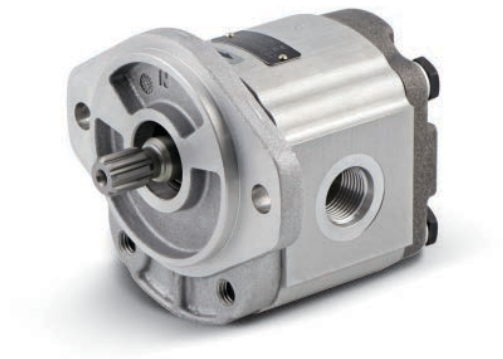
- **Up to 250 bar continuous operation**
  High strength materials and large journal diameters provide low bearing loads for high pressure operation.
- **High efficiency**
  Pressure balanced bearing blocks assure maximum efficiency under all operating conditions.
- **Application flexibility**
  International mounts and connections, integrated valve capabilities and common inlet multiple pump configurations provide unmatched design and application versatility.
- **Low noise**
  12 tooth gear profile and optimized flow metering provide reduced pressure pulsation and quiet operation.
- **Large range of integrated valves**



Product Features	Description
Pump Type	Pressure balanced, aluminum, external gear
Mounting	SAE, rectangular, thru-bolt standard, specials on request
Ports	SAE and metric split flanges and others
Shaft Style	SAE splined, keyed, cylindrical tang drive, specials on request
Maximum Speed	500 - 3500 rpm, see Specifications
Theor. displacement	See Specifications
Drive	Drive direct with flexible coupling is recommended.
Axial / Radial load	Consult with product service for allowable loading.
Inlet pressure	Operating range 0.8 to 2 bar abs. Min. inlet pressure 0.5 bar abs. Short time without load. Maximum suggested inlet flow velocity for pumps: 2.5 mps. Consultation is recommended.
Outlet pressure	See Specifications
Pressure rising rate	Max. 3000 bar/s
Hydraulic fluids	Hydraulic oil HLP, ISO, DIN 51524-2
Fluid viscosity	Range of operating viscosity 8 to 1000 mm²/s. Max. permissible operating pressure dependent on viscosity. Viscosity range for cold start 1000 to 2000 mm²/s at operating pressure p ≤10 bar and speed n ≤1500 rpm.

Product Features	Description
Fluid temperature	For NBR seals, range of operating temperature -40° to +80°C. For FKM seals, range of operating temperature -20° to +105°C. Max. permissible operating pressure dependent on fluid temperature. Temperature for cold start -20° to -15°C at speed ≤1500 rpm. Max. permissible operating pressure dependent on fluid temperature.
Filtration	According to ISO 4406 Cl. 19/17/13
Direction of rotation (looking at the drive shaft)	Clockwise, counter-clockwise or double. Attention! Drive pump only in indicated direction of rotation.
Multiple pump assemblies	• Available in two or three sections; limitations shown in the shaft loading rating table in this catalog. • Max. load is determined by adding the torque values for each pumping section that will be simultaneously loaded.
Separate or common inlet capability	Separate inlet configuration: • Each gear housing has individual inlet and outlet ports. Common inlet configuration: • Two gear sets share a common inlet.

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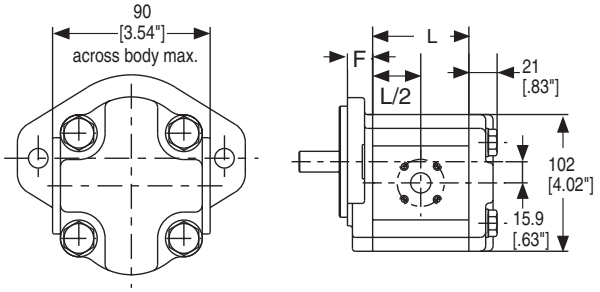
Kings Mountain, NC 28086

PGP/PGM511 Specifications

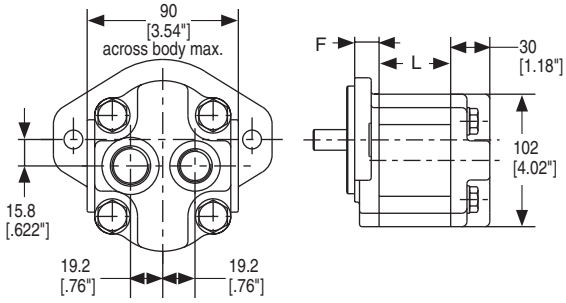
Code		0040	0050	0060	0070	0080	0100	0110	0120	0140	0160	0180	0190	0210	0230	0250	0270	0280	0310	0330
Displacements	cm^3/rev	4	5	6	7	8	10	11	12	14	16	18	19	21	23	25	27	28	31	33
	in^3/rev	0.24	0.31	0.37	0.43	0.49	0.61	0.67	0.73	0.85	0.98	1.10	1.16	1.28	1.40	1.53	1.65	1.71	1.89	2.01
Continuous Pressure	bar	250	250	250	250	250	250	250	250	250	250	250	250	235	225	210	190	185	165	155
	psi	3625	3625	3625	3625	3625	3625	3625	3625	3625	3625	3625	3625	3410	3265	3045	2755	2685	2395	2248
Intermittent Pressure	bar	275	275	275	275	275	275	275	275	275	275	275	275	240	235	220	200	190	170	160
	psi	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3480	3408	3190	2900	2755	2465	2320
Min. Speed @ Max. Outlet Pressure	rpm	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Max. Speed @ 0 Inlet & Max. Outlet Pressure	rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3250	3250	2800	2750	2500	2350	2350	2350	2000
Pump Input Power @ Max. Pressure and 1500 rpm	HP	4.02	5.03	6.03	7.04	8.05	10.06	11.13	12.07	14.08	16.09	18.10	19.18	19.31	19.71	19.98	20.12	21.19	22.40	23.20
	kW	3.0	3.8	4.5	5.3	6.0	7.5	8.3	9.0	10.5	12.0	13.5	14.3	14.4	14.7	14.9	15.0	15.8	16.7	17.3
Dimension L	mm	47.0	48.6	50.1	51.7	53.3	56.5	58.0	59.6	62.8	65.9	69.0	70.6	73.7	76.9	80.0	83.2	84.8	89.5	92.6
	in	1.85"	1.91"	1.97"	2.04"	2.10"	2.22"	2.28"	2.35"	2.47"	2.59"	2.72"	2.78"	2.90"	3.03"	3.15"	3.28"	3.34"	3.52"	3.65"
Approximate Weight	lbs	7.1	7.3	7.5	7.7	7.7	7.8	7.9	8.2	8.2	8.4	8.6	8.6	8.8	9.0	9.3	9.3	9.5	9.7	9.9
	kg	3.2	3.3	3.4	3.5	3.5	3.6	3.6	3.7	3.7	3.8	3.9	3.9	4.0	4.1	4.2	4.2	4.3	4.4	4.5

PGP/PGM511 Dimensions

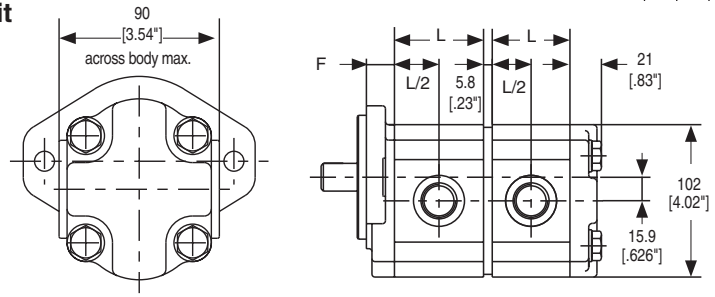
Single Unit



Single Unit with Rear Ports



Tandem Unit



Dimension F:
See Flanges on page 24

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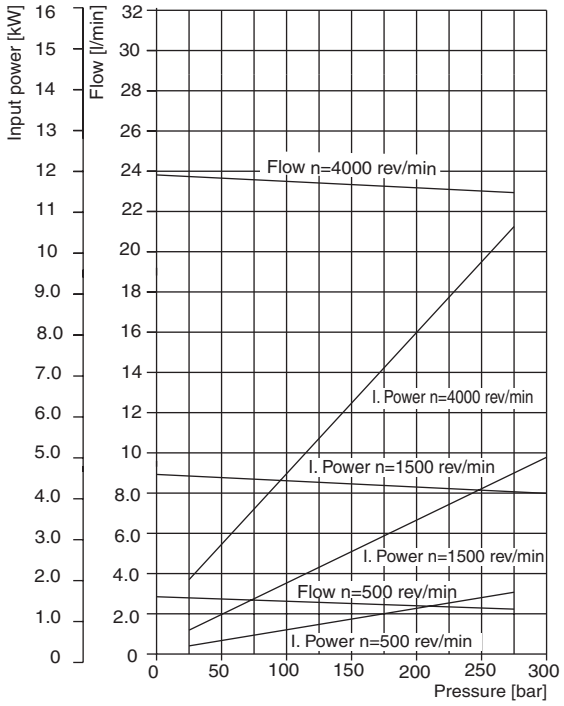
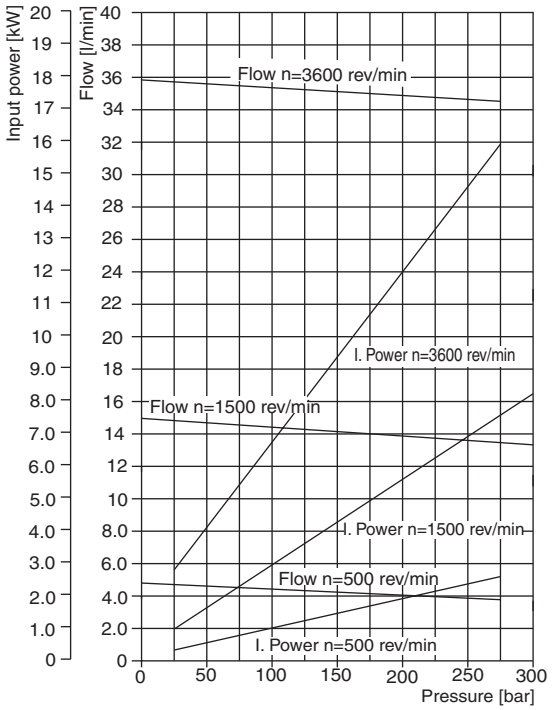
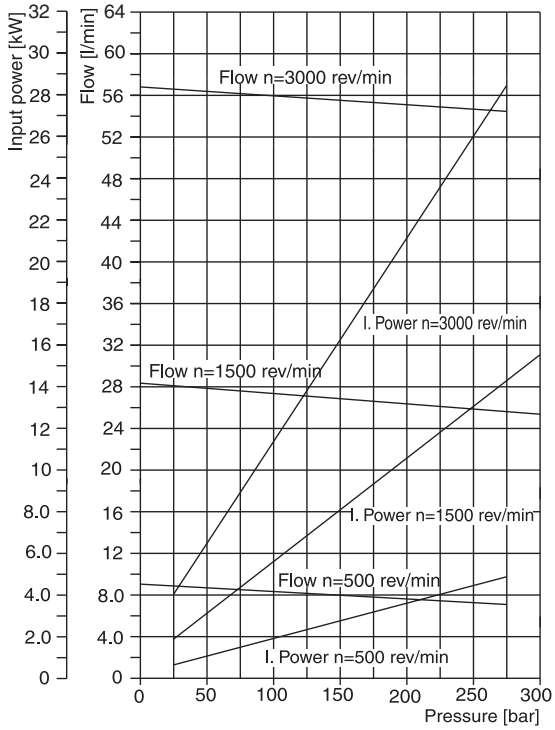
6.0 CC



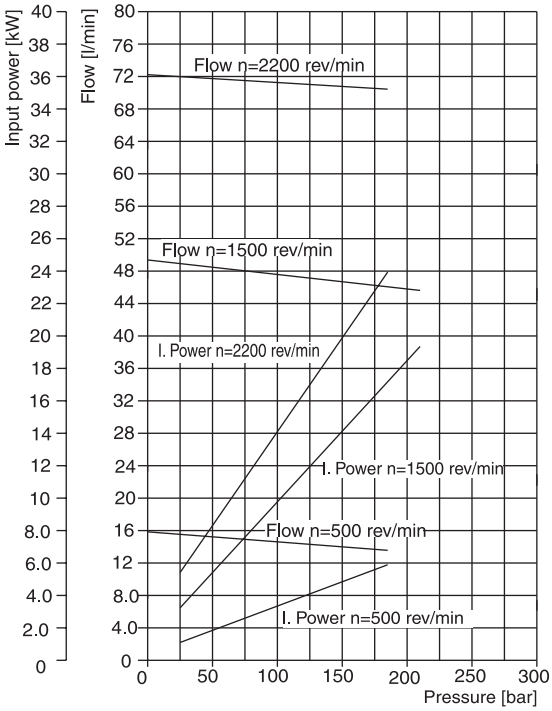
10.0 CC



19.0 CC



33.0 CC



Fluid Temperature = 45± 2ºC
Viscosity = 36 mm²/s
Inlet Pressure = 0.9 + 0.1 bar absolute

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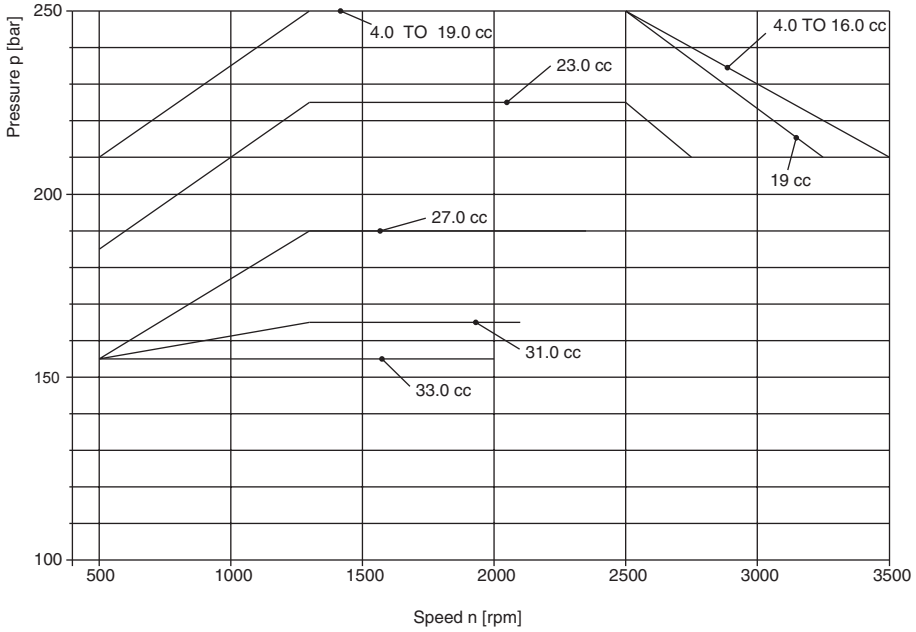
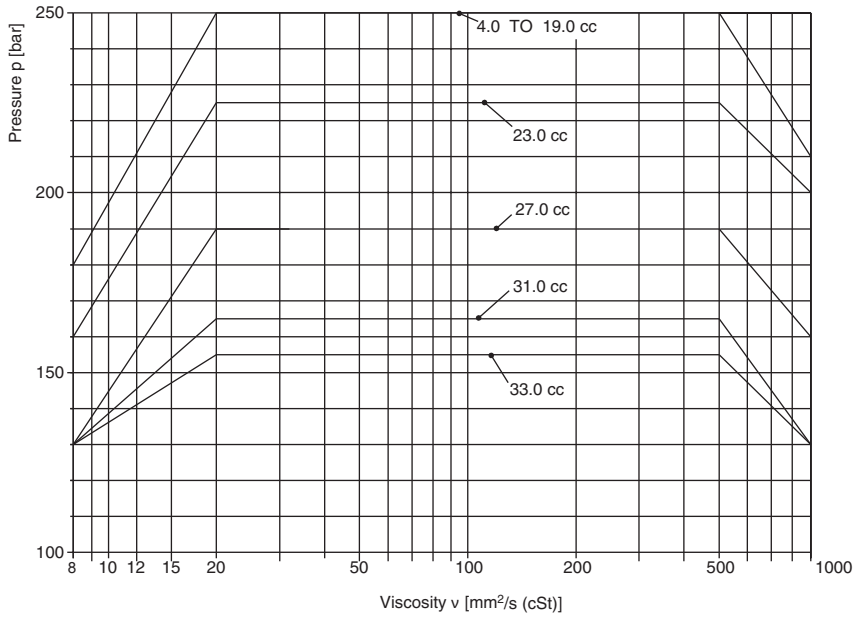
Pressure depending on speed



Pressure depending on viscosity



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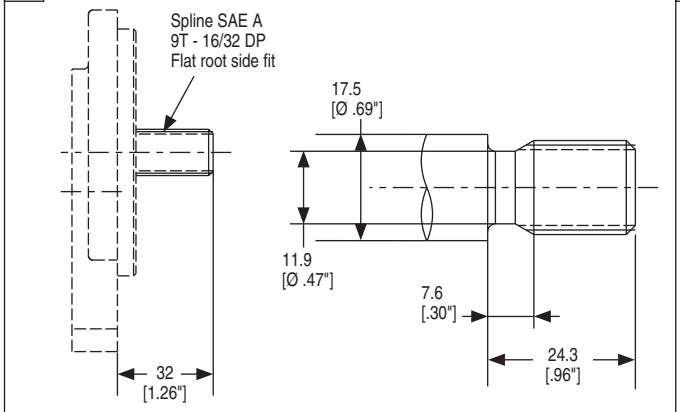
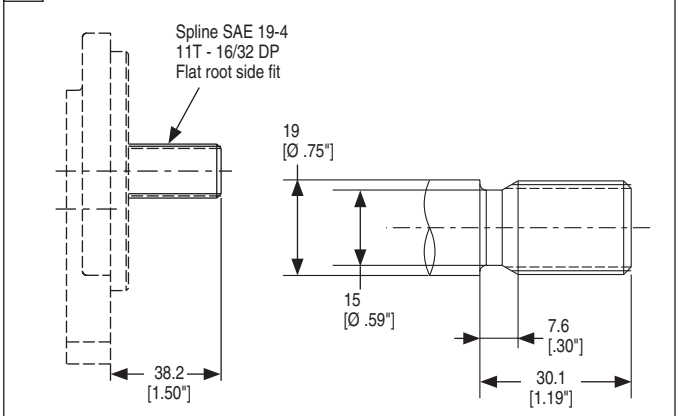
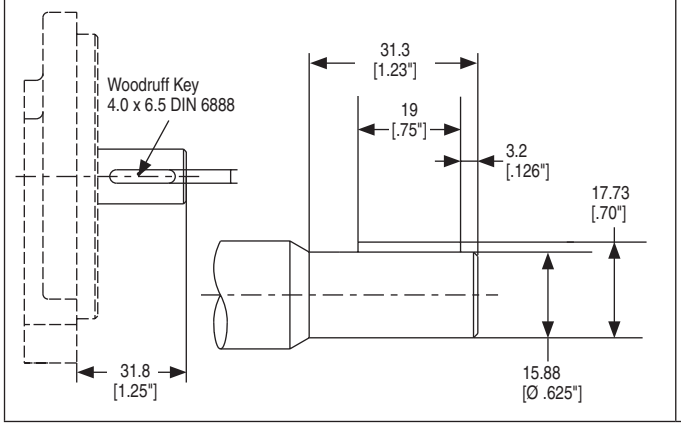
A1



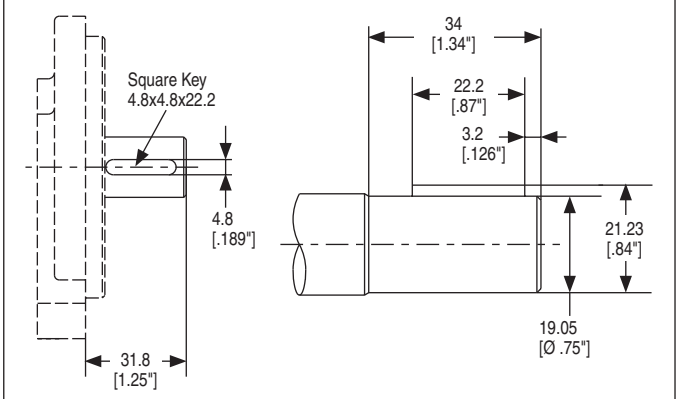
C1



K1



L6



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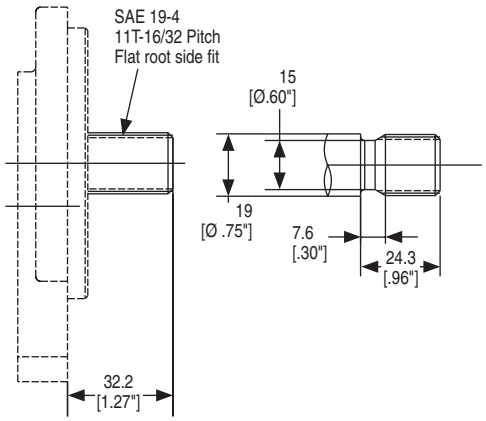
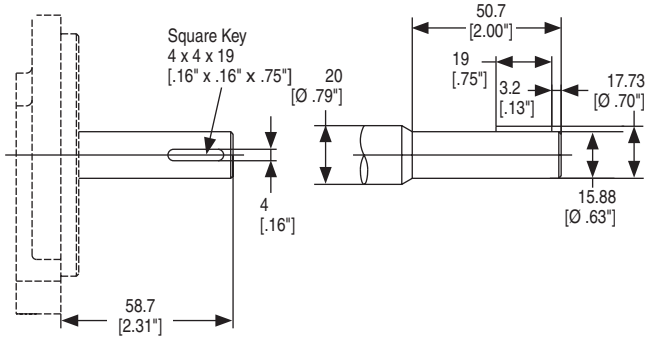
PGP/PGM511 Drive Shafts (Continued)

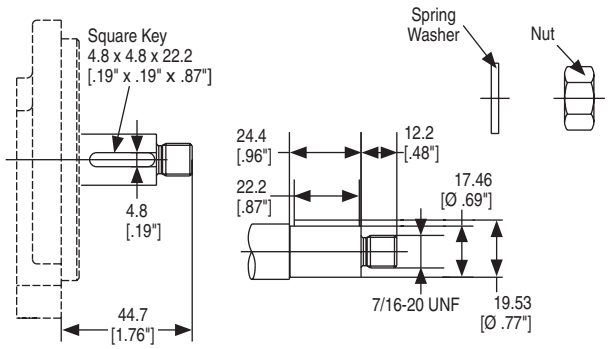
C2



K4



L1



PGP/PGM511 Shaft Load Capacity

Code	Description		Torque Rating [Nm]
A1	9T, 16/32DP, 32L, SAE A	spline	86
C1	11T, 16/32DP, 38.2L, SAE 19-4	spline	184
C2	11T, 16/32DP, 32.2L, SAE 19-4	spline	184
K1	Ø 15.88, 4.0 Key, no thread, 32L, SAE A	parallel	75
K4	Ø 15.88, 3.95 Key, no thread, 58.7L	parallel	75
L1	Ø 17.46, 4.8 Key, 7/16" UNF ext., 44.2L	parallel	112
L6	Ø 19.05, 4.8 Key, no thread, 32L, SAE 19-1	parallel	145
	Tandem pump connection shaft	spline	110

$$\text{Torque [Nm]} = \frac{\text{Displacement [cm}^3\text{/rev]} \times \text{Pressure [bar]}}{57.2}$$

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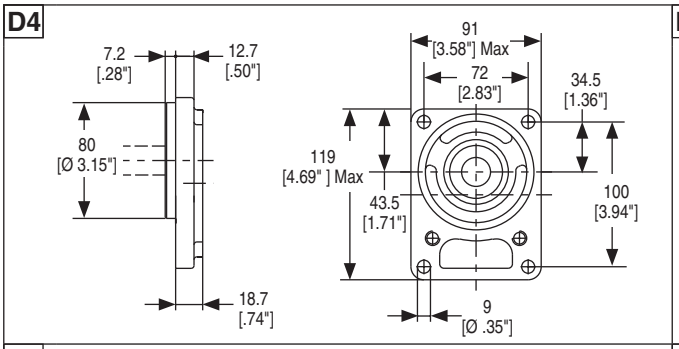
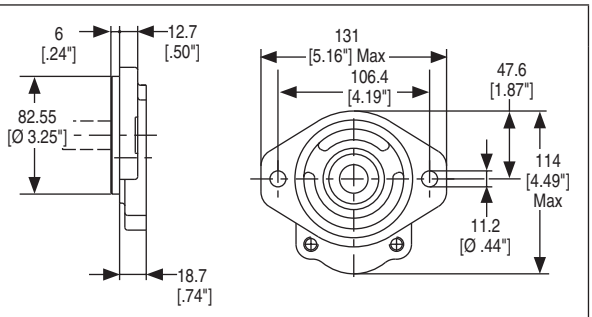
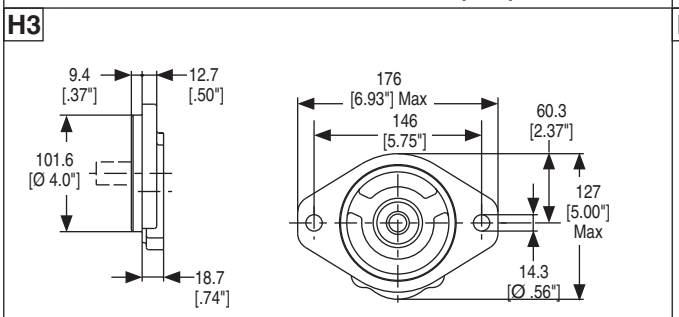
D4



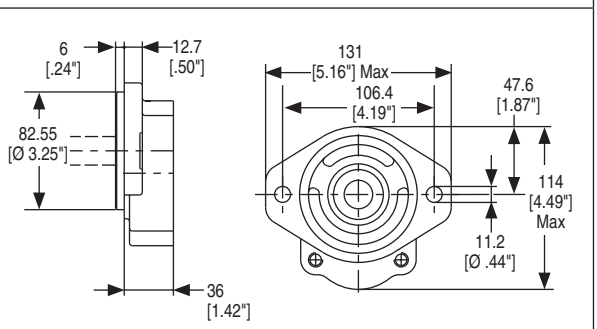
H2



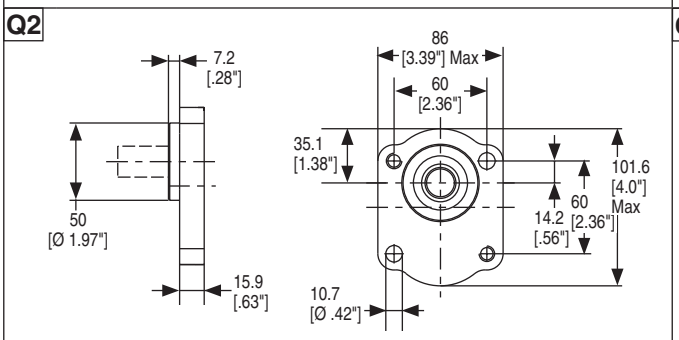
H3



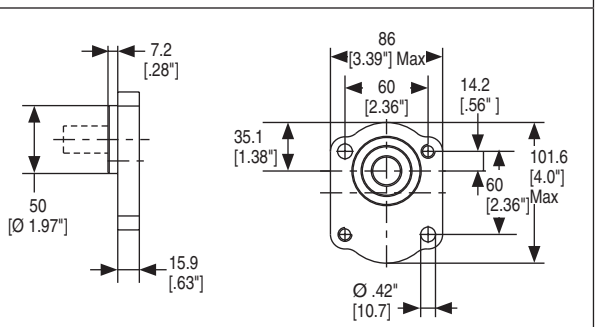
L2



Q2



Q4



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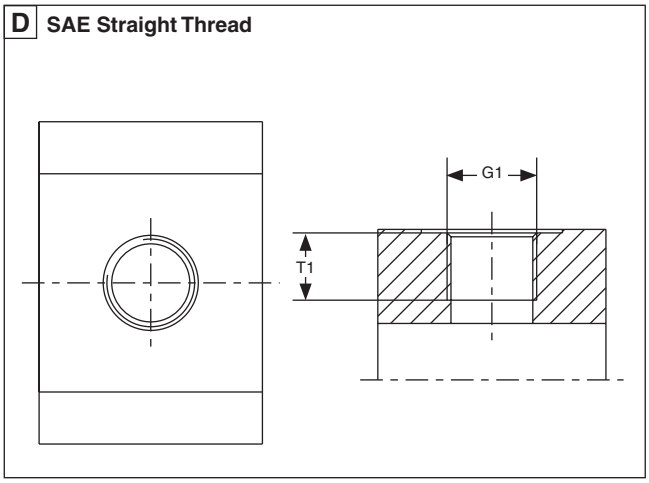
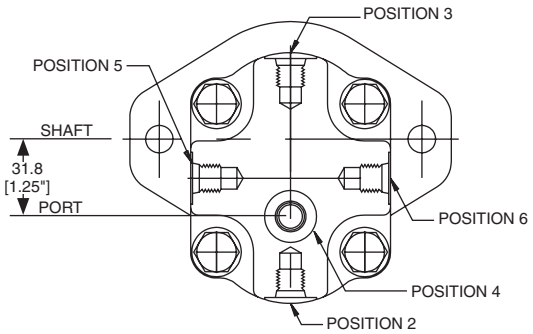
PGP/PGM511 Port Options

D SAE Straight Thread



Code	SAE J1926-1 Dash Size	Nominal Tube OD	G1 Thread	T1 Dimensions
D2	#6	3/8"	9/16" - 18 UNF	0.50" [12.7]
D3	#8	1/2"	3/4" - 16 UNF	0.56" [14.3]
D4	#10	5/8"	7/8" - 14 UNF	0.66" [16.7]
D5	#12	3/4"	1-1/16" - 12 UN	0.75" [19.0]
D6	#16	1"	1-5/16" - 12 UN	0.75" [19.0]
D7	#20	1-1/4"	1-5/8" - 12 UN	0.75" [19.0]
D8	#24	1-1/2"	1-7/8" - 12 UN	0.75" [19.0]

PGP/PGM511 Drain Positions



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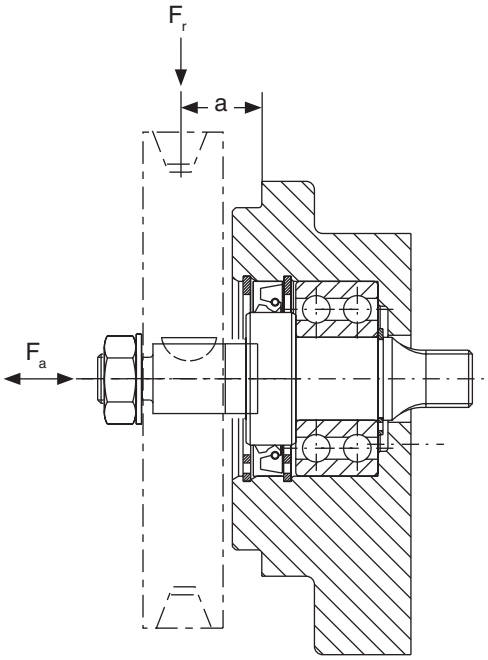
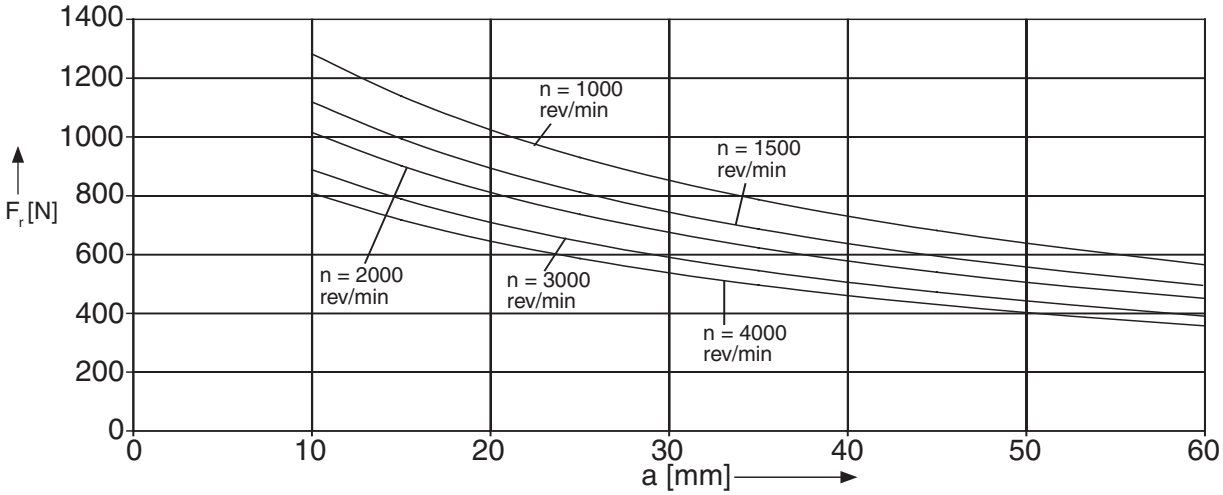
Bearing loads for code L2

Units subject to axial or radial loads, for instance drive with V-belts or gear wheels, must be specified with an outboard bearing. The diagrams below show the maximum axial or radial loads that can be tolerated referred to a bearing life of L_H = 1000 h. F_r is reduced by 0,7 F_a when axial loading is applied.

Outboard Bearing Code L2



Shaft load for outboard bearings



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PG	1	511	2	3	4	5	6	7	8	8	8[1)]	8[1)]	9[2)]	10[2)]	12[5)]	511	2	3	7	8	8	11	3)	4)

Code	1 – Type
P	Pump
M	Motor

Code	2 – Unit	
	Pump	Motor
A	Single unit	Standard Motor without checks
B	Multiple unit	Standard Motor with two checks
C	—	Standard Motor w/ one anti-cavitation check (ACC)
D	—	Standard Motor w/ one ACC + restrictor
M	Single distributor unit	—
Option C MUST NOT HAVE A DRAIN		
Option D MUST HAVE A DRAIN		

3 – Displacement*	
Code	ccm
0040	4.0
0050	5.0
0060	6.0
0070	7.0
0080	8.0
0100	10.0
0110	11.0
0120	12.0
0140	14.0
0160	16.0
0180	18.0
0190	19.0
0210	21.0
0230	23.0
0250	25.0
0270	27.0
0280	28.0
0310	31.0
0330	33.0
* Others on request	

Code	4 – Rotation
C	Clockwise
A	Counter-clockwise
B	Bi-directional

Code	5 – Shaft
A1	9T, 16/32DP, 32L, SAE A spline
C1	11T, 16/32DP, 38.2L, SAE 19-4 spline
C2	11T, 16/32DP, 32.2L, SAE 19-4 spline
K1	Ø15.88, 4.0 Key, no thread, 32L, SAE A, parallel
K4	Ø15.88, 4.0 Key, no thread, 58.7L, parallel
L1	Ø17.46, 4.8 Key, 7/16" UNF ext., 44.7L, parallel
L6	Ø19.05, 4.8 Key, no thread, 32L, SAE 19-1, parallel

Code	6 – Flange	Material
D4	72.0 x 100.0 - Ø80 rectangular	Aluminum
H2	106.4 - Ø82.55 SAE A 2-Bolt	Aluminum
H3	146.1 - Ø101.6 SAE B 2-Bolt	Aluminum
Q2	60.0 x 60.0 - Ø50.0 w/ seal, O thru bolt	Aluminum
Q4	60.0 x 60.0 - Ø50.0 w/ seal, O thru bolt	Aluminum
L2	106.4 - Ø82.55 SAE A 2-Bolt, w/ OBB and cont. drive shaft	Cast Iron

Code	7 – Shaft Seal
X	No seal
N	NBR
V	FPM, FKM
M	Double NBR
W	Double FPM
Standard motor seals are rated for max 75 PSI. For special higher pressure shaft seal solutions please contact Parker.	

Code	8 – Port Options
B1	No ports
D2	9/16" - 18 UNF thread
D3	3/4" - 16 UNF thread
D4	7/8" - 14 UNF thread
D5	1-1/16" - 12 UN thread
D6	1-5/16" - 12 UN thread
D7	1-5/8" - 12 UN thread
D8	1-7/8" - 12 UN thread

Code	9 – Motor Drain Option
B1	No drain
A	7/16" - 20 UNF thread
C	9/16" - 18 UNF thread

Code	10 – Drain Position
2	Drain on bottom
3	Drain on top
4	Rear drain
5	Drain right view on drive shaft
6	Drain left view on drive shaft

Code	11 – Section Connection
S	Separate inlets
C	Common inlets
No code for single unit	

Code	12 – Corrosion Protection
Z	Zinc coated (5)
P1	Black paint 100 hour salt spray
P4	Black paint 400 hour salt spray
No code for no protection	

Not all variances of ordering codes can be offered. Please check available part numbers first.
For not yet implemented part numbers or special requests please contact Parker Hannifin.

1) Only coded for the last section.
2) Only for motors.
3) For further unit repeat displacement, shaft seal between sections, side suction port, side pressure port, rear suction port, rear pressure port.
4) For adding built-in valves enter valve description at the end of the model code. Valve options described on pages 38-48.
5) Rear cover is in cast iron; Zinc coating for rear cover and fasteners, and for mounting flange code L2.

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Kings Mountain, NC 28086

PGP	511	B	0100	A	C1	H2	N	D6	D5	S	511	A	0110	X	D6	D5	B1	B1	P

PGP	Gear Design / Type	Parker Gear Pump
511	Series	
B	Unit	Tandem Unit
0100	Displacement	10.0 cm³/rev.
A	Rotation Direction	Counter-Clockwise
C1	Drive shaft	SAE 19-4 Spline 11T, 16/32 DP
H2	Flange	Mounting Flange SAE 2-Bolt A
N	Shaft Seal	Shaft Seal NBR
D6	Side Suction Port	1-5/16" - 12 UN Thread
D5	Side Pressure Port	1-1/16" - 12 UN Thread
S	Section Connection	Separate Inlets
511	Series Second Section	
A	Unit	Single Unit
110	Displacement	11.0 cm³/rev.
X	Shaft Seal	No Seal
D6	Side Suction Port	1-5/16" - 12 UN Thread
D5	Side Pressure Port	1-1/16" - 12 UN Thread
B1	Rear Suction Port	No Port
B1	Rear Pressure Port	No Port
P1	Corrosion Protection	Black Paint 100 Hour Salt Spray

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