

PGP 500 pumps offer superior performance, high efficiency and low noise operation at high operating pressures. They are produced in four frame sizes (PGP 502, PGP 505, PGP 511, PGP 517) with displacements ranging from 0.8 to 70 cm<sup>3</sup>/rev. A wide variety of standard options is available to meet specific application requirements.



**Characteristics**

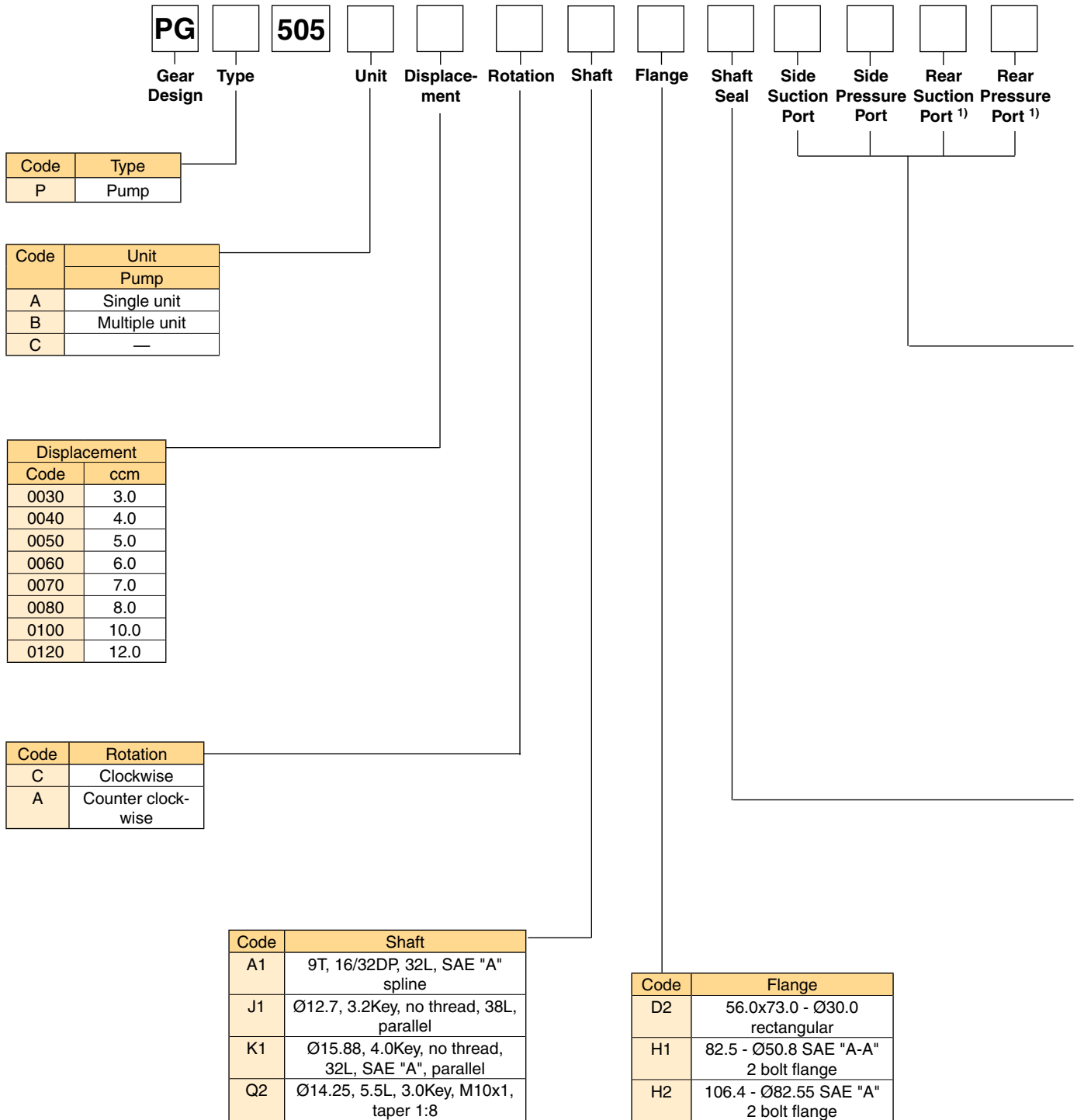
- **Up to 280 bar continuous operation**  
High strength materials and large journal diameters provide low bearing loads for high pressure operation.
- **Low noise**  
PGP 502 - 9 tooth gear profile, PGP 505 and 517 - 13 tooth gear profile, PGP 511 - 12 tooth gear profile and optimized flow metering provide reduced pressure pulsation and exceptionally quiet 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.
- **Large range of integrated valves**

**Characteristics**

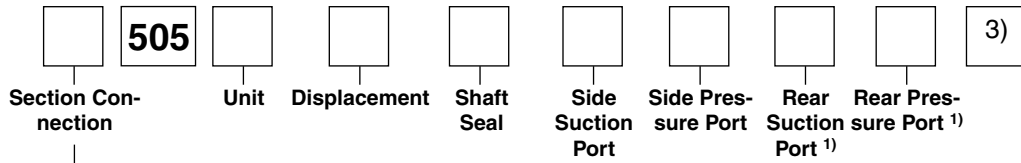
Pump type	Heavy-duty, aluminium, external gear.
Mounting	SAE, rectangular, thru-bolt standard specials on request.
Ports	SAE and metric split flanges and others
Shaft style	SAE splined, keyed, tapered, cylindrical tang drive, specials on request
Speed	500 - 5000 rpm, see Technical Data
Theor. displacement	See Technical Data
Drive	Drive direct with flexible coupling is recommended.
Axial / Radial load	Units subject to axial or radial loads must be specified with an outboard bearing.
Inlet pressure	Operating range 0.8 to 2 bar abs. Min. inlet pressure 0.5 bar abs. Short time without load. Consultation is recommended.
Outlet pressure	See Technical Data
Pressure rising rate	Max. 3000 bar/s
Flow velocity	See Nomograph for Pipe Velocity
Hydraulic fluids	Hydraulic oil HLP, DIN 51524-2
Fluid temperature	Range of operating temperature -15 to +80 °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.

Fluid viscosity	Range of operating viscosity 8 to 1000 mm <sup>2</sup> /s (511 & 517) 20 to 1000 mm <sup>2</sup> /s (502 & 505) Max. permissible operating pressure dependent on viscosity. Viscosity range for cold start 1000 to 2000 mm <sup>2</sup> /s at operating pressure p ≤ 10 bar and speed n ≤ 1500 rpm.
Range of ambient temperature	-40 °C to +70 °C
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	<ul style="list-style-type: none"> <li>• Available in two or three section the limitations shown in the shaft loading rating table in this catalogue.</li> <li>• Max. load is determined by adding the torque values for each pumping section that will be simultaneously loaded.</li> </ul>
Separate or common inlet capability	Separate inlet configuration: <ul style="list-style-type: none"> <li>• Each gear housing has individual inlet and outlet ports.</li> </ul> Common inlet configuration: <ul style="list-style-type: none"> <li>• Two gear sets share a common inlet.</li> </ul>



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.

<sup>1)</sup> Only coded for the last section.



Code	Section Connection
S	Separate inlets
C	Common inlets

Code	Port Options
B1	No ports
D2 <sup>2)</sup>	9/16 - 18 UNF thread
D3 <sup>2)</sup>	3/4 - 16 UNF thread
D4*	7/8 - 14 UNF thread
D5*	1 1/16 - 12UN
E2	3/8 - 19 BSP thread
E3*	1/2 - 14 BSP thread
E5*	3/4 - 16 BSP thread
G1	M14x1.5 thread
G3*	M18x1.5 thread
G4*	M22x1.5 thread
J3*	8 mm - Ø30 mm - M6 square flange
J4*	12 mm - Ø30 mm - M6 square flange
J5*	15 mm - Ø35 mm - M6 square flange
J7*	20 mm - Ø40 mm - M6 square flange

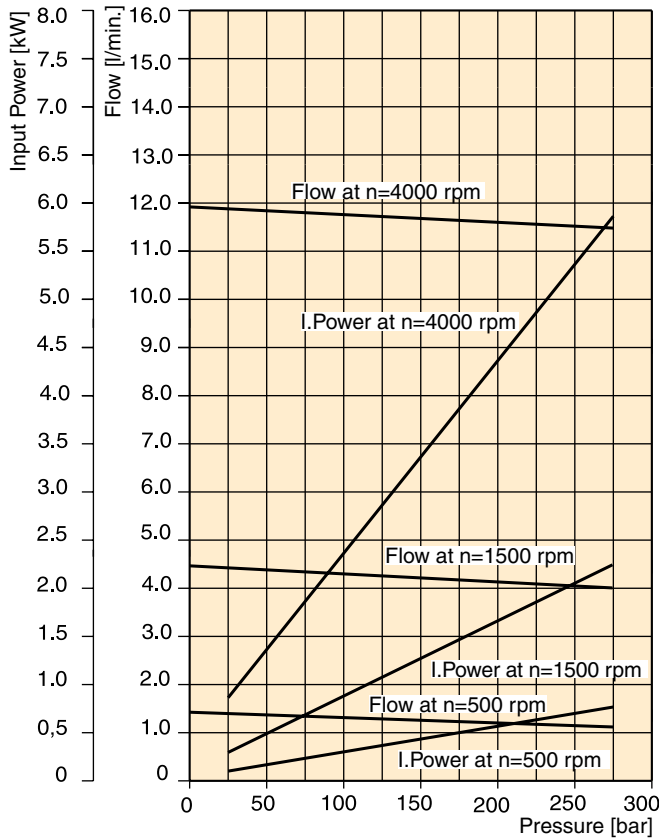
2) Non standard, on request only

\*) Not usable for rear ports

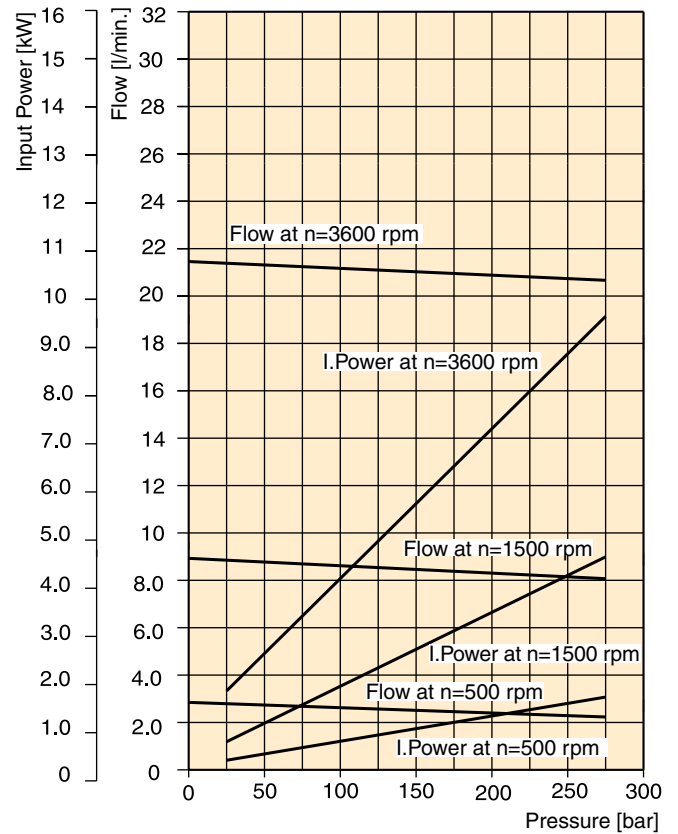
Code	Shaft Seal
X	No seal
N	NBR
M	Double NBR
W	Double FPM

3) For further "B" triple unit repeat displacement, shaft seal between sections, side suction port, side pressure port, rear suction port, rear pressure port.

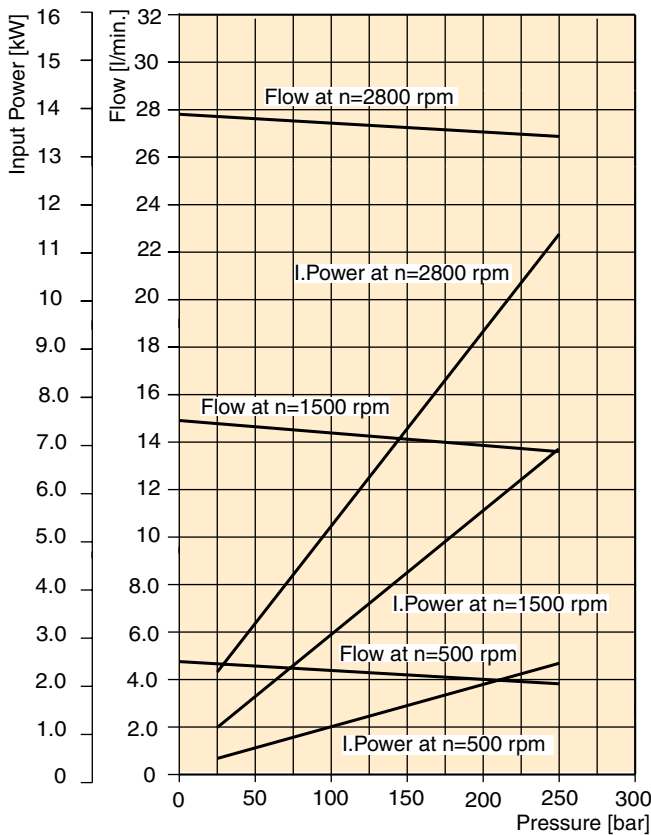
**PGP 505 - 3.0CC**



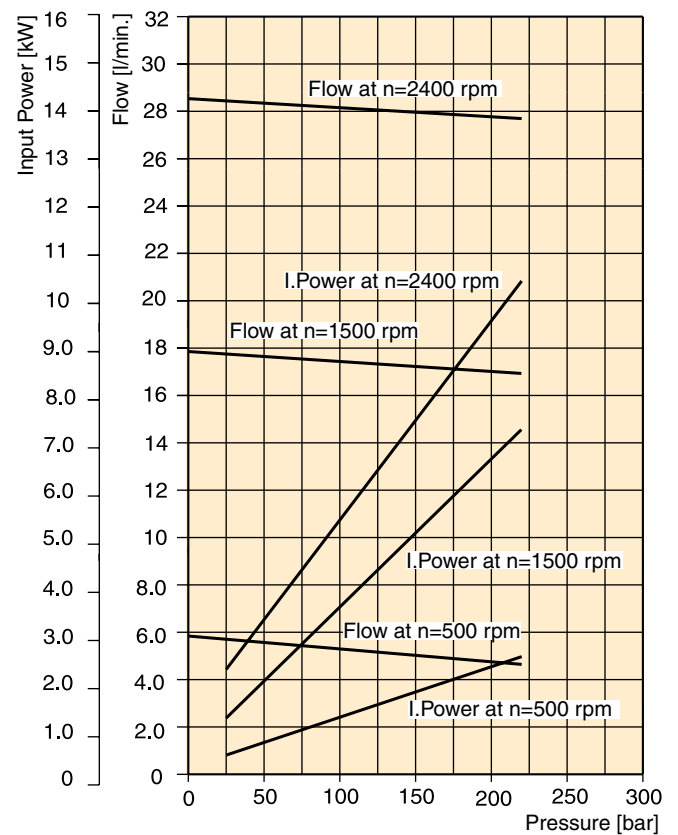
**PGP 505 - 6.0 CC**



**PGP 505 - 10.0 CC**



**PGP 505 - 12.0 CC**



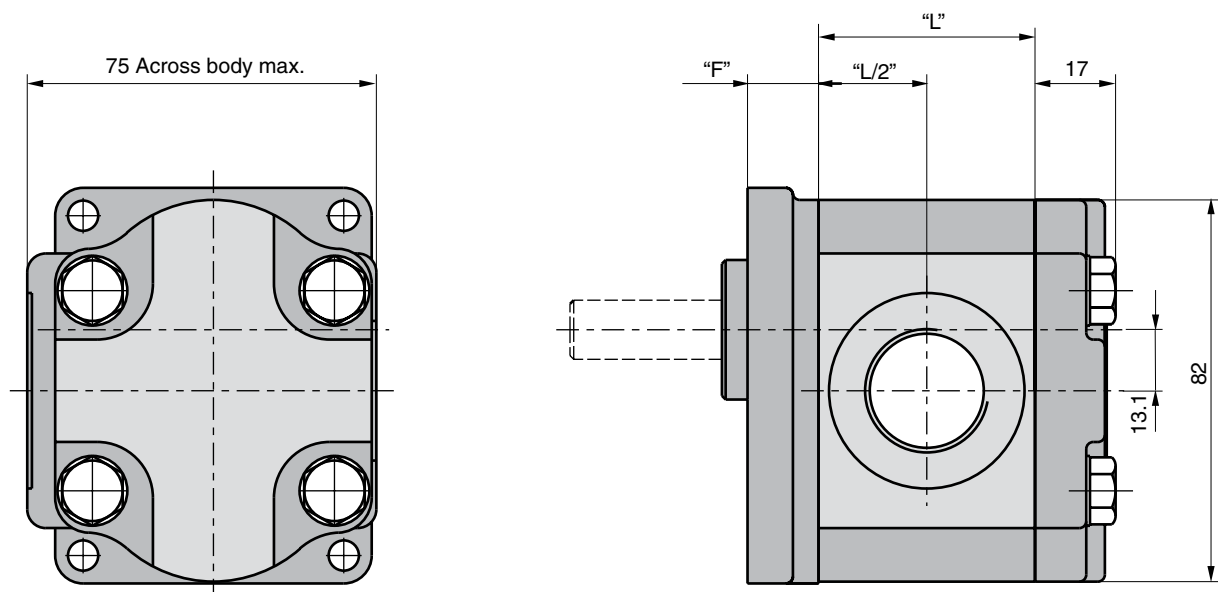
Fluid Temperature = 45± 2°C  
 Viscosity = 36 mm<sup>2</sup>/s  
 Inlet Pressure = 0.9 + 0.1 bar absolute

**PGP 505 Specification - Standard Displacements**

Pump Displacement	Code	0030	0040	0050	0060	0070	0080	0100	0110	0120
	cm <sup>3</sup> /rev	3.0	4.0	5.0	6.0	7.0	8.0	10.0	11.0	12.0
Max. Continuous Pressure	bar	275	275	275	275	275	275	250	250	220
Minimum Speed @ Max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet pressure	rpm	4000	4000	4000	3600	3300	3000	2800	2400	2400
Pump Input Power @ Max. Pressure and 1500 rpm	kW	2.3	3.0	3.8	4.5	5.3	6.0	6.9	7.6	7.5
Dimension "L"	mm	41.1	43.8	46.5	49.1	51.8	54.5	59.8	62.5	65.2
Approximate Weight1)	kg	2.22	2.27	2.32	2.38	2.43	2.48	2.58	2.63	2.68

1) Single pump with Flange D3 and Port end cover B1

**Single Unit PGP 505**

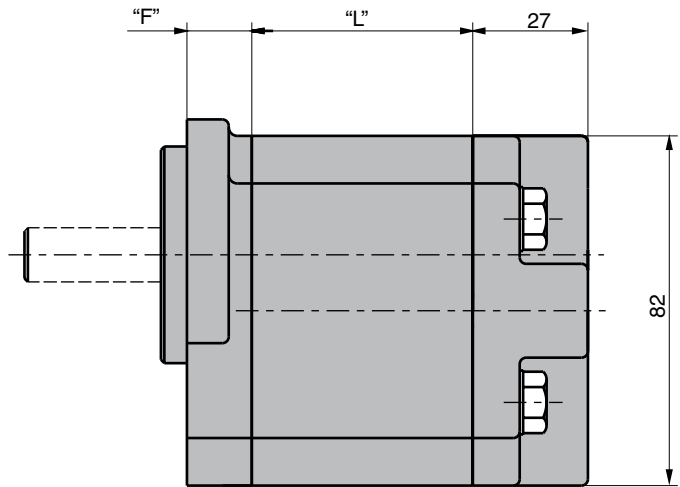
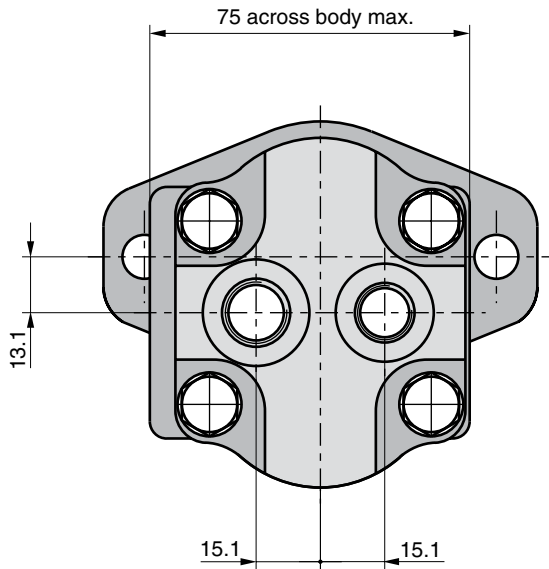


**Dimension "L"** see table above

**Dimension "F"** see flanges on pages 25

**Dimension Shafts** see pages 27 and 28

**Single Unit PGP 505 with rear ports**

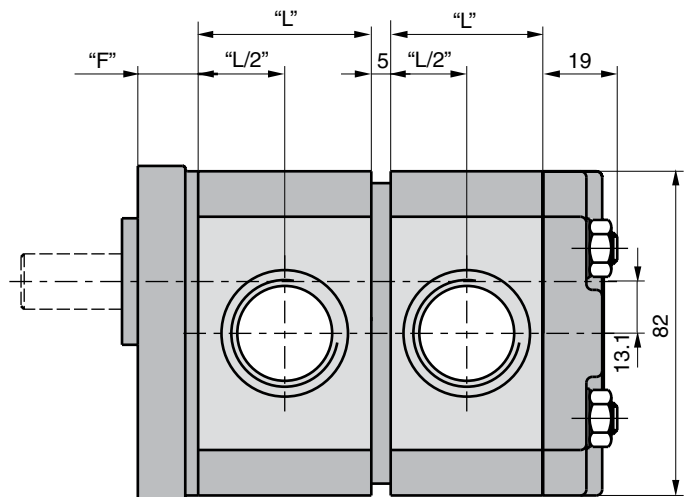
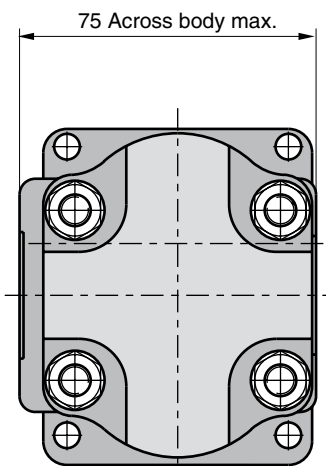


**Dimension "L"** see table on page 23

**Dimension "F"** see flanges on pages 25

**Dimension Shafts** see pages 27 and 28

**Tandem Unit PGP 505**



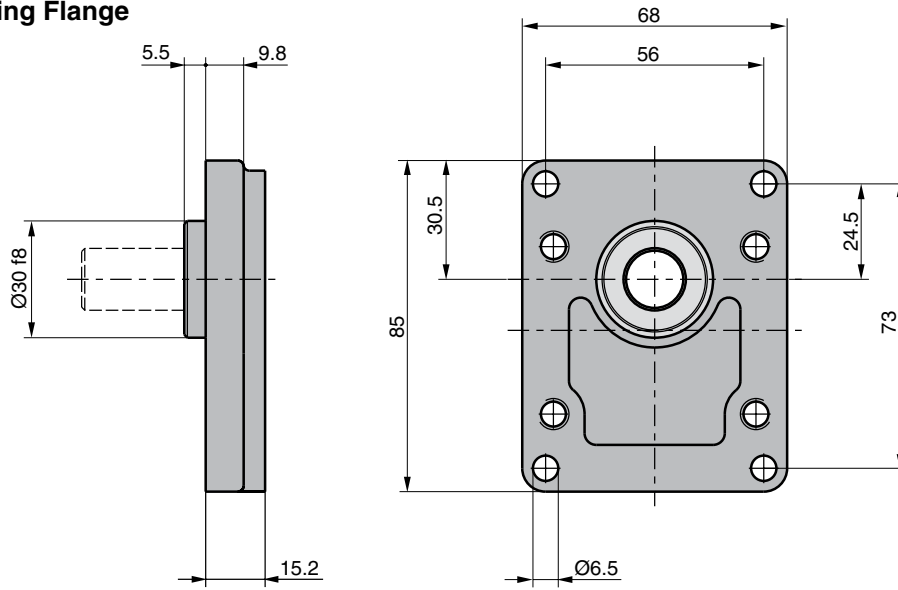
**Dimension "L"** see table on page 23

**Dimension "F"** see flanges on pages 25

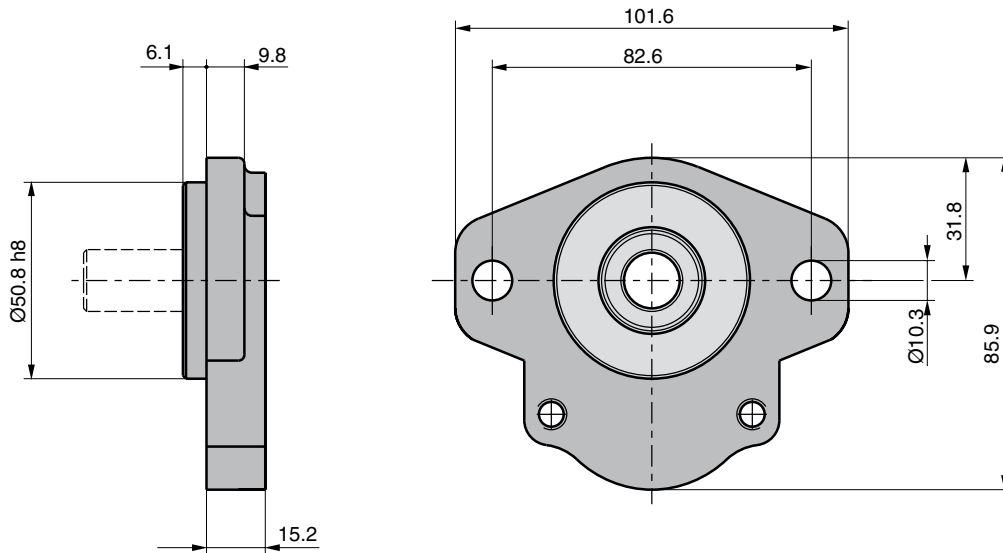
**Dimension Shafts** see pages 27 and 28

**PGP 505 Mounting Flange**

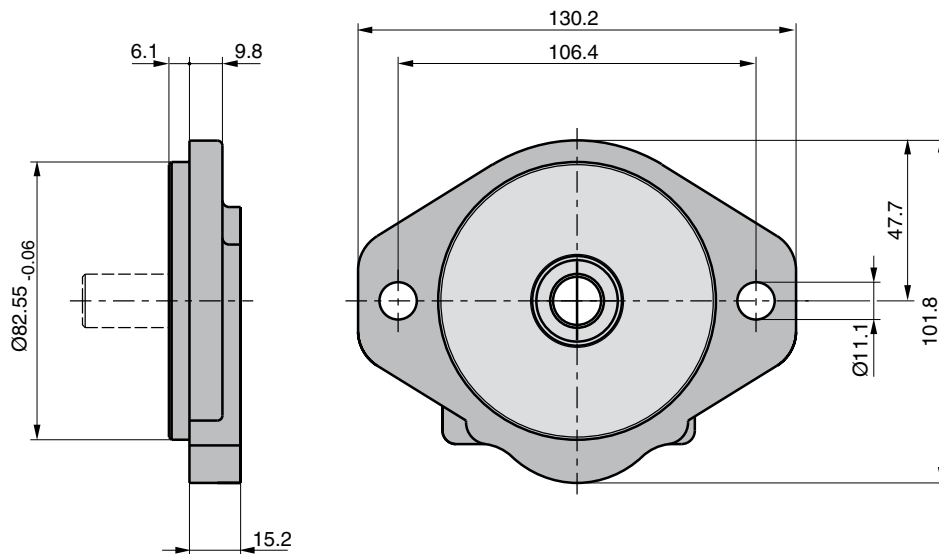
**Code D2**



**Code H1**



**Code H2**



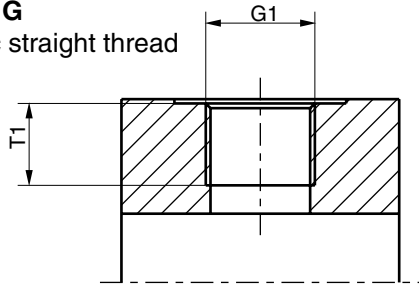
**PGP 505 Porting**

**Code E**

British Standard Pipe

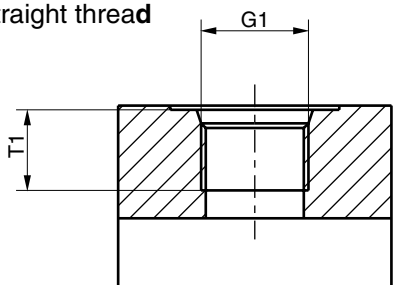
**Code G**

Metric straight thread



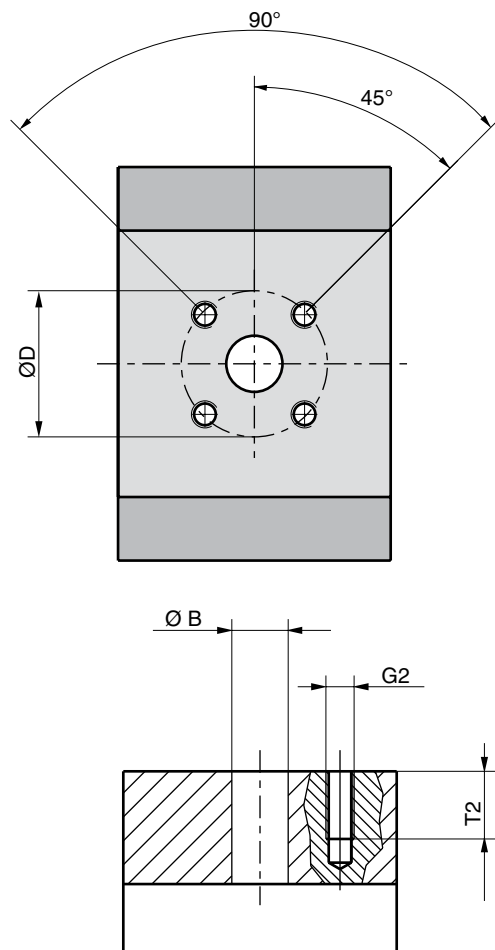
**Code D**

SAE straight thread



**Code J**

European flange



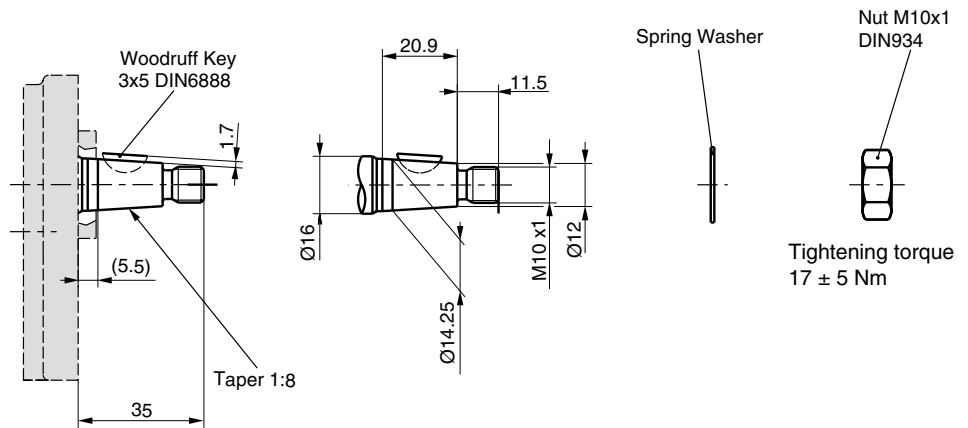
**PGP 505**

Code	G1	G2	T1	Ø B	Ø D	S	T2
Thread	Thread	Dimensions					
D2	9/16-18 UNF		12.7				
D3	3/4-16 UNF		14.3				
D4	7/8-14 UNF		16.7				
D5	1 1/16-12 UN		19.0				
E2	3/8-19 BSP		12.0				
E3	1/2-14 BSP		14.0				
E5	3/4-14 BSP		16.0				
G1	M 14x1.5		12.0				
G3	M 18x1.5		12.0				
G4	M 22x1.5		14.0				
J3		M6		8.0	30.0		12.0
J4		M6		12.0	30.0		12.0
J5		M6		15.0	35.0		12.5
J7		M6		20.0	40.0		13.0
K5		1/4UNC	14.2			25.15	13.0

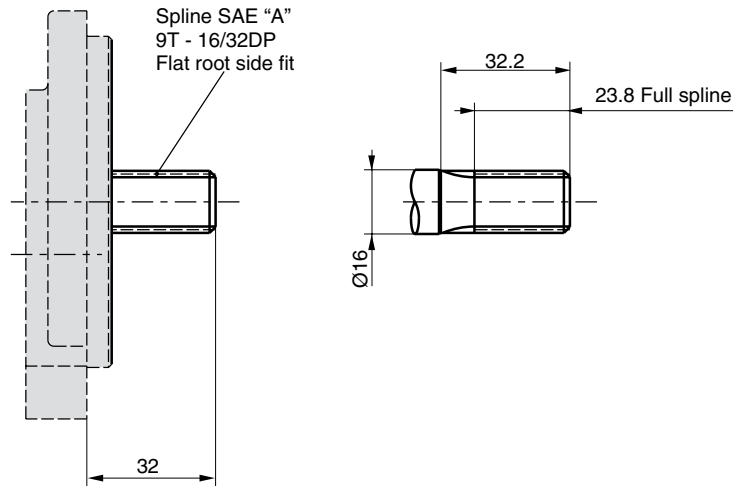


**PGP 505 Drive Shaft**

**Code Q2**

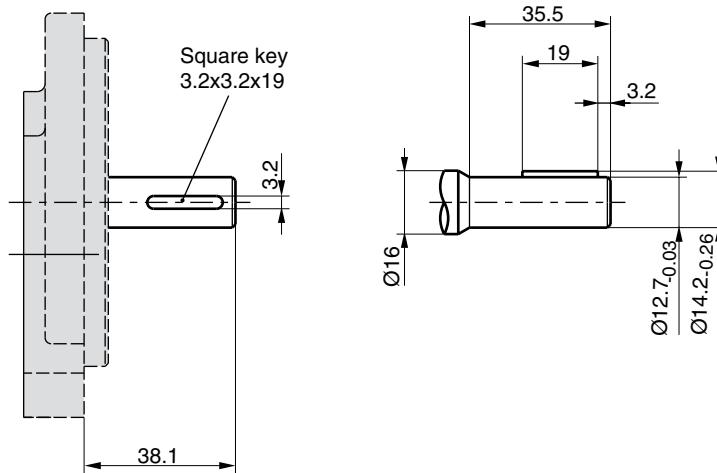


**Code A1**

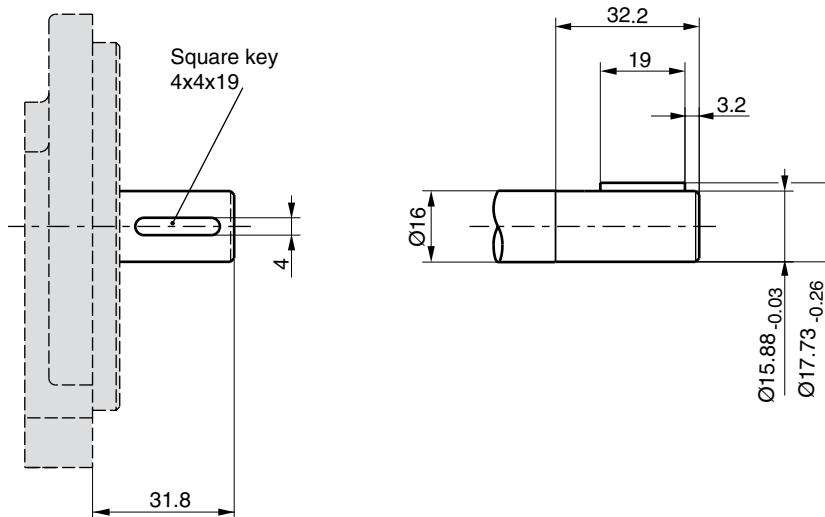


**PGP 505 Drive Shaft**

**Code J1**



**Code K1**



**PGP 505 - Shaft Load Capacity**

Code	Description	Torque Rating [Nm]
A1	9T,16/32DP, 32L, SAE“A“ spline	108
J1	Ø12.7, 3.2 KEY, no thread, 38L parallel	43
K1	Ø15.88, 4.0 KEY, no thread, 32L, SAE“A“ parallel	85
Q2	Ø14.25, 5.5L, 3.0 KEY, M10x1 taper 1:8	68
	Multiple pump connection shaft	36

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