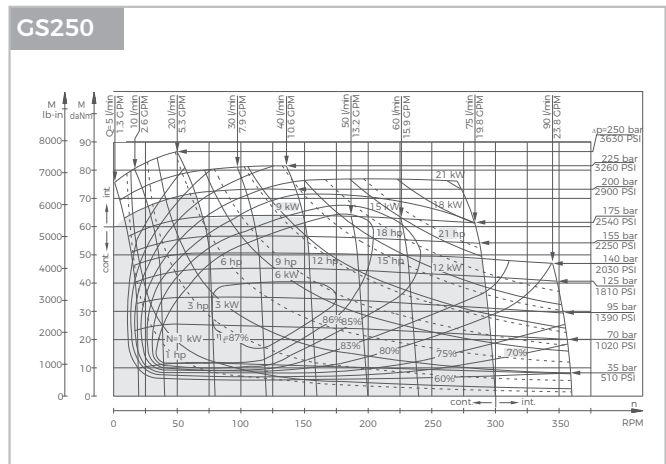
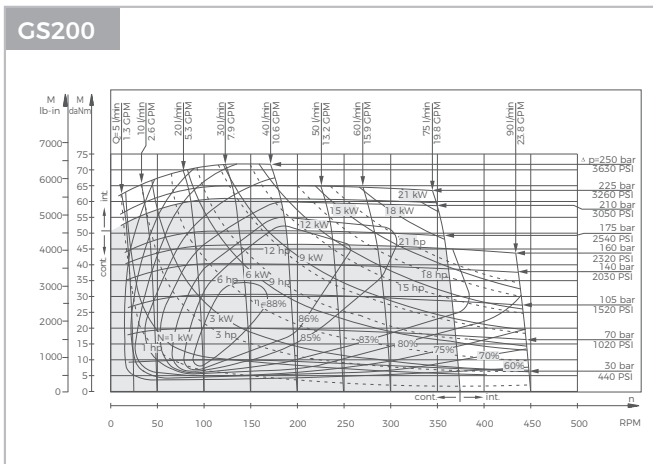
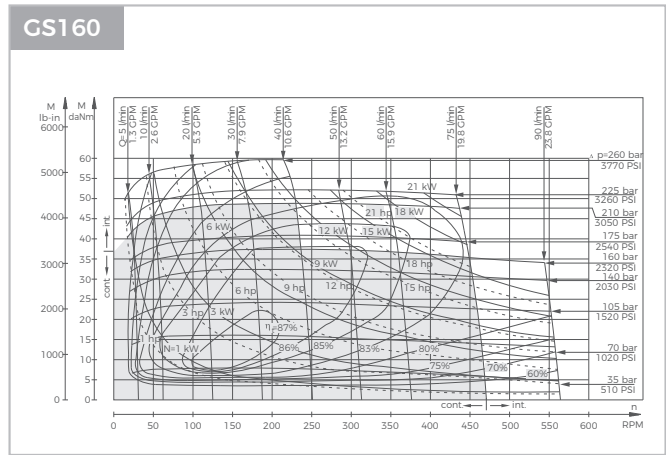
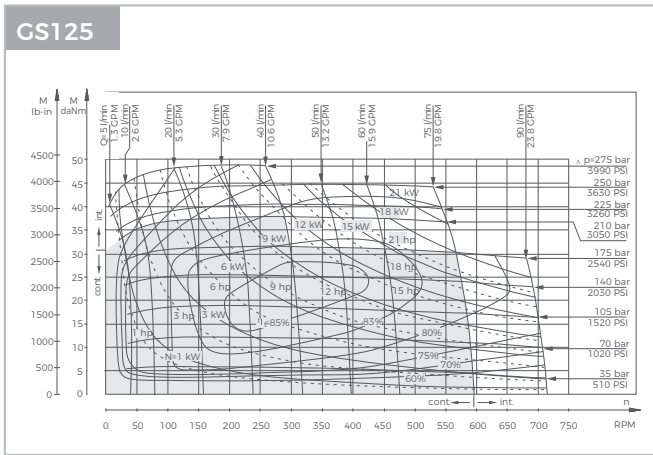
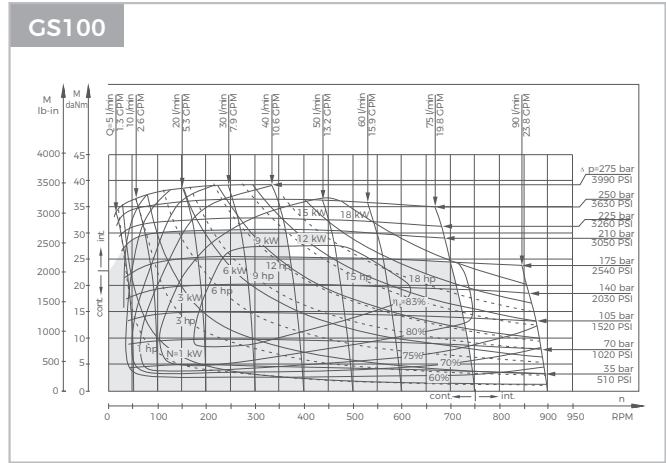
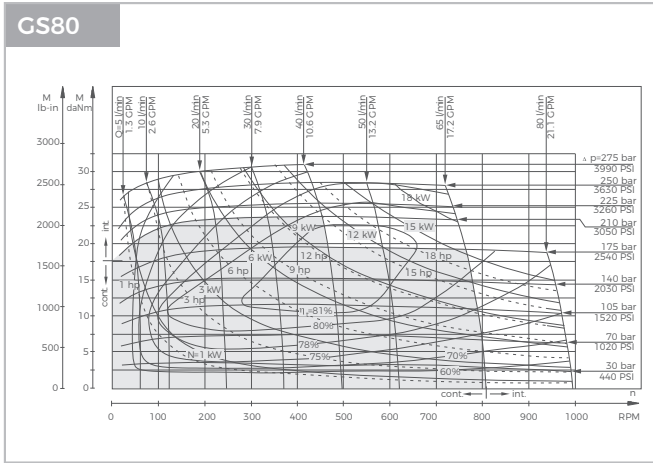
Specifications

Type		GS80	GS100	GS125	GS160	GS200	GS250
Displacement, cm ³ /rev [in ³ /rev]		80,5[4.91]	100[6.1]	125,7[7.67]	159,7[9.74]	200[12.2]	250 [15.3]
Max. Speed	Cont	810	750	600	470	375	300
RPM	Int*	1000	900	720	560	450	360
Max. Torque	Cont	24[2120]	30,5[2700]	37,5[3320]	49[4340]	61[5400]	72[6370]
daNm [lb-in]	Int*	31[2740]	39[3450]	49[4340]	60[5310]	72[6370]	87[7700]
Max. Output	Cont	15,5[20.8]	18[24.1]	18[24.1]	16,5[22.1]	16,5[22.1]	14,5[19.4]
kW [HP]	Int*	19,5[26.2]	22,8[30.2]	22,5[30.2]	23[30.8]	22[29.52]	18[24.1]
Max. Pressure Drop	Cont	210[3050]	210[3050]	210[3050]	210[3050]	210[3050]	200[2900]
bar [PSI]	Int*	275[3990]	275[3990]	275[3990]	275[3990]	275[3990]	250[3630]
	Peak**	295[4280]	295[4280]	295[4280]	295[4280]	295[4280]	270[3920]
Max. Oil Flow	Cont	65[17]	75[20]	75[20]	75[20]	75[20]	75[20]
lpm [GPM]	Int*	80[21]	90[24]	90[24]	90[24]	90[24]	90[24]
Max. Inlet Pressure	Cont	230[3340]	230[3340]	230[3340]	230[3340]	230[3340]	230[3340]
bar [PSI]	Int*	295[4280]	295[4280]	295[4280]	295[4280]	295[4280]	295[4280]
	Peak**	300[4350]	300[4350]	300[4350]	300[4350]	300[4350]	300[4350]
Max. Return Pressure	Cont	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]
with Drain Line	Int*	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Peak**	210[3050]	210[3050]	210[3050]	210[3050]	210[3050]	210[3050]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		12[175]	10[145]	10[145]	8[115]	8[115]	8[115]
Min. Starting Torque	At max. press. drop Cont	18[1590]	23[2040]	29[2570]	37[3270]	47[4160]	56[4960]
daNm [lb-in]	At max. press. drop Int*	23,5[2080]	30[2660]	38[3360]	46[4070]	56[4960]	70[6200]
Min. Speed**, RPM		10	10	8	8	6	6
Weight, kg [lb] For	GS	9,9[21.8]	10,1[22.2]	10,4[22.9]	10,8[23.8]	11,2[24.7]	11,7[25.8]
rear port + 0,40 [.88]	GSS	7,9[17.4]	8,1[17.8]	8,4[18.5]	8,8[19.4]	9,2[20.2]	9,7[21.4]

Specifications

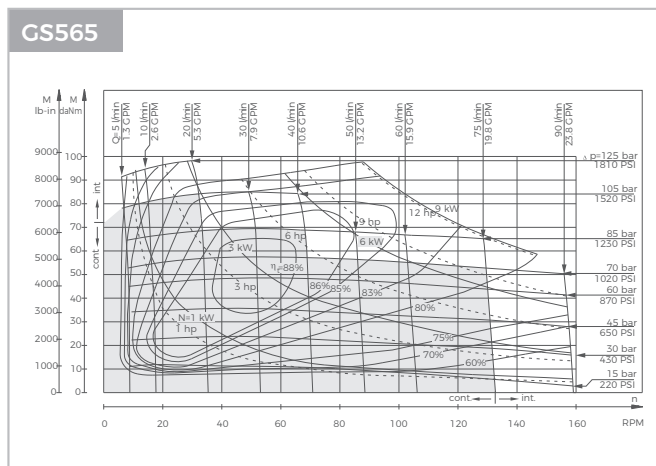
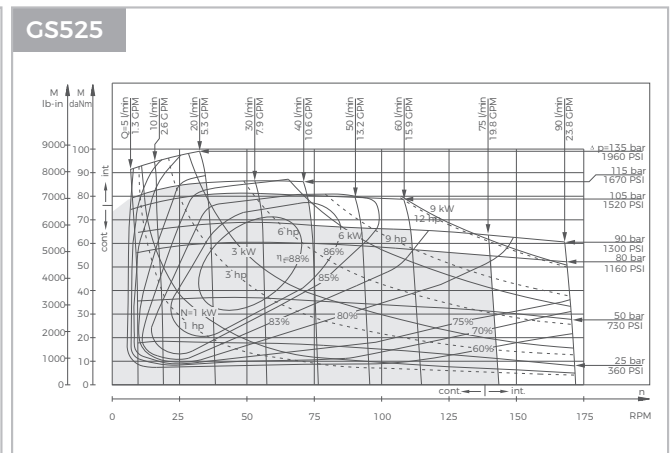
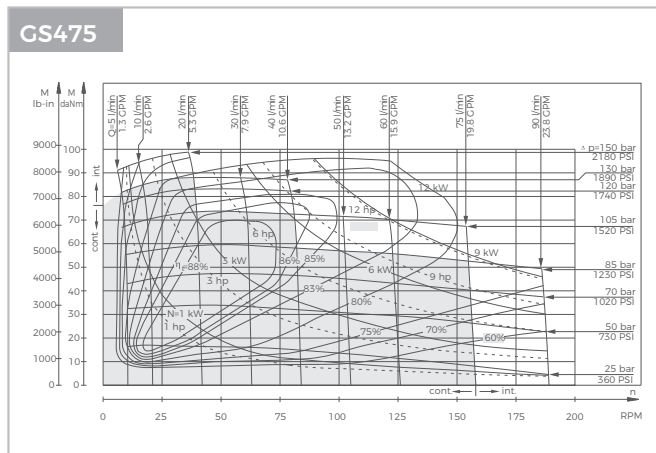
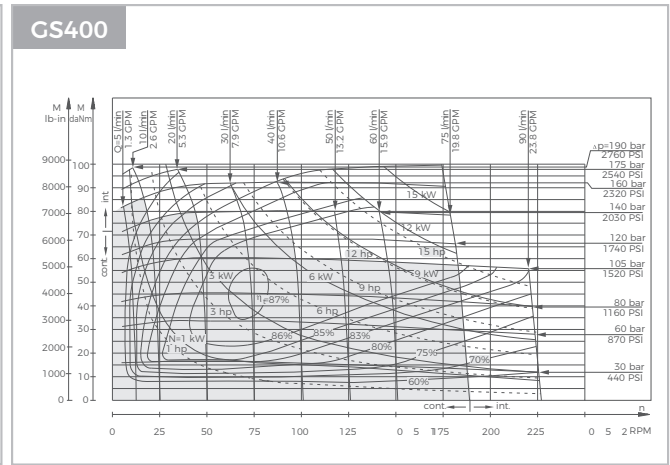
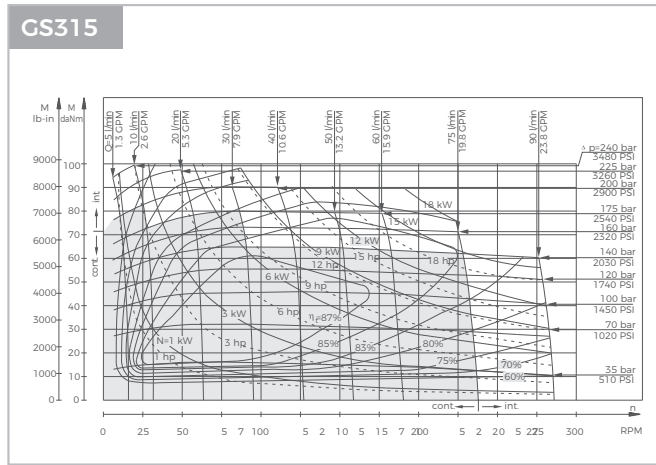
Type		GS315	GS400	GS475	GS525	GS565
Displacement, cm ³ /rev [in ³ /rev]		314,9[19.2]	397[24.2]	474,6[28.96]	522,7[31.88]	564,9[34.47]
Max. Speed	Cont.	240	190	160	145	130
RPM	Int.*	290	230	190	175	160
Max. Torque	Cont.	82,5[7300]	86,5 [7660]	85[7520]	85[7520]	85[7520]
daNm [lb-in]	Int.*	100[8850]	99[8760]	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		8[115]	8[115]	8[115]	8[115]	8[115]
with Unloaded Shaft, bar [PSI]						
Min. Starting Torque	At max. press. drop Cont.	71[6280]	71[6280]	71[6280]	71[6280]	71[6280]
daNm [lb-in]	At max. press. drop Int.*	85[7520]	84[7430]	84[7430]	84[7430]	84[7430]
Min. Speed***, RPM		5	5	5	5	5
Weight, kg [lb] For	GS	12,4[27.3]	13,1[29.3]	14,1[31]	14,6[32.2]	15[33.1]
rear port + 0,40 [.88]	GSS	10,4[22.9]	11,3[24.9]	12,1[26.7]	12,6[27.8]	13[28.6]

Function Diagrams



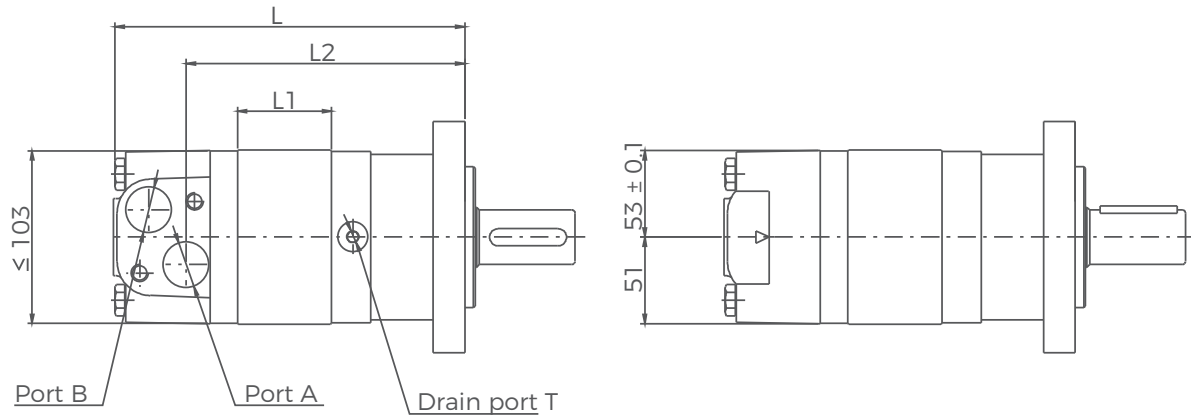
The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

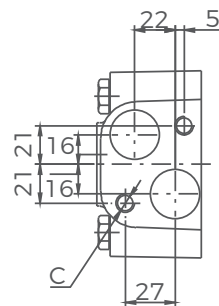


The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

GS Dimensions and Mountings

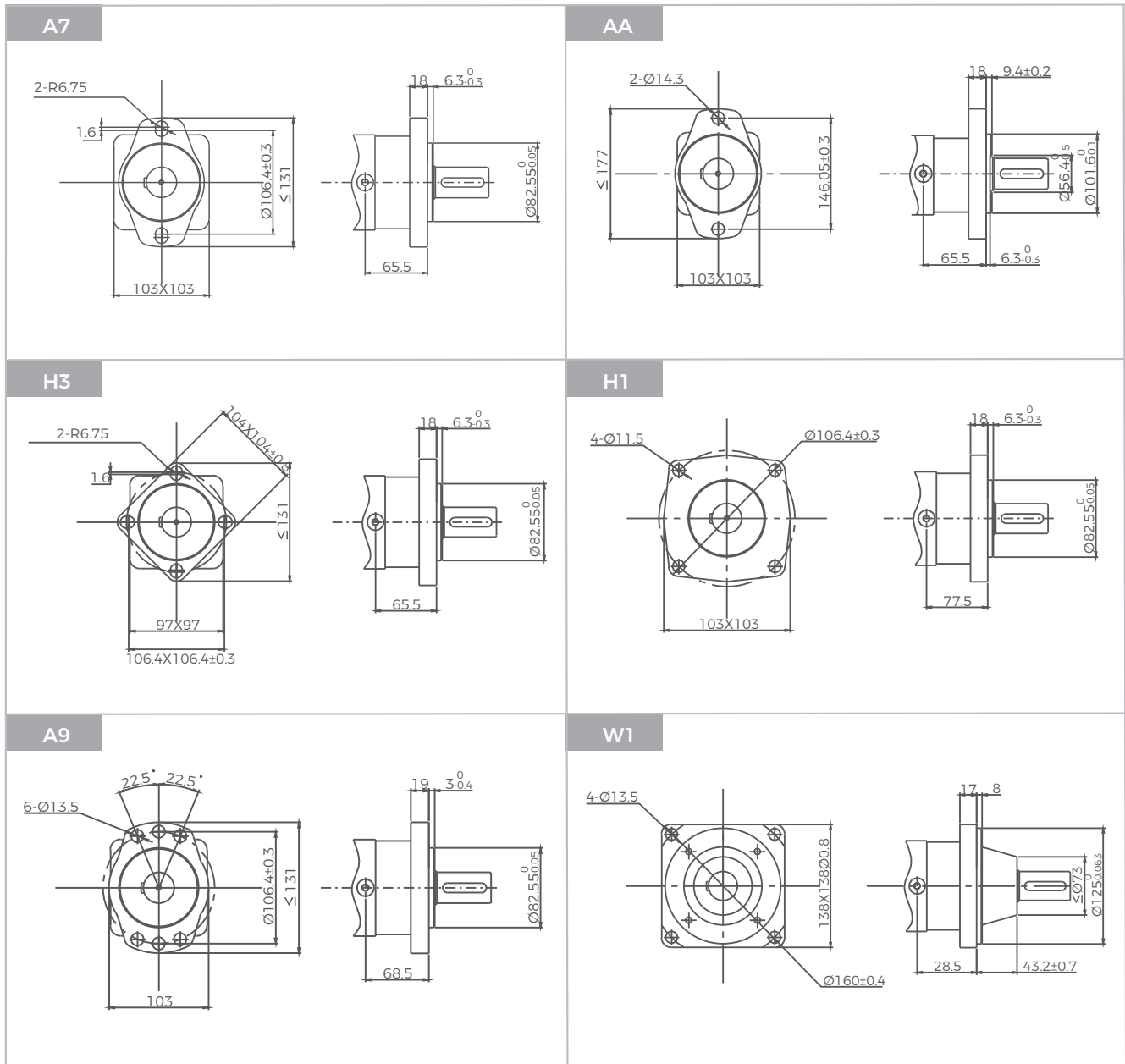


Model	L	L1	L2
GS80	170	16	126.5
GS100	174	20	130.5
GS125	179	25	135.5
GS160	181	27	137.5
GS200	188	34	144.5
GS250	196	42	152.5
GS315	208	54	164.5
GS400	223	69	179.5
GS475	237	83	193.5
GS525	229	75	185
GS565	235	80	191

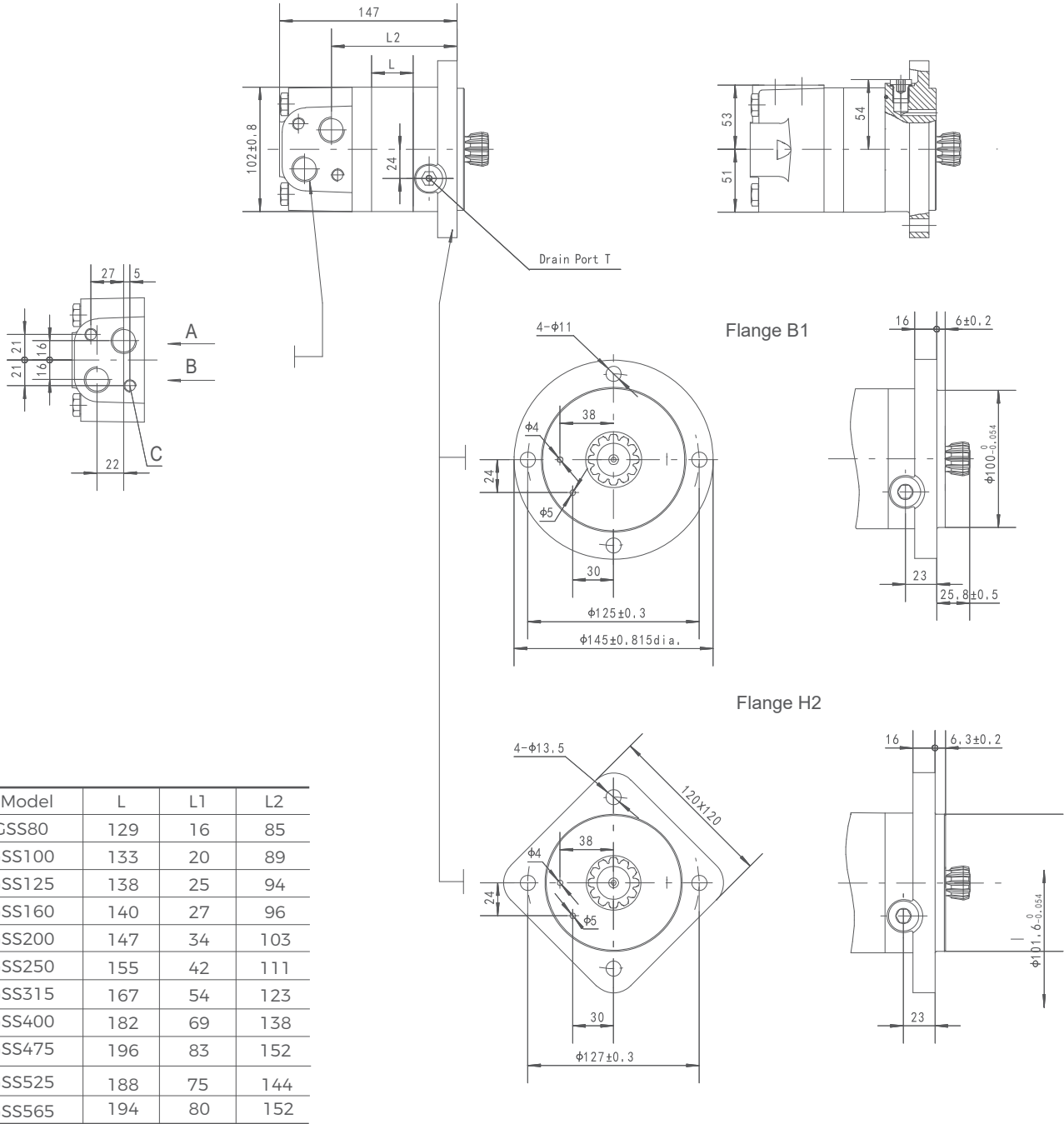


Mounting	G9 (depth)	M8 (depth)	UB (depth)	UC (depth)
P(A,B)	G1/2(15)	M22 x 1.5(15)	7/8-14 O-ring(17)	1/2-14 NPTF(15)
T	G1/4(12)	M14 x 1.5(12)	7/16-20 UNF(12)	7/16-20 UNF(12)
C	2-M10(13)	2-M10(13)	2-3/8-16 UNC(13)	2-3/8-16 UNC(13)

GS Flange Covers Dimensions



GSS Bearingless Motor Dimensions and Mounting



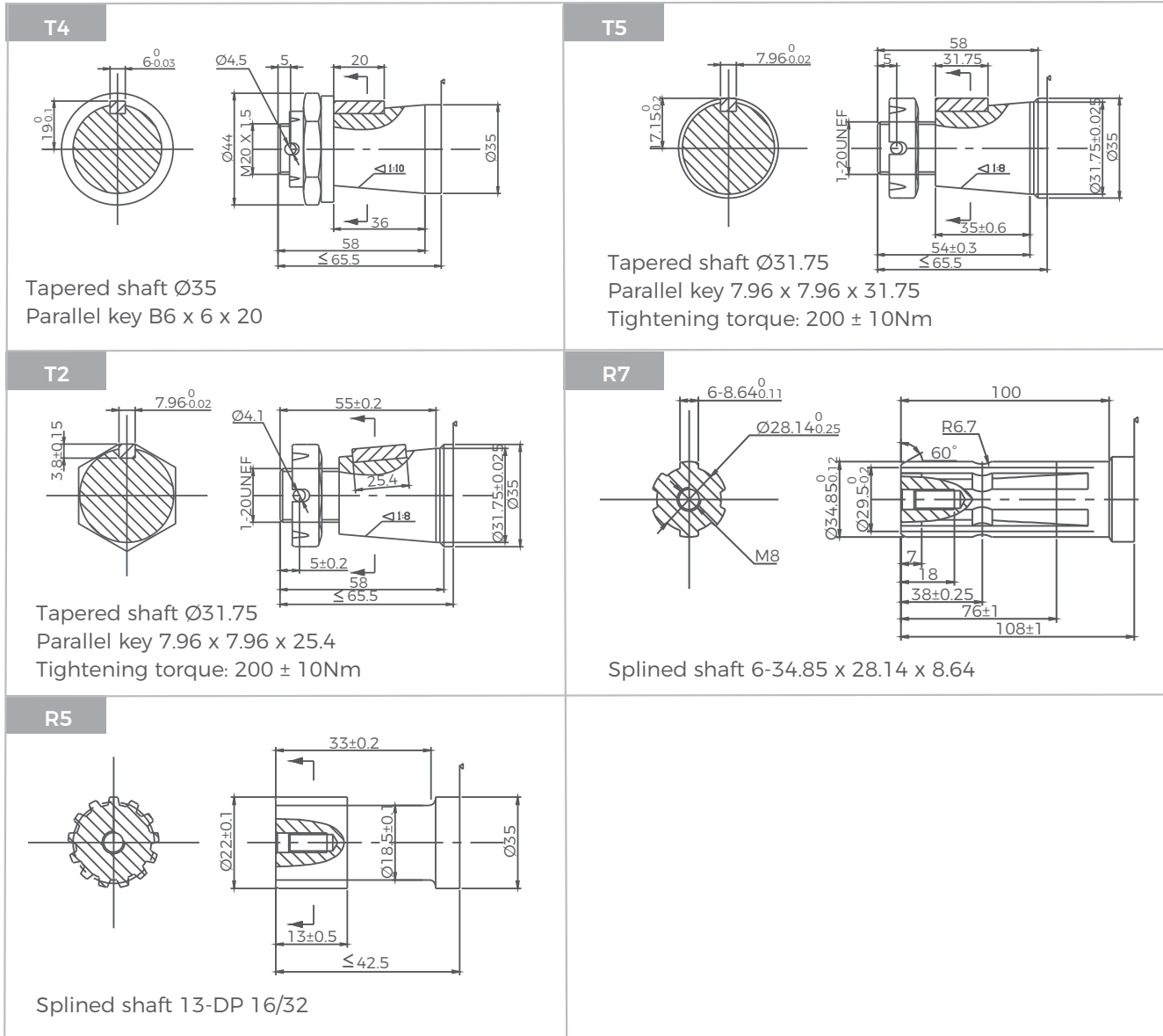
Model	L	L1	L2
GSS80	129	16	85
GSS100	133	20	89
GSS125	138	25	94
GSS160	140	27	96
GSS200	147	34	103
GSS250	155	42	111
GSS315	167	54	123
GSS400	182	69	138
GSS475	196	83	152
GSS525	188	75	144
GSS565	194	80	152

Mounting	C9 (depth)	M8 (depth)	UB (depth)	UC (depth)
P(A, B)	G1/2(15)	M22 x 1.5(15)	7/8-14 O-ring(17)	1/2-14 NPTF(15)
T	G1/4(12)	M14 x 1.5(12)	7/16-20 UNF(12)	7/16-20 UNF(12)
C	2-M10(13)	2-M10(13)	2-3/8-16 UNC(13)	2-3/8-16 UNC(13)

GS Shafts Dimensions

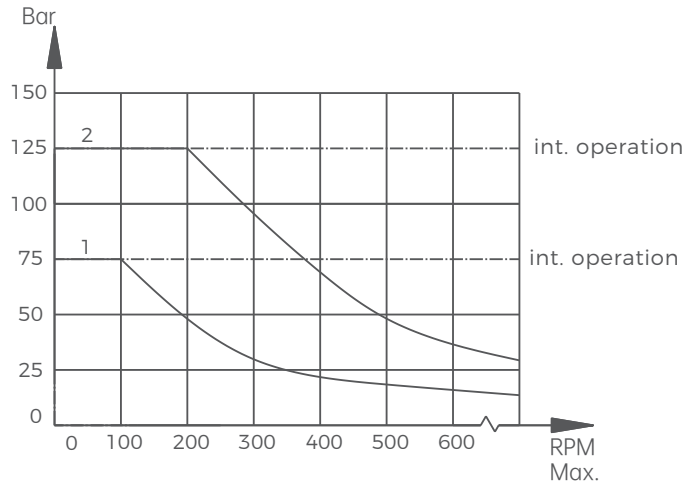
<p>S1</p> <p>Straight shaft Ø25 Parallel key 8 x 7 x 32</p>	<p>S4</p> <p>Straight shaft Ø32 Parallel key 10 x 8 x 45</p>
<p>S8</p> <p>Straight shaft Ø25.4 Parallel key 6.35 x 6.35 x 25.4</p>	<p>SG</p> <p>Straight shaft Ø31.75 Parallel key 7.96 x 7.96 x 31.75</p>
<p>R2</p> <p>Splined shaft 14-DP 12/24</p>	<p>R3</p> <p>Splined shaft 14-DP 12/24</p>
<p>S6</p> <p>Straight shaft Ø25.4 Woodruff key Ø25.4 x 6.35</p>	<p>R8</p> <p>Splined shaft SAE 6B</p>

CS Shafts Dimensions



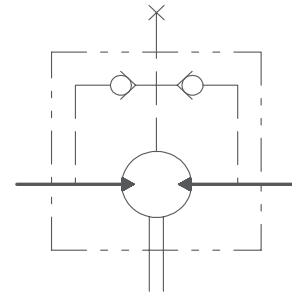
GS Series Hydraulic Motors

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.

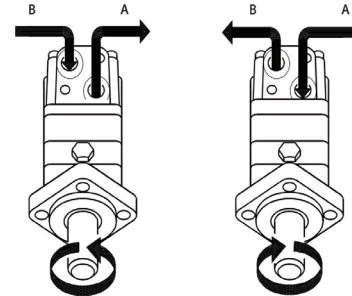


GS with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.

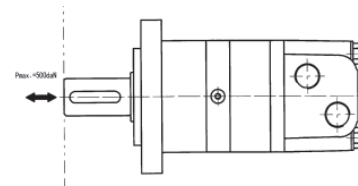
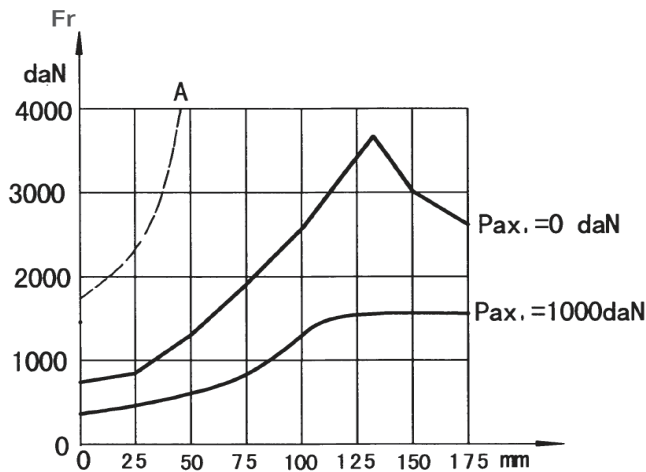
GS with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

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 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.