

## Gear Pumps / Motors

Series PGP / PGM  
Fixed Displacement Pumps,  
Cast-Iron and Aluminium Designs

aerospace  
climate control  
electromechanical  
filtration  
fluid & gas handling  
**hydraulics**  
pneumatics  
process control  
sealing & shielding



ENGINEERING YOUR SUCCESS.

<b>Contents</b>	<b>Page</b>
<b>Series 500 Aluminium</b>	
<b>PGP, PGM 500</b>	Characteristics..... 5
<b>PGP 502</b>	Ordering code..... 6-7
<b>PGP 505</b>	Ordering code..... 8-9
<b>PGP, PGM 511</b>	Ordering code..... 10-11
<b>PGP 517</b>	Ordering code..... 12-13
<b>PGP 502</b>	Performance data ..... 14
<b>PGP 505</b>	Performance data ..... 15
<b>PGP, PGM 511</b>	Performance data ..... 16
<b>PGP 517</b>	Performance data ..... 17
<b>PGP 502</b>	Technical Data / Dimensions ..... 18-19
	Mounting flange options ..... 20
	Port options ..... 21
	Drive shaft options..... 22
<b>PGP 505</b>	Technical Data / Dimensions ..... 23-24
	Mounting flange options ..... 25
	Port options ..... 26
	Drive shaft options..... 27
	Drive shaft options..... 28
<b>PGP, PGM 511</b>	Technical Data / Dimensions ..... 29-30
	Mounting flange options ..... 31-34
	Outboard Berings ..... 35
	Port options ..... 36-37
	Drive shaft options..... 38-40
<b>PGP 517</b>	Technical Data / Dimensions ..... 41-42
	Mounting flange options ..... 43
	Port options ..... 44
	Drive shaft options..... 46-48
<b>PGP 511</b>	Operating Conditions..... 49
<b>PGP 517</b>	Operating Conditions..... 50

<b>Contents</b>	<b>Page</b>
<b>Series 600 Cast-Iron</b>	
<b>PGP, PGM 600</b>	Characteristics..... 51
<b>PGP, PGM 620</b>	Ordering code..... 52-53
<b>PGP, PGM 640</b>	Ordering Code..... 54-55
<b>PGP, PGM 620</b>	Performance data ..... 56
<b>PGP, PGM 640</b>	Performance Curves..... 57
<b>PGP, PGM 620</b>	Technical Data / Dimensions ..... 58-59
	Mounting flange options ..... 60-61
	Port options ..... 62-63
	Drive shaft options..... 64-65
<b>PGP, PGM 640</b>	Technical Data / Dimensions ..... 66-68
	Mounting flange options ..... 69-70
	Port options ..... 71-72
	Drive shaft options..... 73
<b>PGP, PGM 500/600</b>	Shaft Loads / Fluids..... 74
	List of available pump combinations..... 75
<b>Valve options</b>	
<b>PGP, PGM 500/600</b>	Pressure relief valve / adjustable internal vent ..... 76
<b>PGP511/517/620/640</b>	Priority Flow Divider, Valve options / Ordering code..... 77-78
	Side Mounted Priority Flow Divider (Load Sense or Fixed Flow)..... 79
	Load Sensing Priority Valve..... 80-81
	Load Sensing Priority Valve..... 81
<b>PGM511/620/640</b>	Single Pressure Relief Valve ..... 82
	Single Pressure Relief Valve with Anti-Cavitation..... 83
	Cross Port Pressure Relief Valves..... 84
	Cross Port Pressure Relief Valves with Anti-Cavitation ..... 85
	Cross Port Pressure Relief Valves with Anti-Cavitation + Check Valves ..... 86
<b>PGP, PGM 500/600</b>	Solenoid Proportional Pressure Relief Valve ..... 87
	Seal Kits ..... 89
	Standard Seal Kits for pumps/motors 500 + 600..... 89
	Ordering examples ..... 90-91



## **WARNING – USER RESPONSIBILITY**

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalogue and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

## **Offer of Sale**

Please contact your Parker representation for a detailed "Offer of Sale".

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**

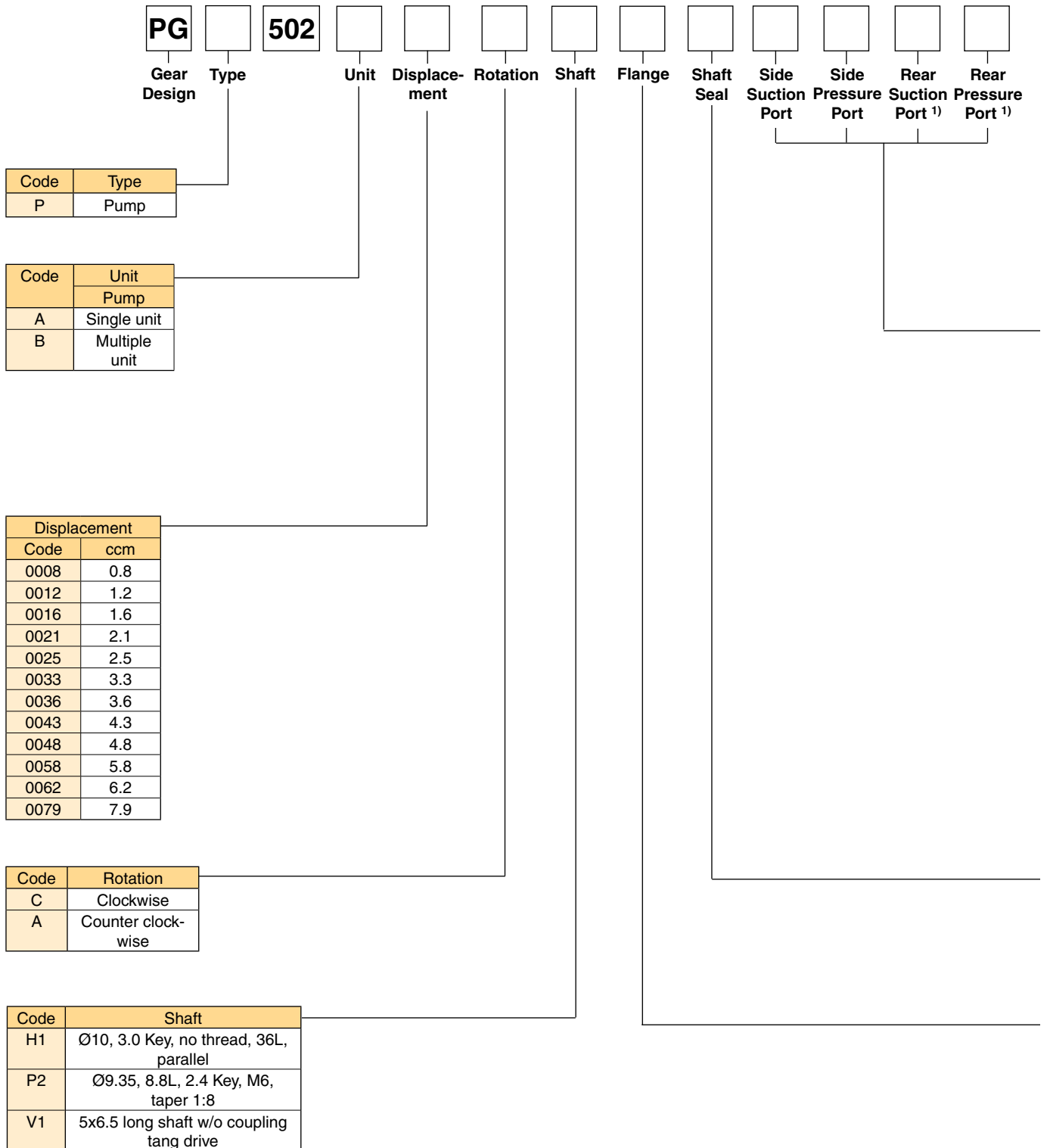
- **Up to 280 bar continuous operation**  
High strength materials and large journal diameters provide low bearing loads for high pressure operation.
- **Low noise**  
PGP 502 - 9 tooth gear profile, PGP 505 and 517 - 13 tooth gear profile, PGP 511 - 12 tooth gear profile and optimized flow metering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

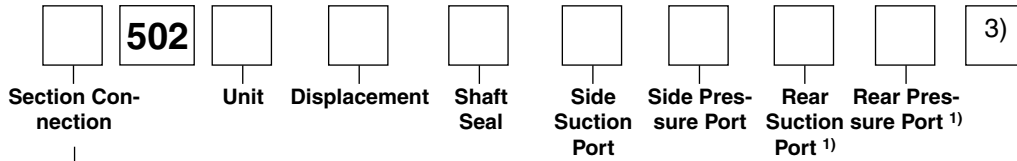
Pump type	Heavy-duty, aluminium, external gear.
Mounting	SAE, rectangular, thru-bolt standard specials on request.
Ports	SAE and metric split flanges and others
Shaft style	SAE splined, keyed, tapered, cylindrical tang drive, specials on request
Speed	500 - 5000 rpm, see Technical Data
Theor. displacement	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
E1	1/4 - 19 BSP thread
E2	3/8 - 19 BSP thread
E3*	1/2 - 14 BSP thread
G1 <sup>2)</sup>	M14x1.5 thread
G3 <sup>2)*</sup>	M18x1.5 thread
J1*	8 mm - Ø26 mm - M5 square flange
J2*	10 mm - Ø26 mm - M5 square flange
J3*	8 mm - Ø30 mm - M6 square flange
J4*	12 mm - Ø30 mm - M6 square flange

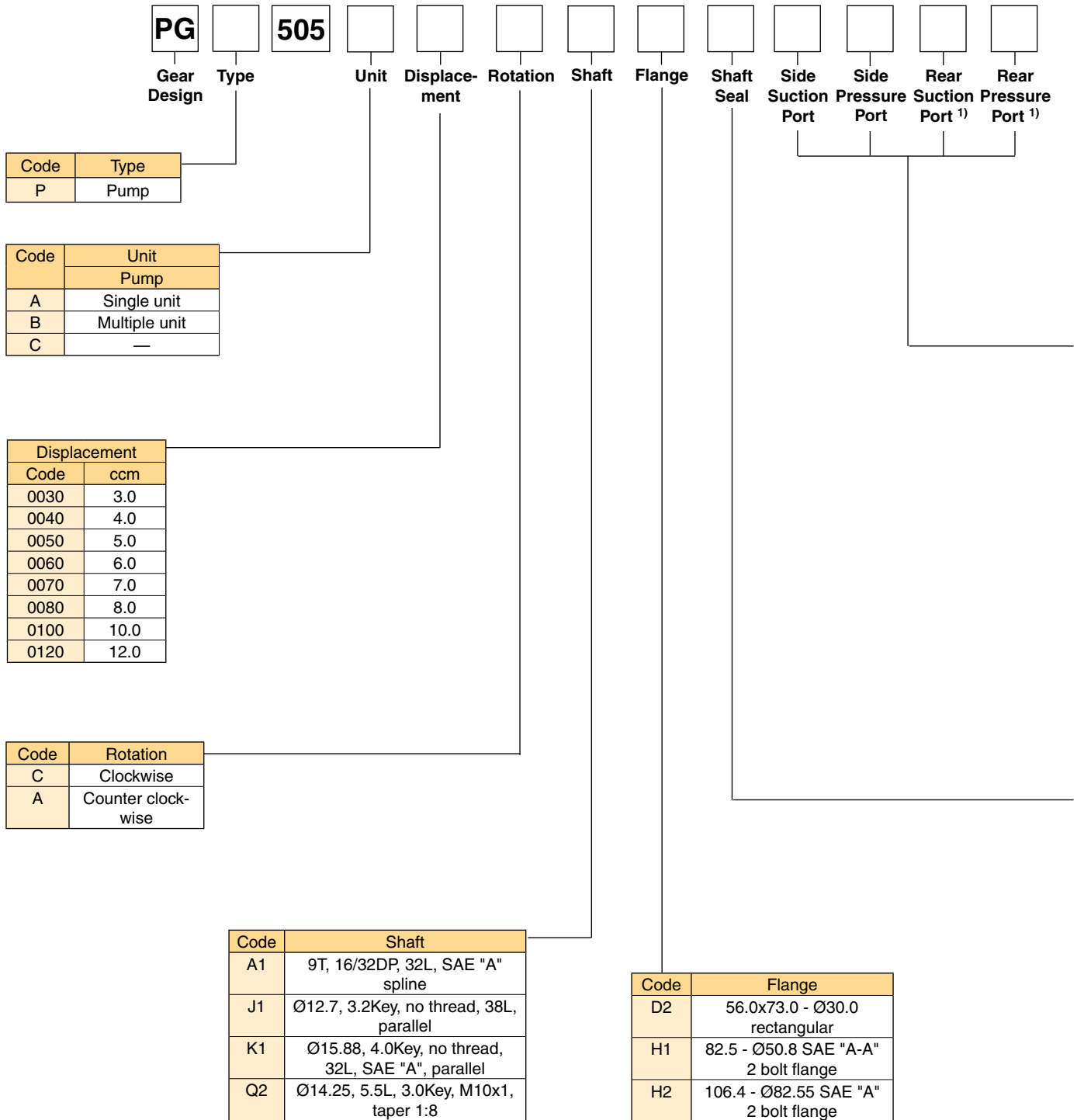
2) Non standard, on request only

\*) Not usable for rear ports

Code	Shaft Seal
X	No seal
N	NBR
V	FPM, FKM

Code	Flange
D1	52.2x72.0 - Ø25.4 rectangular
H1	82.5 - Ø50.8 SAE "A-A" 2 bolt flange
P1	40.0x40.0 - Ø32.0 w/ seal ported, thru bolt flange

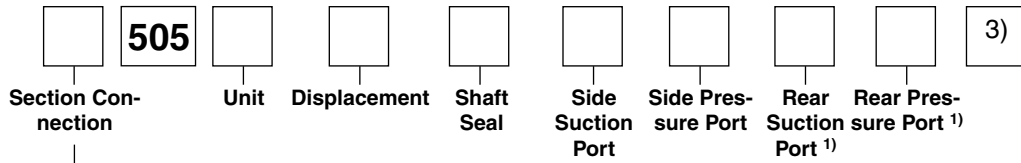
3) For further "B" triple unit repeat displacement, shaft seal between sections, side suction port, side pressure port, rear suction port, rear pressure port.



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

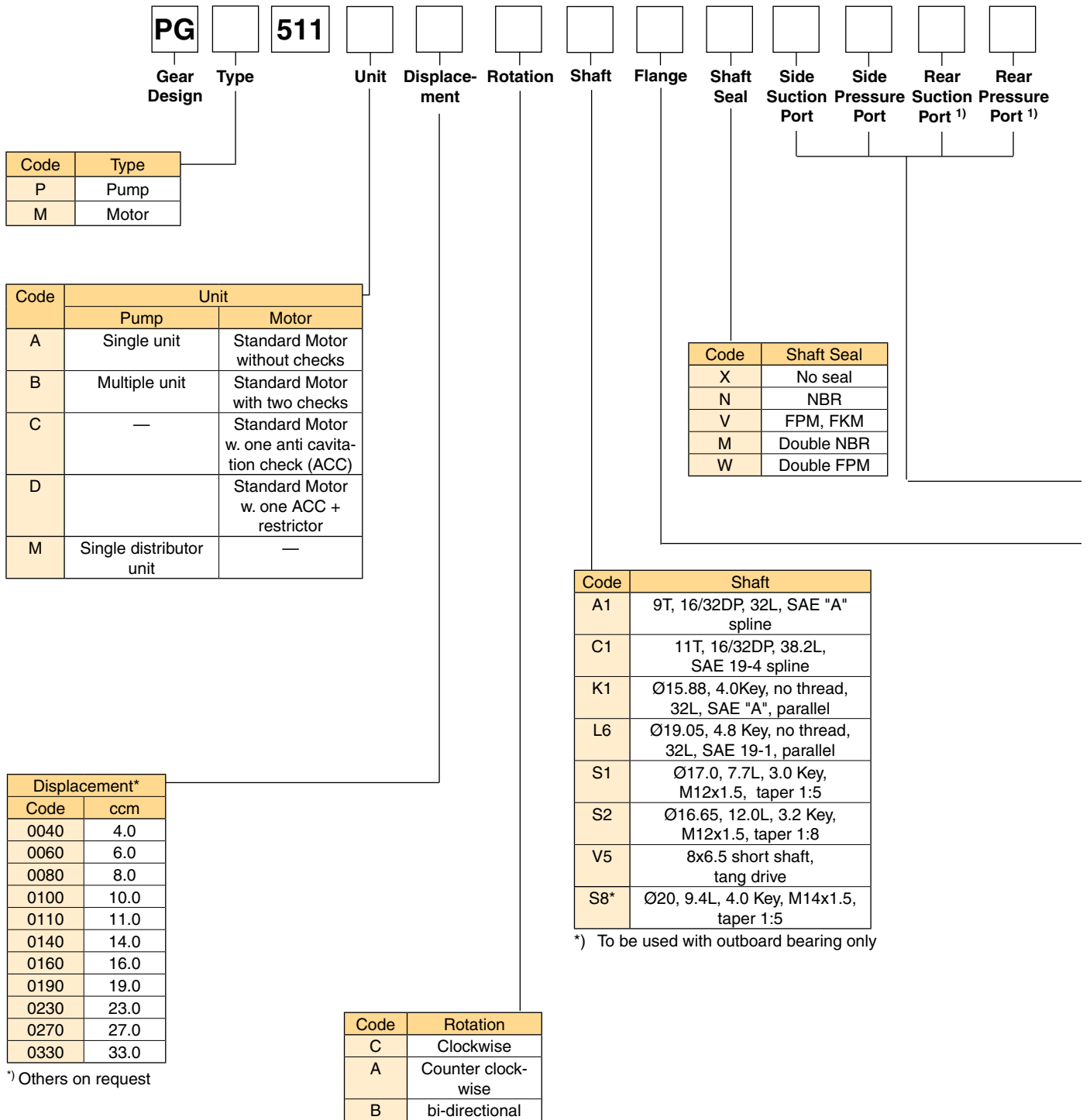
Code	Port Options
B1	No ports
D2 <sup>2)</sup>	9/16 - 18 UNF thread
D3 <sup>2)</sup>	3/4 - 16 UNF thread
D4*	7/8 - 14 UNF thread
D5*	1 1/16 - 12UN
E2	3/8 - 19 BSP thread
E3*	1/2 - 14 BSP thread
E5*	3/4 - 16 BSP thread
G1	M14x1.5 thread
G3*	M18x1.5 thread
G4*	M22x1.5 thread
J3*	8 mm - Ø30 mm - M6 square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

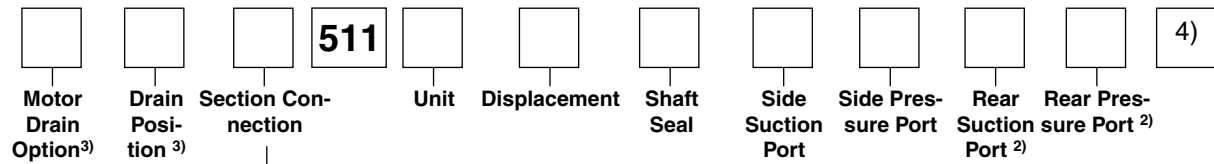


Not all variances of ordering codes can be offered. Please check available part numbers first. For not yet implemented part numbers or special requests please contact Parker Hannifin.

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

**Ordering code**

**Heavy-duty aluminium Pumps and Motors  
Series PGP, PGM 511**



Code	Section Connection
S	Separate inlets
C	Common inlets

Code	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	Motor Drain Option
B1	no drain
A <sup>2)</sup>	7/16-20 UNF thread
C	9/16-18 UNF thread
G	1/4 BSP thread
N <sup>2)</sup>	M10x1 metric thread
P <sup>2)</sup>	M12x1.5 metric thread

2) Non standard, on request only

Code	Flange
D3	71.4x96.0 - Ø36.47 rectangular
D4	72.0x100.0 - Ø80 rectangular
H2	106.4 - Ø82.55 SAE "A" 2 bolt flange
H3	146.1 - Ø101.6 SAE "B" 2 bolt flange
Q1 <sup>2)</sup>	60.0x60.0 - Ø52.0 w/o seal ,O' thru bolt flange
Q2	60.0x60.0 - Ø50.0 w. seal ,O' thru bolt flange
Q3 <sup>2)</sup>	60.0x60.0 - Ø52.0 w/o seal ,O' thru bolt flange
Q4	60.0x60.0 - Ø50.0 w. seal ,O', thru bolt flange
F4	72.0x100.0 - Ø80.0 rect., w. OBB and cont. drive shaft

2) Non standard, on request only

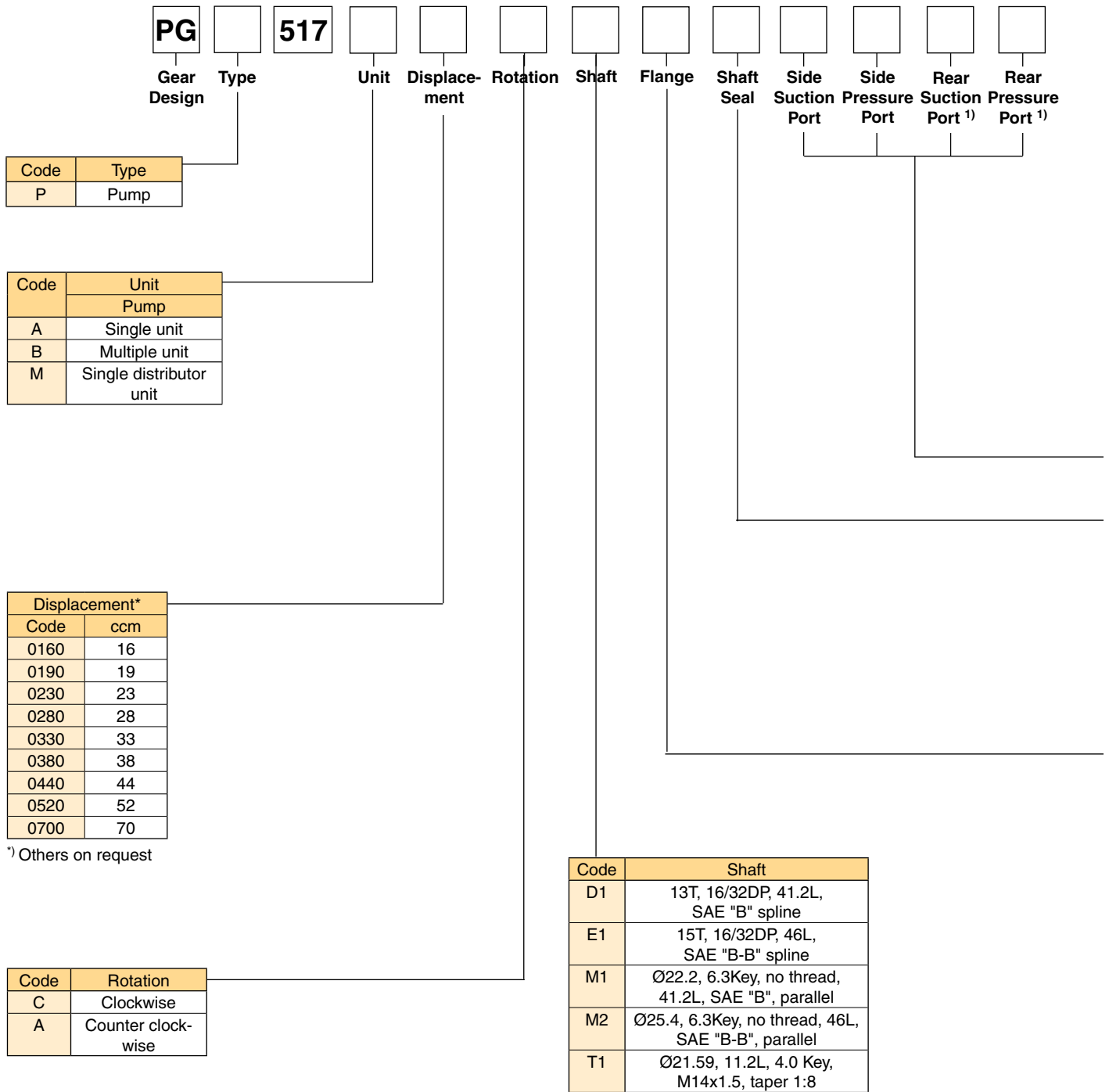
Code	Port Options	Code	Port Options
B1	No ports	L1*	13 mm-Ø30 mm-M6 diamond
D2 <sup>2)</sup>	9/16 - 18 UNF thread	L2*	19 mm-Ø40 mm-M8 diamond
D3 <sup>2)</sup>	3/4 - 16 UNF thread	N1 <sup>2)</sup> *	1/2"-5/16-18UNC SAE Split Flange
D4 <sup>2)</sup>	7/8 - 14 UNF thread	N2 <sup>2)</sup> *	3/4"-3/8-16UNC SAE Split Flange
D5 <sup>2)</sup>	1 1/16 - 12 UN thread	N3 <sup>2)</sup> *	1"-3/8-16UNC SAE Split Flange
D6 <sup>2)</sup> *	1 5/16 - 12 UN thread	N4 <sup>2)</sup> *	1 1/4"-7/16-14UNC SAE Split Flange
D7 <sup>2)</sup> *	1 5/8 - 12 UN thread	P1*	12.7 mm - M8 Metric Split Flange
E2	3/8 - 19 BSP thread	P2*	19.0 mm - M10 Metric Split Flange
E3	1/2 - 12 BSP thread	P3*	25.4 mm - M10 Metric Split Flange
E4*	5/8 - 14 BSP thread	P4*	31.8 mm - M10 Metric Split Flange
E5*	3/4 - 14 BSP thread		
E6*	1 - 11 BSP thread		
E7*	1 1/4 - 11 BSP thread		
G1 <sup>2)</sup>	M14x1.5 thread		
G3 <sup>2)</sup>	M18x1.5 thread		
G4 <sup>2)</sup>	M22x1.5 thread		
G5 <sup>2)</sup> *	M26x1.5 thread		
G7 <sup>2)</sup> *	M30x1.5 thread		
J3 <sup>2)</sup> *	8mm - Ø30mm - M6 square		
J4 <sup>2)</sup> *	12mm - Ø30mm - M6 square		
J5*	15mm - Ø40mm - M6 square		
J6 <sup>2)</sup> *	15mm - Ø40mm - M8 square		
J7*	20mm - Ø40mm - M6 square		
J8*	18mm - Ø55mm - M8 square		
J9*	26mm - Ø55mm - M8 square		

2) Non standard, on request only

\*) Not usable for rear ports

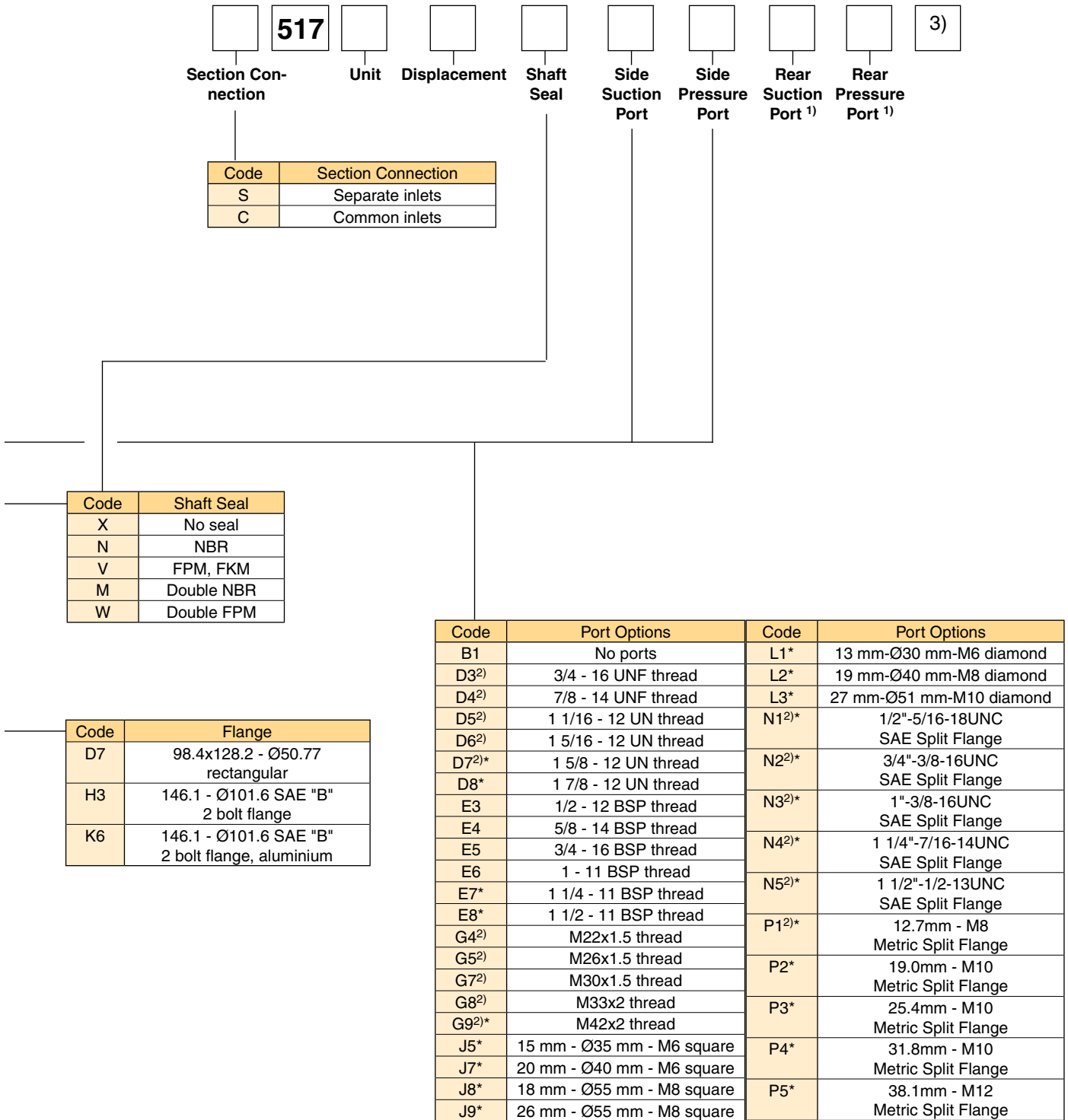
3) Only for motors

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



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.

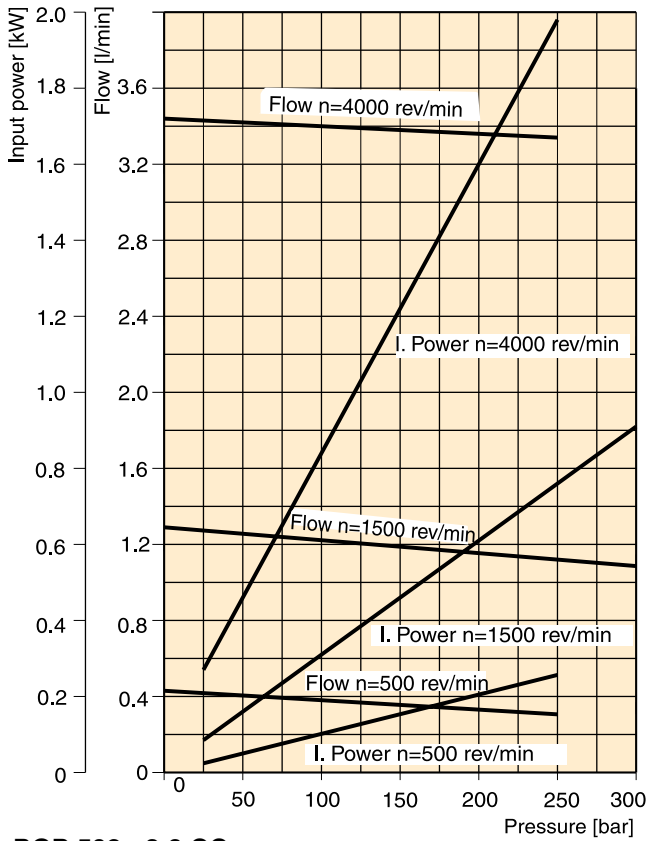


2) Non standard, on request only

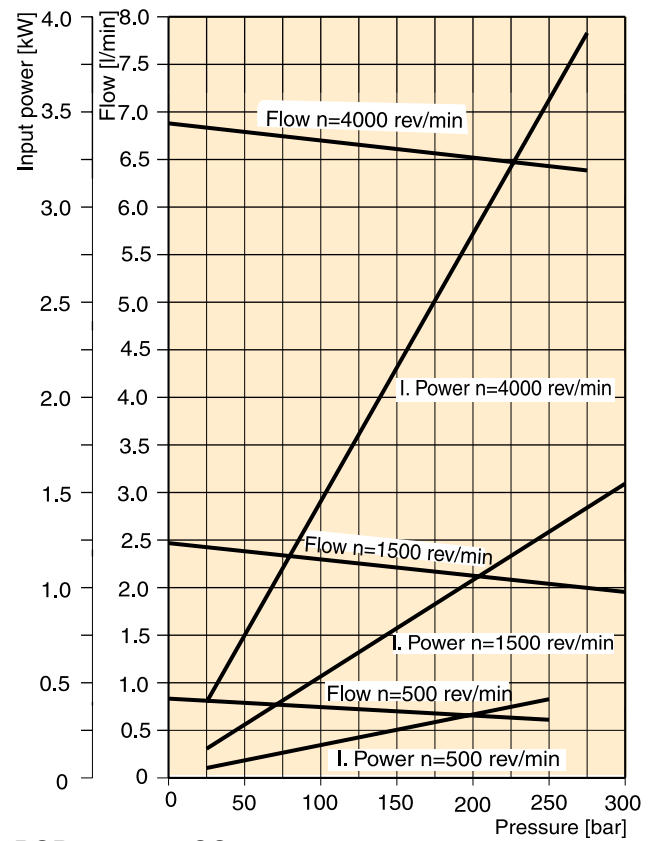
\*) Not usable for rear ports

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

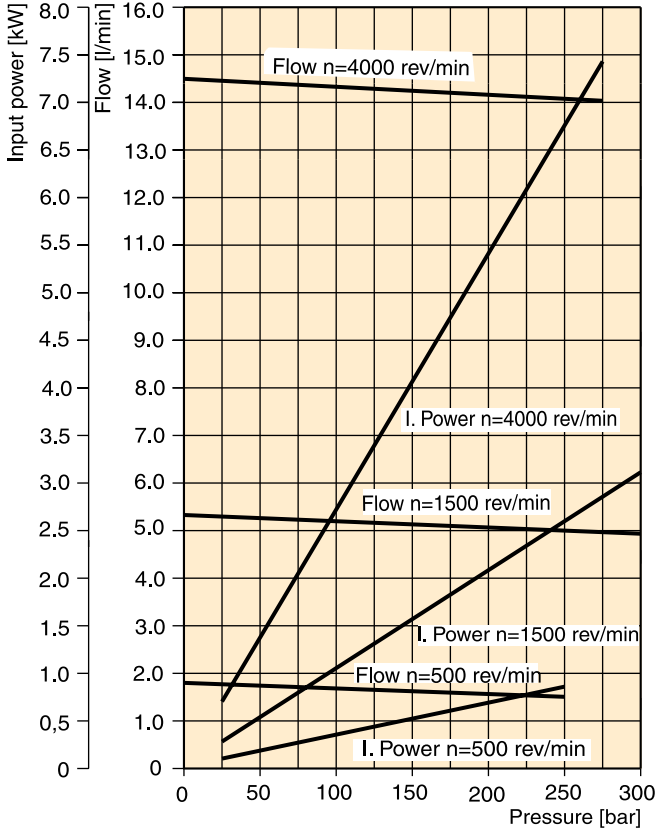
**PGP 502 - 0.8 CC**



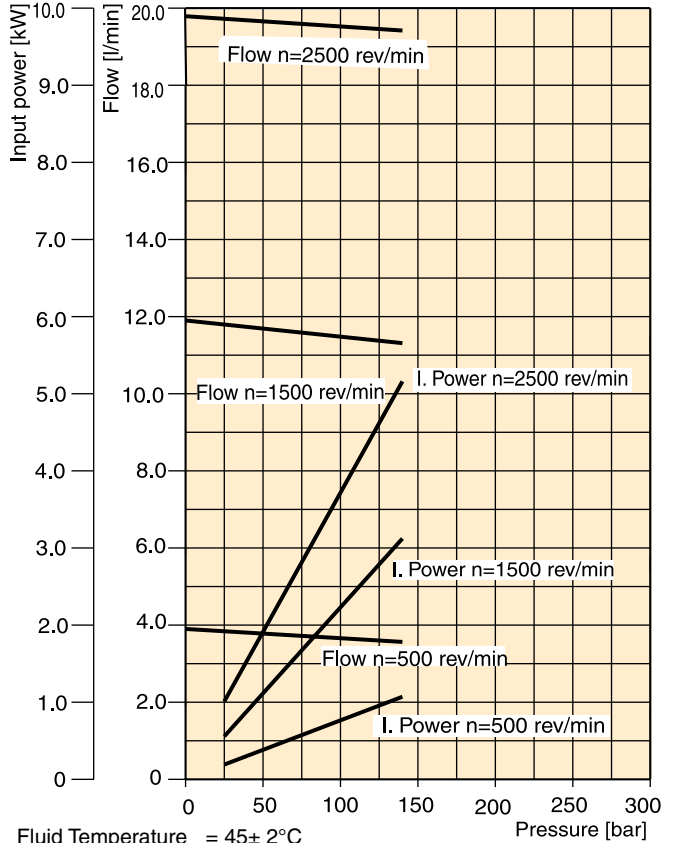
**PGP 502 - 1.6 CC**



**PGP 502 - 3.6 CC**

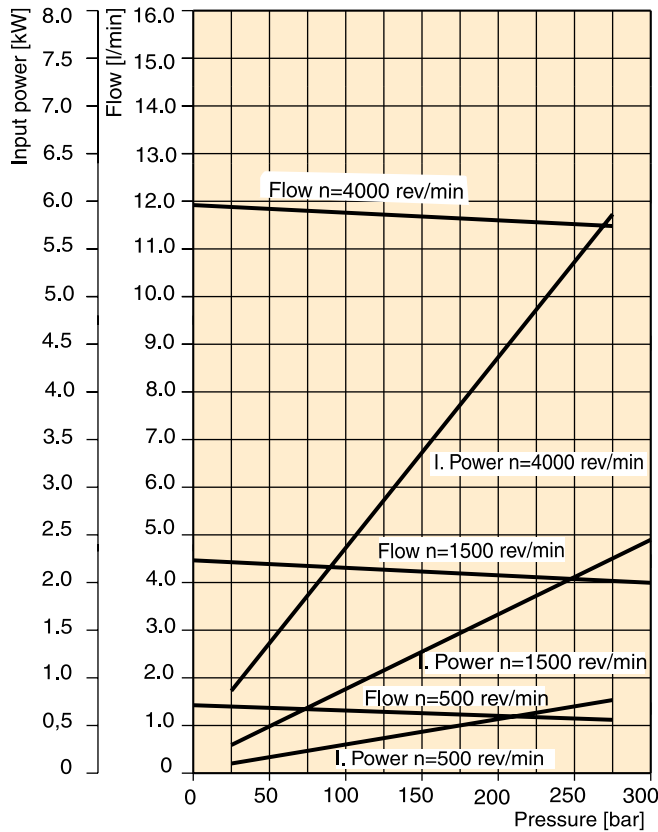


**PGP 502 - 7.9 CC**

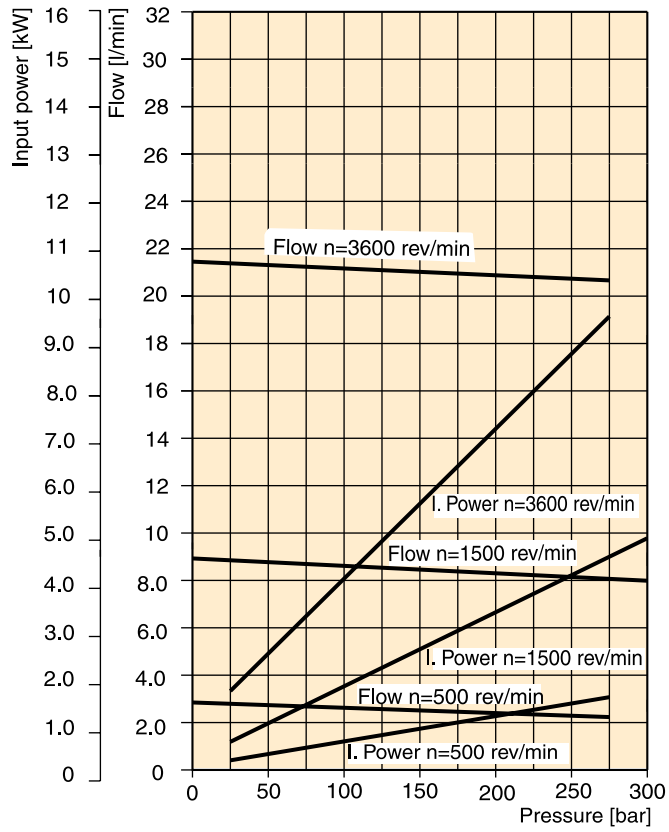


Fluid Temperature =  $45 \pm 2^\circ\text{C}$   
 Viscosity =  $36 \text{ mm}^2/\text{s}$   
 Inlet Pressure =  $0.9 + 0.1 \text{ bar absolute}$

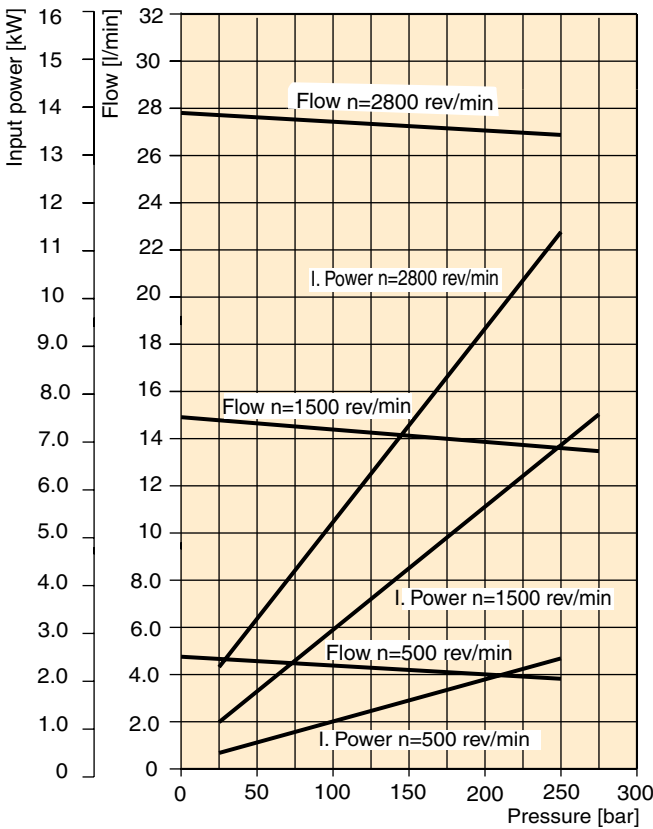
**PGP 505 - 3.0CC**



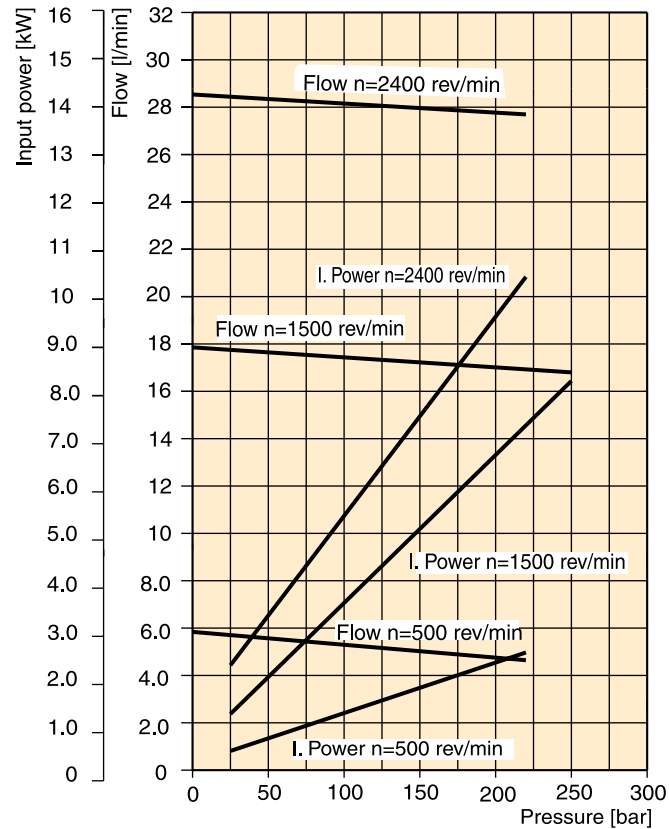
**PGP 505 - 6.0 CC**



**PGP 505 - 10.0 CC**

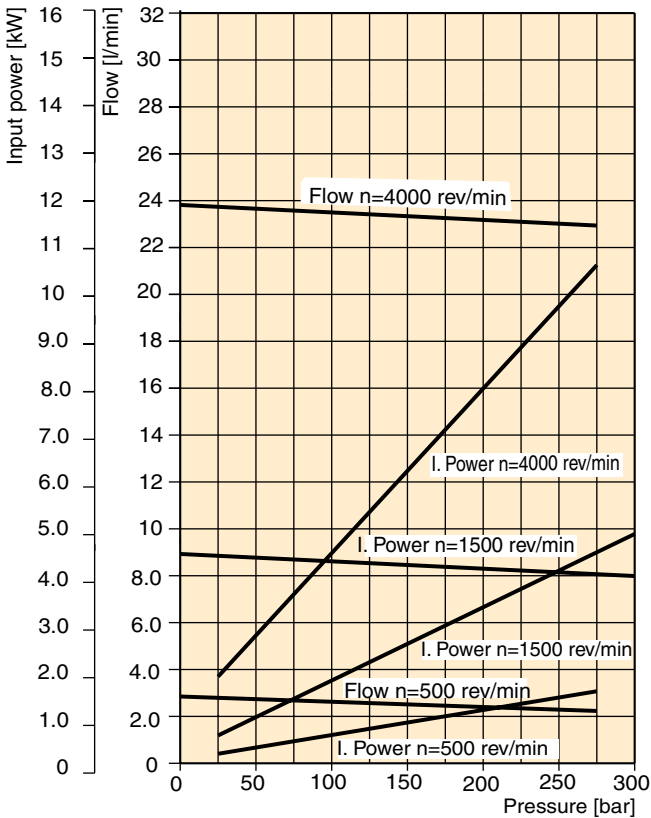


**PGP 505 - 12.0 CC**

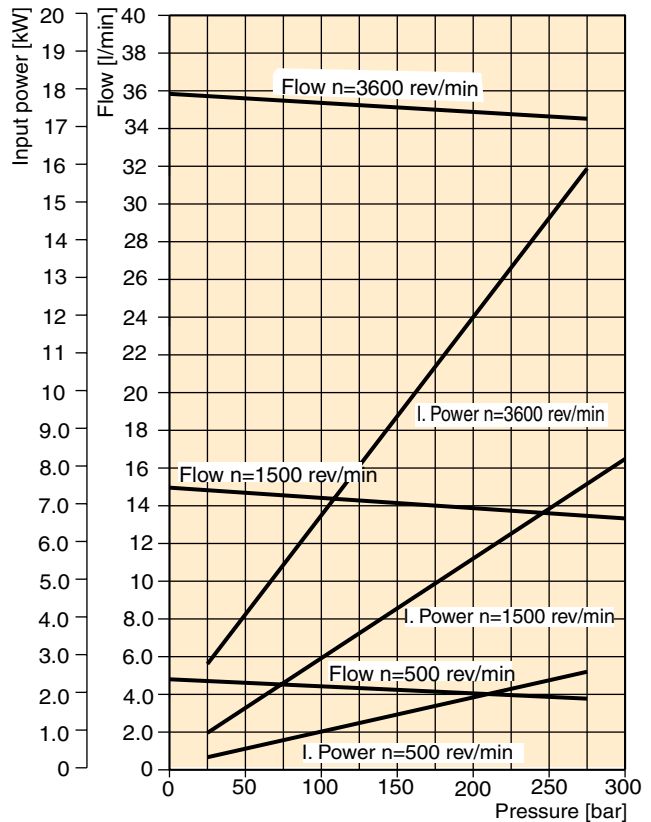


Fluid Temperature = 45± 2°C  
 Viscosity = 36 mm<sup>2</sup>/s  
 Inlet Pressure = 0.9 + 0.1 bar absolute

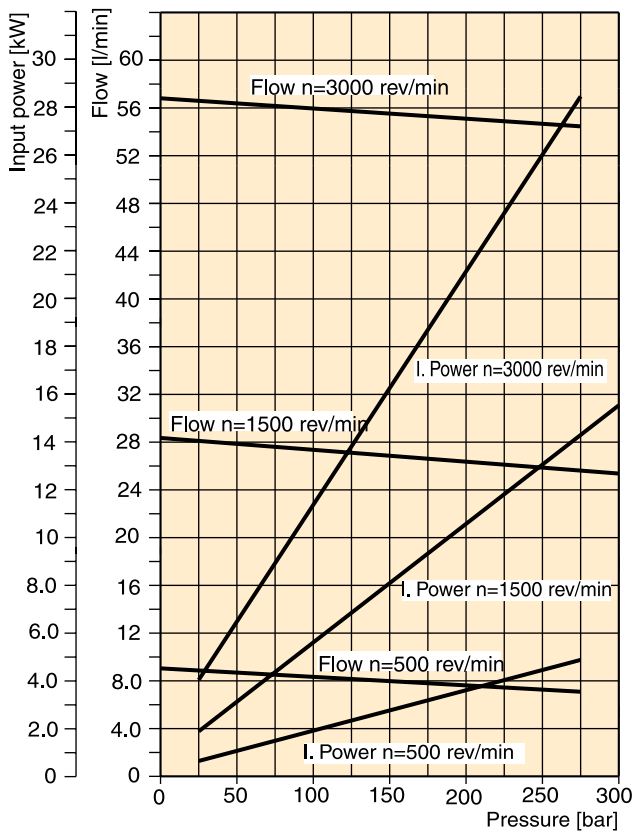
**PGP/PGM 511 - 6.0 CC**



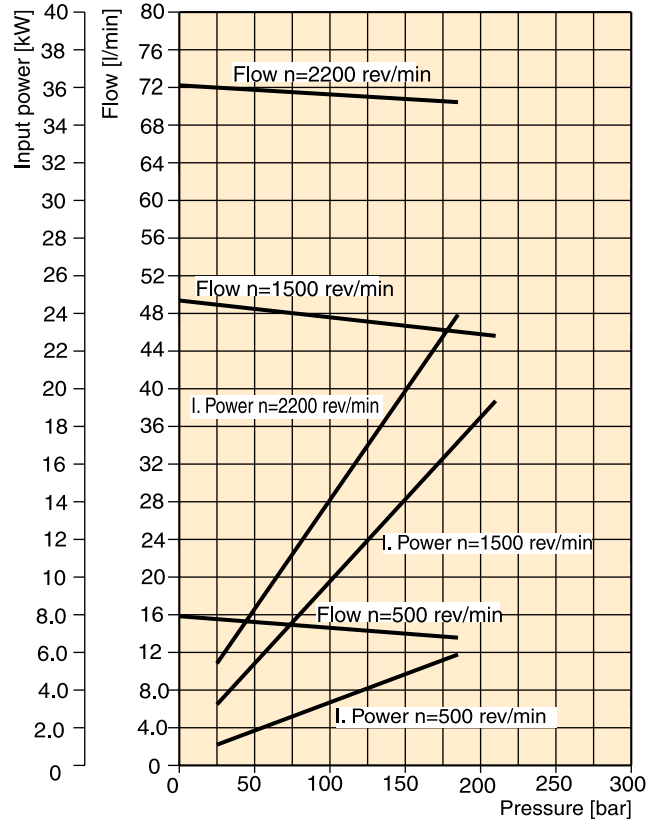
**PGP 511 - 10.0 CC**



**PGP/PGM 511 - 19.0 CC**



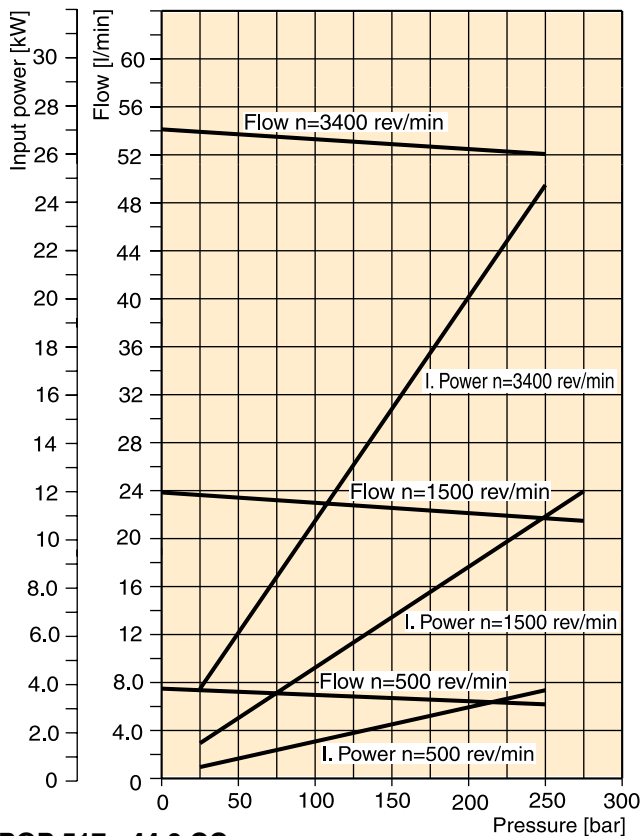
**PGP 511 - 33.0 CC**



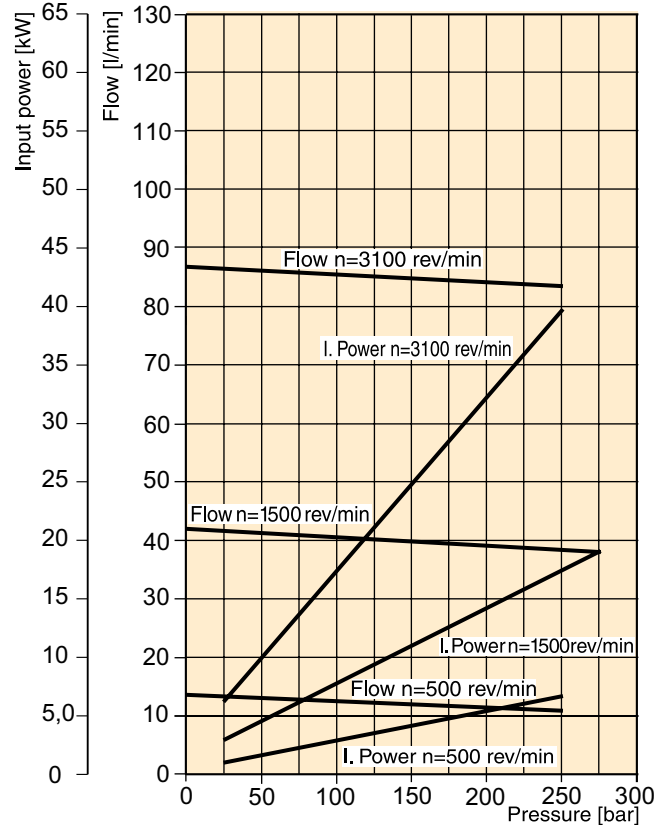
Fluid Temperature =  $45 \pm 2^\circ\text{C}$   
 Viscosity =  $36 \text{ mm}^2/\text{s}$   
 Inlet Pressure =  $0.9 + 0.1 \text{ bar absolute}$



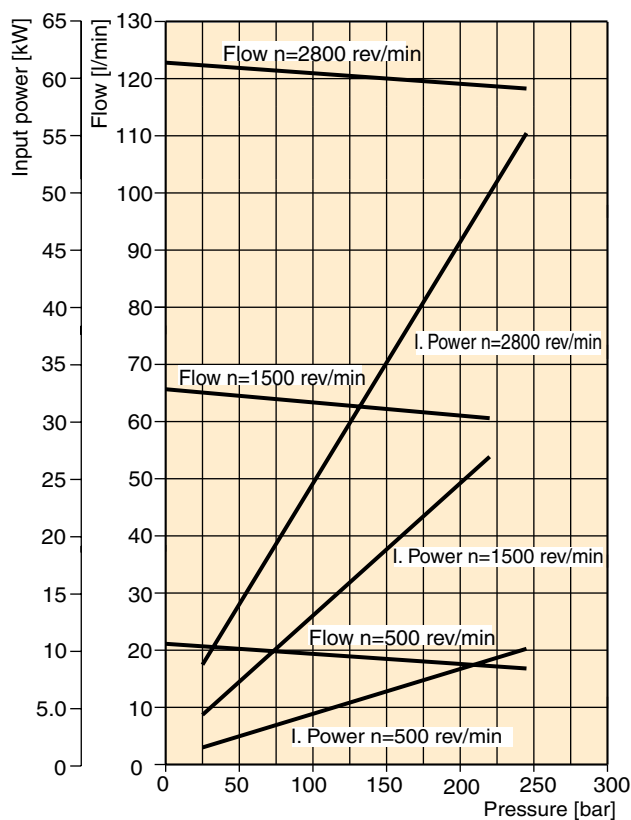
**PGP 517- 16.0 CC**



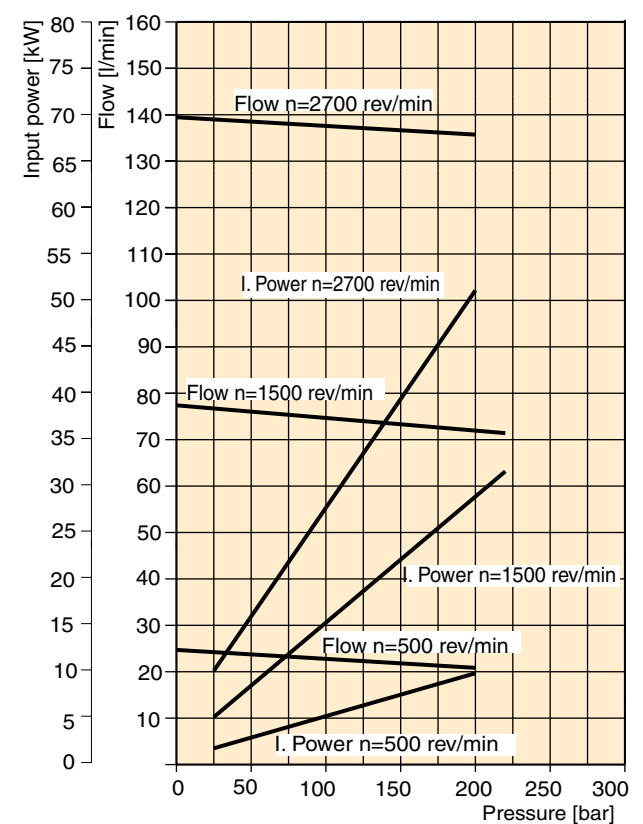
**PGP 517 -28.0 CC**



**PGP 517 - 44.0 CC**



**PGP 517- 52.0 CC**



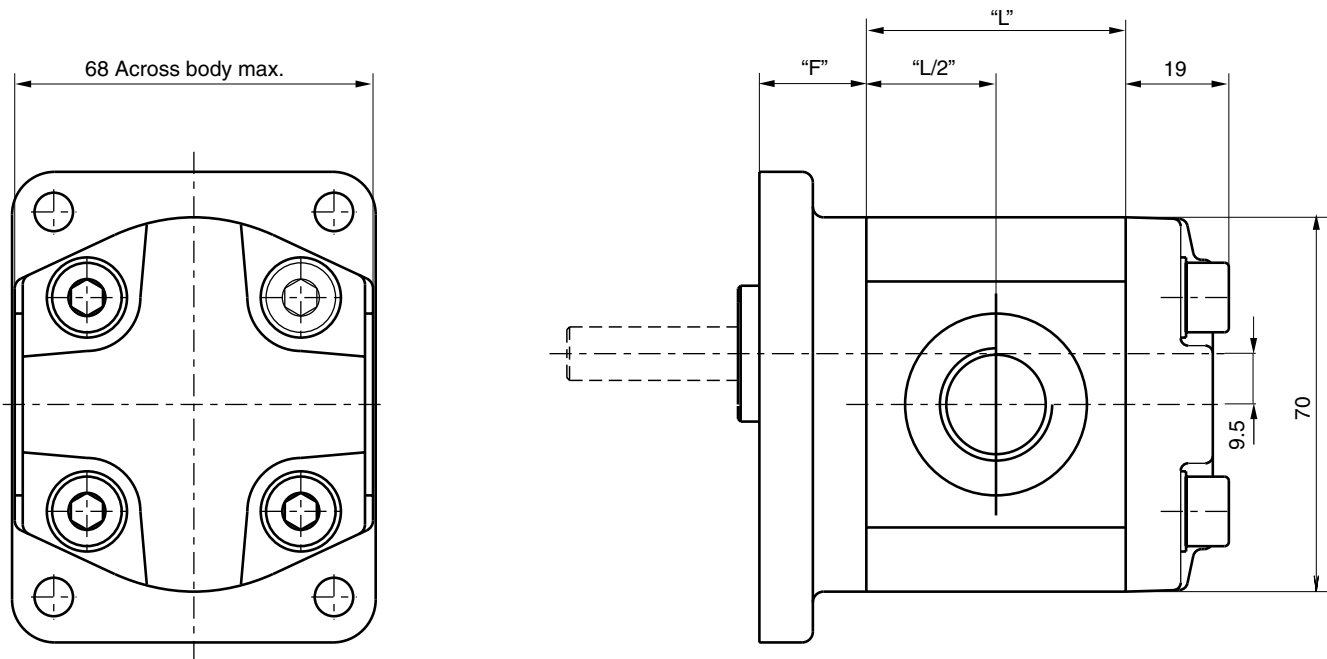
Fluid Temperature =  $45 \pm 2^\circ\text{C}$   
 Viscosity =  $36 \text{ mm}^2/\text{s}$   
 Inlet Pressure =  $0.9 + 0.1 \text{ bar absolute}$

**PGP 502 Pump Specification - Standard Displacements**

Pump Displacement	Code	0008	0012	0016	0021	0025	0033	0036	0043	0048	0058	0062	0079
	cm <sup>3</sup> /rev	0.8	1.2	1.6	2.1	2.5	3.3	3.6	4.3	4.8	5.8	6.2	7.9
<b>Max. Continuous Pressure</b>	bar	280	280	280	280	280	280	260	250	230	200	180	160
<b>Minimum Speed</b> @ Max. outlet press.	rpm	500	500	500	500	500	500	500	500	500	500	500	500
<b>Maximum Speed</b> @ 0 Inlet & Max. outlet press.	rpm	5000	5000	5000	4500	4500	4000	4000	3500	3000	3000	3000	3000
<b>Pump Input Power</b> @ Max. Press. and 1500 rpm	kW	0.82	1.1	1.4	1.7	2.0	2.5	2.6	2.6	2.4	2.8	2.9	3.0
<b>Dimension "L"</b>	mm	35.3	36.8	38.3	39.9	41.5	44.5	45.6	48.5	50.0	53.8	55.3	61.6
<b>Approximate Weight <sup>1)</sup></b>	kg	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.4	1.4	1.5	1.6

<sup>1)</sup> Single pump with Flange D1 and Port end cover B1

**Single Unit PGP 502**

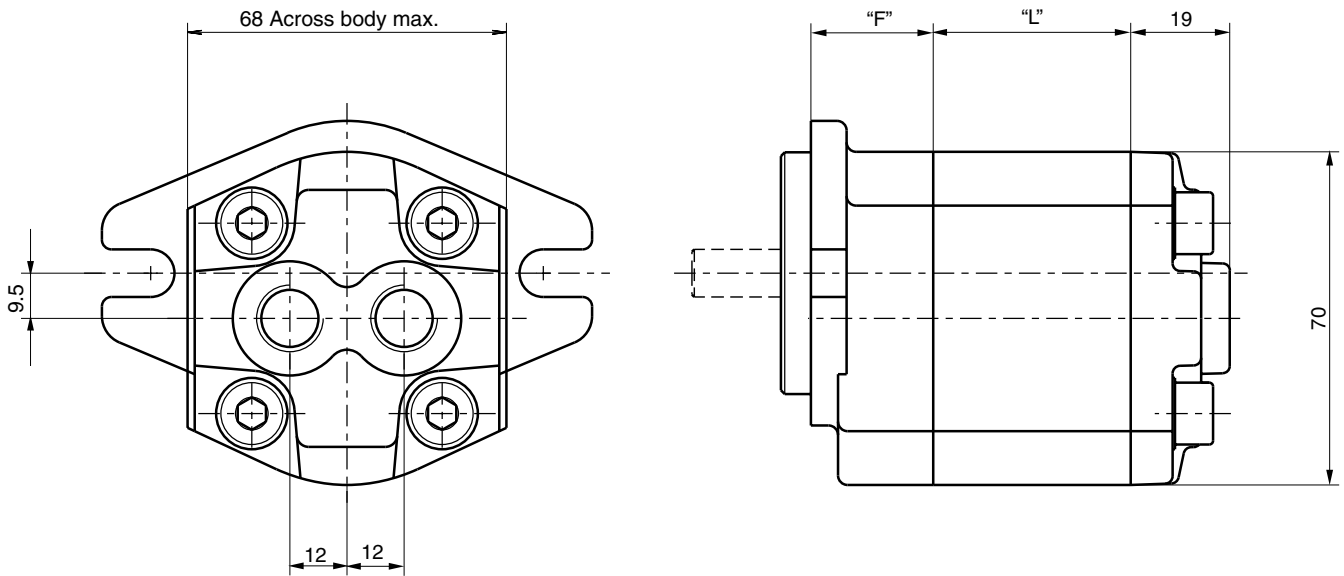


**Dimension "L"** see table above

**Dimension "F"** see flanges on page 20

**Dimension Shafts** see page 22

**Single Unit PGP 502 with rear ports**

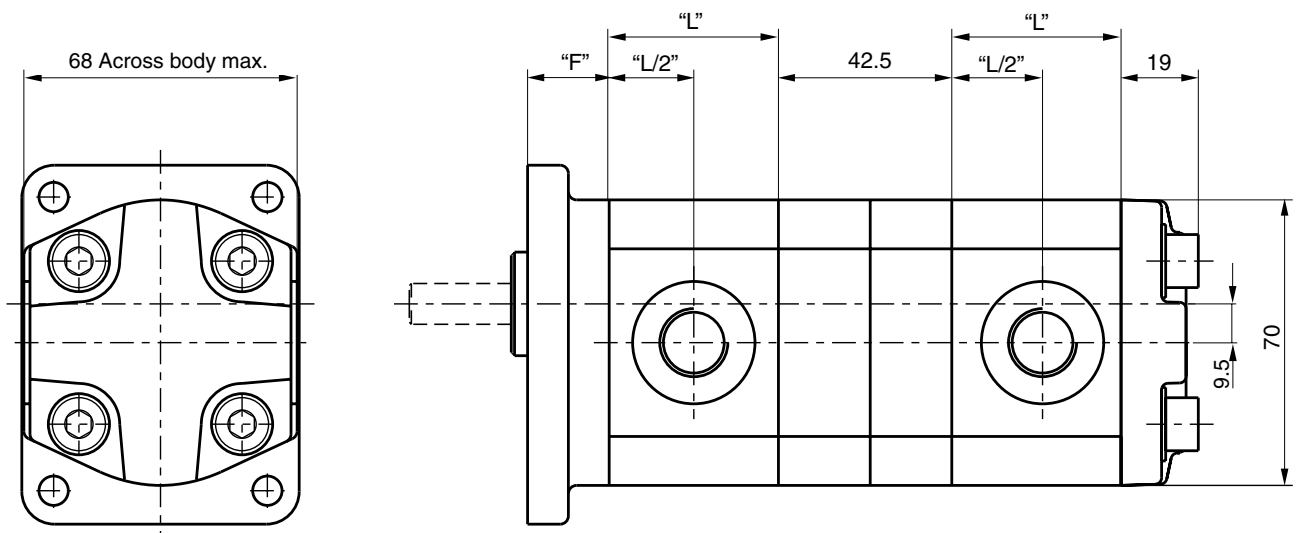


**Dimension "L"** see table on page 18

**Dimension "F"** see flanges on page 20

**Dimension Shafts** see page 22

**Tandem Unit PGP 502**



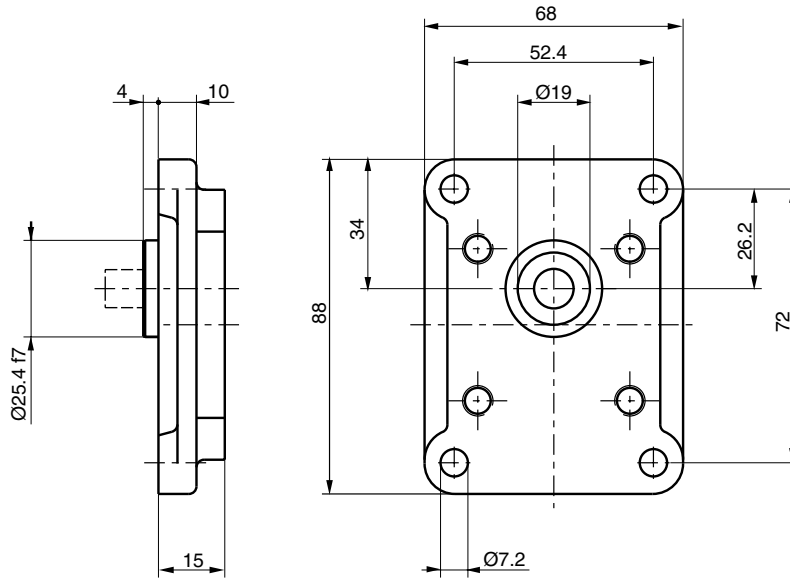
**Dimension "L"** see table on page 18

**Dimension "F"** see flanges on page 20

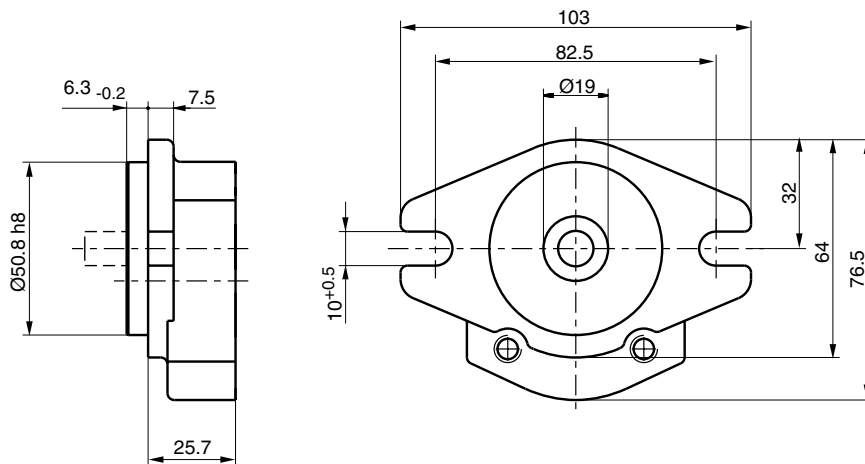
**Dimension Shafts** see page 22

**PGP 502 Mounting Flange**

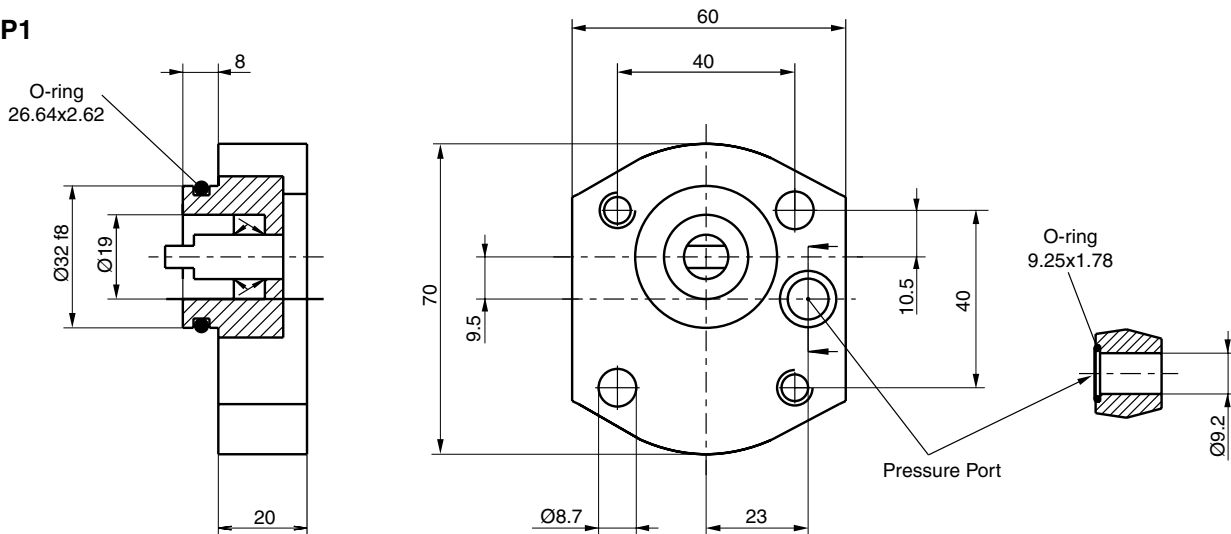
**Code D1**



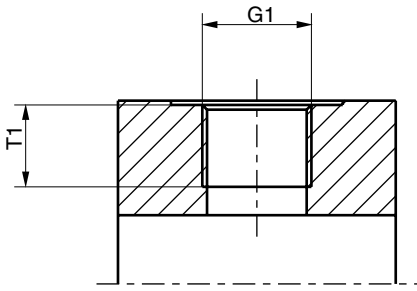
**Code H1**



**Code P1**

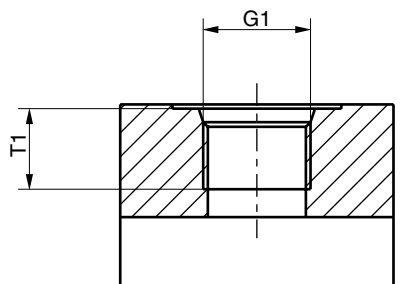
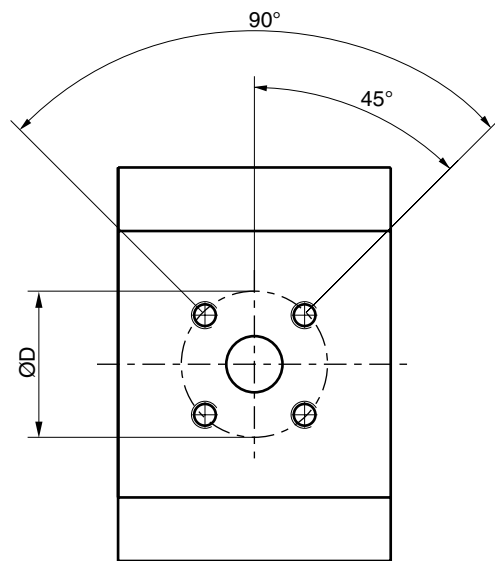
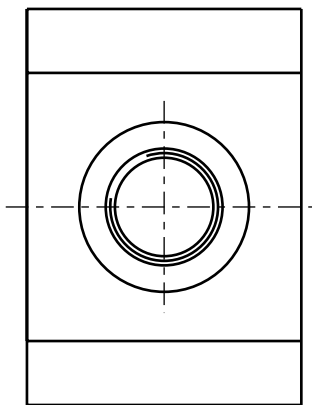
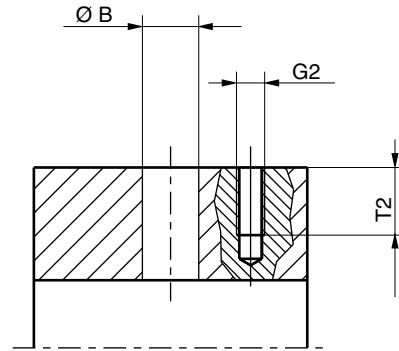


**PGP 502 Porting**



**Code E** British Standard Pipe Parallel (BSPP)

**Code G** Metric straight thread



**Code J** European flange

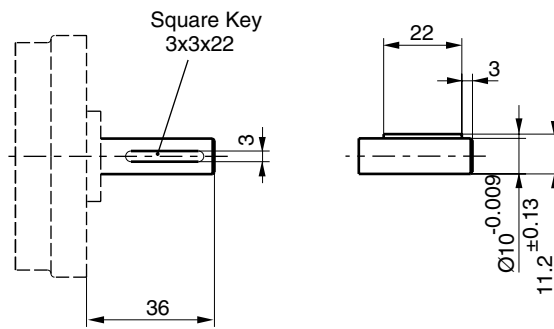
**Code D** SAE straight thread

**PGP 502**

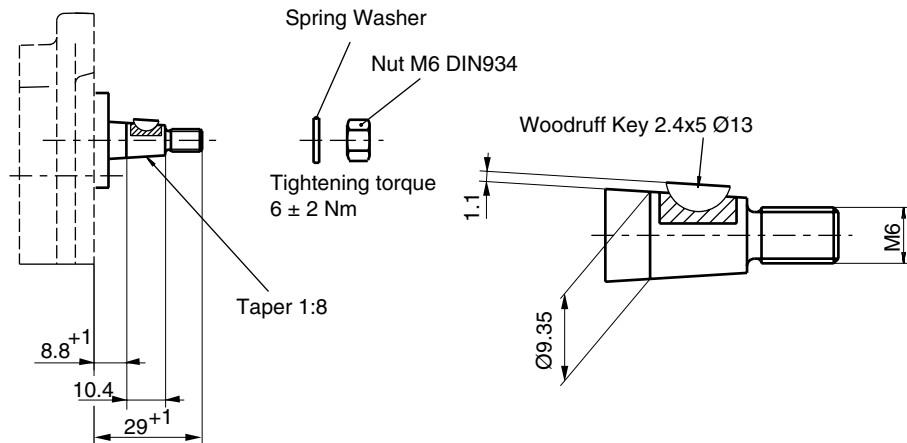
Code	G1	G2	T1	Ø B	Ø D	T2
D2	9/16-18 UNF		12.7			
D3	3/4-16 UNF		14.3			
E1	1/4-19 BSP		12.0			
E2	3/8-19 BSP		12.0			
E3	1/2-14 BSP		14.0			
G1	M14x1.5		12.0			
G3	M18x1.5		12.0			
J1		M5		8.0	26.0	12.0
J2		M5		10.0	26.0	12.0
J3		M6		8.0	30.0	12.0
J4		M6		12.0	30.0	12.0

**PGP 502 Drive Shaft**

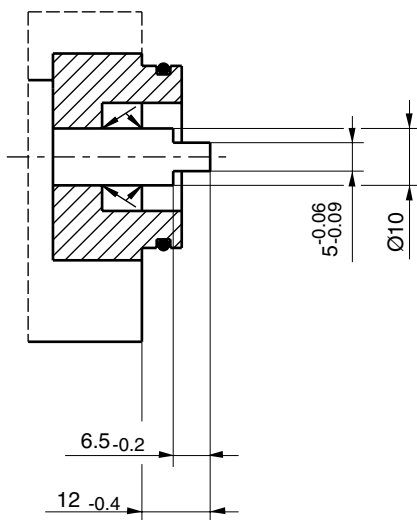
**Code H1**



**Code P2**



**Code V1**



**PGP/PGM 502 - Shaft Load Capacity**

Code	Description	Torque Rating [Nm]
H1	Ø10,3.0 KEY, no thread, 36L parallel	30
P2	Ø9.95, 8.8L, 2.4 KEY, M6 taper 1:8	30
V1	5x6.5 long shaft w/o coupling tang drive	20

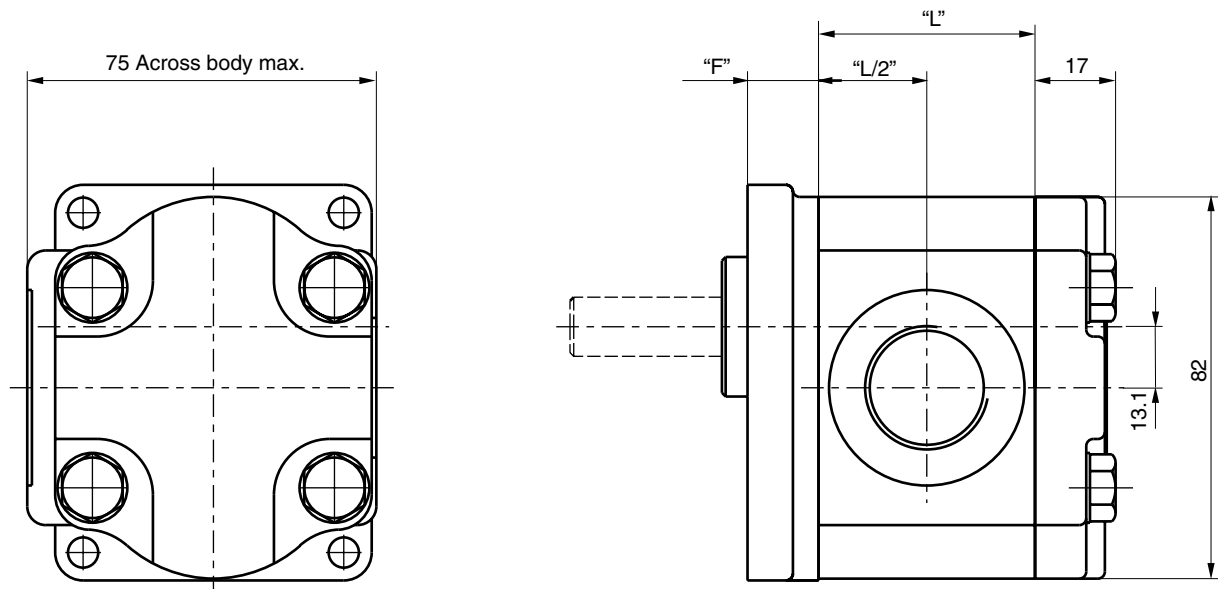
$$\text{Torque [Nm]} = \frac{\text{Displacement [cm}^3\text{/rev]} \times \text{Pressure [bar]}}{57.2}$$

**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 Weight <sup>1)</sup>	kg	2.22	2.27	2.32	2.38	2.43	2.48	2.58	2.63	2.68

<sup>1)</sup> Single pump with Flange D3 and Port end cover B1

**Single Unit PGP 505**

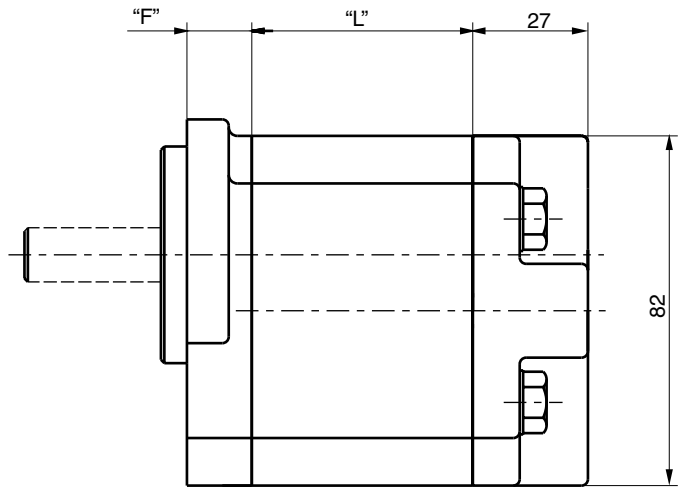
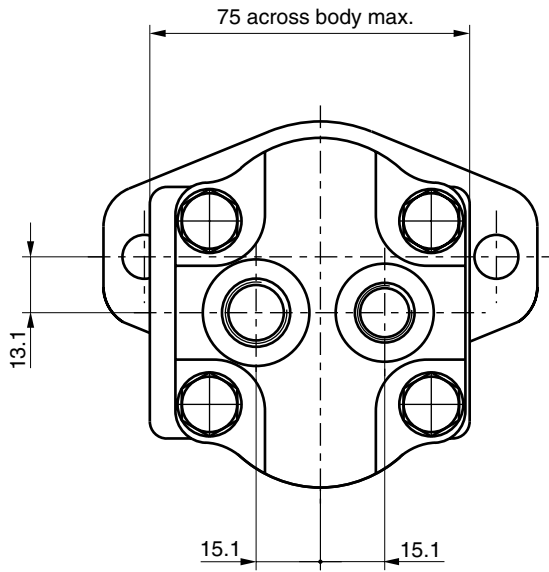


**Dimension "L"** see table above

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

**Dimension Shafts** see pages 27 and 28

**Single Unit PGP 505 with rear ports**

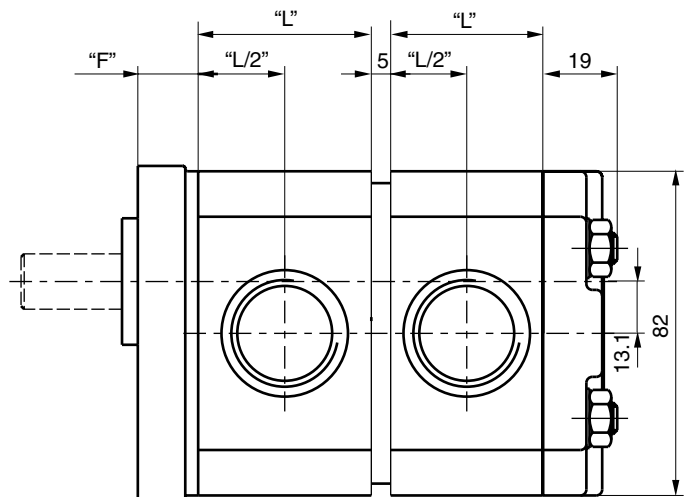
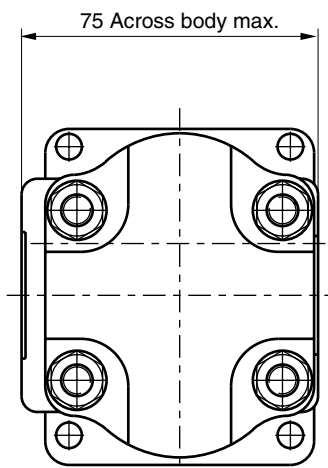


**Dimension "L"** see table on page 23

**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

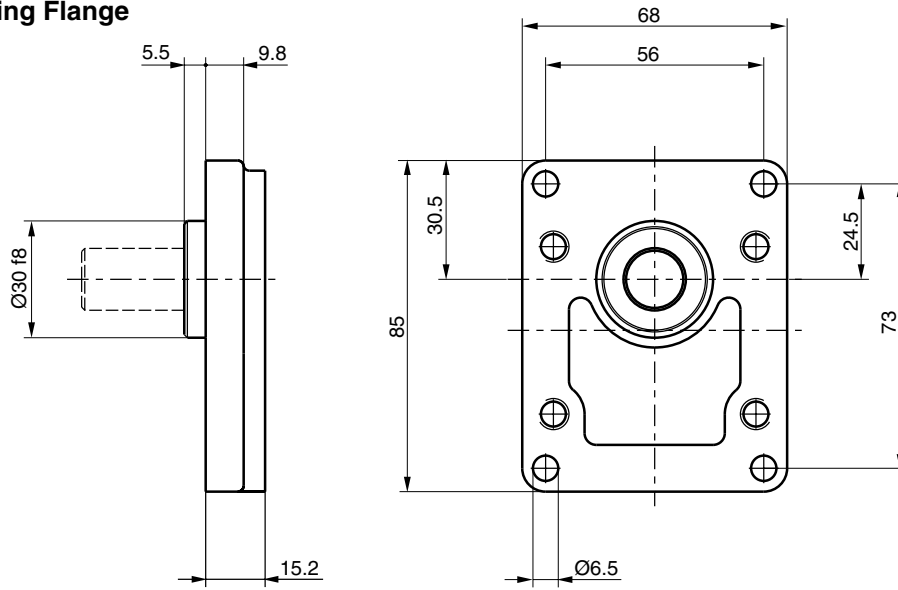
**Dimension "F"** see flanges on pages 25

**Dimension Shafts** see pages 27 and 28

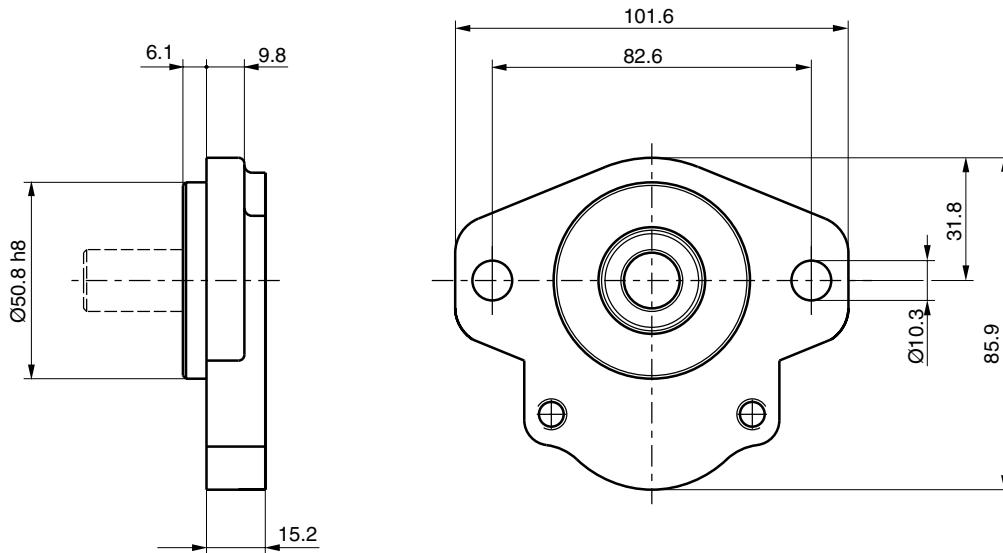


**PGP 505 Mounting Flange**

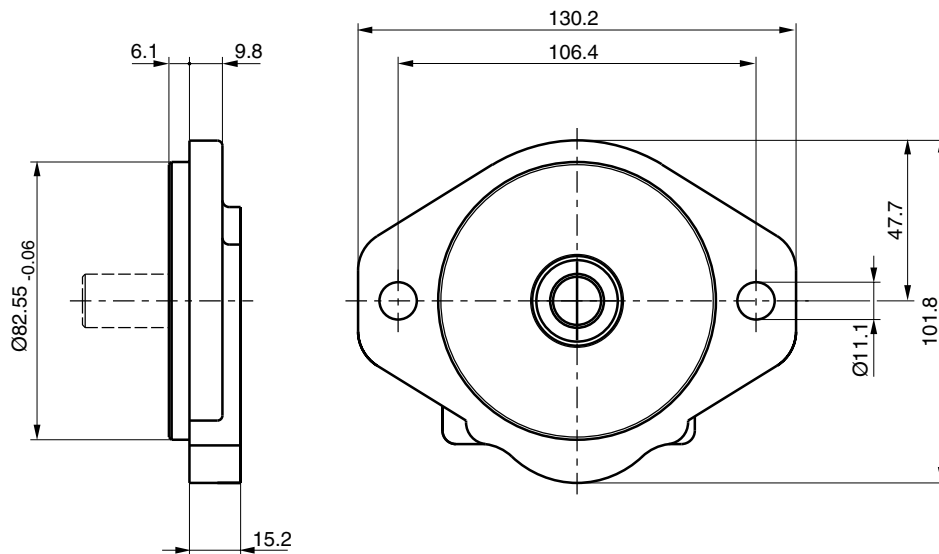
**Code D2**



**Code H1**



**Code H2**



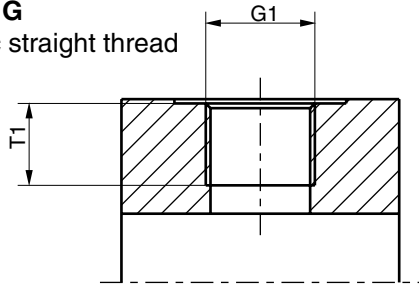
**PGP 505 Porting**

**Code E**

British Standard Pipe

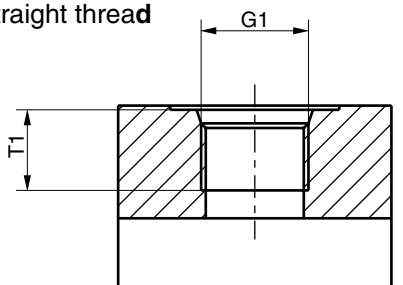
**Code G**

Metric straight thread



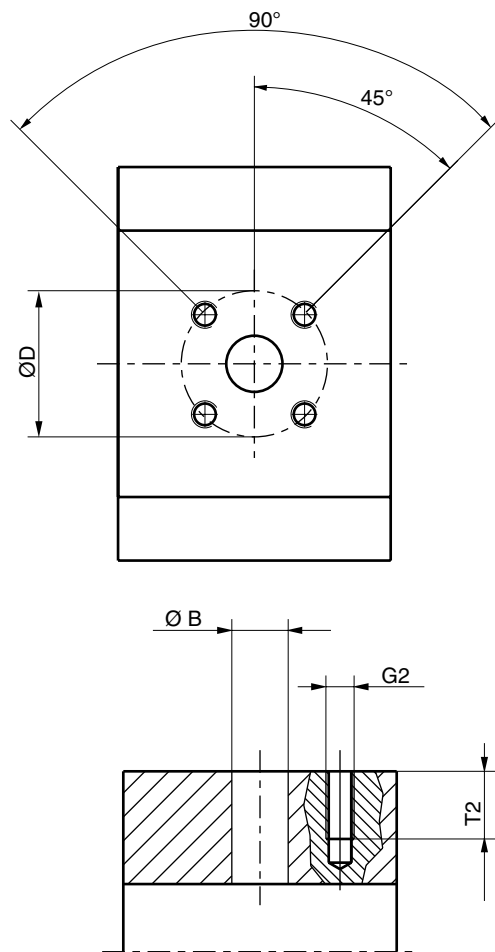
**Code D**

SAE straight thread



**Code J**

European flange

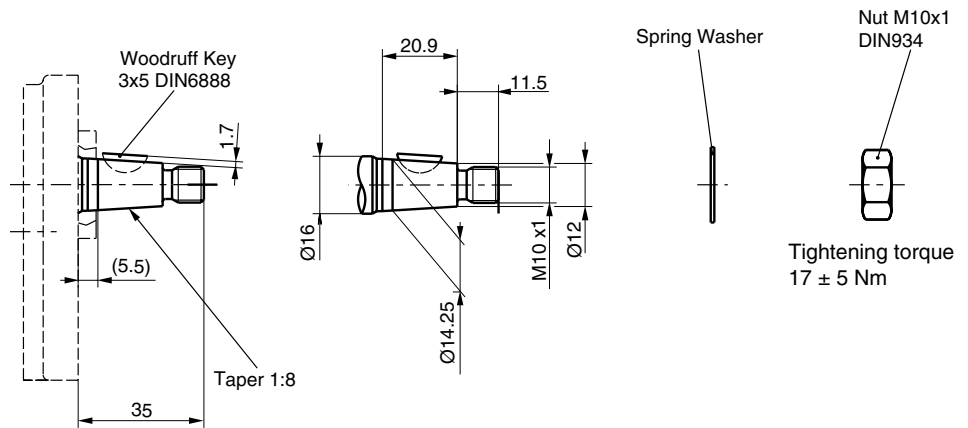


**PGP 505**

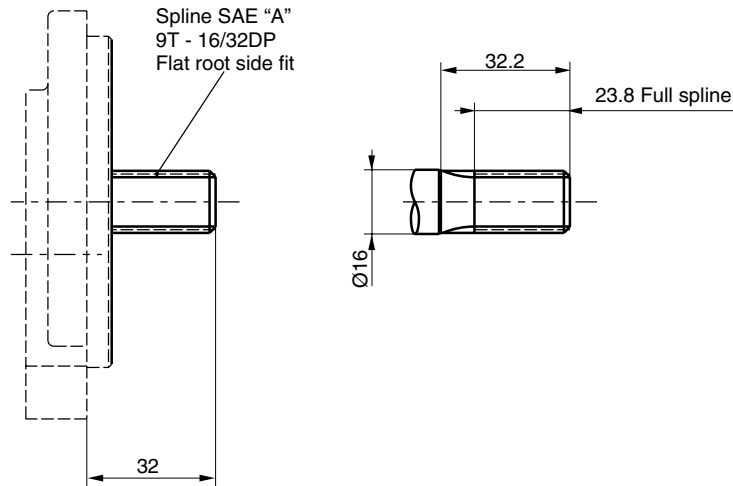
Code	G1	G2	T1	Ø B	Ø D	S	T2
Thread	Thread	Dimensions					
D2	9/16-18 UNF		12.7				
D3	3/4-16 UNF		14.3				
D4	7/8-14 UNF		16.7				
D5	1 1/16-12 UN		19.0				
E2	3/8-19 BSP		12.0				
E3	1/2-14 BSP		14.0				
E5	3/4-14 BSP		16.0				
G1	M 14x1.5		12.0				
G3	M 18x1.5		12.0				
G4	M 22x1.5		14.0				
J3		M6		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

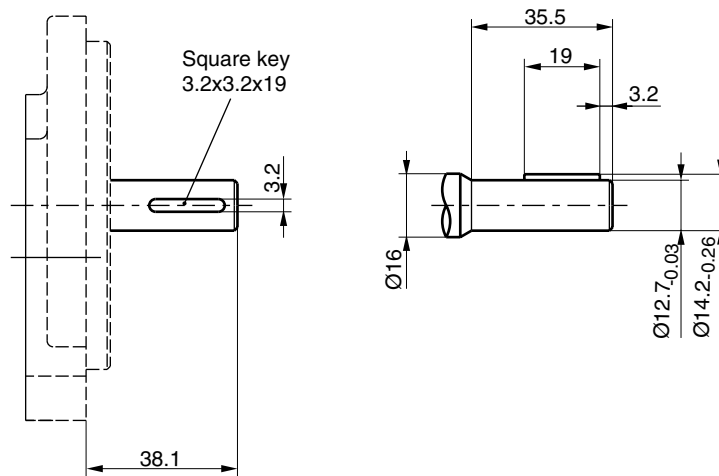


Code A1

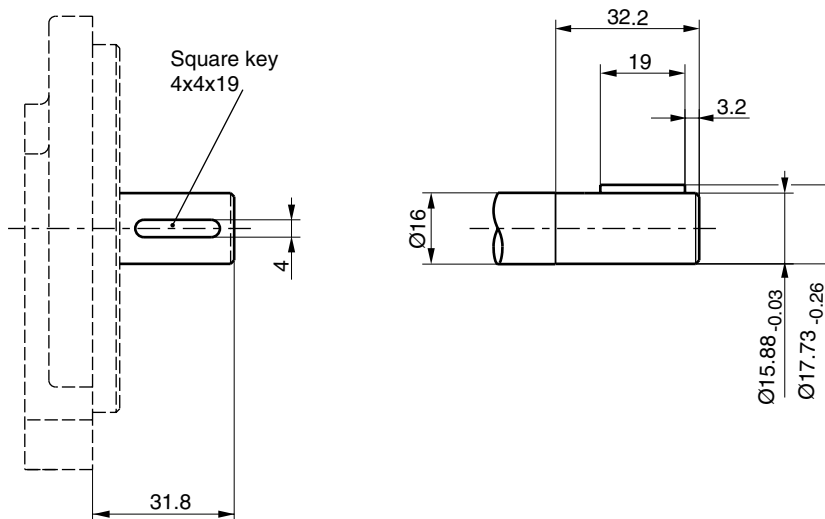


**PGP 505 Drive Shaft**

**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

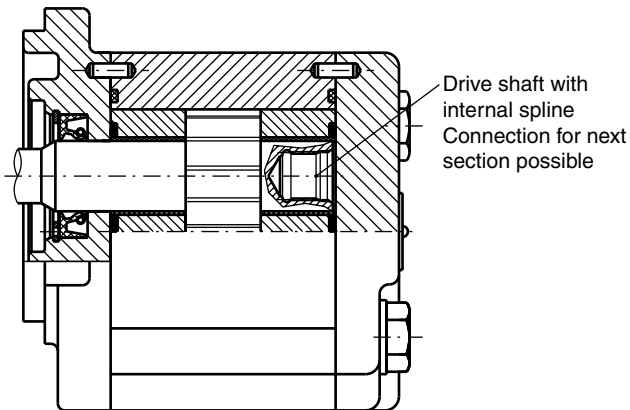
$$\text{Torque [Nm]} = \frac{\text{Displacement [cm}^3\text{/rev]} \times \text{Pressure [bar]}}{57.2}$$

**PGP/PGM 511 Specification - Standard Displacements**

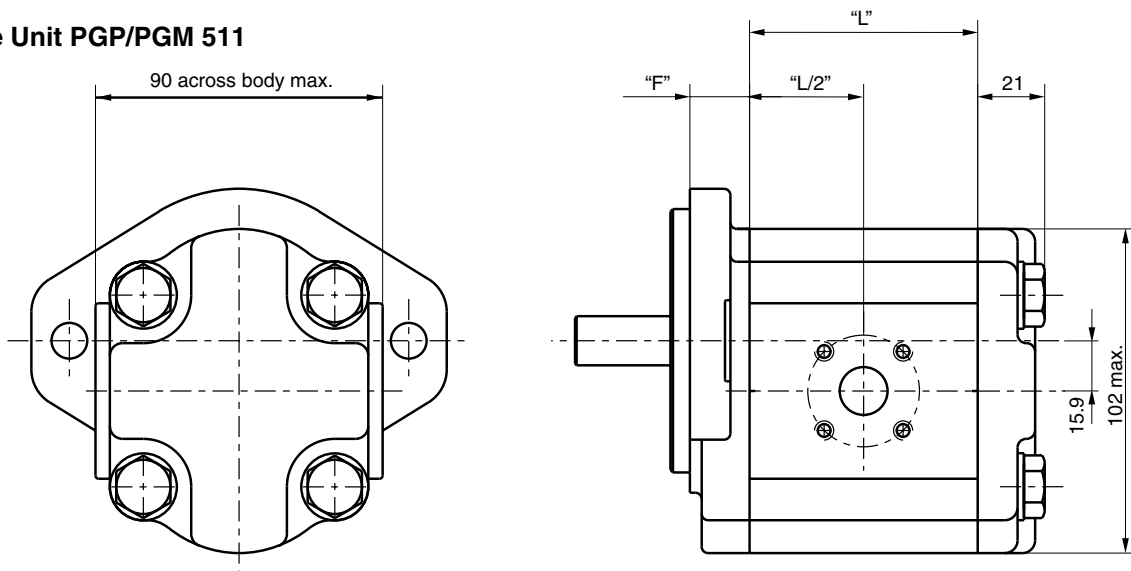
Pump Displacement	Code	0060	0080	0100	0110	0140	0160	0190	0230	0270	033
	cm <sup>3</sup> /rev	6.0	8.0	10.0	11.0	14.0	16.0	19.0	23.0	27.0	33.0
Max. Continuous Pressure	bar	250	250	250	250	250	250	250	225	190	155
Minimum Speed @ 0 Inlet & Max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet pressure	rpm	3500	3500	3500	3500	3500	3500	3250	2750	2350	2000
Pump Input Power @ Max. Pressure and 1500 rpm	kW	4.5	6.0	7.5	8.3	10.5	12.0	14.3	14.7	14.9	17.3
Dimension "L"	mm	50.1	53.3	56.5	58.0	62.8	65.9	70.6	76.9	83.2	92.6
Approximate Weight <sup>1)</sup>	kg	3.40	3.47	3.55	3.57	3.71	3.79	3.91	4.06	4.21	4.45

<sup>1)</sup> Single pump with Flange Q1 and Port end cover B1

**Distributor Unit PGP 511**



**Single Unit PGP/PGM 511**

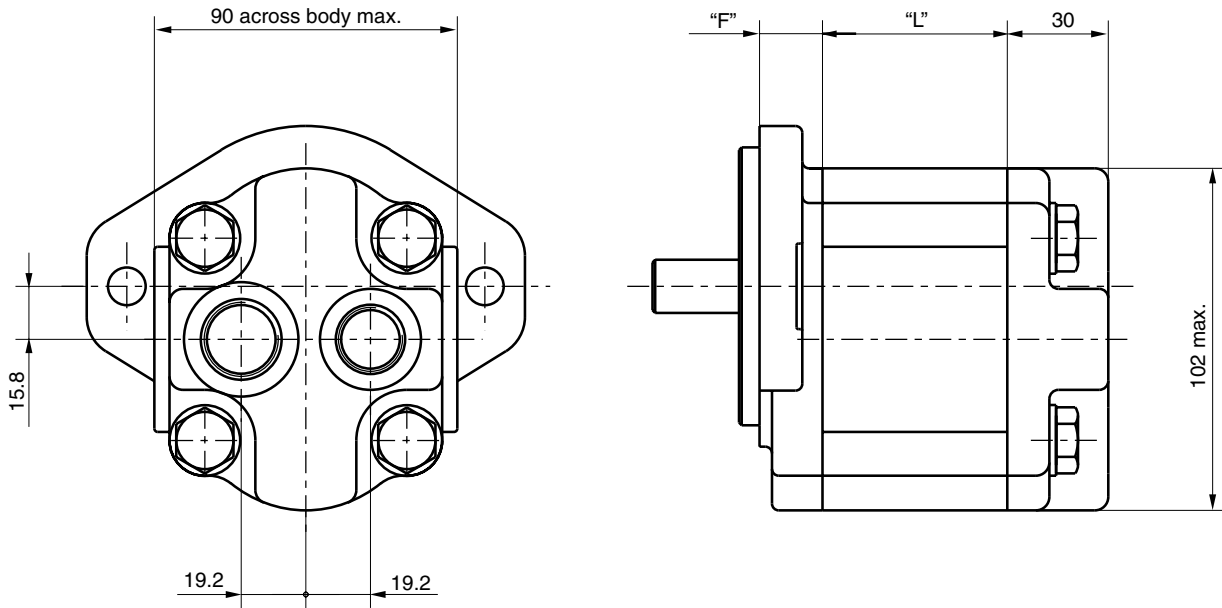


**Dimension "L"** see table above

**Dimension "F"** see flanges on pages 31 to 34

**Dimension Shafts** see pages 38 to 40

**Single Unit PGP/PGM 511 with rear ports**

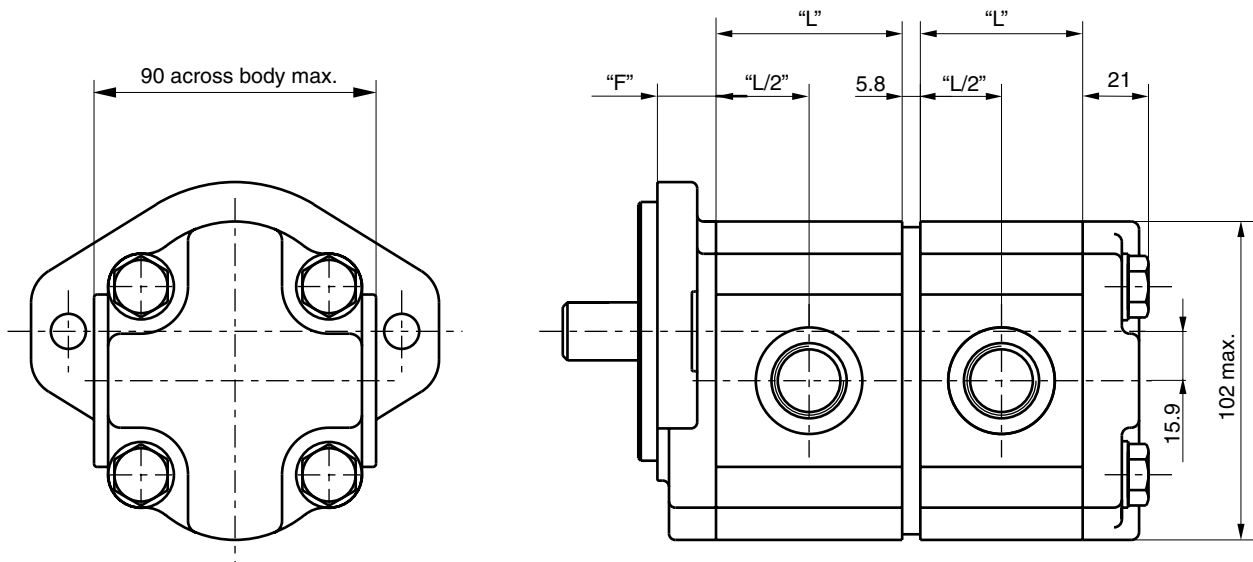


**Dimension "L"** see table on page 29

**Dimension "F"** see flanges on pages 31 to 34

**Dimension Shafts** see pages 38 to 40

**Tandem Unit PGP/PGM 511**



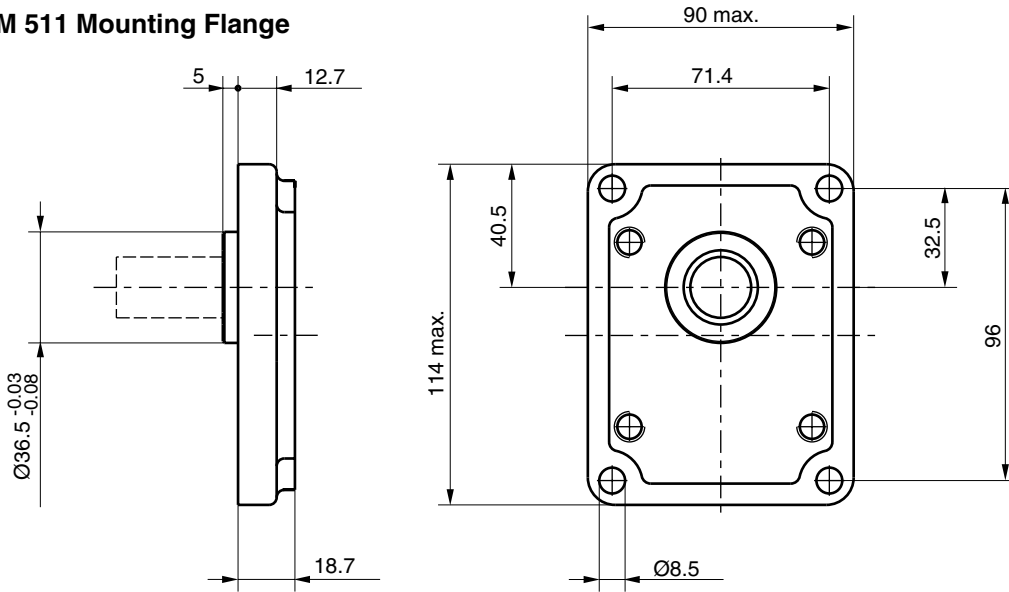
**Dimension "L"** see table on page 29

**Dimension "F"** see flanges on pages 31 to 34

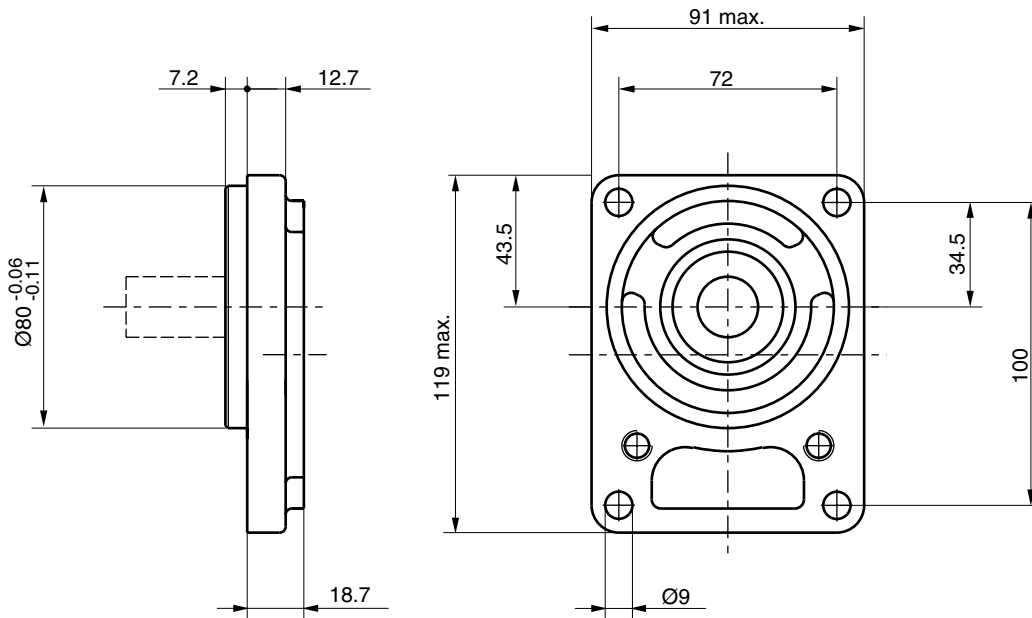
**Dimension Shafts** see pages 38 to 40

**PGP/PGM 511 Mounting Flange**

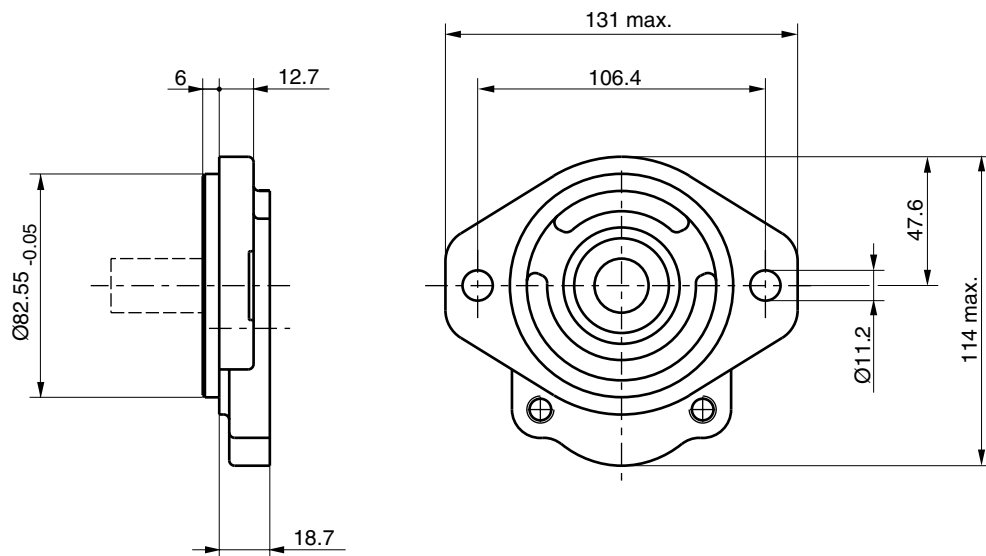
**Code D3**



**Code D4**

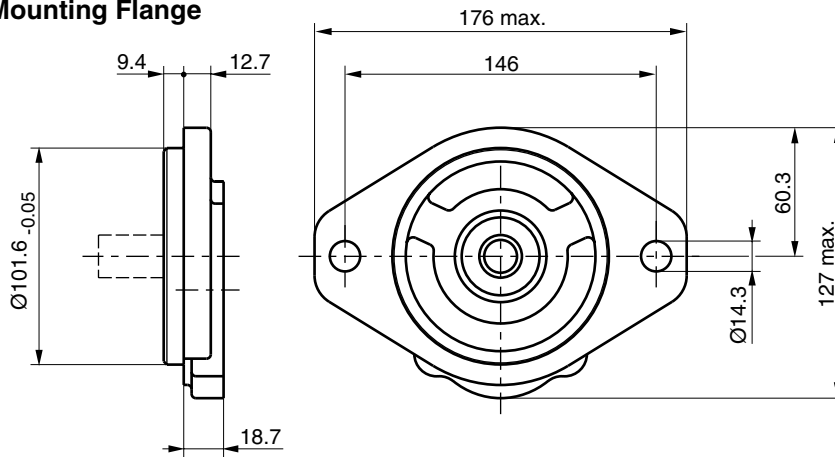


**Code H2**

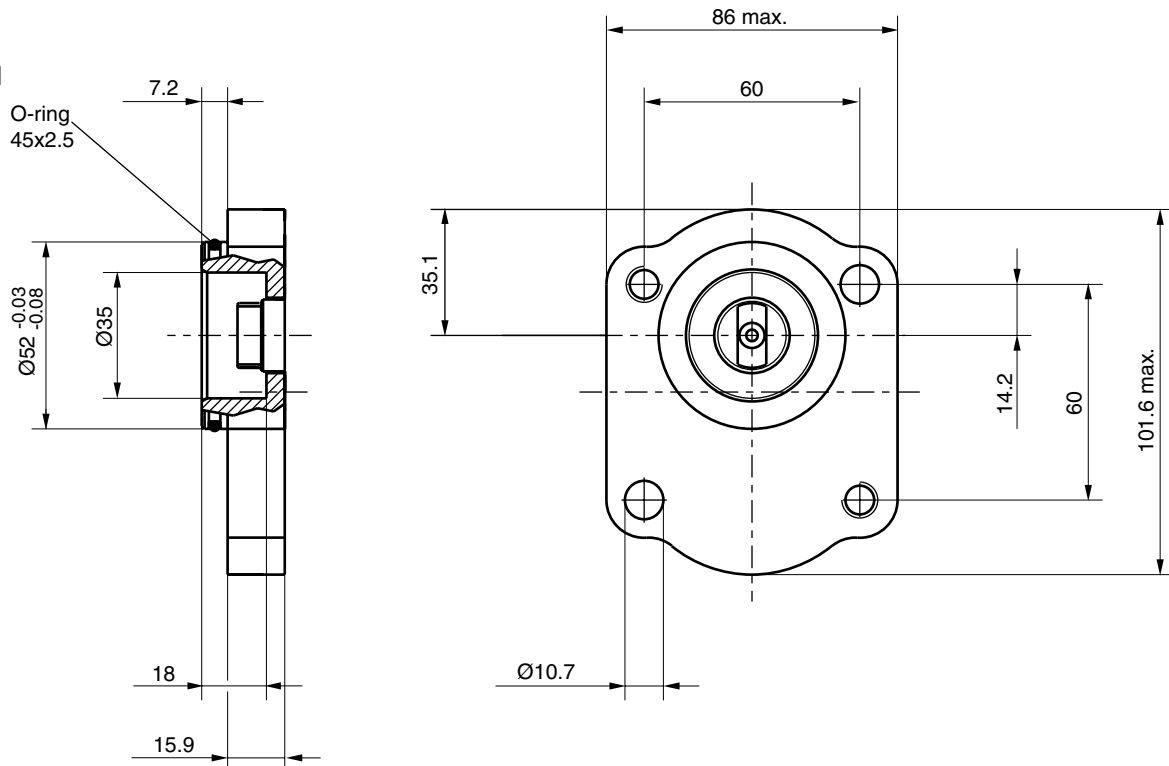


**PGP/PGM 511 Mounting Flange**

**Code H3**



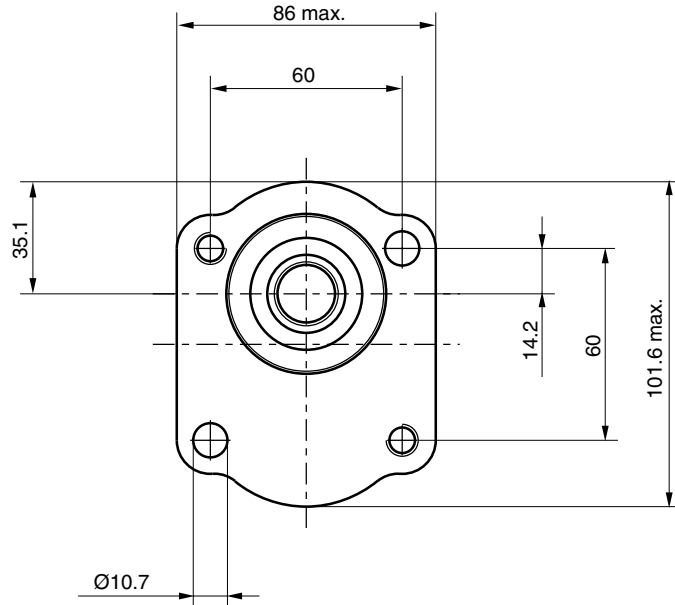
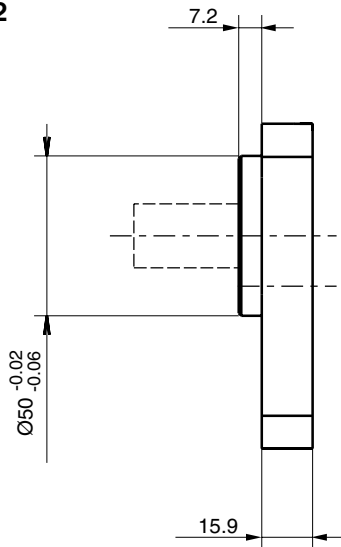
**Code Q1**



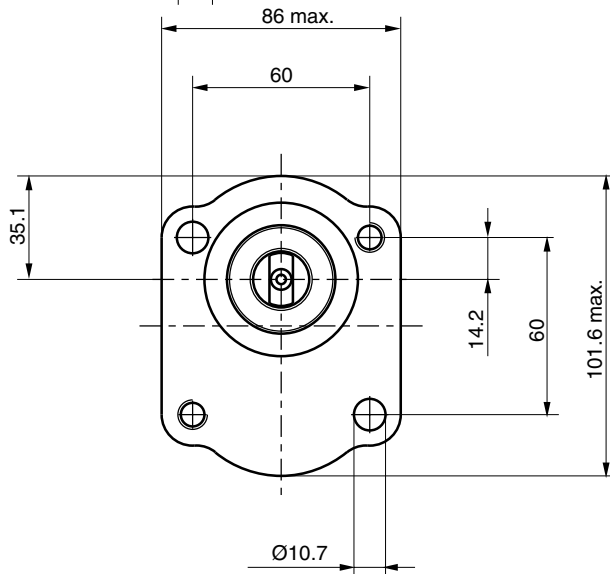
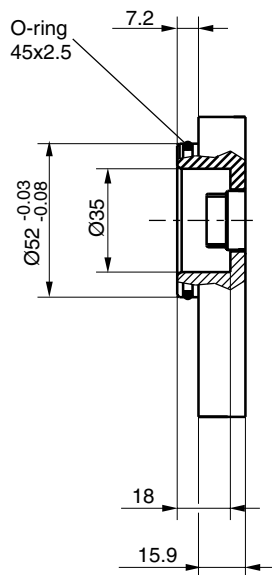


**PGP/PGM 511 Mounting Flange**

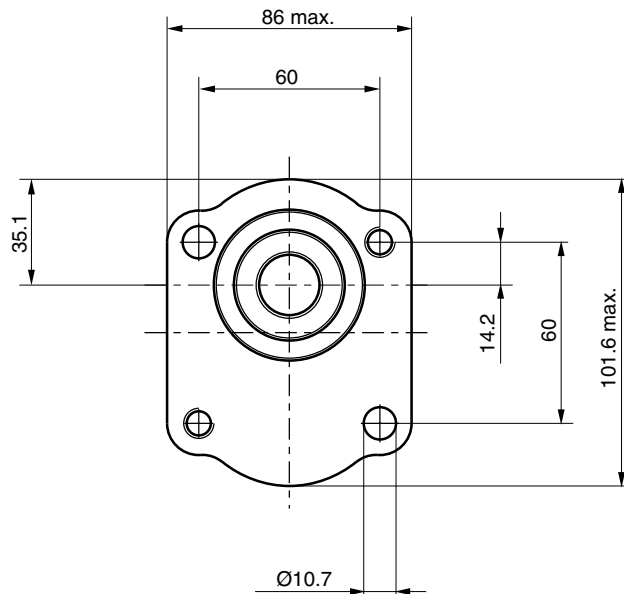
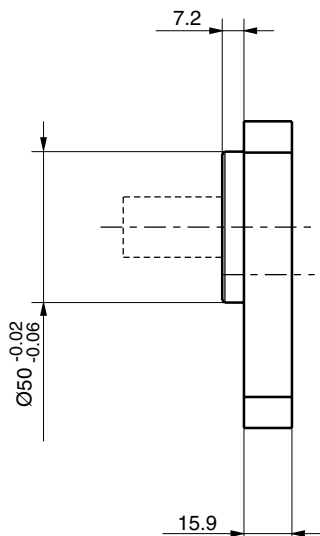
**Code Q2**



**Code Q3**

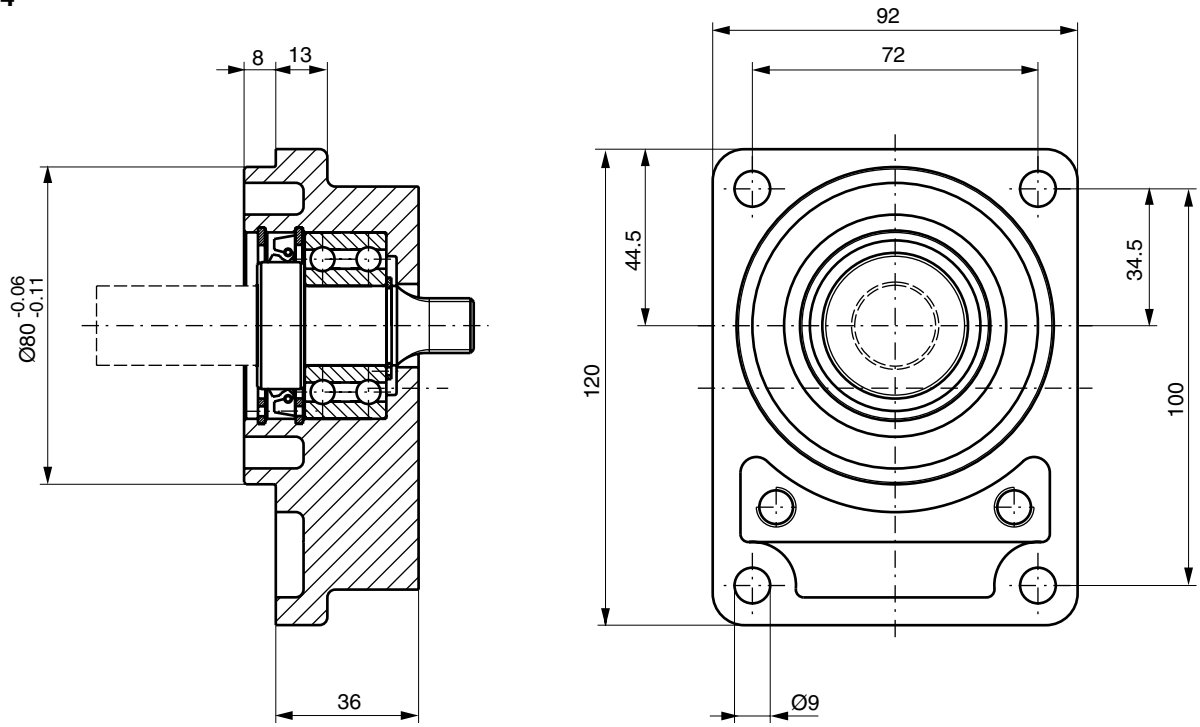


**Code Q4**



PGP/PGM 511 Mounting Flange

Code F4



**Outboard Bearing PGP-PGM 511**

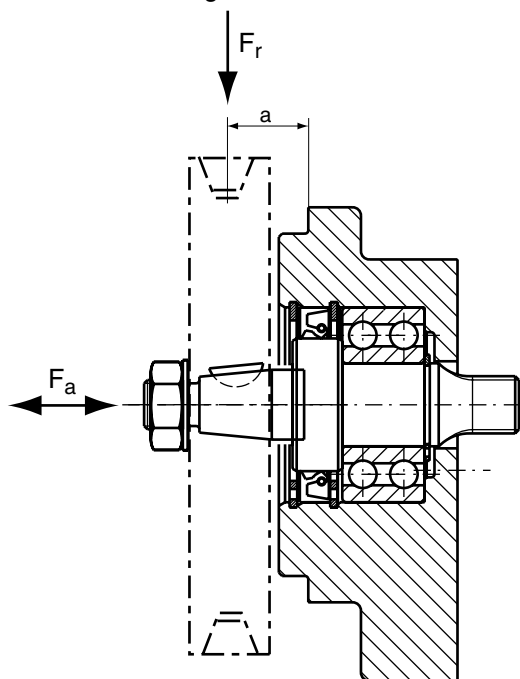
Bearing loads for code F4

Units subject to axial or radial loads, for instance drive with V-belts or gear wheels, must be specified with an outboard bearing.

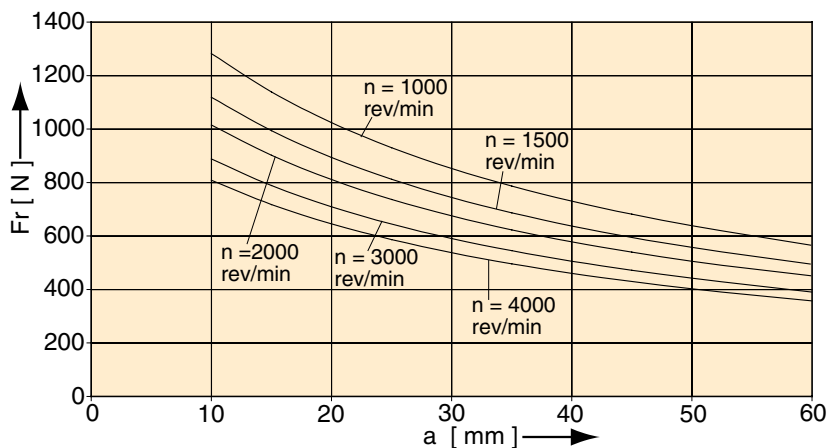
The diagrams below show the maximum axial or radial loads that can be tolerated referred to a bearing life of  $L_H = 1000$  h.

$F_r$  is reduced by  $0,7 F_a$  when axial loading is applied.

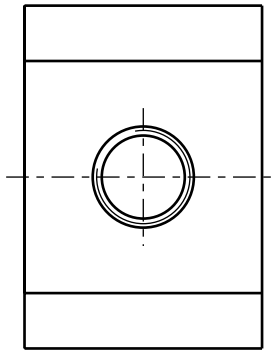
Outboard Bearing Code F4



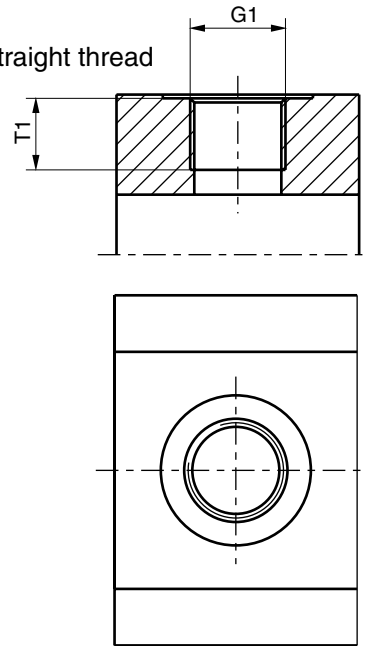
Shaft load for outboard bearings PGP/PGM 511



**PGP/PGM 511 Porting**



**Code E**  
 British Standard Pipe  
**Code G**  
 Metric straight thread

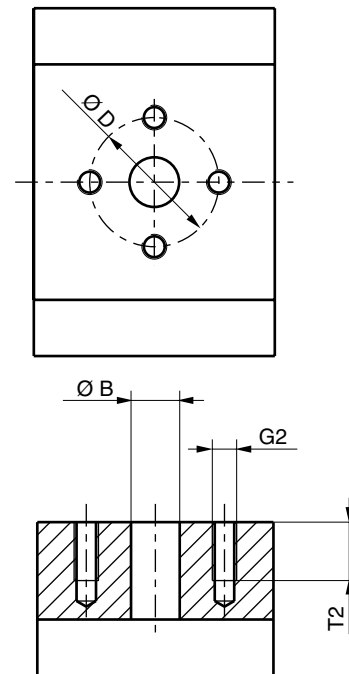


**Code D**  
 SAE straight thread

**PGP/PGM 511**

Code	G1	T1
	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
D6	1 5/8-12 UN	19.0
D7	1 5/8-12 UN	19.0
E2	3/8-19 BSP	12.0
E3	1/2-14 BSP	14.0
E4	5/8-14 BSP	16.3
E5	3/4-16 BSP	16.0
E6	1-11 BSP	18.0
E7	1 1/4-11 BSP	20.0
G1	M 14x1.5	12.0
G3	M 18x1.5	12.0
G4	M 22x1.5	14.0
G5	M 26x1.5	16.0
G7	M 30x1.5	12.0

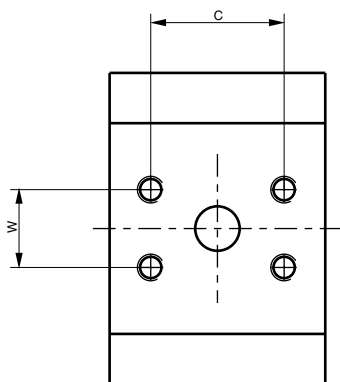
**Code L**  
 4-Bolt flange



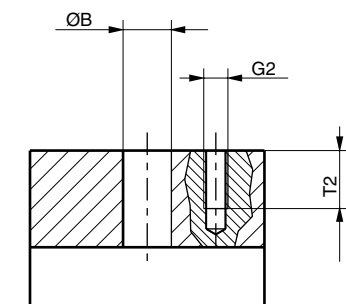
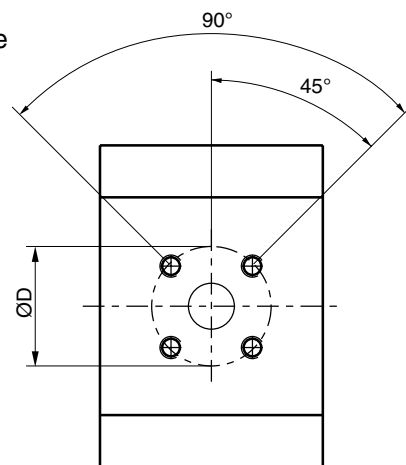
**PGP/PGM 511 Porting**

**Code N**  
 SAE Split flange

**Code P**  
 SAE Split flange  
 metric thread



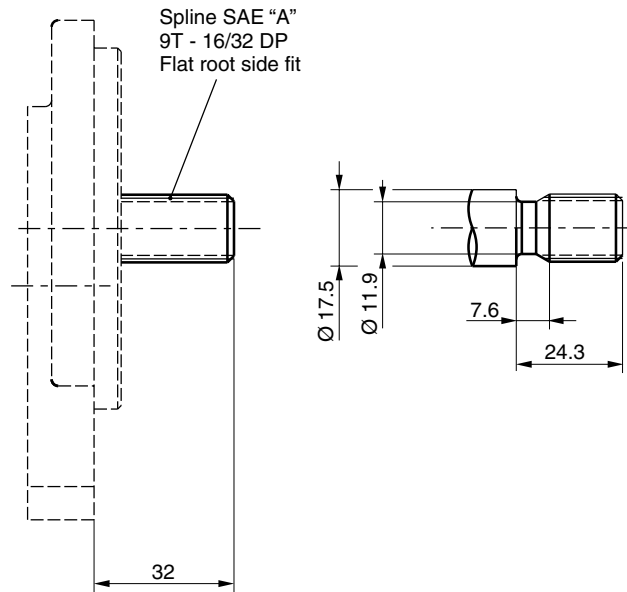
**Code J**  
 European flange



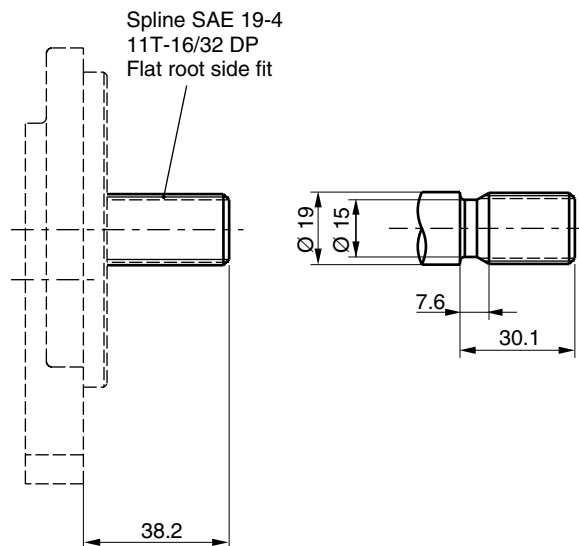
**PGP/PGM 511**

Code	G2	Ø B	Ø D	S	C	W	T2
	Thread						
J3	M6	8.0	30.0				12.0
J4	M6	12.0	30.0				12.0
J5	M6	15.0	35.0				12.5
J6	M8	15.0	40.0				15.0
J7	M6	20.0	40.0				13.0
J8	M8	18.0	55.0				15.0
J9	M8	26.0	55.0				15.0
K1	5/16-18 UNF	19.0		30.48			15.0
K2	M8	19.0		30.48			15.0
K3	M6	19.0		32.00			13.0
K4	M6	16.0		25.15			13.0
L1	M6	13.0	30.0				13.0
L2	M8	19.0	40.0				15.0
N1	5/16-18 UNC	12.7			38.10	17.48	15.0
N2	3/8-16 UNC	19.0			47.63	22.23	14.0
N3	3/8-16 UNC	25.4			52.37	26.19	20.6
N4	7/16-14 UNC	31.8			58.72	30.17	20.6
P1	M8	12.7			38.10	17.48	15.0
P2	M10	19.0			47.63	22.23	20.6
P3	M10	25.4			52.37	26.19	21.4
P4	M10	31.8			58.72	30.17	20.6

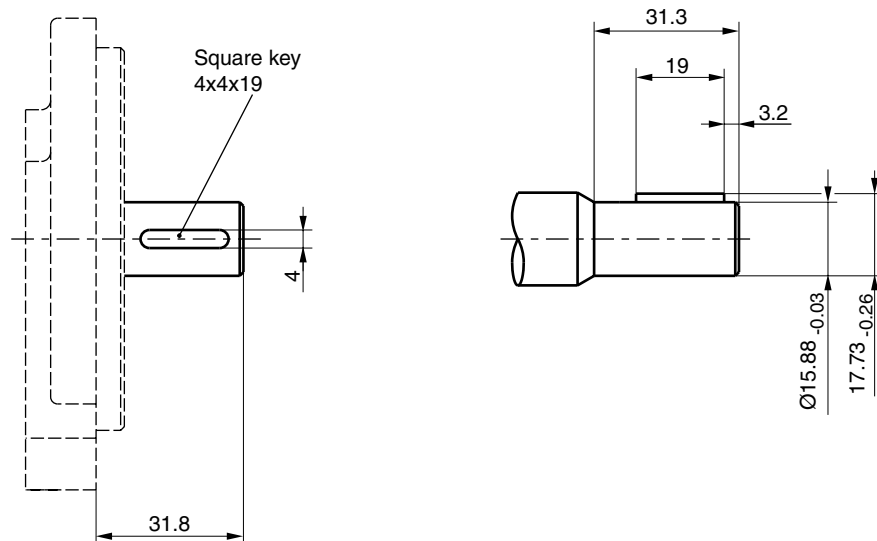
**PGP/PGM 511 Drive Shaft**  
**Code A1**



**Code C1**

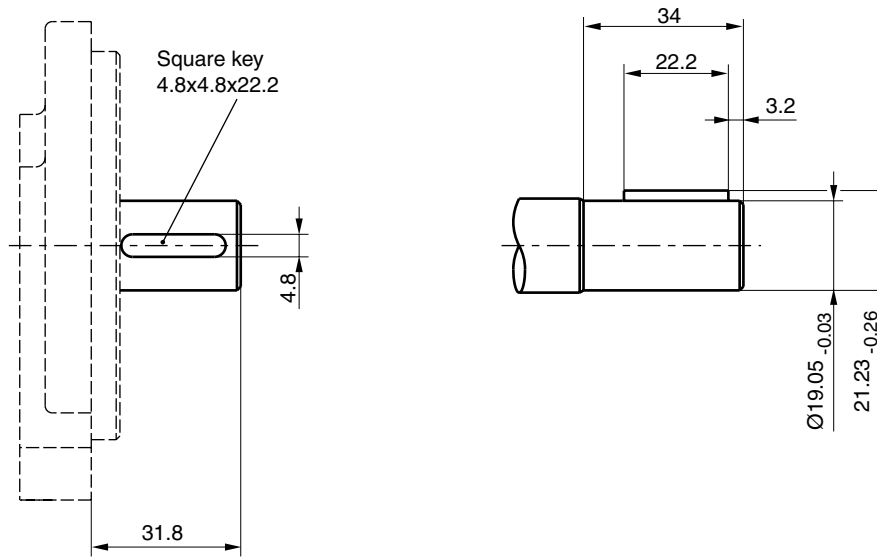


**Code K1**

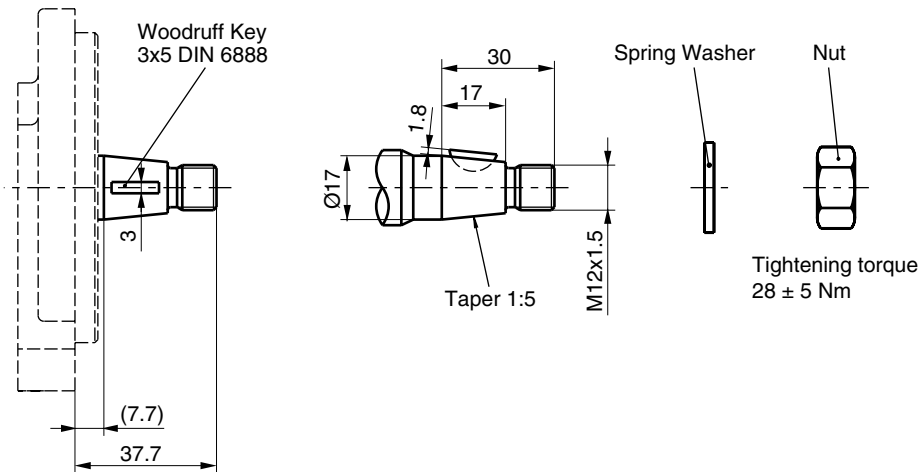


**PGP/PGM 511 Drive Shaft**

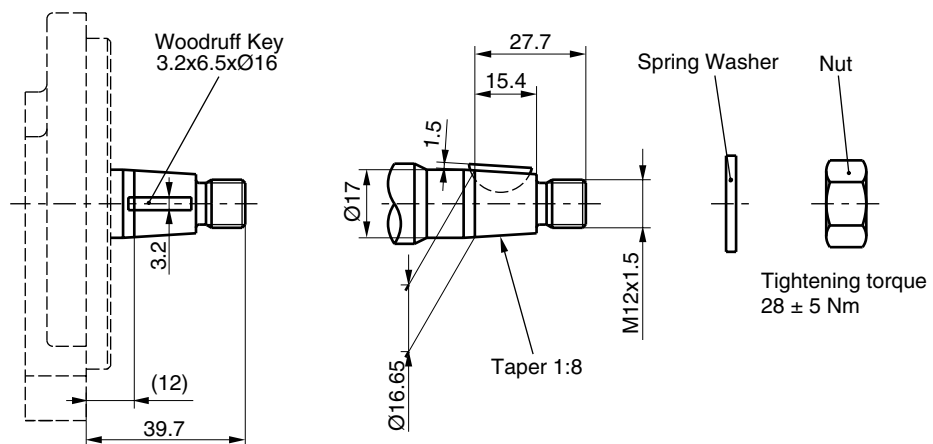
**Code L6**



**Code S1**

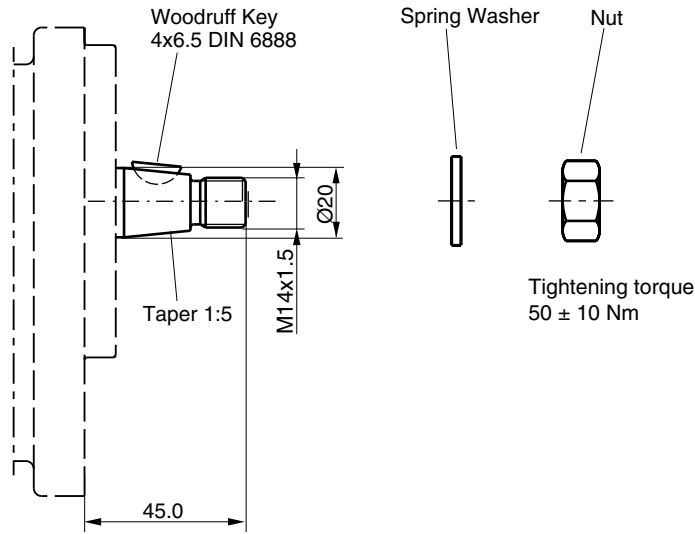


**Code S2**

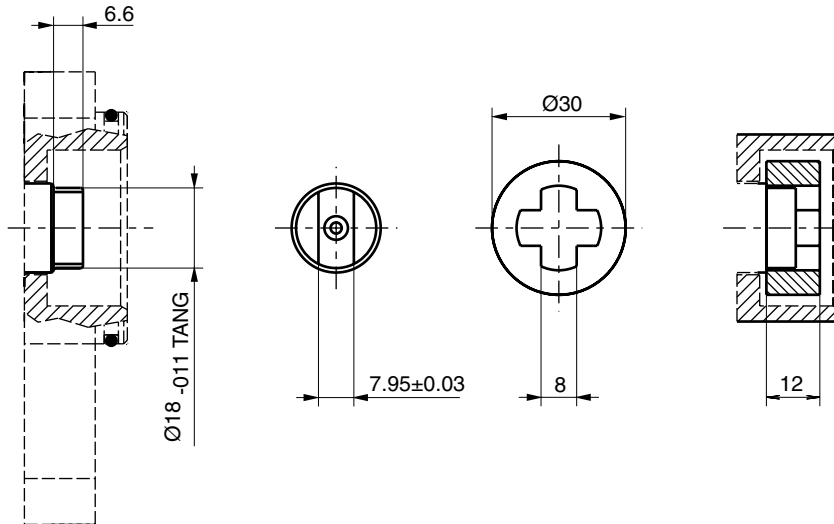


**PGP/PGM 511 Drive Shaft**

**Code S8**



**Code V5**



**PGP/PGM 511 - 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
K1	Ø15.88, 4.0 KEY, no thread, 32L, SAE“A” parallel	75
L6	Ø19.05, 4.8 KEY, no thread, 32L, SAE 19-1 parallel	145
S1	Ø17.0, 7.7L, 3.0 KEY, M12x1.5 taper 1:5	193
S2	Ø16.65, 12.0L, 3.2 KEY, M12x1.5 taper 1:8	198
S8	Ø20, 9.4L, 4.0 KEY, M14x1.5 taper 1:5	110
V5	8x6.5 short shaft tang drive	60
	Multiple pump connection shaft	110

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

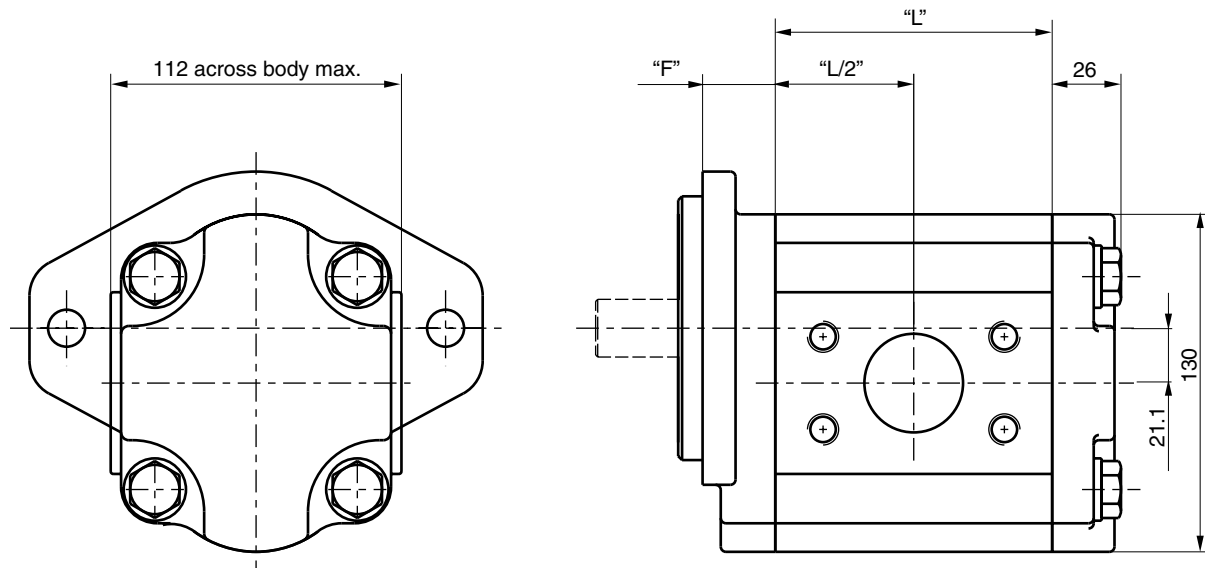


**PGP 517 Specification - Standard Displacements**

Pump Displacement	Code	0160	0190	0230	0280	0330	0380	0440	0520	0700
	cm <sup>3</sup> /rev	16.0	19.0	23.0	28.0	33.0	38.0	44.0	52.0	70.0
<b>Max. Continuous Pressure</b>	bar	250	250	250	250	250	250	220	200	160
<b>Minimum Speed</b> @ Max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500
<b>Maximum Speed</b> @ 0 Inlet & Max. outlet pressure	rpm	3400	3300	3300	3100	3000	3000	2800	2700	2400
<b>Pump Input Power</b> @ Max. Pressure and 1500 rpm	kW	11	13.1	15.8	19.3	22.7	26.1	27	28.6	31.2
<b>Dimension "L"</b>	mm	70.3	73.3	77.4	82.4	87.5	92.5	98.6	106.7	124.9
<b>Approximate Weight <sup>1)</sup></b>	kg	8.00	8.12	8.29	8.50	8.70	8.91	9.16	9.49	10.24

<sup>1)</sup> Single pump with Flange H3 and Port end cover B1

**Single Unit PGP 517**

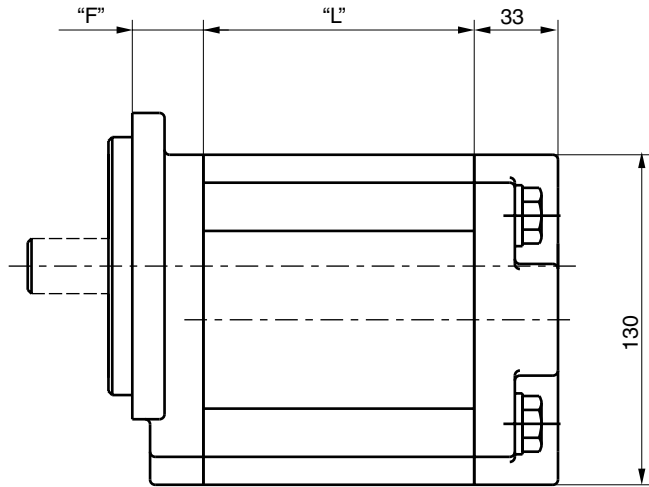
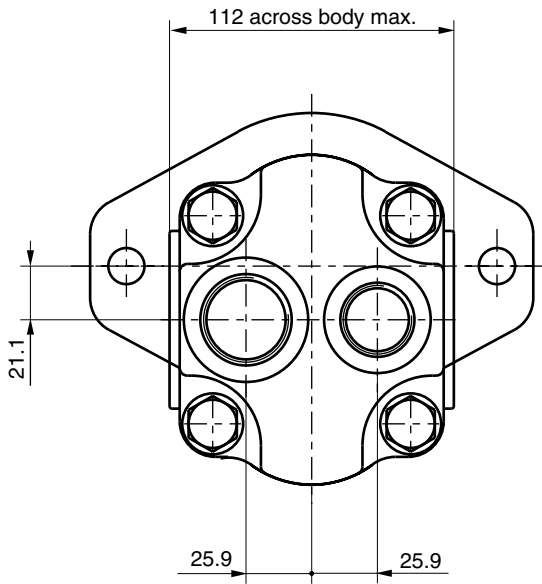


**Dimension "L"** see table above

**Dimension "F"** see flanges on page 43

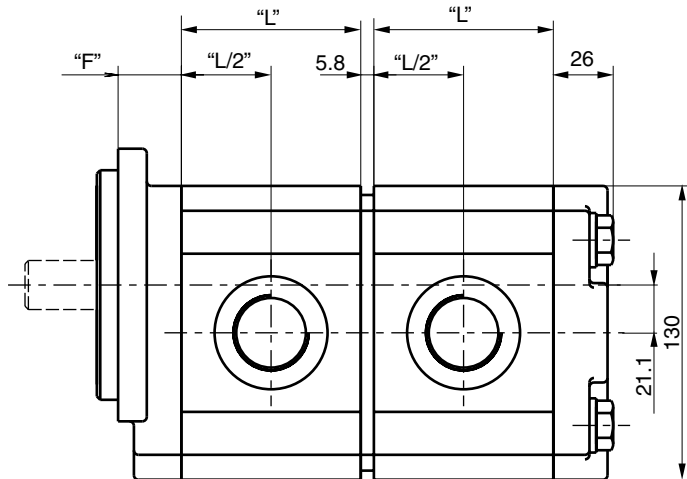
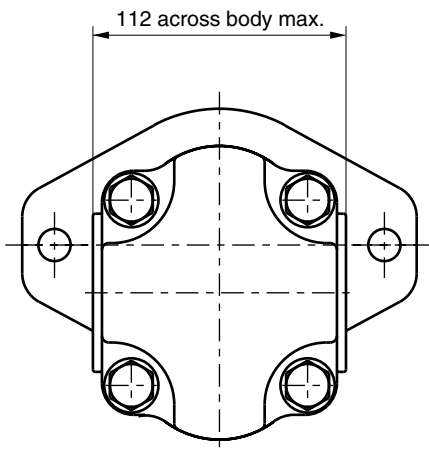
**Dimension Shafts** see pages 46 to 48

**Single Unit PGP 517 with rear ports**



- Dimension "L"** see table on page 41
- Dimension "F"** see flanges on page 43
- Dimension Shafts** see pages 46 to 48

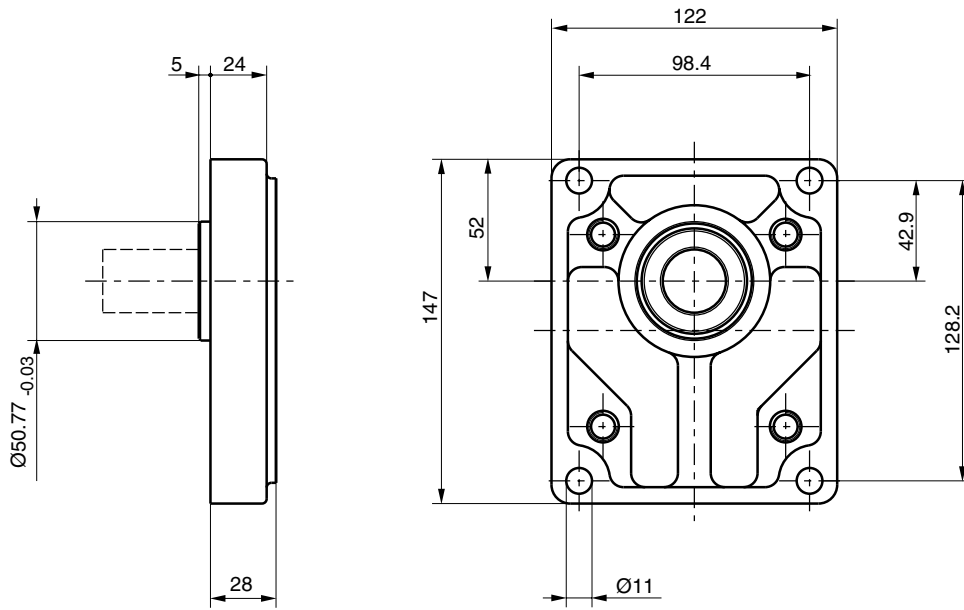
**Tandem Unit PGP 517**



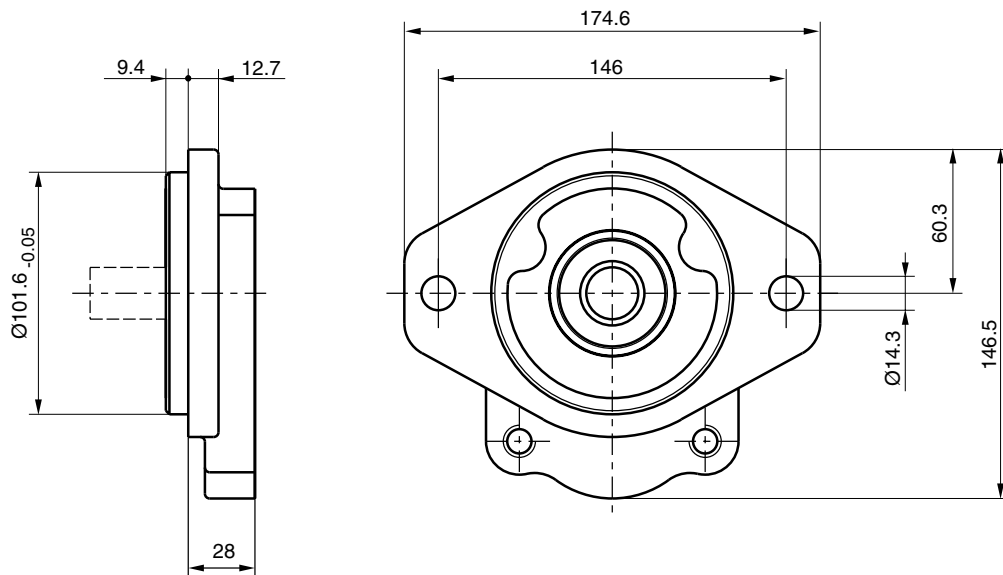
- Dimension "L"** see table on page 41
- Dimension "F"** see flanges on page 43
- Dimension Shafts** see pages 46 to 48

**PGP 517 Mounting Flange**

**Code D7**



**Code H3/K6**

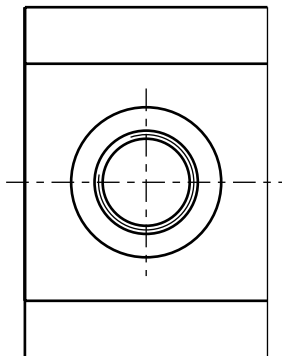
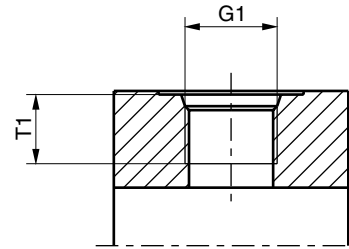
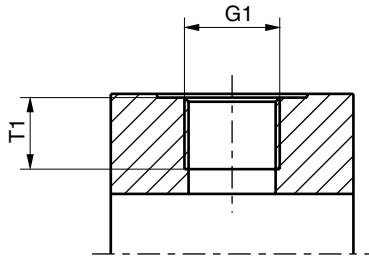


**PGP 517 Porting**

**Code E**  
 British Standard Pipe

**Code G**  
 Metric straight thread

**Code D**  
 SAE straight thread



**PGP 517**

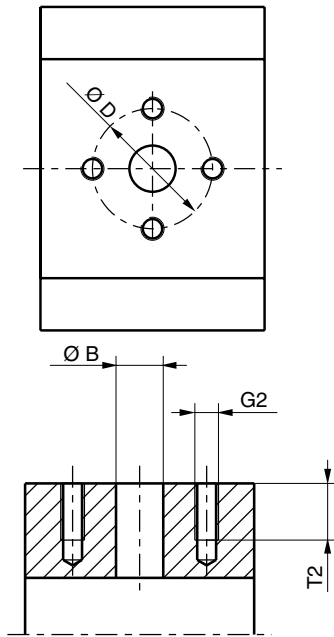
Code	G1 Thread	T1 Dimensions
D2	9/16-18 UNF	12.7
D3	3/4-16 UNF	14.3
D4	7/8-14 UNF	16.7
D5	1 1/16-12 UN	19.0
D6	1 5/16-12 UN	19.0
D7	1 5/8-12 UN	19.0
D8	1 7/8-12 UN	19.0
E2	3/8-19 BSP	12.0
E3	1/2-14 BSP	14.0
E4	5/8-14 BSP	16.3
E5	3/4-16 BSP	16.0
E6	1-11 BSP	18.0
E7	1 1/4-11 BSP	20.0
E8	1 1/2-11 BSP	22.0
G4	M 22x1.5	14.0
G5	M 26x1.5	16.0
G7	M 30x1.5	12.0
G8	M 33x2	18.0
G9	M 42x2	20.0

**Port options**

**PGP 517 Porting**

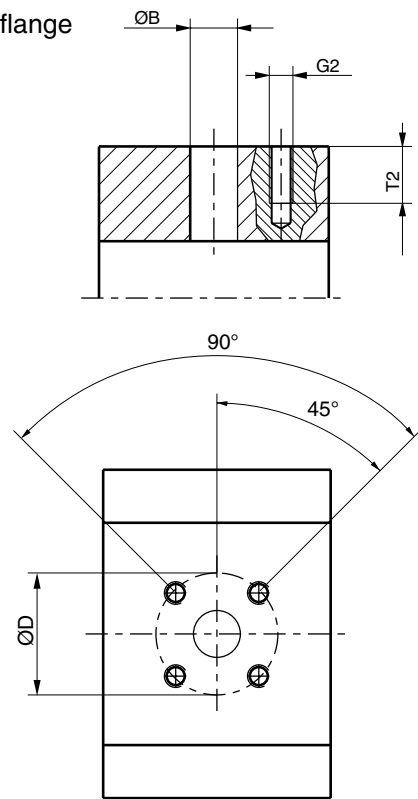
**Code L**

4-Bolt flange



**Code J**

European flange

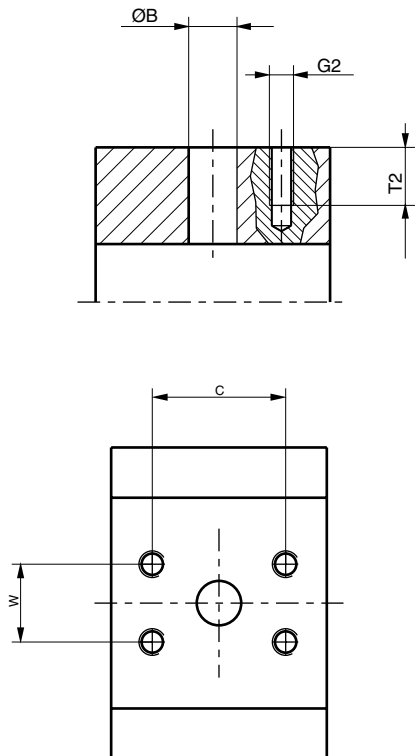


**Code N**

SAE split flange

**Code P**

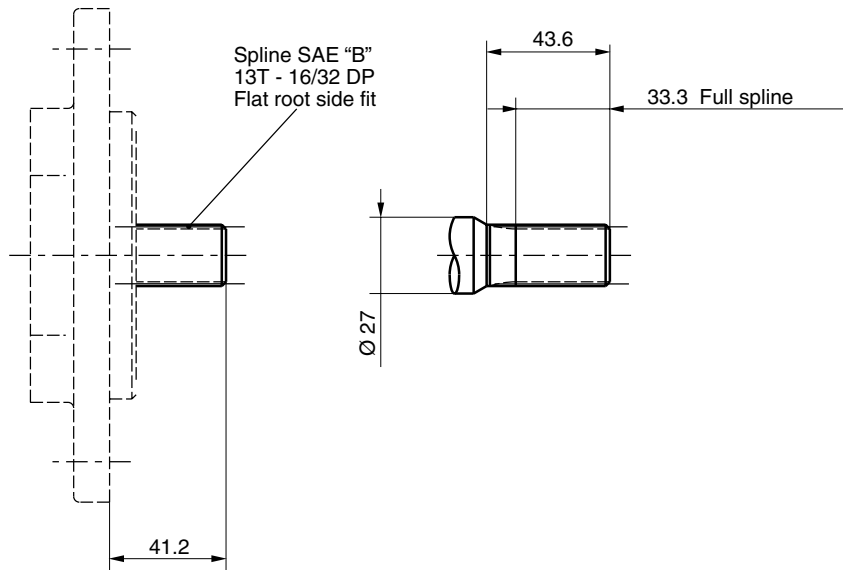
SAE split flange metric thread



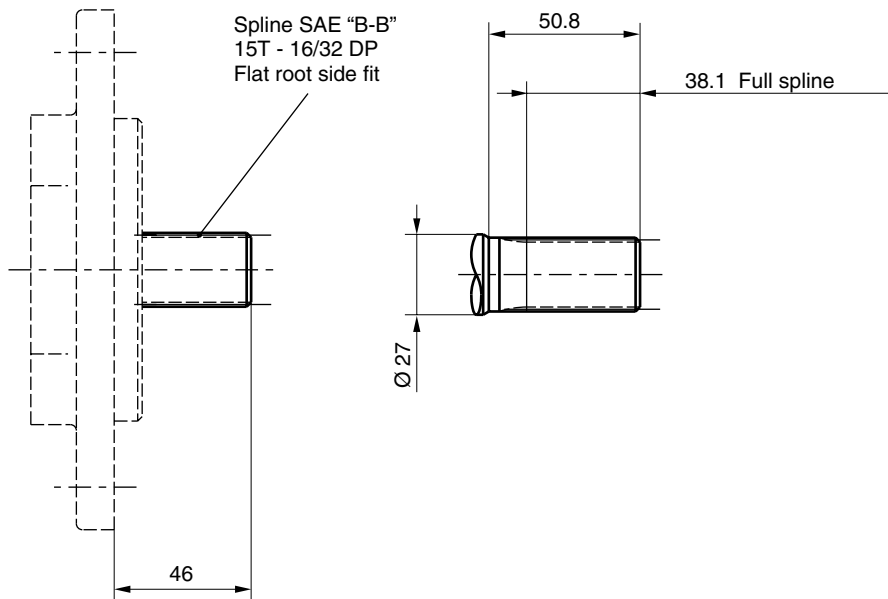
**PGP 517**

Code	G2	Ø B	Ø D	S	C	W	T2
	Thread						
J5	M6	15.0	35.0				12.5
J7	M6	20.0	40.0				13.0
J8	M8	18.0	55.0				15.0
J9	M8	26.0	55.0				15.0
L1	M6	13.0	30.0				13.0
L2	M8	19.0	40.0				15.0
L3	M10	27.0	51.0				18.0
L4	1/4-20 UNF	13.0	30.0				13.0
N1	5/16-18 UNC	12.7			38.10	17.48	15.0
N2	3/8-16 UNC	19.0			47.63	22.23	14.0
N3	3/8-16 UNC	25.4			52.37	26.19	20.6
N4	7/16-14 UNC	31.8			58.72	30.17	20.6
N5	1/2-13 UNC	38.1			69.82	35.71	20.6
P1	M8	12.7			38.10	17.48	15.0
P2	M10	19.0			47.63	22.23	20.6
P3	M10	25.4			52.37	26.19	21.4
P4	M10	31.8			58.72	30.17	20.6
P5	M12	38.1			69.82	35.71	20.6

PGP 517 Drive Shaft  
Code D1

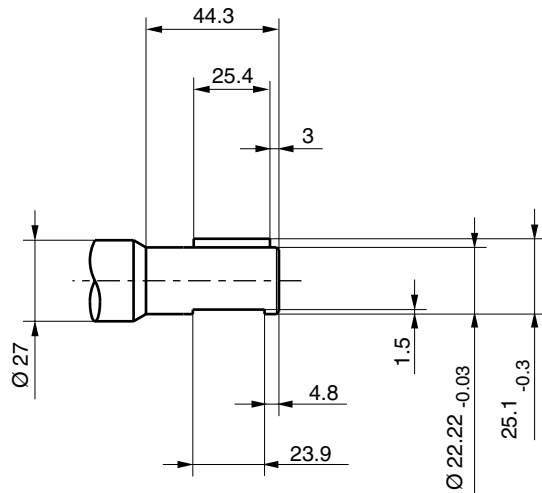
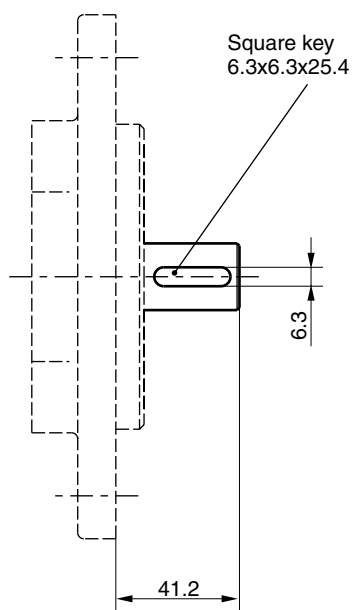


Code E1

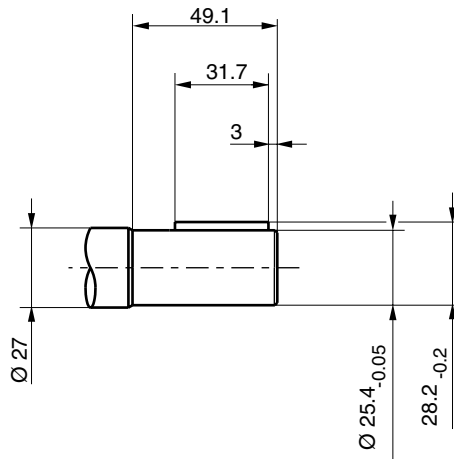
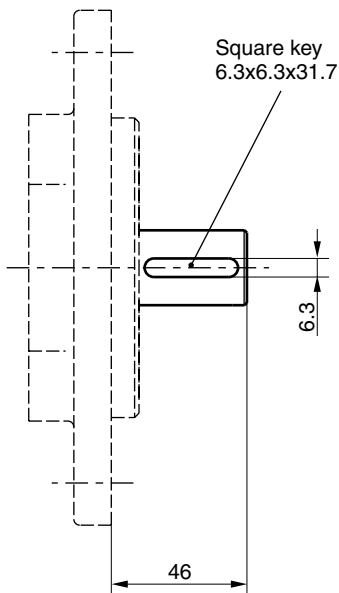


**PGP 517 Drive Shaft**

**Code M1**

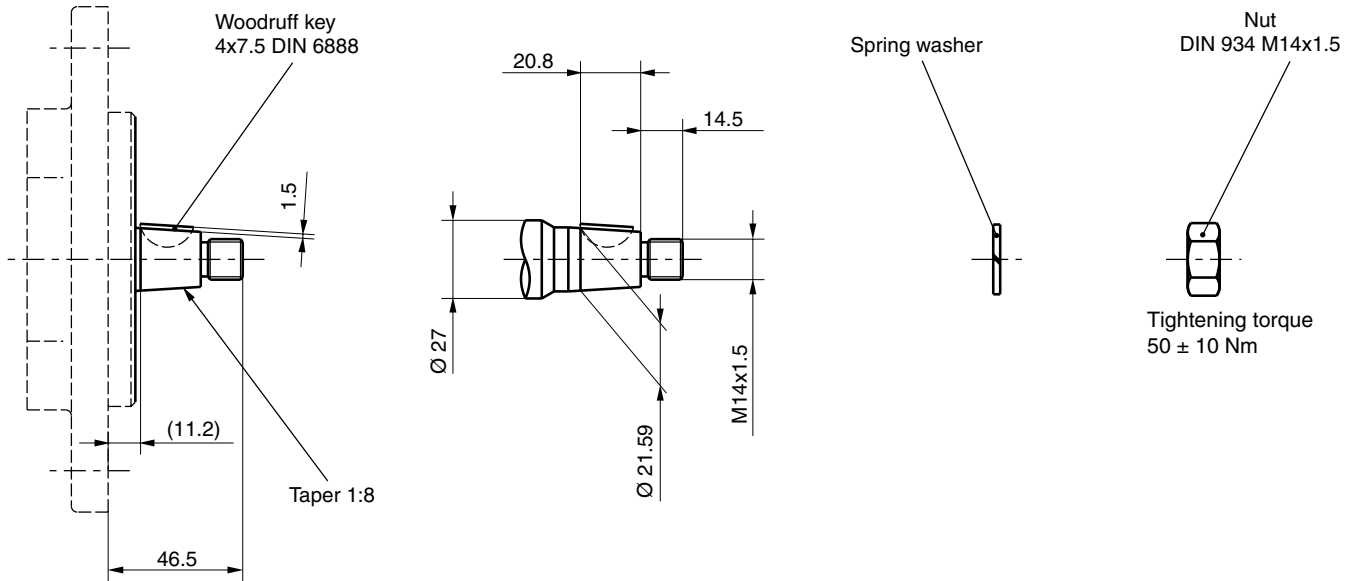


**Code M2**



**PGP 517 Drive Shaft**

**Code T1**

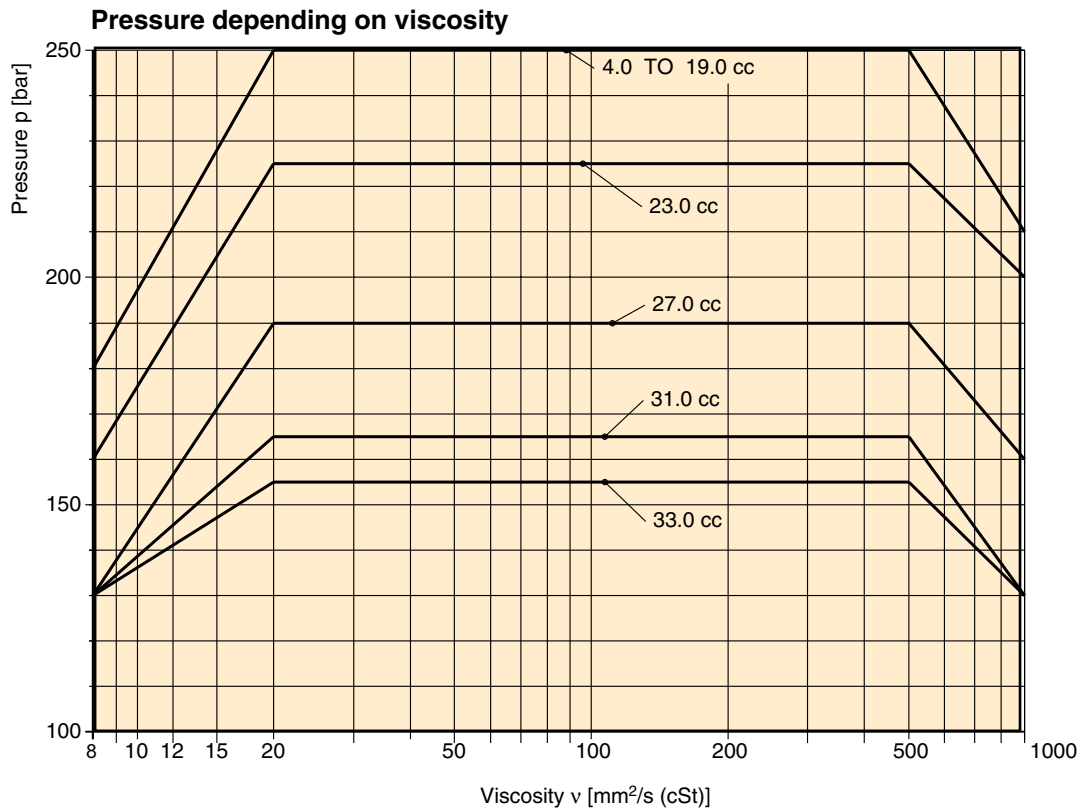
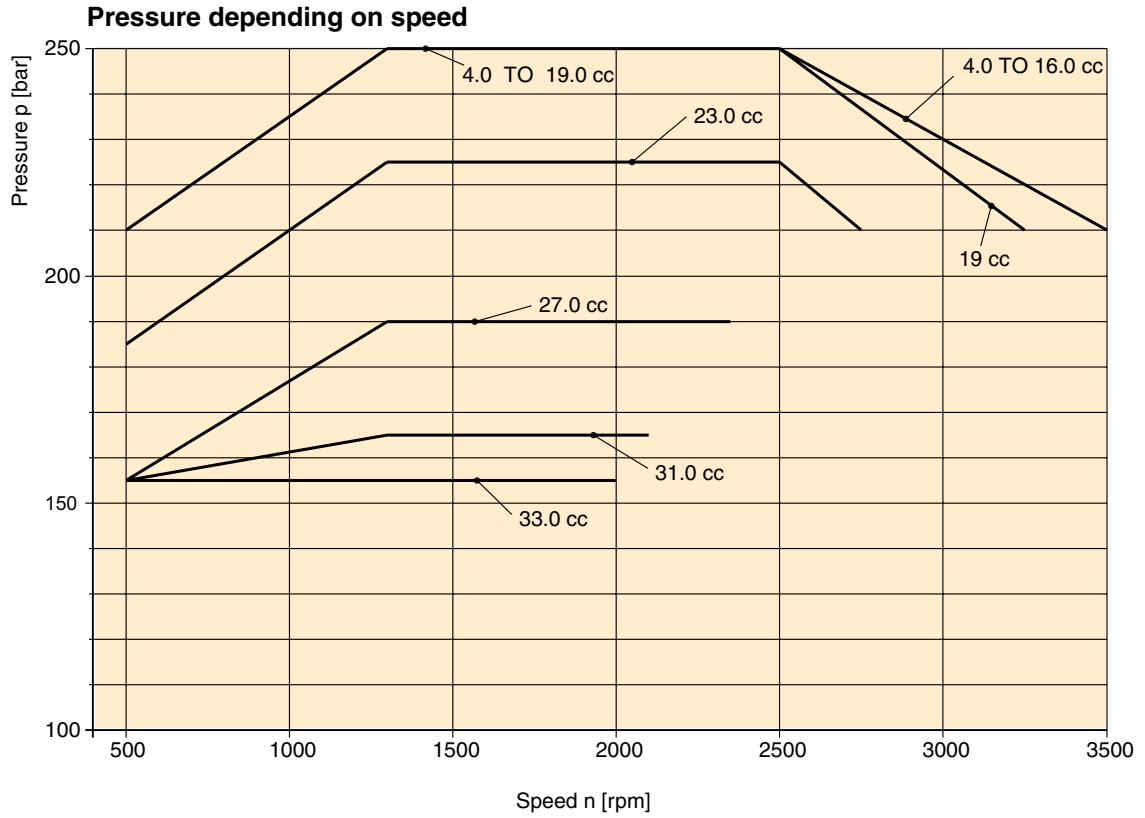


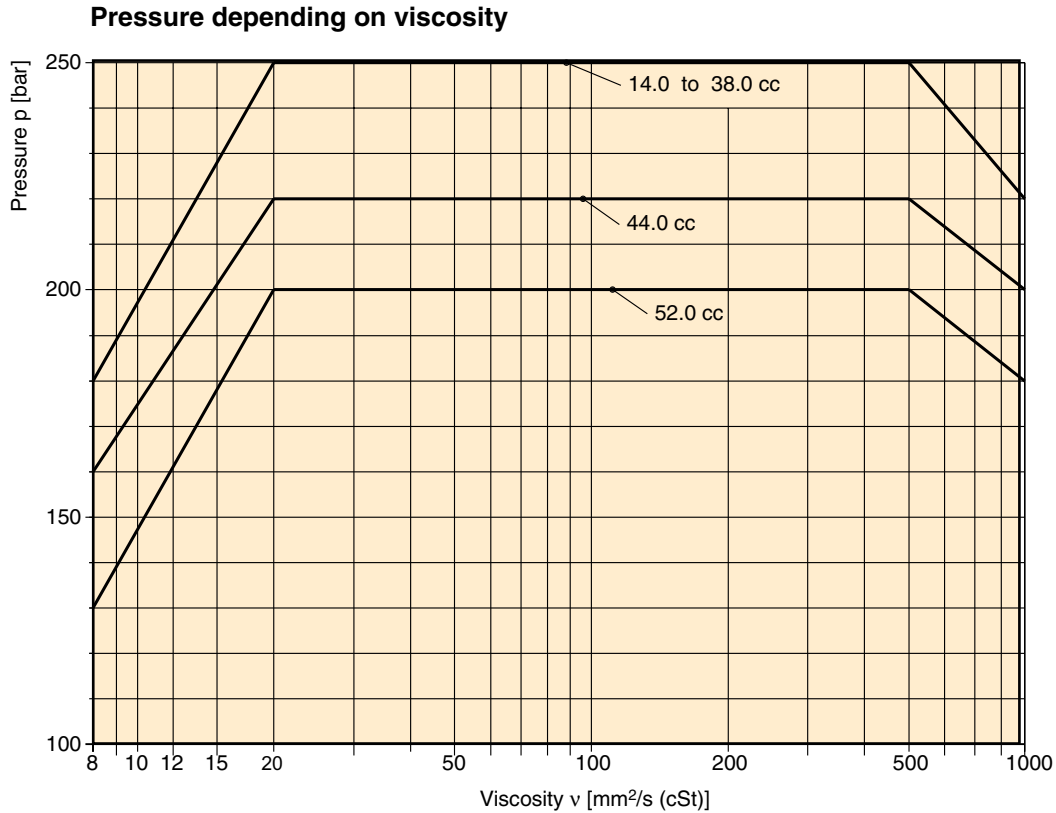
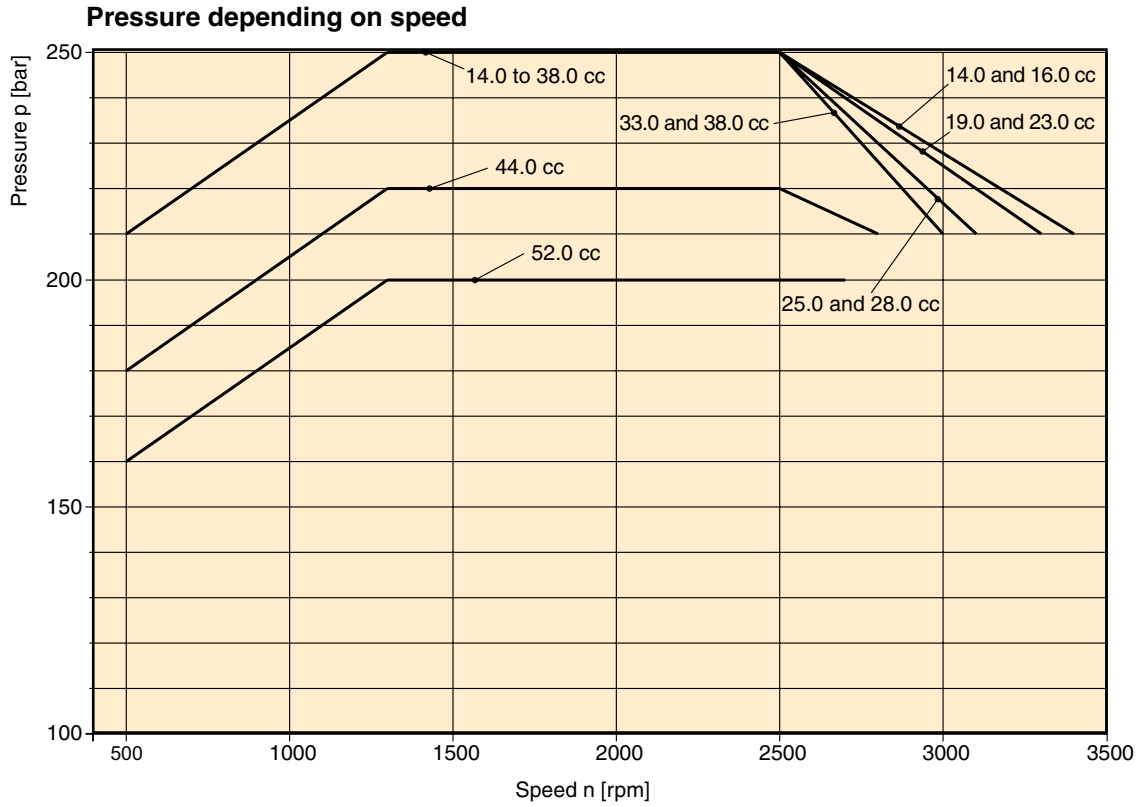
**PGP/PGM 517 - Shaft Load Capacity**

Code	Description	Torque Rating [Nm]
<b>D1</b>	13T,16/32DP, 41.2L, SAE“B“ spline	345
<b>E1</b>	15T, 16/32DP, 46L, SAE“B-B“ spline	530
<b>M1</b>	Ø22.2, 6.3 KEY, no thd, 41.2L, SAE“B“ parallel	251
<b>M2</b>	Ø25.4, 6.3 KEY, no thd, 46L, SAE“B-B“ parallel	395
<b>T1</b>	Ø21.59,11.2 L,4.0 KEY, M14x1.5 taper 1:8	250
	Multiple pump connection shaft	228

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







Over many years Parker Hydraulics has supplied gear pumps and motors for mobile and industrial markets worldwide, especially for materials handling, commercial grass cutting and construction equipment applications. Many Parker pumps and motors have been developed and tested for the specific needs of these industries.

Parker's defined strategy to provide engineered solutions, coupled with an award winning flexible manufacturing system, has resulted in a wide range of SAE/DIN/European and other special options being available as standard.



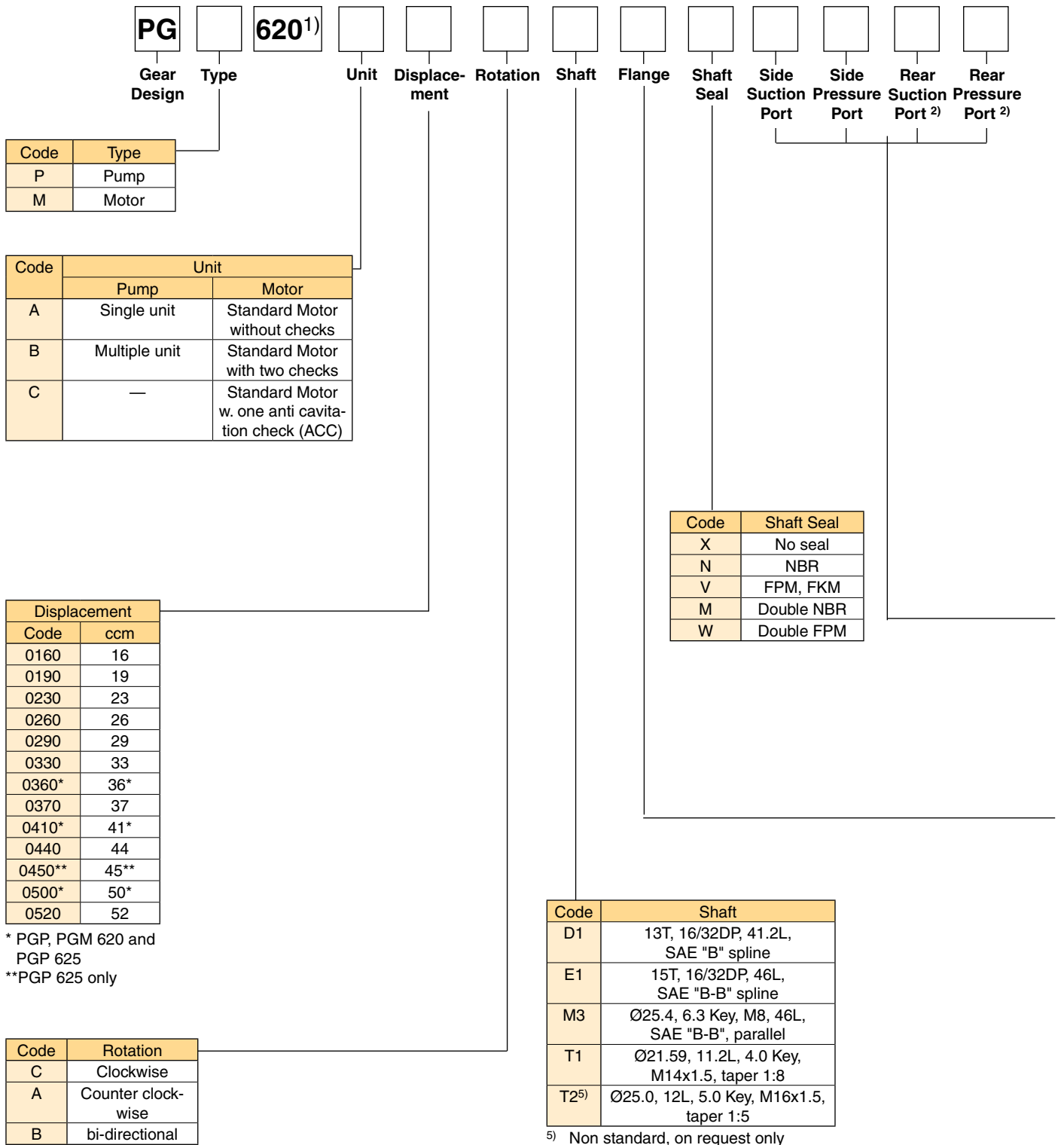
**Features**

- Patented interlocking body design
- 12 tooth gears, bronze balance plates
- Tandem, triple and cross-frame pumps available
- Common inlets available for tandem and triple pumps
- Continuous operating pressures up to 310 bar
- Production run-in available to suite OEM application conditions and to provide optimized volumetric efficiencies
- Pressure balanced design for high efficiency
- Reduced system noise levels compared to earlier models
- High power through-drive capability
- Wide range of integral valves for power steering, power brakes, fan drivers and implement hydraulics
- Load sense and solenoid operated unloading valves

**Characteristics**

Pump type	Heavy-duty, cast iron, 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 - 3500 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
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. 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 configuration.</li> <li>• Max. shaft load must be conform to 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>

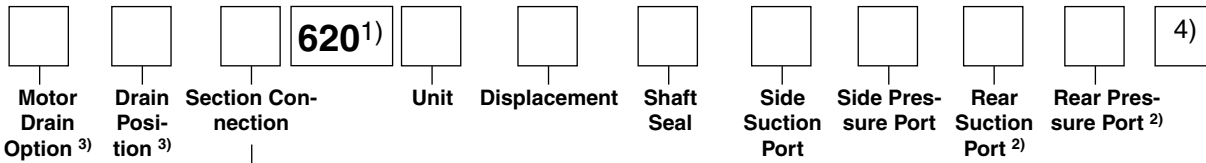


Not all variances of ordering codes can be offered. Please check available part numbers first. For not yet implemented part numbers or special requests please contact Parker Hannifin.

<sup>1)</sup> Available as PGP 625 with 36, 41, 45 and 50 cc/rev only.

<sup>2)</sup> Only coded for the last section.

<sup>3)</sup> Only for motors



Code	Section Connection
S	Separate inlets
C	Common inlets

Code	Drain Position
2 <sup>5)</sup>	Drain on bottom
3 <sup>5)</sup>	Drain on top
4	Rear drain

<sup>5)</sup> Non standard, on request only

Code	Motor Drain Option
B1	no drain
C	9/16-18 UNF thread
G	1/4 BSP thread

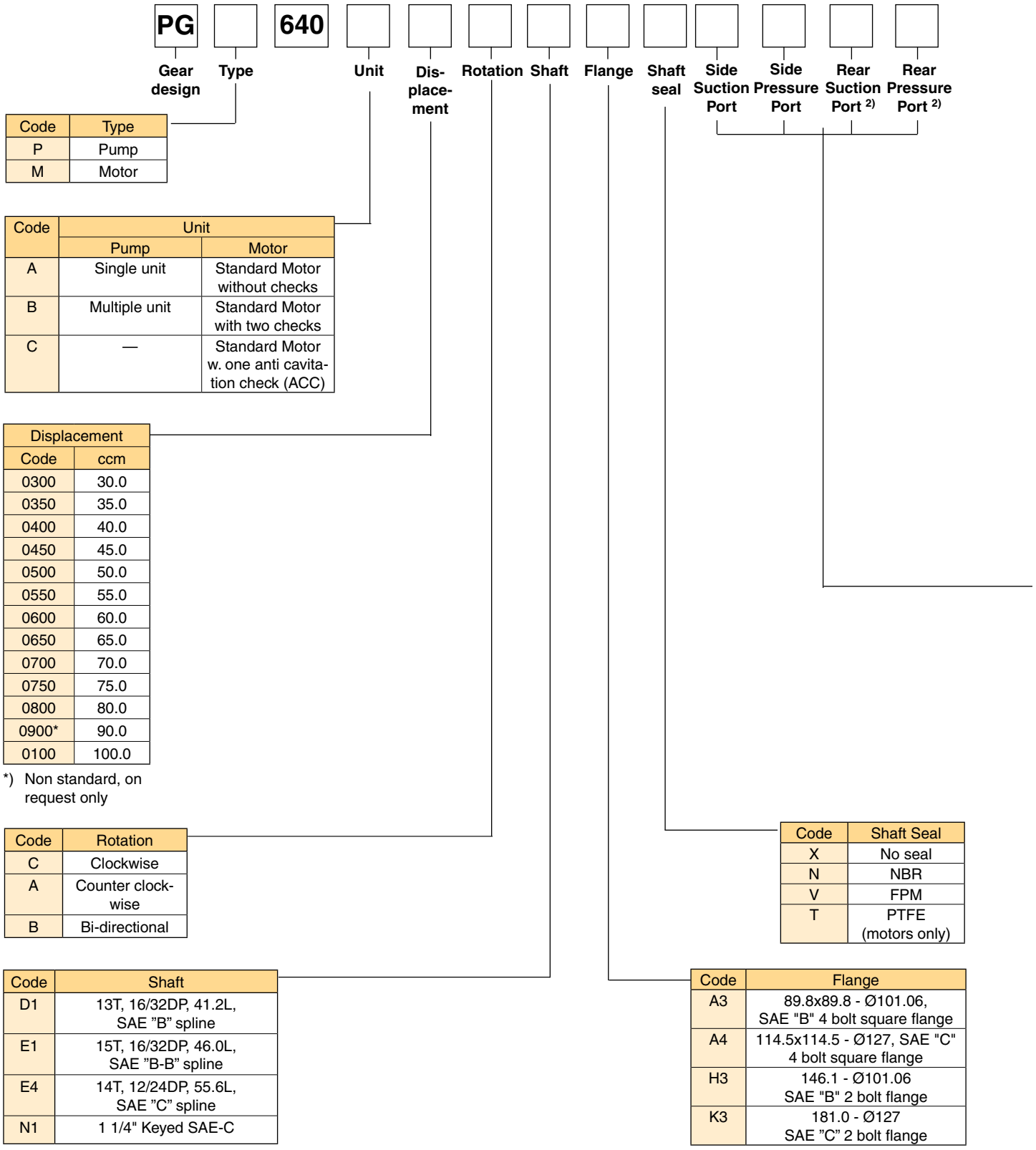
Code	Flange
A3	89.8x89.8 - Ø101.6, SAE "B" 4 bolt square
A4	114.5x114.5 - Ø127, SAE "C" 4 bolt square
D7	98.4x128.2 - Ø50.77 rectangular
H2	106.4 - Ø82.55 SAE "A" 2 bolt flange
H3	146.1 - Ø101.6 SAE "B" 2 bolt flange
L3	89.8x89.8 - 101.6 SAE "B" 2/4 bolt flange

Code	Port Options	Code	Port Options
B1	No ports	S2 <sup>5)</sup> *	3/4"-3/8-16 UNC SAE Split Flange
D3 <sup>5)</sup>	3/4 - 16 UNF thread	S3 <sup>5)</sup> *	1"-3/8-16 UNC SAE Split Flange
D4 <sup>5)</sup>	7/8 - 14 UNF thread	S4 <sup>5)</sup> *	1 1/4"-7/16-14 UNC SAE Split Flange
D5 <sup>5)</sup>	1 1/16 - 12 UN thread	S5 <sup>5)</sup> *	1 1/2"-1/2-13 UNC SAE Split Flange
D6 <sup>5)</sup> *	1 5/16 - 12 UN thread	S6 <sup>5)</sup> *	2"-1/2-13 UNC SAE Split Flange
D7 <sup>5)</sup> *	1 5/8 - 12 UN thread	T2*	19.0 mm - M10 Metric Split Flange
D8 <sup>5)</sup> *	1 7/8 - 12 UN thread	T3*	25.4 mm - M10 Metric Split Flange
E3	1/2 - 14 BSP thread	T4*	31.8 mm - M10 Metric Split Flange
E4	5/8 - 14 BSP thread	T5*	38.1 mm - M12 Metric Split Flange
E5	3/4 - 16 BSP thread	T6*	50.8 mm - M12 Metric Split Flange
E6*	1 - 11 BSP thread		
E7*	1 1/4 - 11 BSP thread		
E8*	1 1/2 - 11 BSP thread		
J5*	15 mm - Ø35 mm - M6 square		
J7*	20 mm - Ø40 mm - M6 square		
J8*	18 mm - Ø55 mm - M8 square		
J9*	26 mm - Ø55 mm - M8 square		
L1*	13 mm-Ø30 mm-M6 diamond		
L2*	19 mm-Ø40 mm-M8 diamond		
L3*	27 mm-Ø51 mm-M10 diamond		

<sup>5)</sup> Non standard, on request only

\*) Not usable for rear ports

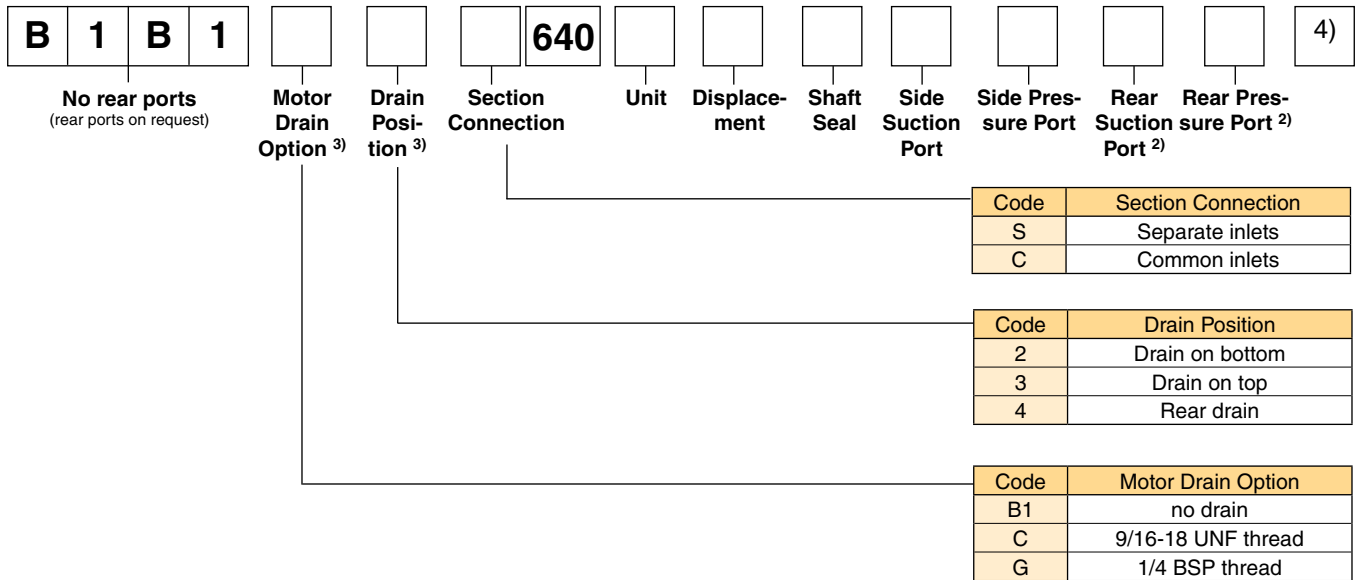
4) For further "B" triple unit repeat displacement, shaft seal between sections, side suction port, side pressure port, rear suction port, rear pressure port.



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.

2) Only coded for the last section.  
 3) Only for motors





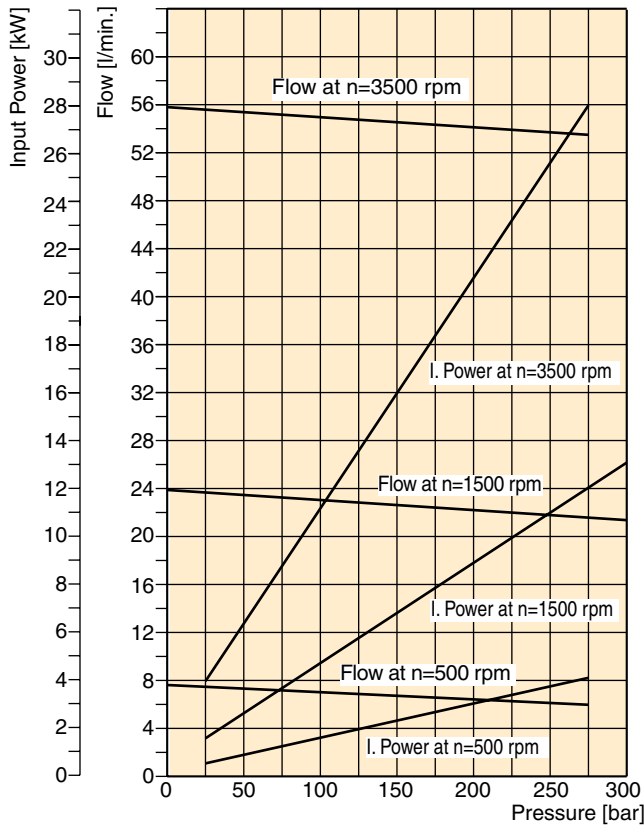
Code	Port Options	Code	Port Options
B1	No ports	S2 <sup>5)</sup> *	3/4"-3/8-16 UNC SAE Split Flange
D5 <sup>5)</sup>	1 1/16 - 12 UN thread	S3 <sup>5)</sup> *	1"-3/8-16 UNC SAE Split Flange
D6 <sup>5)</sup> *	1 5/16 - 12 UN thread	S4 <sup>5)</sup> *	1 1/4"-7/16-14 UNC SAE Split Flange
D7 <sup>5)</sup> *	1 5/8 - 12 UN thread	S5 <sup>5)</sup> *	1 1/2"-1/2-13 UNC SAE Split Flange
D8 <sup>5)</sup> *	1 7/8 - 12 UN thread	S6 <sup>5)</sup> *	2"-1/2-13 UNC SAE Split Flange
E4	5/8 - 14 BSP thread	T2*	19.0 mm - M10 Metric Split Flange
E5	3/4 - 16 BSP thread	T3*	25.4 mm - M10 Metric Split Flange
E6*	1 - 11 BSP thread	T4*	31.8 mm - M10 Metric Split Flange
E7*	1 1/4 - 11 BSP thread	T5*	38.1 mm - M12 Metric Split Flange
E8*	1 1/2 - 11 BSP thread	T6*	50.8 mm - M12 Metric Split Flange
J8*	18 mm - Ø55 mm - M8 square		
J9*	26 mm - Ø55 mm - M8 square		
L2*	19 mm-Ø40 mm-M8 diamond		
L3*	27 mm-Ø51 mm-M10 diamond		

<sup>5)</sup> Non standard, on request only

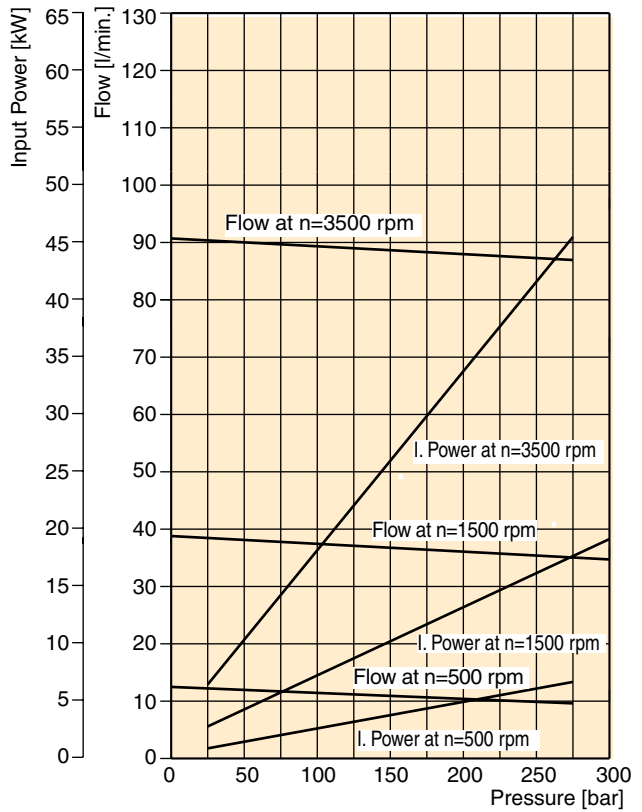
\*) Not usable for rear ports

<sup>4)</sup> For further "B" triple unit repeat displacement, shaft seal between sections, side suction port, side pressure port, rear suction port, rear pressure port.

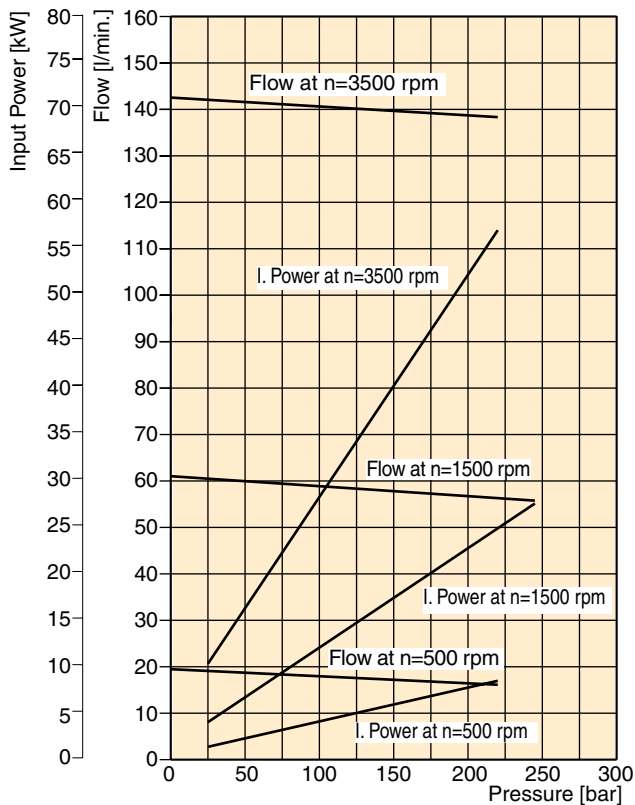
**PGP 620 - 16.0 CC**



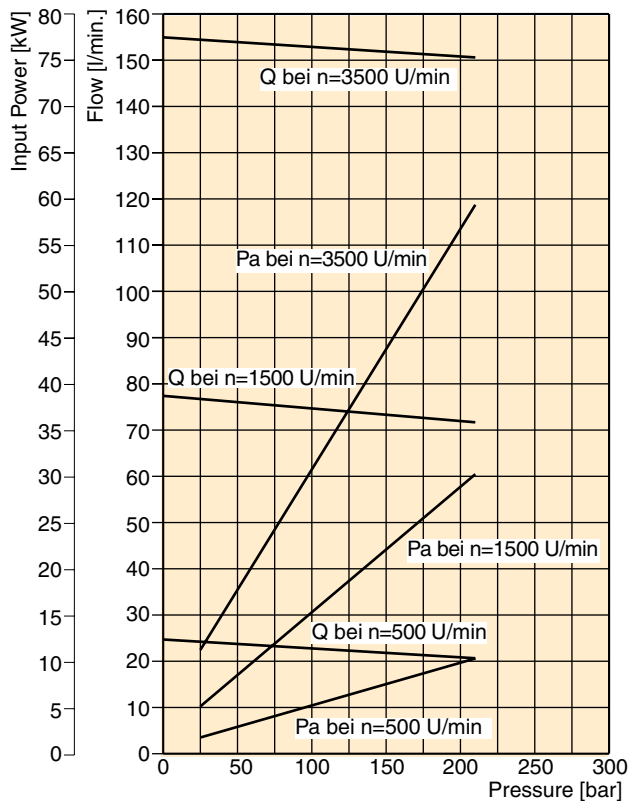
**PGP 620 - 26.0 CC**



**PGP 620 - 41.0 CC**



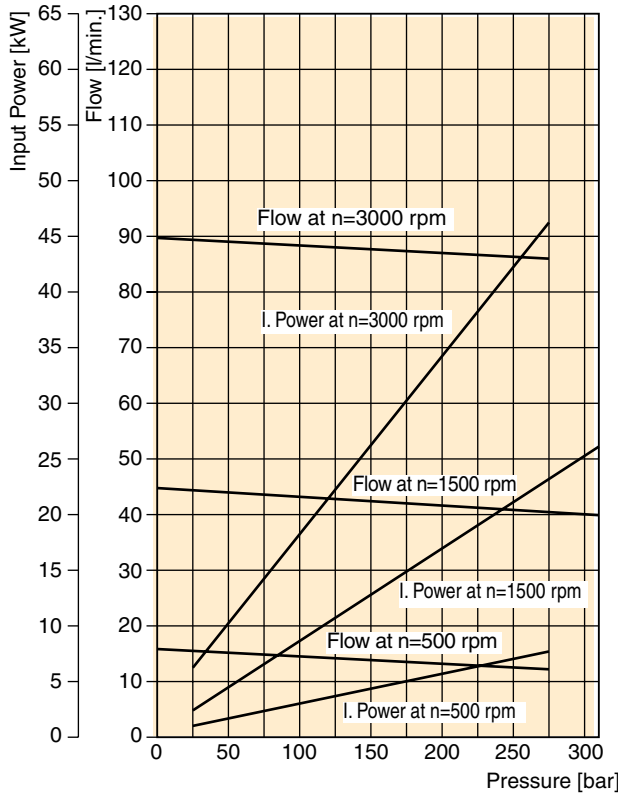
**PGP 620 - 52.0 CC**



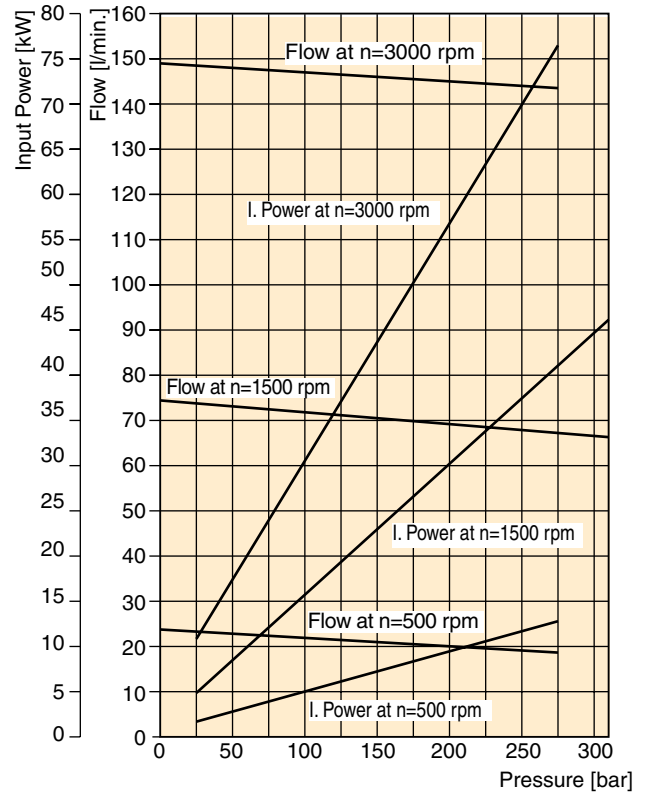
Fluid Temperature =  $45 \pm 2^\circ\text{C}$   
 Viscosity =  $36 \text{ mm}^2/\text{s}$   
 Inlet Pressure =  $0.9 + 0.1 \text{ bar absolute}$



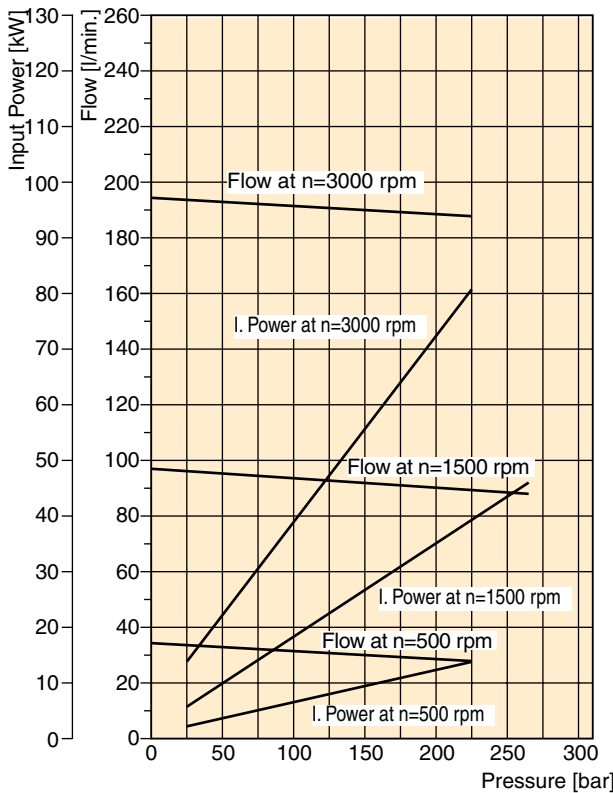
**PGP640 - 30.0 CC**



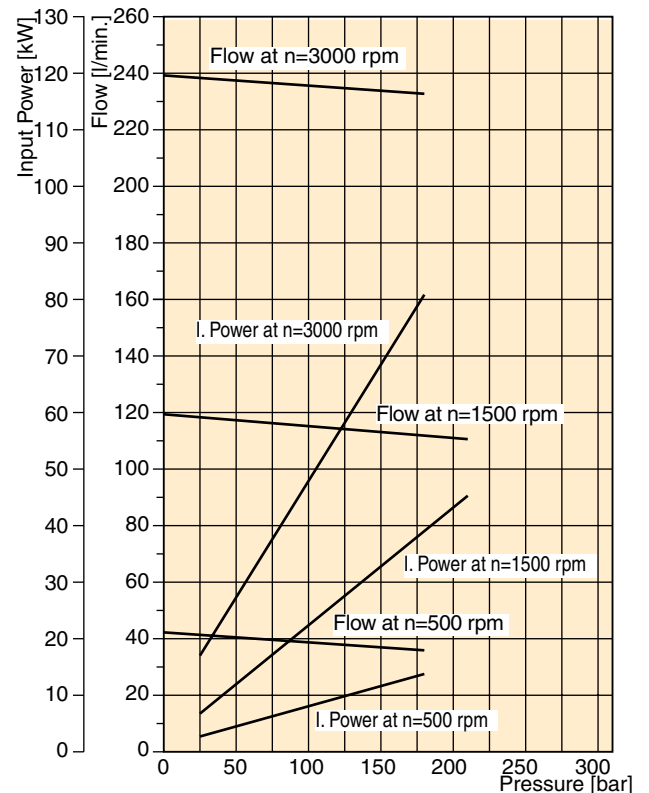
**PGP640 - 50.0 CC**



**PGP640 - 65.0 CC**



**PGP640 - 80.0 CC**

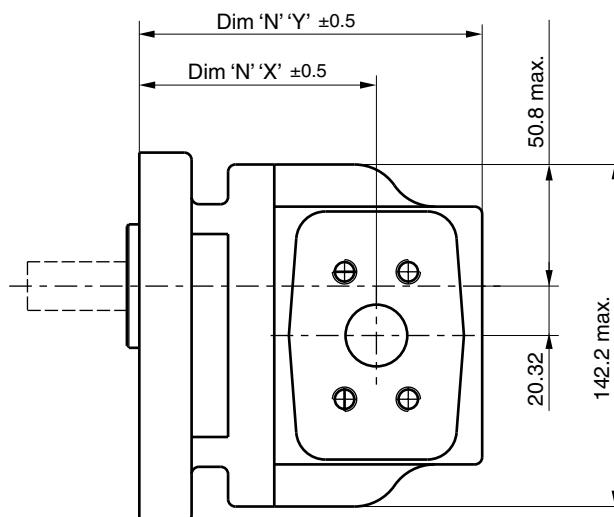
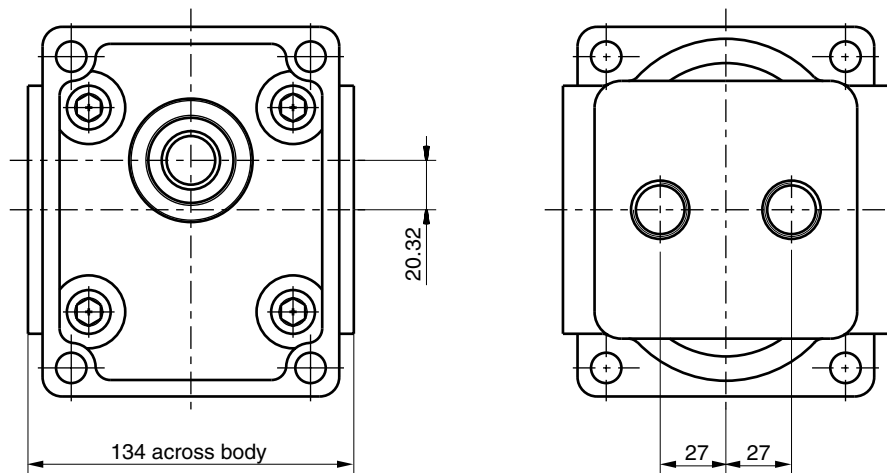


Fluid temperature: 45 °C ± 2K ; Viscosity: 36 mm<sup>2</sup>/s ; Inlet pressure: 0.9 + 0.1 bar absolute

**PGP/PGM 620 Specification - Standard Displacements - Single Unit**

Pump Displacement	Code	0160	0190	0230	0260	0290	0330	0360	0370	0410	0440	0450	0500	0520
	cm <sup>3</sup> /rev	16.0	19.0	23.0	26.0	29.0	33.0	36.0	37.0	41.0	44.0	45.0	50.0	52.0
<b>Max. Continuous Press. PGP 620</b>	bar	275	275	275	275	275	275	250	250	220	210	–	210	210
<b>Max. Continuous Press. PGP 625</b>	bar	–	–	–	–	–	–	280*	–	280*	–	260*	230*	–
<b>Minimum Speed</b> @ Max. outlet press.	rpm	500	500	500	500	500	500	500	500	500	500	500	500	500
<b>Maximum Speed</b> @ 0 Inlet & Max. outlet press.	rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3000	3000
<b>Dimension "X"</b>	mm	79.2	82.5	86.9	90.2	93.5	97.9	101.2	102.3	106.7	110.0	110.0	116.6	118.8
<b>Dimension "Y"</b>	mm	122.7	126.0	130.4	133.7	137.0	141.4	144.7	145.8	150.2	153.5	153.5	160.1	162.3
<b>Approx. Weight</b>	kg	12.0	12.1	12.2	12.3	12.6	12.7	12.8	12.9	13.0	13.1	13.1	13.3	13.4

\* For higher continuous pressure please use PGP 625 which is with same envelop and dimension as PGP 620 but available with 36, 41, 45 and 50 cc/rev only.



**Dimension Flanges** see pages 60 to 61

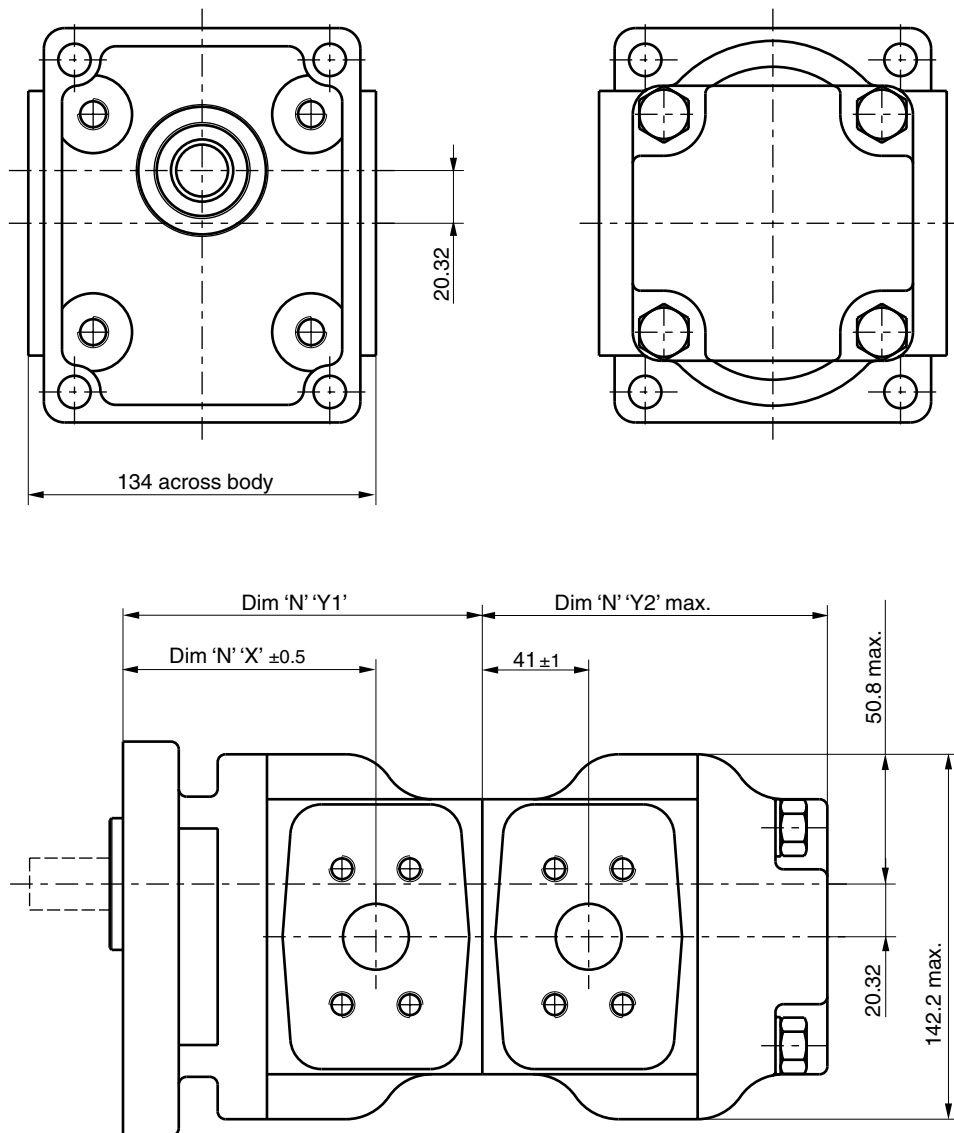
**Dimension Shafts** see pages 64 to 65

**PGP/PGM 620 Specification - Standard Displacements - Tandem Unit**

Pump Displacement	Code	0160	0190	0230	0260	0290	0330	0360	0370	0410	0440	0500	0520
	cm <sup>3</sup> /rev	16.0	19.0	23.0	26.0	29.0	33.0	36.0	37.0	41.0	44.0	50.0	52.0
Dimension "X"	mm	79.2	82.5	86.9	90.2	93.5	97.9	101.2	102.3	106.7	110.0	116.6	118.8
Dimension "Y1 "	mm	120.2	123.5	127.9	131.2	134.5	138.9	142.2	143.3	147.7	151.0	157.6	159.8
Dimension "Y2" max.	mm	115.2	118.5	122.9	126.2	129.5	133.9	137.2	138.3	142.7	146.0	152.6	154.8
Approximate Weight (front section)	kg	12.0	12.1	12.2	12.3	12.6	12.7	12.8	12.9	13.0	13.1	13.3	13.4
Approx. Weight (rear section)	kg	10.4	10.5	10.6	10.7	11.0	11.1	11.2	11.3	11.4	11.5	11.7	11.8

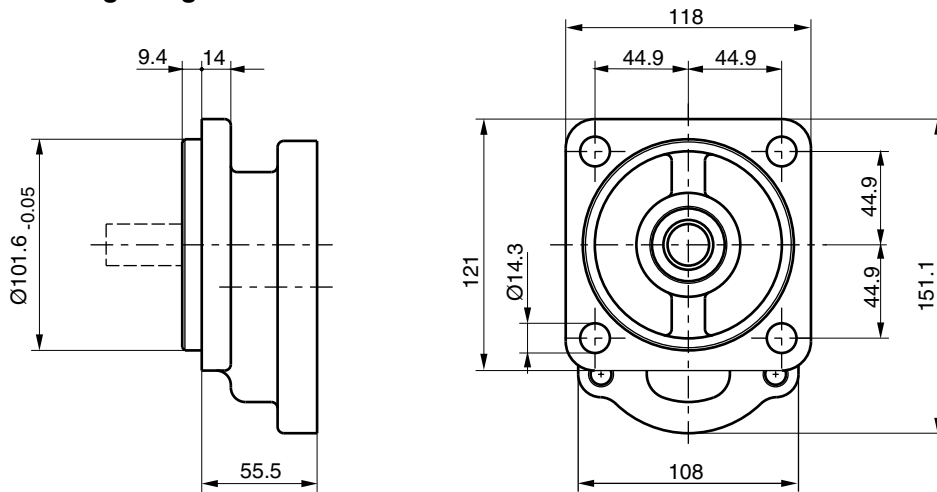
**Dimension Flanges** see pages 60 to 61

**Dimension Shafts** see pages 64 to 65

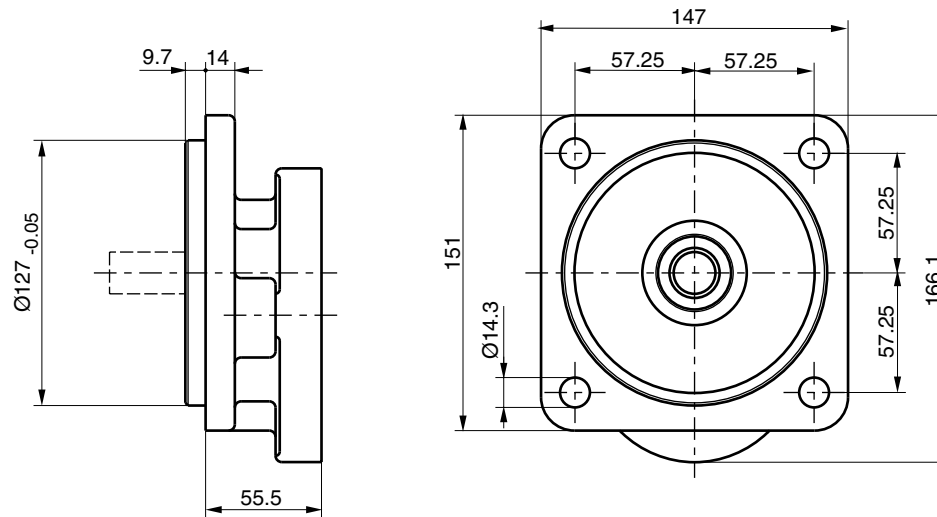


**PGP/PGM 620 Mounting Flange**

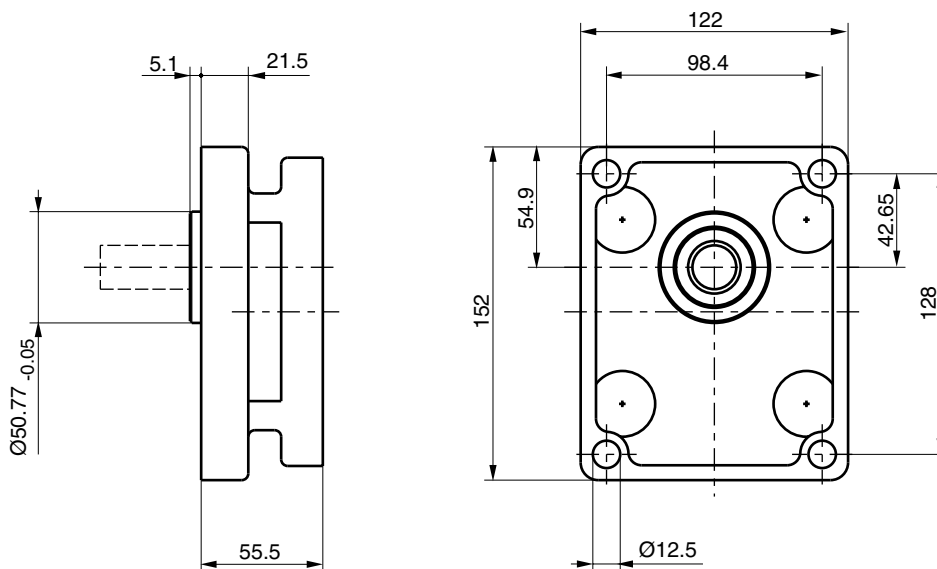
**Code A3**



**Code A4**

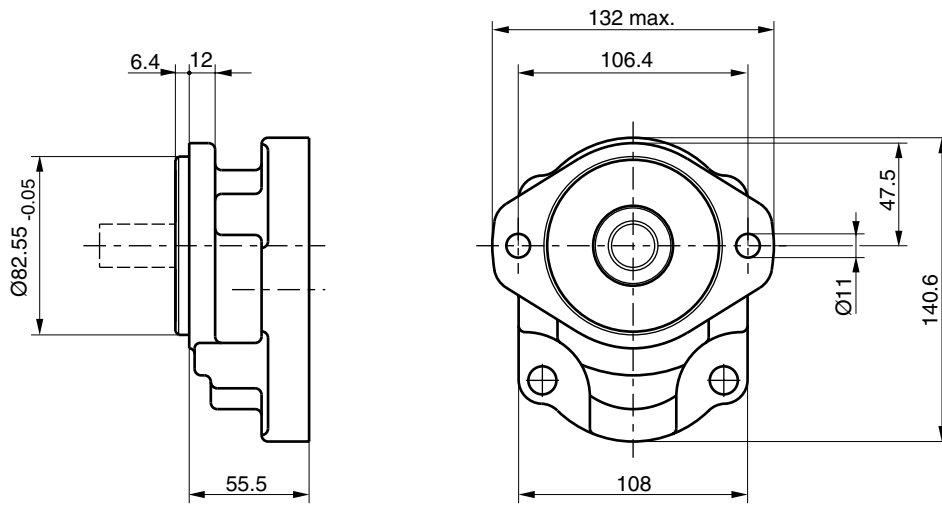


**Code D7**

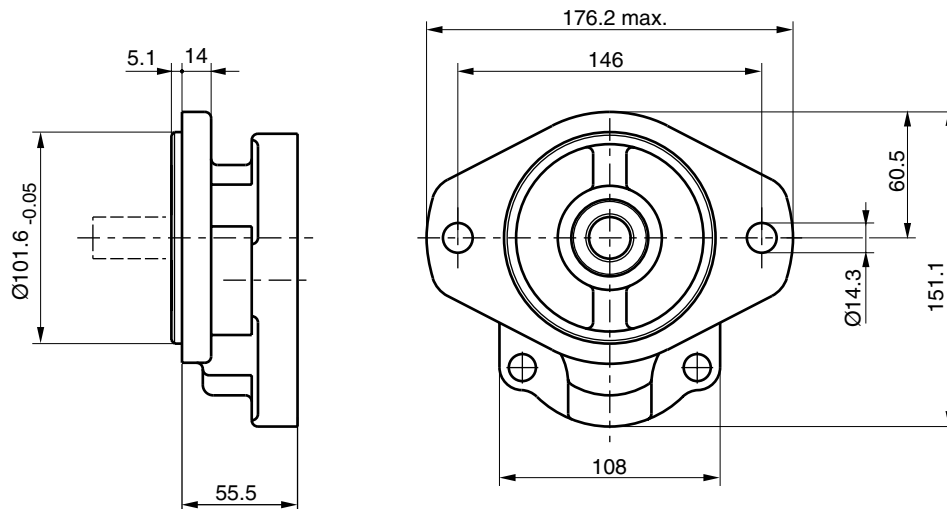


**PGP/PGM 620 Mounting Flange**

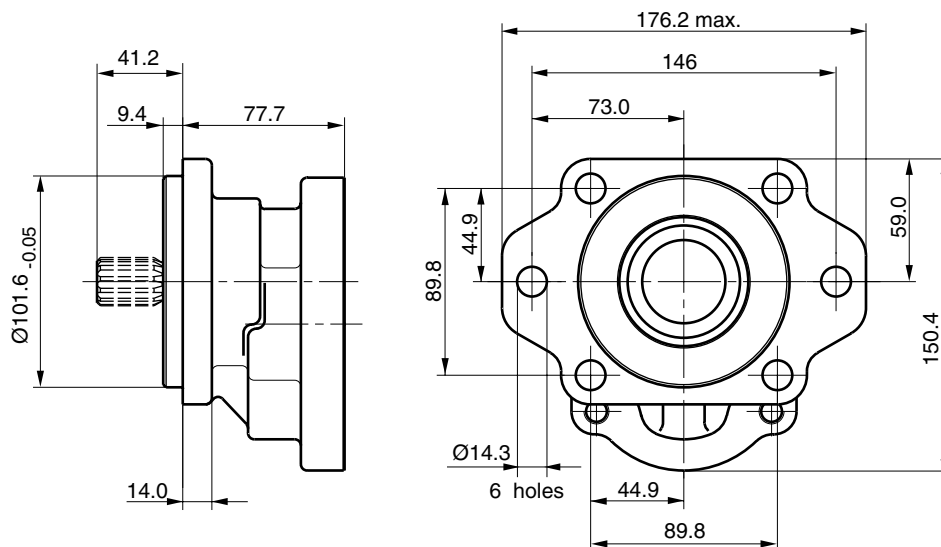
**Code H2**



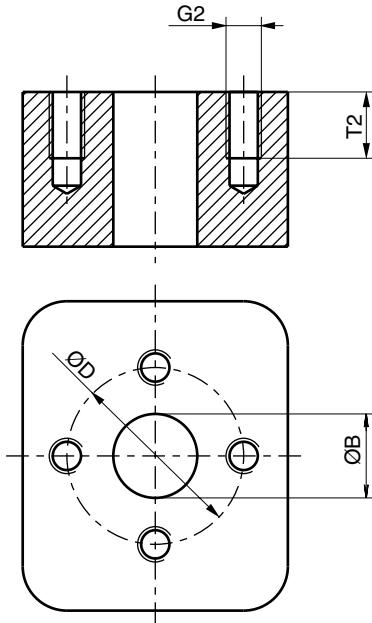
**Code H3**



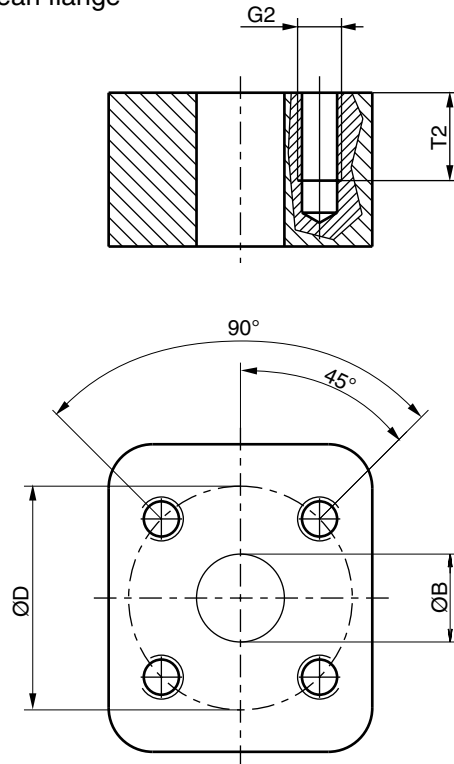
**Code L3**



**PGP/PGM 620 Porting**  
**Code L**  
 4-Bolt flange



**Code J**  
 European flange

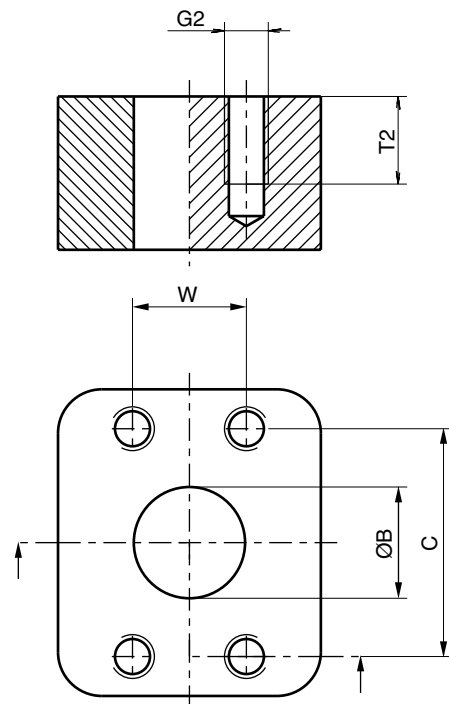


**PGP/PGM 620**

Code	G2	ØB	ØD	C	W	T2
	Thread					
J5	M6	15.0	35.0			12.5
J7	M6	20.0	40.0			13.0
J8	M8	18.0	55.0			15.0
J9	M8	26.0	55.0			15.0
L1	M6	13.0	30.0			13.0
L2	M8	19.0	40.0			15.0
L3	M10	27.0	51.0			18.0
S2	3/8-16 UNC	19.0		47.63	22.23	14.0
S3	3/8-16 UNC	25.4		52.37	26.19	20.6
S4	7/16-14 UNC	31.8		58.72	30.17	20.6
S5	1/2-13 UNC	38.1		69.82	35.71	20.6
S6	1/2-13 UNC	50.8		77.77	42.88	20.6
T2	M10	19.0		47.63	22.23	20.6
T3	M10	25.4		52.37	26.19	21.4
T4	M10	31.8		58.72	30.17	20.6
T5	M12	38.1		69.82	35.71	20.6
T6	M12	50.8		77.77	42.88	20.6

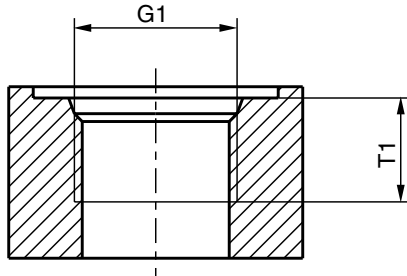
**Code S**  
 SAE split flange

**Code T**  
 SAE split flange metric thread

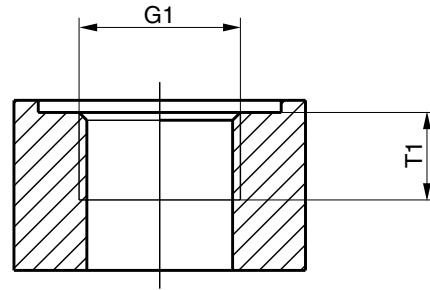


**PGP/PGM 620 Porting**

**Code D**  
 SAE straight thread



**Code E**  
 BSP - thread

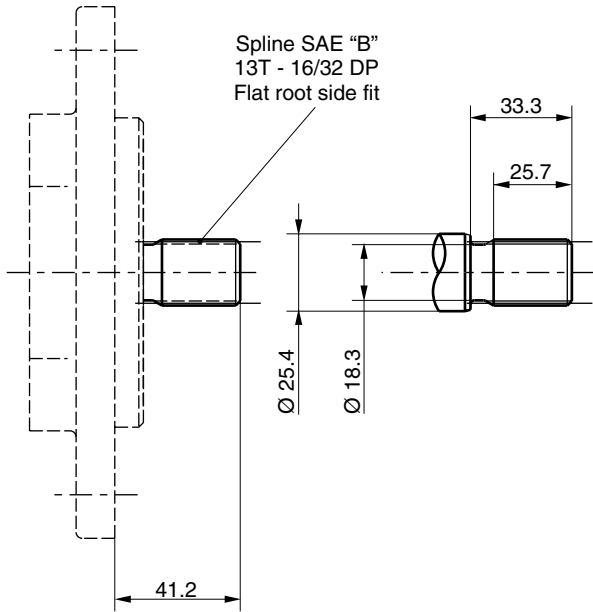


**PGP/PGM 620**

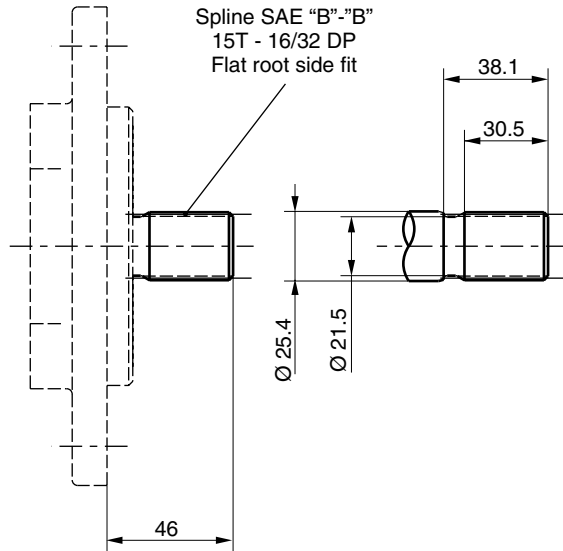
Code	G1 Thread	T1 Dimensions
D3	3/4-16 UNF	14.3
D4	7/8-14 UNF	16.7
D5	1 1/16-12 UN	19.0
D6	1 5/16-12 UN	19.0
D7	1 5/8-12 UN	19.0
D8	1 7/8-12 UN	19.0
E3	1/2-14 BSP	14.0
E4	5/8-14 BSP	16.3
E5	3/4-16 BSP	16.0
E6	1-11 BSP	18.0
E7	1 1/4-11 BSP	20.0
E8	1 1/2-11 BSP	22.0

**PGP/PGM 620 Drive Shaft**

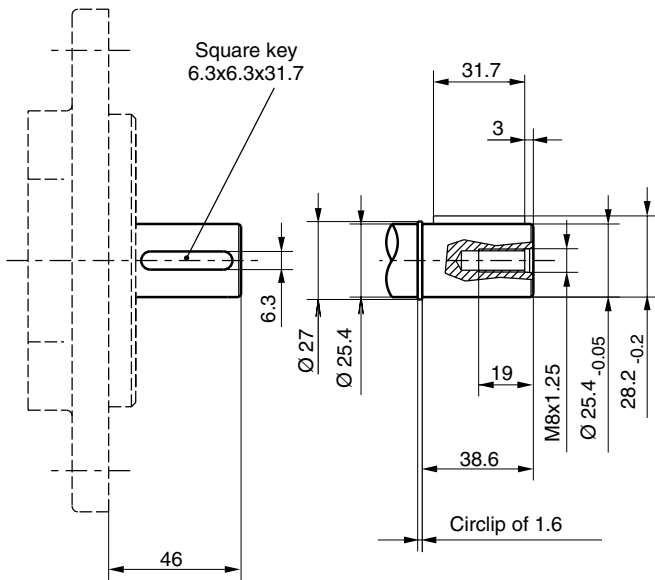
**Code D1**



**Code E1**



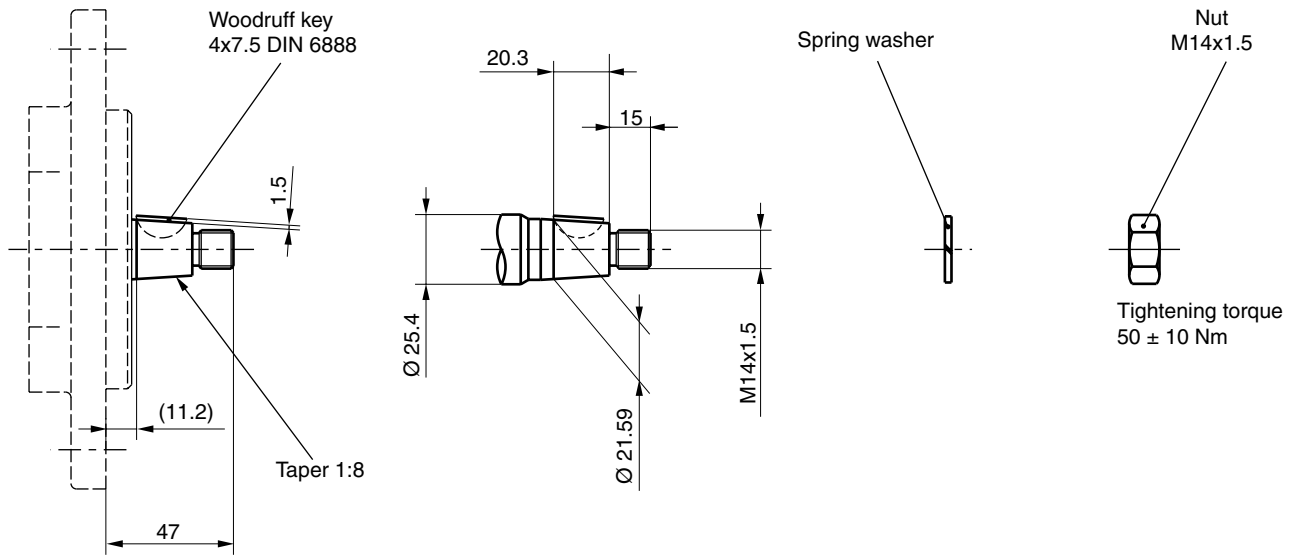
**Code M3**



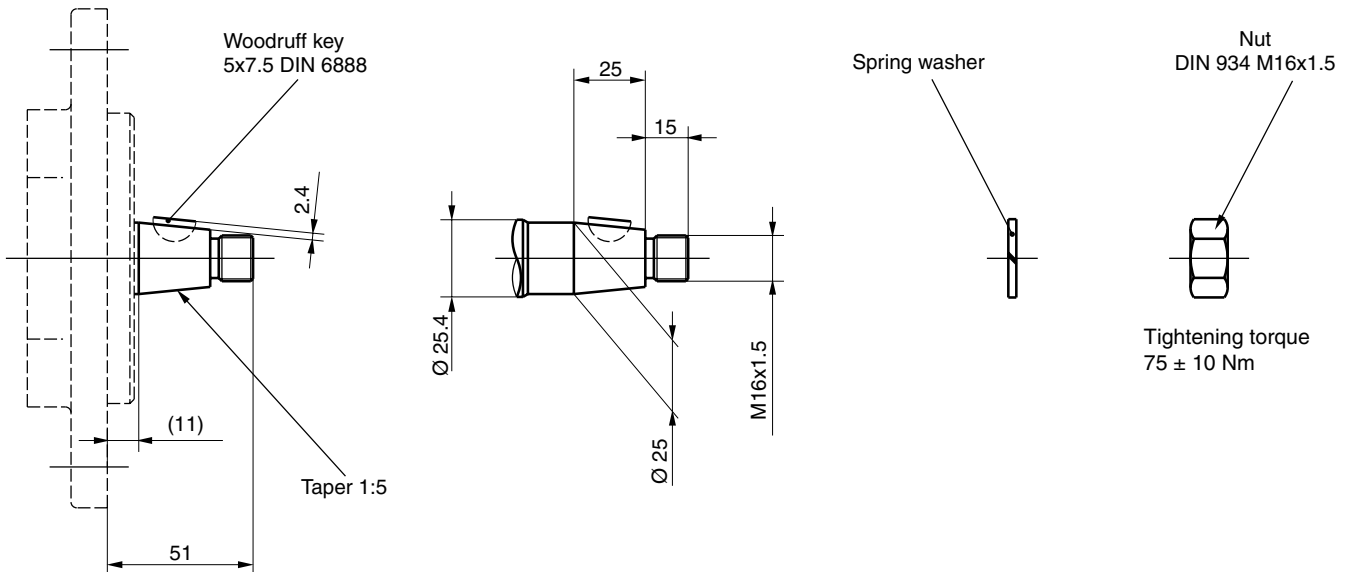


**PGP/PGM 620 Drive Shaft**

**Code T1**



**Code T2**



**PGP/PGM 620- Shaft Load Capacity**

Code	Description	Torque Rating [Nm]
D1	13T, 16/32 DP, 41.2L, SAE "B" spline	272
E1	15T, 16/32 DP, 46L, SAE "B-B" spline	460
M3	$\varnothing 25.4$ , 6.3 KEY, M8, 46L, SAE "B-B" parallel	325
T1	$\varnothing 21.59$ , 11.2L, 4.0 KEY, M14x1.5 taper 1:8	218
T2	$\varnothing 25.0$ , 12.0 L, 5.0 KEY, M16x1.5 taper 1:5	350
	Multiple pump connection shaft	228

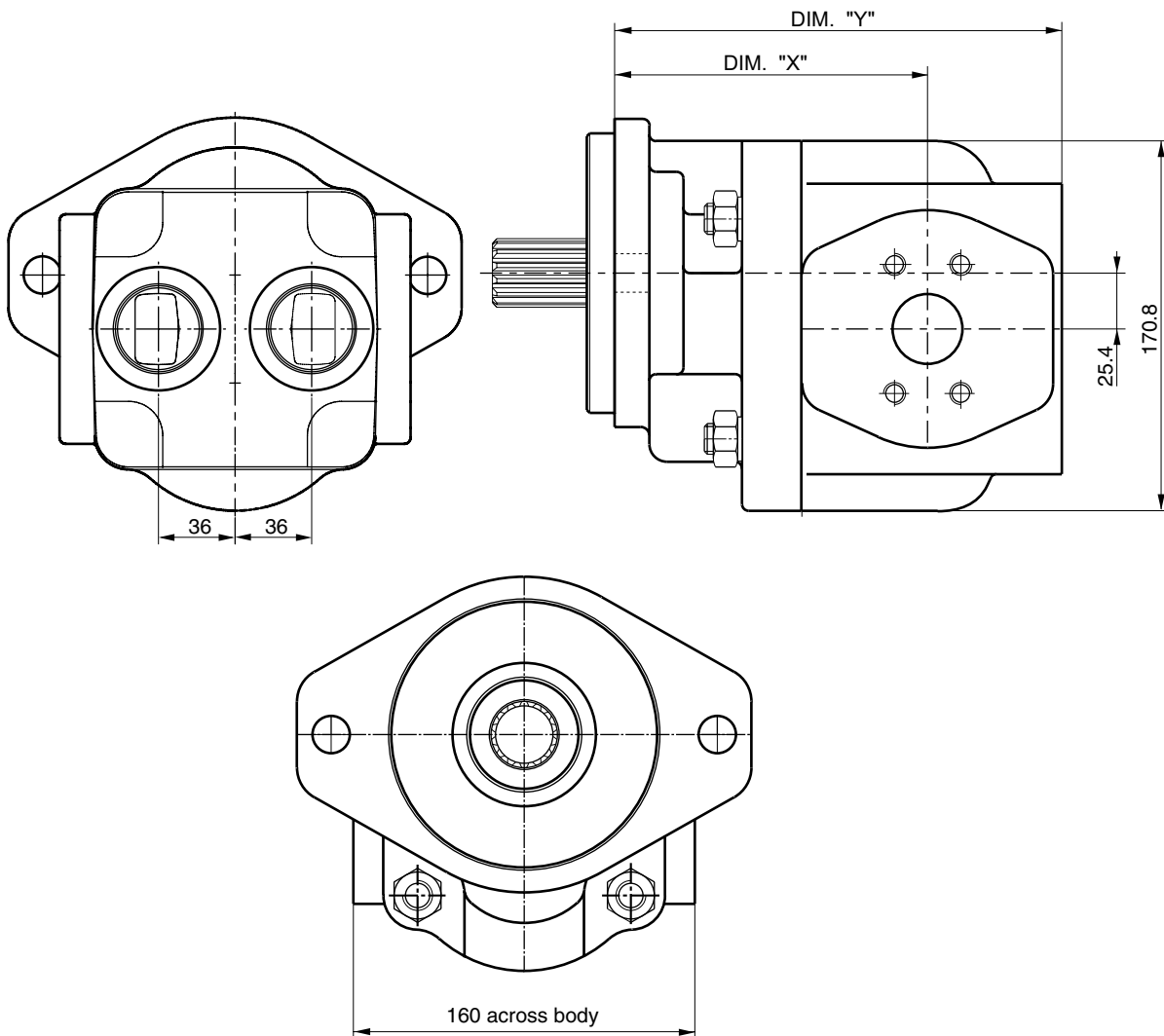
$$\text{Torque [Nm]} = \frac{\text{Displacement [cm}^3\text{/rev]} \times \text{Pressure [bar]}}{57.2}$$

**PGP/PGM 640 Specification - Standard Displacements - Single Unit**

Pump Displ	Code	300	350	400	450	500	550	600	650	700	750	800	900	1000
	cm <sup>3</sup> /rev	30,0	35,0	40,0	45,0	50,0	55,0	60,0	65,0	70,0	75,0	80,0	90,0	100,0
Max. Continuous Pressure	bar	310	310	310	310	310	310	290	265	245	225	210	190	180
Minimum Speed at max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500	500	500	500	500
Maximum Speed at = inlet & max. Outlet pressure	rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Dimension "X"	mm	128,6	128,6	131,8	131,8	135,6	135,6	138,4	138,4	142,2	142,2	142,2	149,8	149,8
Dimension "Y"	mm	176,1	176,1	182,7	182,7	189,3	189,3	195,8	195,8	203,2	203,2	203,2	216,4	216,4
Aprox. Weight	Kg	20,6	20,6	21,2	21,2	22,0	22,0	22,6	22,6	23,3	23,3	25,0	25,5	25,5

**Dimension Flanges** see pages 69 to 70

**Dimension Shafts** see page 73

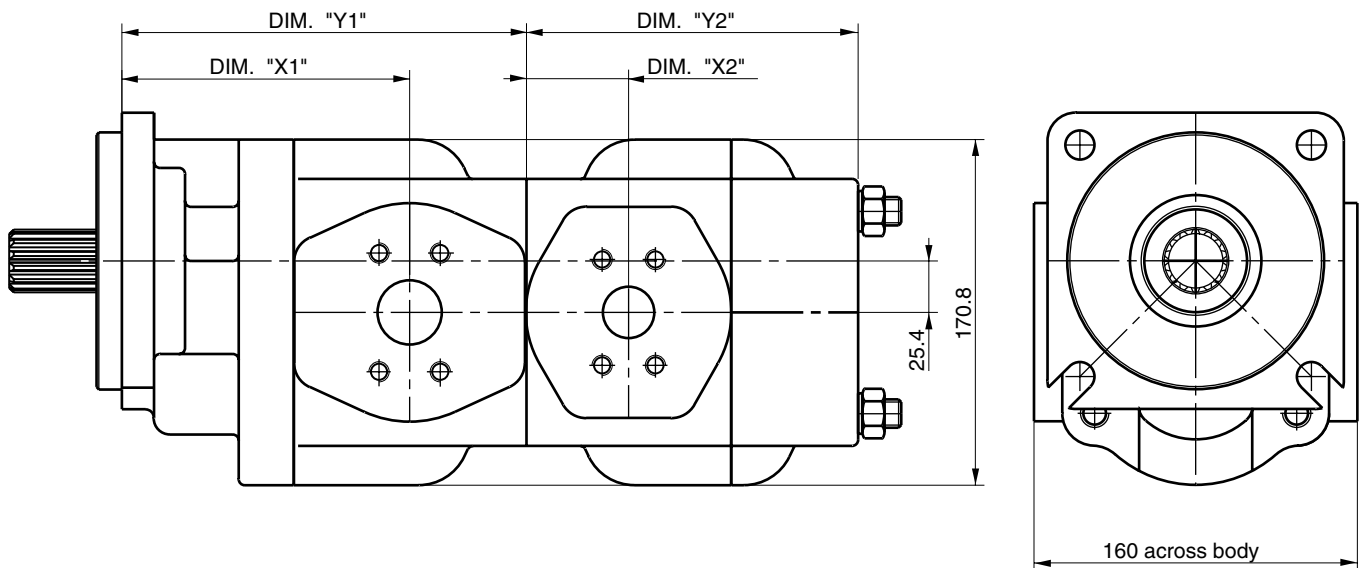


**PGP/PGM 640 Specification - Standard Displacements - Tandem Unit**

Pump Displ	Code	300	350	400	450	500	550	600	650	700	750	800	900	1000
	cm <sup>3</sup> /rev	30,0	35,0	40,0	45,0	50,0	55,0	60,0	65,0	70,0	75,0	80,0	90,0	100,0
Dimension "X1"	mm	128,6	128,6	131,8	131,8	135,6	135,6	138,4	138,4	142,2	142,2	142,2	149,8	149,8
Dimension "Y1"	mm	176,1	176,1	182,7	182,7	189,3	189,3	195,8	195,8	203,2	203,2	203,2	216,4	216,4
Dimension "X2"	mm	44,3	44,3	47,8	47,8	50,5	50,5	54,3	54,3	57,8	57,8	57,8	63,4	63,4
Dimension "Y2"	mm	147,5	147,5	154,1	154,1	160,7	160,7	167,2	167,2	174,6	174,6	174,6	184,2	184,2
Aprox. Weight front section	Kg	20,6	20,6	21,2	21,2	22,0	22,0	22,6	22,6	23,3	23,3	25,0	25,5	25,5
Aprox. Weight rear section	Kg	20,1	20,1	20,7	20,7	21,5	21,5	22,1	22,1	22,8	22,8	24,5	25,0	25,0

**Dimension Flanges** see pages 69 to 70

**Dimension Shafts** see page 73

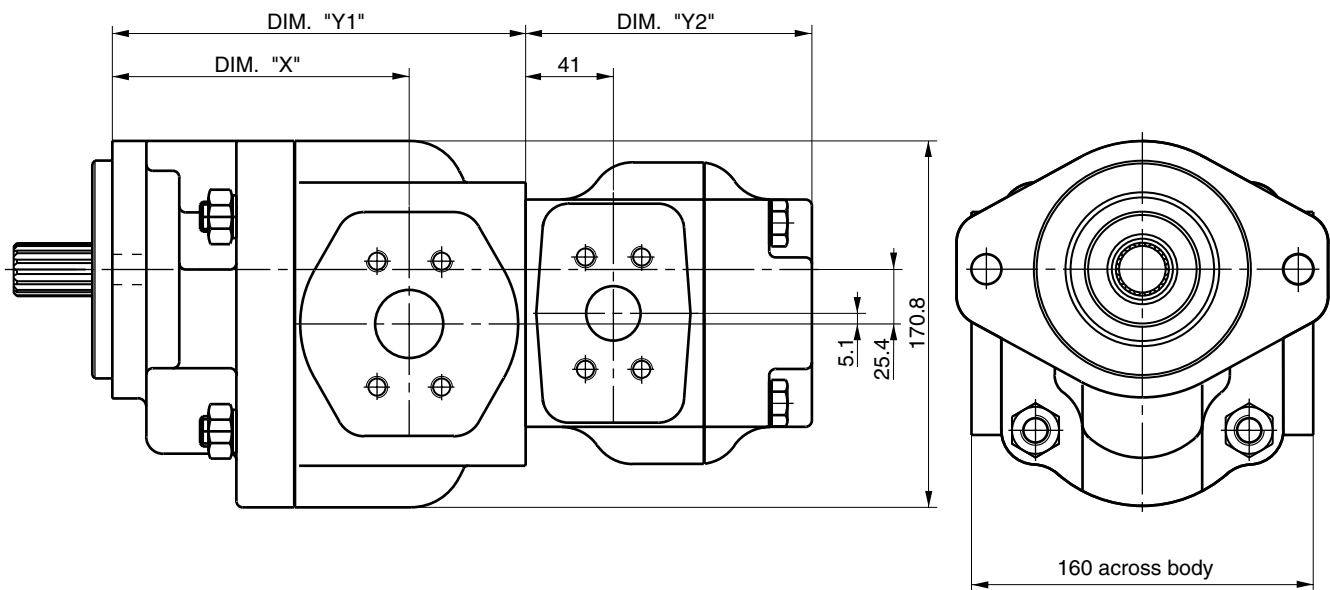


**PGP 640/620 Specification - Standard Displacements - Tandem Unit**

Pump Displ. 640	Code	300	350	400	450	500	550	600	650	700	750	800	900	1000
	cm³/rev	30,0	35,0	40,0	45,0	50,0	55,0	60,0	65,0	70,0	75,0	80,0	90,0	100,0
Dimension "X1"	mm	128,6	128,6	131,8	131,8	135,6	135,6	138,4	138,4	142,2	142,2	142,2	149,8	149,8
Dimension "Y1"	mm	176,1	176,1	182,7	182,7	189,3	189,3	195,8	195,8	203,2	203,2	203,2	216,4	216,4
Pump Displ. 620	Code	160	190	210	230	260	290	330	360	370	410	440	500	520
	cm³/rev	16,0	19,0	21,0	23,0	26,0	29,0	33,0	36,0	37,0	41,0	44,0	50,0	52,0
Dimension "Y2"	mm	115,2	118,5	120,7	122,9	126,2	129,5	133,9	137,2	138,3	142,7	146	152,6	154,8
Aprox. Weight front section	Kg	20,6	20,6	21,2	21,2	22,0	22,0	22,6	22,6	23,3	23,3	25,0	25,5	25,5
Aprox. Weight rear section	Kg	10,4	10,5	10,5	10,6	10,7	11	11,1	11,2	11,3	11,4	11,5	11,7	11,8

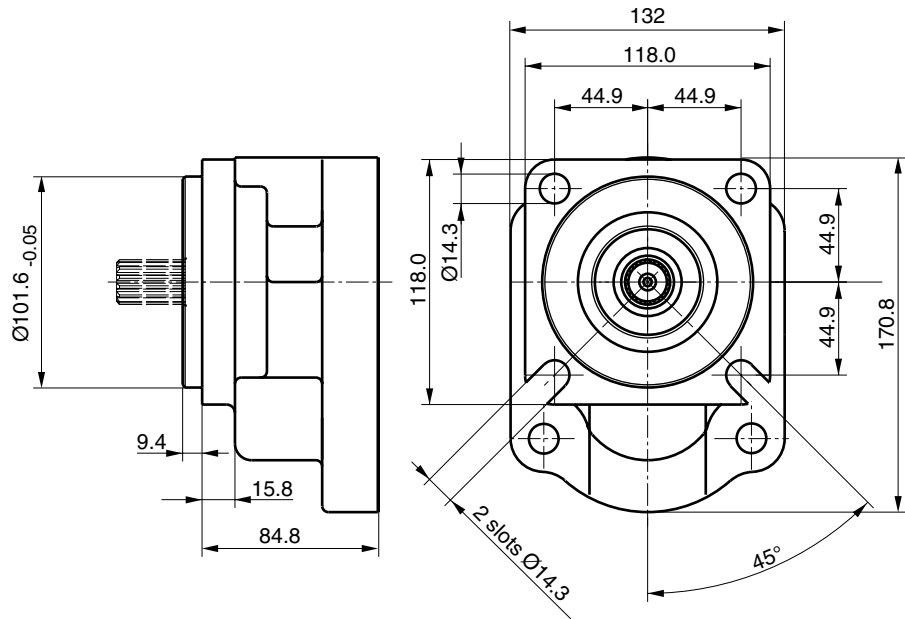
**Dimension Flanges** see pages 69 to 70

**Dimension Shafts** see page 73

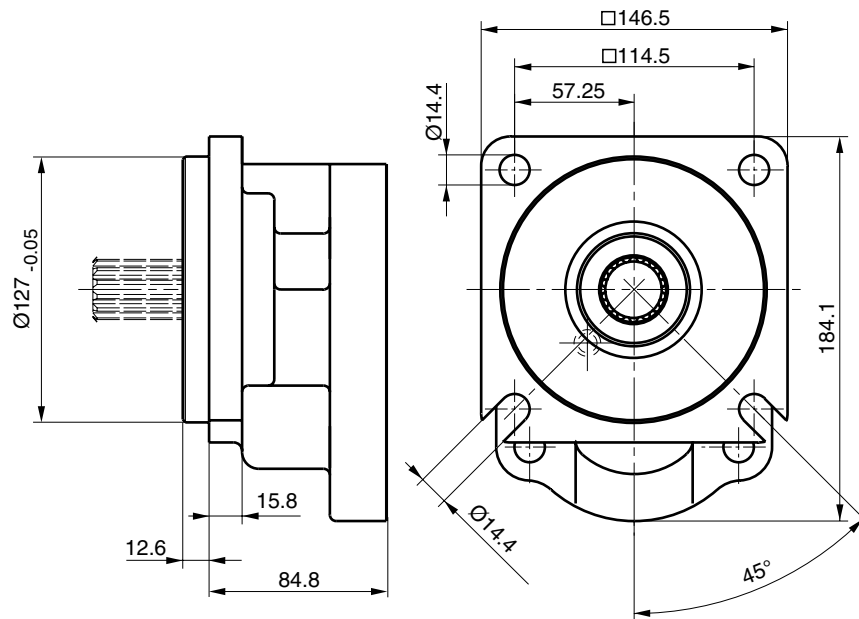


PGP/PGM 640 Mounting Flange

Code A3

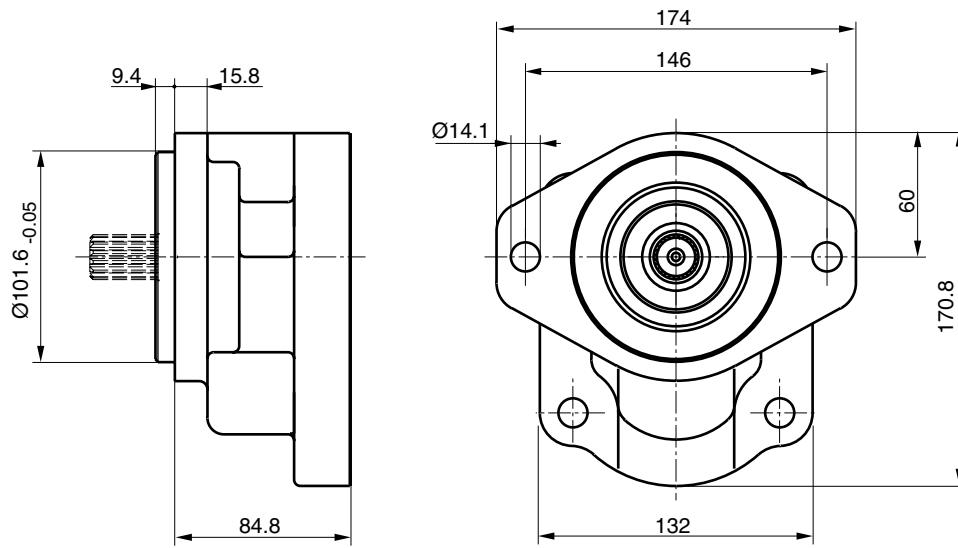


Code A4

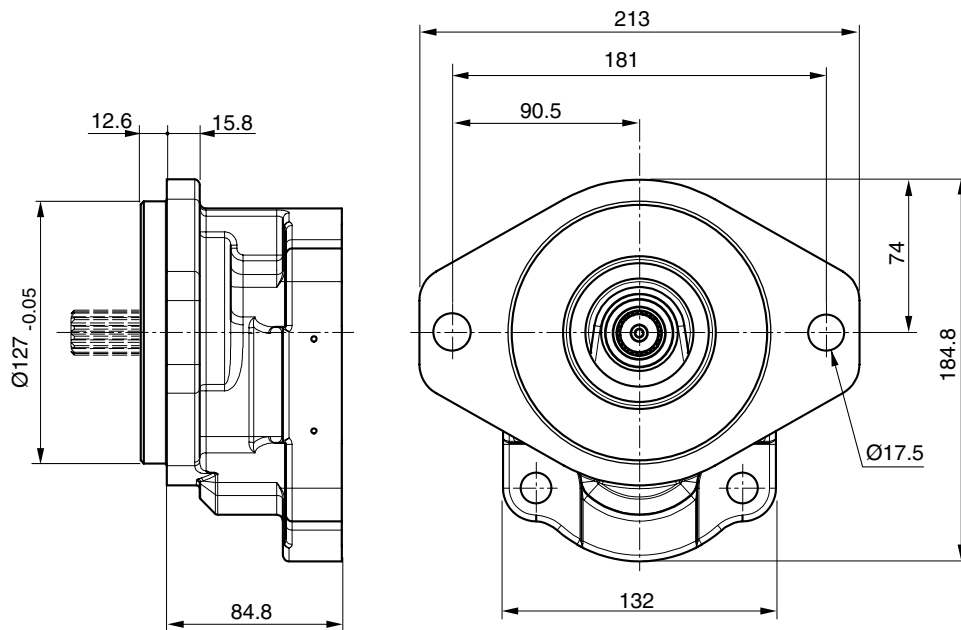


PGP/PGM 640 Mounting Flange

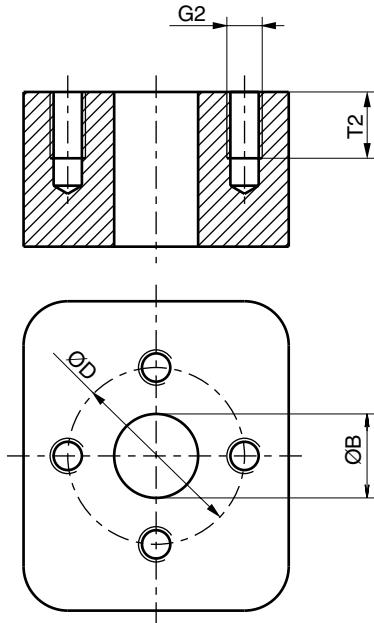
Code H3



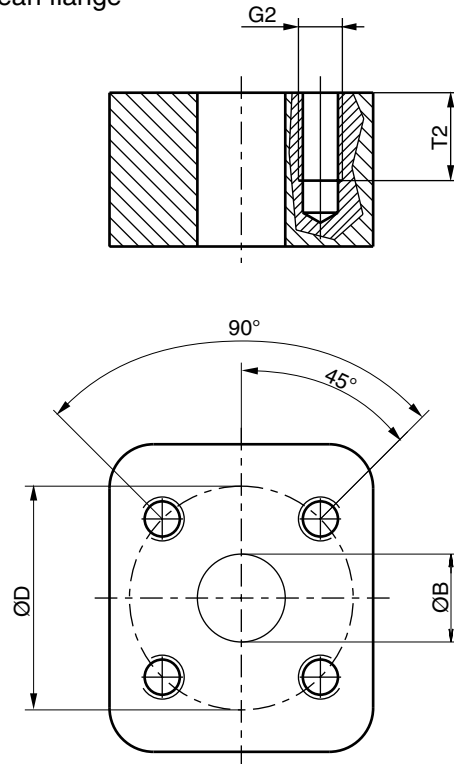
Code K3



**PGP/PGM 640 Porting**  
**Code L**  
 4-Bolt flange



**Code J**  
 European flange

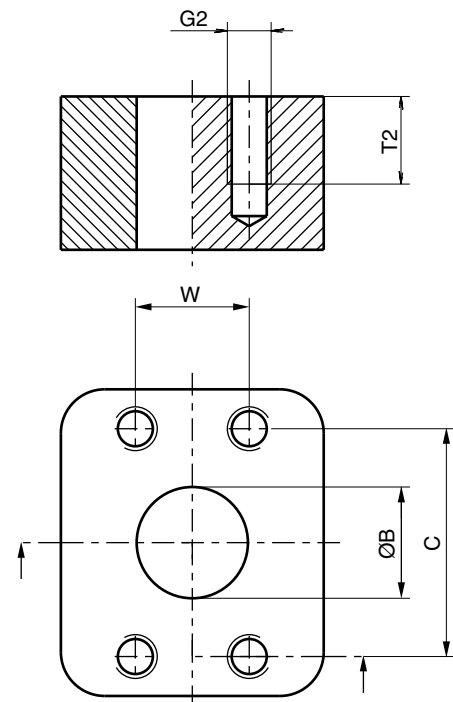


**PGP/PGM 640**

Code	G2	ØB	ØD	C	W	T2
	Thread					
J8	M8	18.0	55.0			15.0
J9	M8	26.0	55.0			15.0
L2	M8	19.0	40.0			15.0
L3	M10	27.0	51.0			18.0
S2	3/8-16 UNC	19.0		47.63	22.23	14.0
S3	3/8-16 UNC	25.4		52.37	26.19	20.6
S4	7/16-14 UNC	31.8		58.72	30.17	20.6
S5	1/2-13 UNC	38.1		69.82	35.71	20.6
S6	1/2-13 UNC	50.8		77.77	42.88	20.6
T2	M10	19.0		47.63	22.23	20.6
T3	M10	25.4		52.37	26.19	21.4
T4	M10	31.8		58.72	30.17	20.6
T5	M12	38.1		69.82	35.71	20.6
T6	M12	50.8		77.77	42.88	20.6

**Code S**  
 SAE split flange

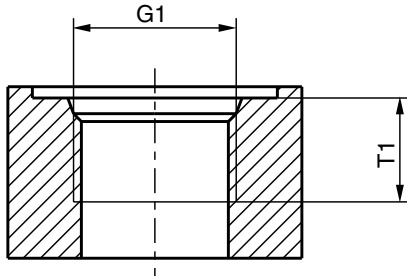
**Code T**  
 SAE split flange metric thread



**PGP/PGM 640 Porting**

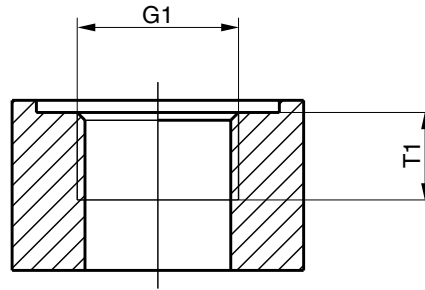
**Code D**

SAE straight thread



**Code E**

BSP - thread



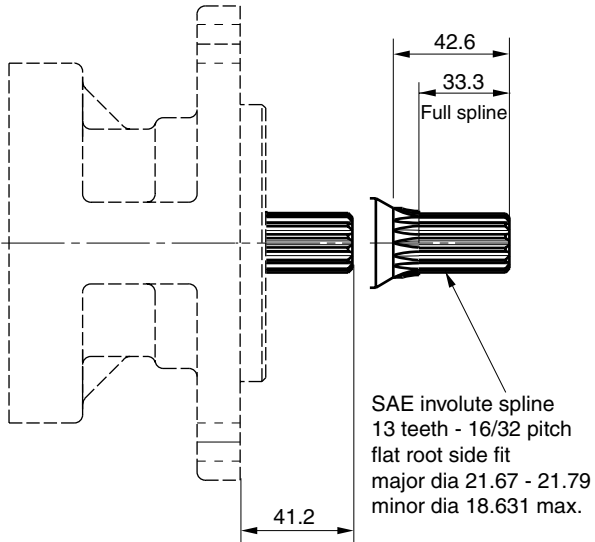
**PGP/PGM 640**

Code	G1	T1
	Thread	Dimensions
D5	1 1/16-12 UN	19.0
D6	1 5/16-12 UN	19.0
D7	1 5/8-12 UN	19.0
D8	1 7/8-12 UN	19.0
E4	5/8-14 BSP	16.3
E5	3/4-16 BSP	16.0
E6	1-11 BSP	18.0
E7	1 1/4-11 BSP	20.0
E8	1 1/2-11 BSP	22.0

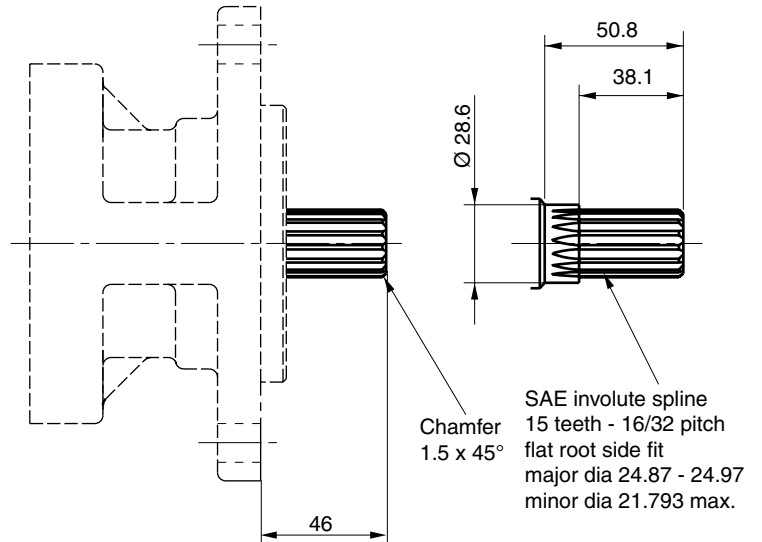


**PGP/PGM 640 Drive Shaft**

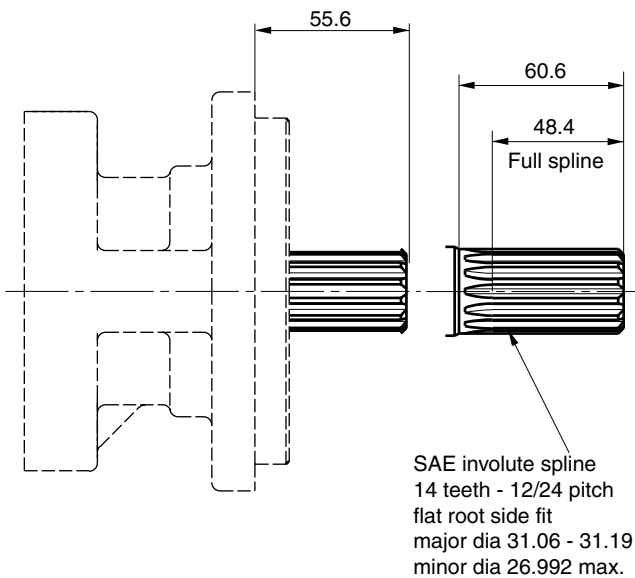
**Code D1**



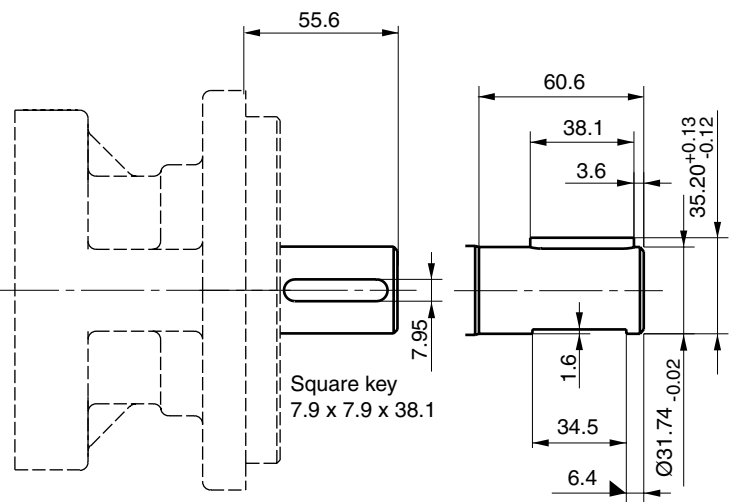
**Code E1**



**Code E4**



**Code N1**



**Shaft loads PGP/PGM500**

Code	Description	Type	Torque rating [Nm]			
			PGP 502	PGP 505	PGP/PGM511	PGP 517
H1	Ø10.0, 3.0 key, no thread, 36L	parallel	30	—	—	—
P2	Ø9.95, 8.8L, 2.4 key, M6	taper 1:8	30	—	—	—
V1	5 x 6.5 long shaft w/o coupling	tang drive	20	—	—	—
A1	9T, 16/32DP, 32L, SAE "A"	splined	—	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	—	—
A1	9T, 16/32DP, 32L, SAE "A"	splined	—	—	86	—
C1	11T, 16/32DP, 38.2L, SAE 19-4	splined	—	—	184	—
K1	Ø15.88, 4.0 key, no thread, 32L, SAE "A"	parallel	—	—	75	—
L6	Ø19.05, 4.8 key, no thread, 32L, SAE 19-1	parallel	—	—	145	—
S1	Ø17.0, 7.7L, 3.0 key, M12x1.5	taper 1:5	—	—	193	—
S2	Ø16.65, 12.0L, 3.2 key, M12x1.5	taper 1:8	—	—	198	—
S8	Ø20.0, 9.0L, 4.0 key, M14x1.5	taper 1:5	—	—	110	—
D1	13T, 16/32DP, 41.2L, SAE "B"	splined	—	—	—	345
E1	15T, 16/32DP, 46.2L, SAE "B-B"	splined	—	—	—	530
M1	Ø22.2, 6.3 key, no thread, 41.2L, SAE "B"	parallel	—	—	—	251
M2	Ø25.4, 6.3 key, no thread, 46L, SAE "B-B"	parallel	—	—	—	395
T1	Ø21.59, 11.2L, 4.0 key, M14x1.5	taper 1:8	—	—	—	250
	Connecting shaft for multiple units		20	36	110	228

**Shaft loads PGP/PGM600**

Code	Description	Type	Torque rating 620 [Nm]	Torque rating 640 [Nm]
D1	13T, 16/32 DP, 41.2L, SAE "B"	splined	272	328
E1	15T, 16/32 DP, 46.0L, SAE "B-B"	splined	460	503
E4	14T, 12/24 DP, 55.6L, SAE "C"	splined	—	960
M3	Ø25.4, 6.3 KEY, M8, 46L, SAE "B-B"	parallel	325	—
T1	Ø21.59, 11.2L, 4.0key, M14x1.5	tapered 1:8	218	—
T2	Ø25.0, 12.0L, 5.0 KEY, M16x1.5	taper 1:5	301	—
N1	1 1/4" SAE-C	keyed	—	678
	connecting shaft		228	407

**Formula to calculate shaft load**

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

**Hydraulic fluids**

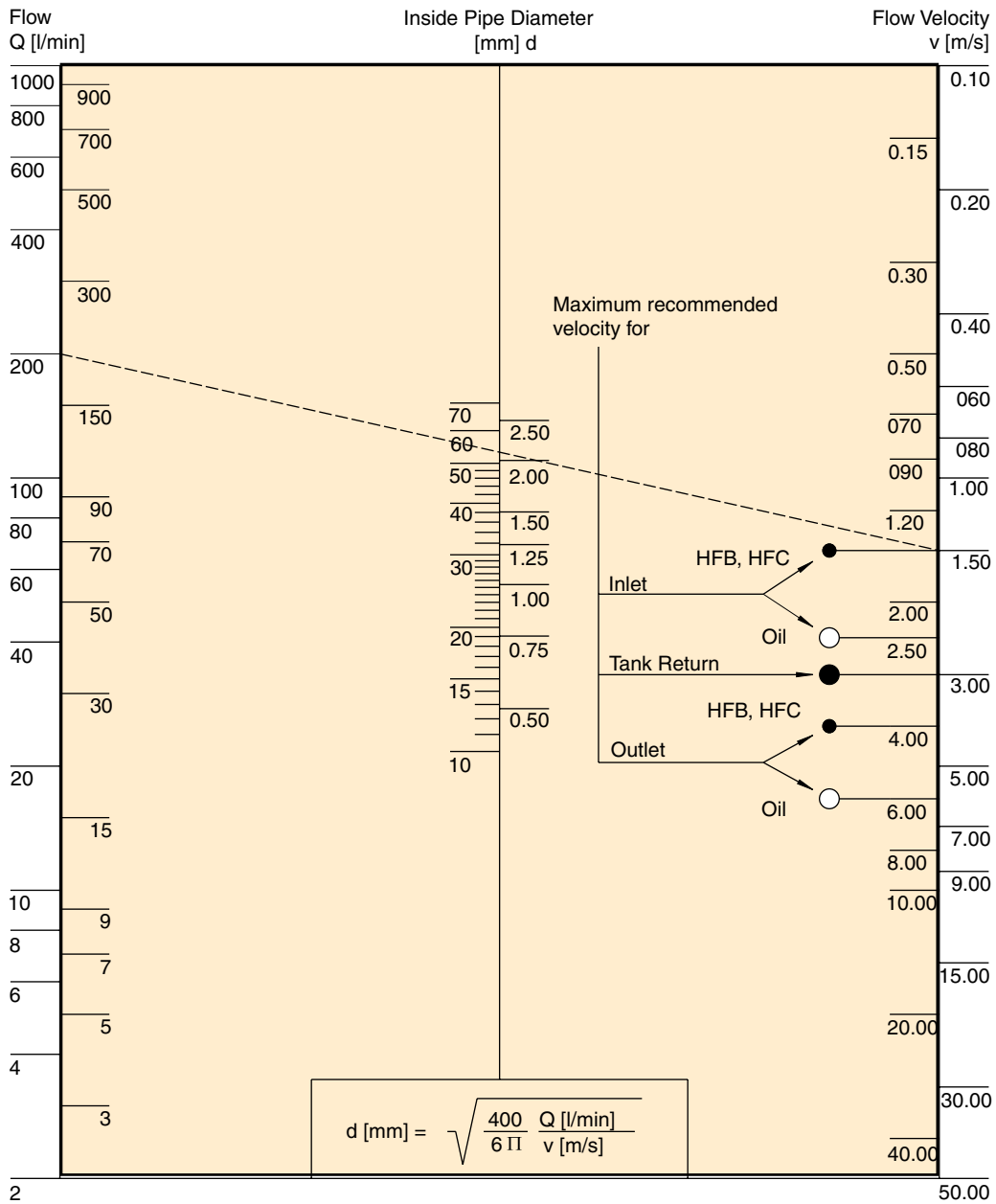
Type	Fluid composition	Max. working pressure [bar]	Max. speed [min-1]	Temperature	Seal
Hydraulic fluid	Mineral oil based on hydraulic fluid acc. to ISO/DIN	See table drawings	See table drawings	-15 ... +80 °C	NBR
				-15 ... +120 °C	FPM
HFB	Water-in-oil emulsion 40/60	140	1500	+2 ... +65 °C	NBR
HFC	Water-glycol 40/60	140	1500	-15 ... +65 °C	NBR
HFD	Phosphate ester	140	1500	-10 ... +80 °C	FPM

**Flanges for suction and discharge ports**

Please refer to Parker Bulletin 4040/UK.

Reading Direction	First pump	Second pump					
		PGP 502	PGP 505	PGP 511	PGP 517	PGP 620	PGP 640
	PGP 502	X					
	PGP 505		X				
	PGP 511	X		X			
	PGP 517			X	X		
	PGP 620			X		X	
	PGP 640			X		X	X

Nomograph for Pipe Velocity

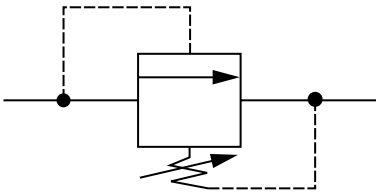


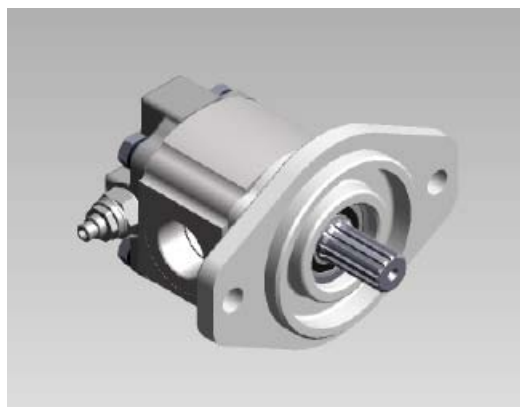
**Pressure relief valve / adjustable internal vent**

**Introduction:**

Parker’s valve program was developed in response to requests from OEM customers to reduce the number and total cost of components on their machines. We addressed this challenge by integrating the valves required for machine functions into our hydraulic pumps and motors.

This integration has reduced the number of purchased components, eliminated many of the hydraulic hoses and associated fittings (and potential leak points), and reduced assembly labor cost on the production line.

PGP 502 PGP 505 PGP 511				PGP 517 PGP 620	
CODE	Pressure bar		CODE	Pressure bar	
RDAA	10		RDPA	10	
RDAB	20		RDPB	20	
RDAC	30		RDPC	30	
RDAD	40		RDPD	40	
RDAE	50		RDPE	50	
RDAF	60		RDPF	60	
RDAG	70		RDPG	70	
RDAH	80		RDPH	80	
RDAJ	90		RDPJ	90	
RDAK	100		RDPK	100	
RDAL	110		RDPL	110	
RDAM	120		RDPM	120	
RDAN	130		RDPN	130	
RDAP	140		RDPQ	140	
RDAQ	150		RDPQ	150	
RDAR	160		R DPR	160	
RDAS	170		RDPS	170	
RDAT	180		RDPT	180	
RDAU	190		RDPU	190	
RDAV	200		RDPV	200	
RDAW	210		RDPW	210	
RDAX	220		RDPX	220	
RDAY	230		RDPY	230	
RDAZ	240		RDPZ	240	



**Priority Flow Divider**

**1VP- / CVP100-**

□

□

□

□

□

□

□

**Port Configuration**

Code	Port Configuration
A	End Priority, End Excess
B	Side Priority, Side Excess
C	End Priority, Side Excess
D	Side Priority, End Excess
E	Double Side Ported

**Port Orientation**

Code	Port Orientation
A	Priority Port on Pump Inlet Side
B	Priority Port on Pump Outlet Side

**Function**

Code	Function
A	Priority Flow Divider
B	PFD with Full Flow R/V
C	PFD with Pilot R/V

**Priority Port**

Code	Priority Port
J1	3/4-16UNF
J8	9/16-18UNF
T1	3/8 BSP
other on request	

**Excess Port**

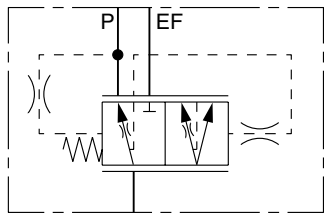
Code	Excess Port
J2	7/8-14UNF
J3	1-1/16-12UN
T2	1/2 BSP
T4	3/4 BSP
other on request	

**Priority Flow**

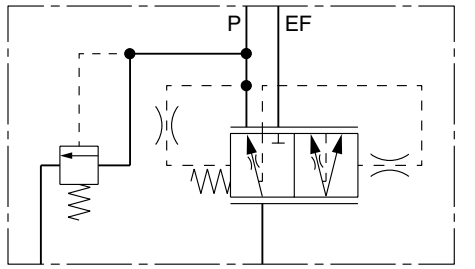
Code	Priority Flow
08	8 lpm
11	11 lpm
15	15 lpm
19	19 lpm
23	23 lpm
30	30 lpm
38	38 lpm
other on request	

**R/V Setting**

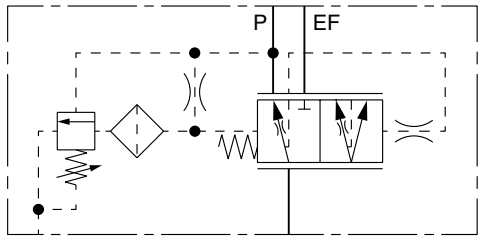
Code	R/V Setting
00	No Relief Valve
A05	Adjustable 40 - 120 bar
A15	Adjustable 130 - 250 bar
05	50 bar
08	80 bar
10	100 bar
11	110 bar
12	120 bar
13	130 bar
14	140 bar
15	150 bar
16	160 bar
17	170 bar
18	180 bar
20	200 bar
other on request	



Priority Flow Divider  
Function "A"



Priority Flow Divider With Full Flow R/V  
Function "B"



Priority Flow Divider With Pilot R/V  
Function "C"

**Priority Flow Divider**

**Comments:**

The Priority Flow Divider provides a constant and specified flow for power steering or other priority functions. The balance of flow produced by the pump is available from the EF port for additional functions such as open center directional control valves, fan drives , etc. It can also be fitted with a pressure relief valve

**Variations for PGP 511 / 517 / 620 / 640**

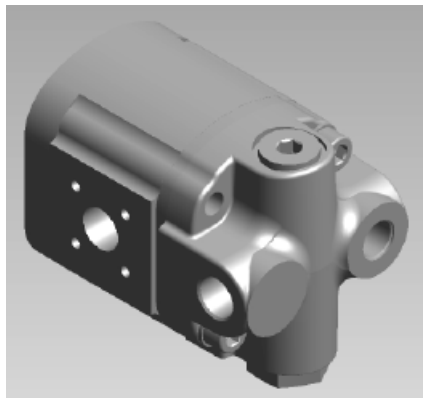
- without priority relief valve (Function "A")
- with full flow priority relief valve (Function "B")
- with pilot priority relief valve (Function "C")

Pressure Range	
P-port Maximum	230 bar
EF-port Maximum	250 bar

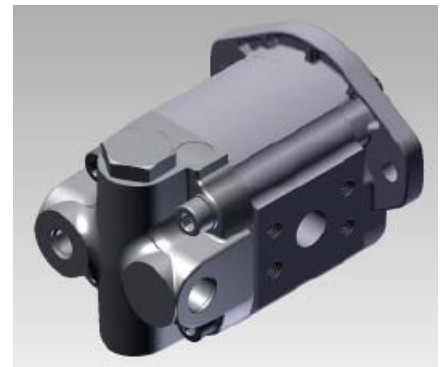
Maximum Flows	
<b>for PGP511</b>	
P-port	32 lpm
EF-port	70 lpm
max. input flow	70 lpm
<b>for PGP517/620/640</b>	
P-port	45 lpm
EF-port	100 lpm
max. input flow	100 lpm



Port Configuration „A“  
 Port Orientation „B“



Port Configuration „D“  
 Port Orientation „A“



Port Configuration „C“  
 Port Orientation „B“

**Side Mounted Priority Flow Divider (Load Sense or Fixed Flow)**

**Comments:**

Priority Flow Dividers can also be direct mounted to the pressure port to provide a constant and specified flow for power steering or other priority functions.

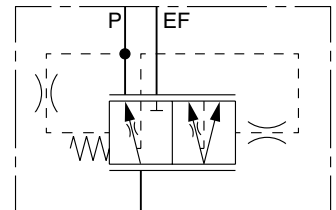
**Variations for PGP 511 / 517 / 620 / 640**

- without priority relief valve (Function "A")
- with full flow priority relief valve (Function "B")
- with pilot priority relief valve (Function "C")

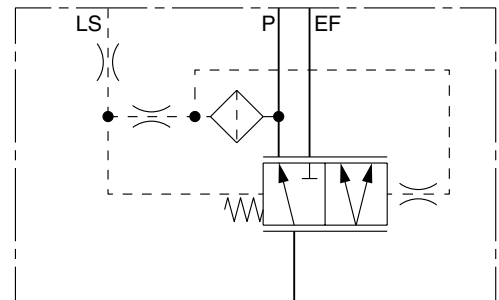
Note: relief valve in the steering unit is required.  
 control pressure settings and priority flow settings on request

Pressure Range	
<b>for PGP511/517</b>	
P-port Maximum	230 bar
EF-port Maximum	250 bar
<b>for 517/620/640</b>	
P-port Maximum	250 bar
EF-port Maximum	310 bar

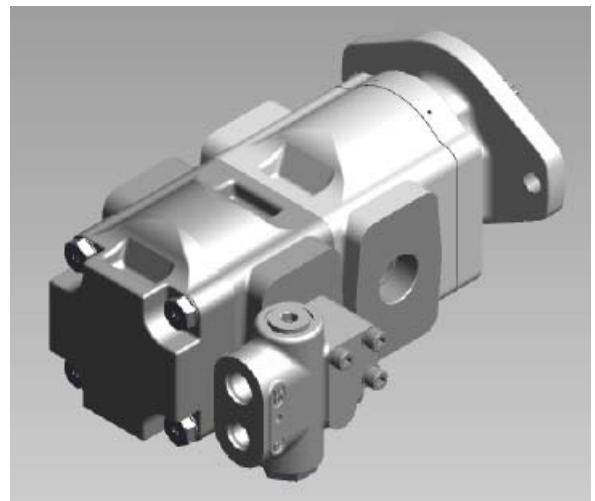
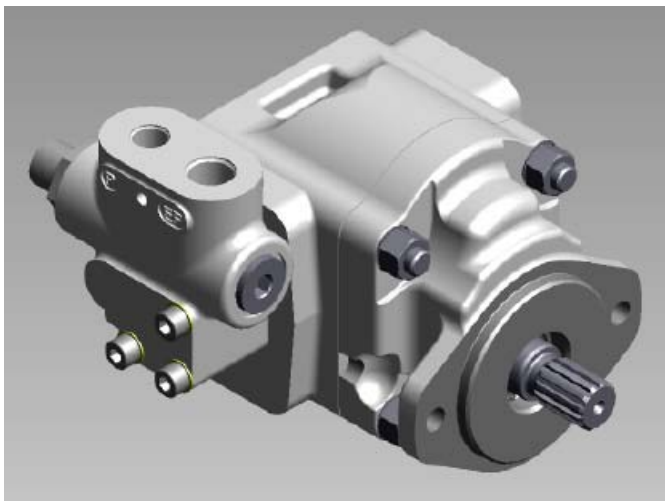
Maximum Flows	
<b>for PGP511</b>	
P-port	32 lpm
max. input flow	80 lpm
<b>for 517/620/640</b>	
P-port	45 lpm
max. input flow	160 lpm



Priority Flow Divider  
 Function "A"

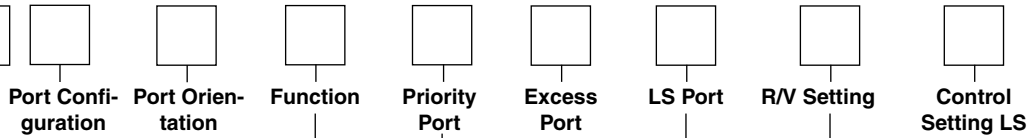


Load Sensing Priority Valve  
 with Dynamic Load Sensing Signal  
 Function "F"



**Load Sensing Priority Valve**

**1VP- / CVP100-**



Code	Port Configuration
A	End Priority, End Excess
B	Side Priority, Side Excess
C	End Priority, Side Excess
D	Side Priority, End Excess
E	Double Side Ported

Code	Port Orientation
A	Priority Port on Pump Inlet Side
B	Priority Port on Pump Outlet Side

Code	Function
D	LSPV, Static LS
E	LSPV, Static LS with Pilot R/V
F	LSPV, Dynamic LS
G	LSPV, Dynamic LS with Pilot R/V

Code	Priority Port
J1	3/4-16UNF
J8	9/16-18UNF
T1	3/8 BSP

other on request

Code	Excess Port
J2	7/8-14UNF
J3	1-1/16-12UN
T2	1/2 BSP
T4	3/4 BSP

other on request

Code	LS Port
X2	7/16- 20UNF female
Y1	1/4 BSP male
Y3	1/4 BSP
BX2	7/16- 20UNF Body Port

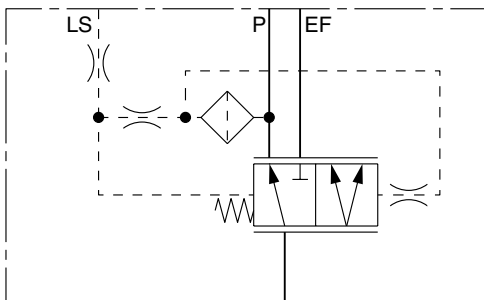
other on request

Code	Control Setting LS
052	5.2 bar static
056	5.6 bar dynamic
062	6.2 bar dynamic
063	6.3 bar static
070	7.0 bar static / dynamic
090	9.0 bar dynamic
093	9.3 bar static
104	10.4 bar dynamic
126	12.6 bar dynamic
140	14.0 bar dynamic
186	18.6 bar dynamic

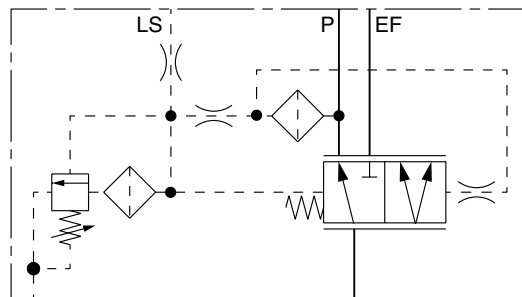
other on request

Code	R/V Setting
00	No Relief Valve
A05	Adjustable 40 - 120 bar
A15	Adjustable 130 - 250 bar
05	50 bar
08	80 bar
10	100 bar
11	110 bar
12	120 bar
13	130 bar
14	140 bar
15	150 bar
16	160 bar
17	170 bar
18	180 bar
20	200 bar

other on request



Load Sensing Priority Valve with Dynamic Load Sensing Signal Function "F"



Load Sensing Priority Valve with Dynamic Load Sensing Signal Function "G"



**Load Sensing Priority Valve**

**Comments:**

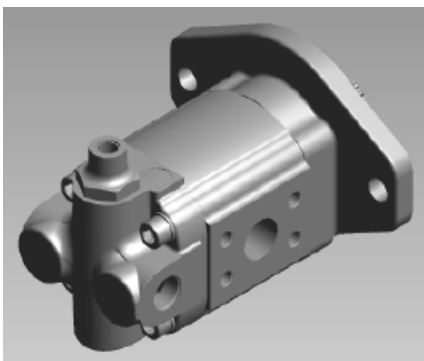
The Load sense Priority Valve provides priority flow on demand, typically for LS power steering: The balance of the flow produced by the pump is available from the EF port for additional functions such as open center directional control valves, fan drives , etc. When the power steering is idle, full pump flow is available for these functions  
 The selection of pilot relief and static or dynamic signal is dependent on the characteristics of the selected steering unit.

**Variations for PGP 511 / 517 / 620 / 640**

without pilot relief, dynamic LS signal (Function "G") / with pilot relief, dynamic LS signal (Function "F") without pilot relief, static LS signal / with pilot relief, static LS signal

Pressure Range	
P-port Maximum	230 bar
EF-port Maximum	equal to max. rating of pump

Maximum Flows	
<b>for PGP 511</b>	
P-port	32 lpm
EF-port	70 lpm
max. input flow	70 lpm
<b>for PGP 517 / 620 / 640</b>	
P-port	45 lpm
EF-port	100 lpm
max. input flow	100 lpm



Port Configuration „B“  
 Port Orientation „A“



Port Configuration „D“  
 Port Orientation „B“



Port Configuration „E“  
 Port Orientation „A“

**Single Pressure Relief Valve**

**Comments:**

Integral relief valve to protect the motor.

Motors with this valve may be applied in series with relief valve providing a limit to the pressure differential, and hence, the output torque.

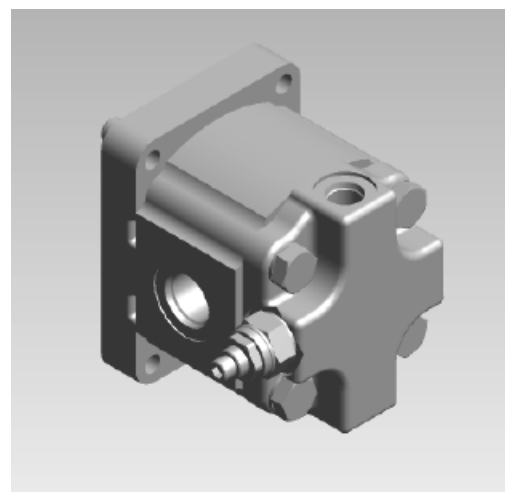
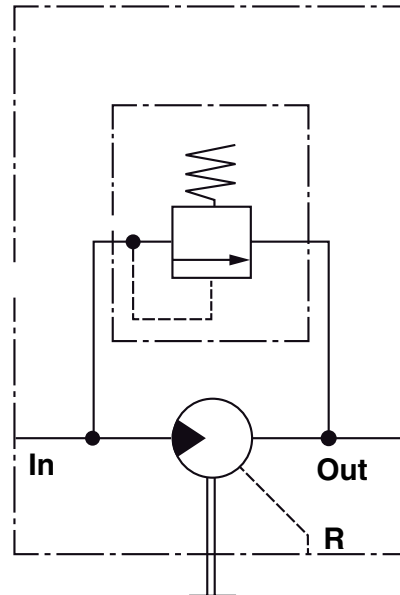
**Variations for PGM 511 / PGM 620 / PGM 640**

adjustable, with internal or external drain

**Applications**

Fan Drives, Mower Blade Drives, Compressor Drives and Water Pump Drives

Motor Range			
Ranges	PGM 511	PGM 620	PGM 640 .
Maximum Flow	75 lpm	113 lpm	113 lpm
Pressure Range	25-250 bar	25-280 bar	25-310 bar



**Single Pressure Relief Valve with Anti-Cavitation**

**Comments:**

Motors fitted with this relief valve may be applied in series with relief valve providing a limit to the pressure differential, and hence, the output torque.  
 The check valve allows the motor and driven load to “spool down” when the fluid supply is shut off or reduced due to engine speed fluctuations.  
 In series operation, the check valve permits the motor to come to a controlled stop should the outlet flow be suddenly blocked.  
 This valve reduces the risk of damaging the motor or blowing a hydraulic line.  
 Motors fitted with this valve are available with side or rear facing ports.

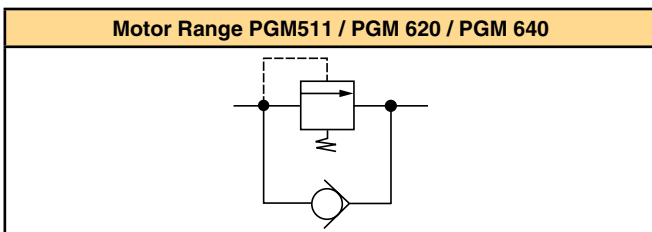
**Variations for PGM 511 / PGM 620 / PGM 640**

non-adjustable, with reverse flow check with internal or external drain

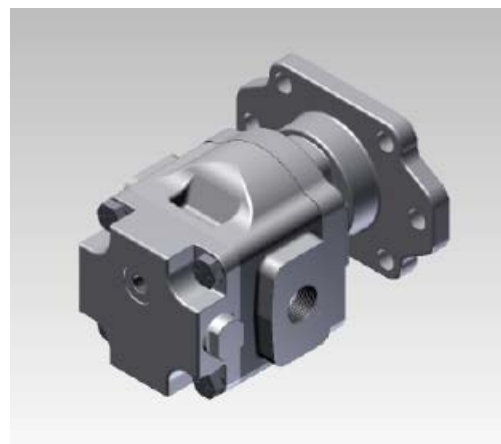
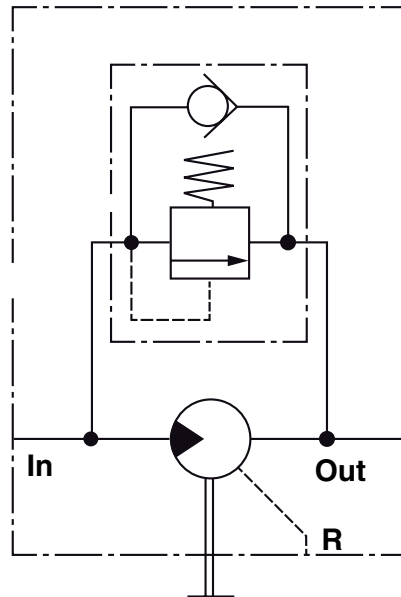
**Applications**

Fan Drives, Mower Blade Drives, Compressor Drives and Water Pump Drives

Motor Range PGM 511 / PGM 620 / PGM 640	
Pressure Range	35-250 bar
Maximum Flow	100 lpm



CODE	Pressure bar
RMAF	50
RMAP	90
RMAR	100
RMAV	120
RMBB	150
RMBD	160
RMBK	190
RMBP	210
RMBT	230



**Cross Port Pressure Relief Valves**

**Comments:**

Integral cross port relief to protect motor and to limit torque in both directions of rotation.  
 Motors fitted with this relief valve cover may be operated in series with other motors downstream when using external case drain.  
 Limited change to the factory set is possible .  
 Side ports are standard in order to minimize overall length.

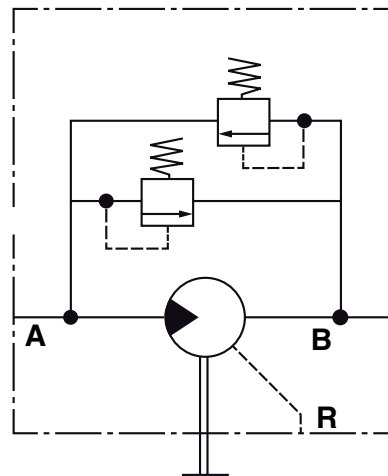
**Variations for PGM 511 / PGM 620 / PGM 640**

adjustable with internal and external drain

**Applications**

Fan Drives, Mower Reel Drives, and all low-medium power reversible drives

Motor Range			
Ranges	PGM 511	PGM 620	PGM 640 .
Maximum Flow	75 lpm	113 lpm	113 lpm
Pressure Range	25-250 bar	25-280 bar	25-310 bar



**Cross Port Pressure Relief Valves with Anti-Cavitation**

**Comments:**

Motors fitted this relief valve may be applied in series or in hydraulic transmission with relief valve providing a limit to the pressure differential, and hence, the output torque.

The check valves allow flow to return to the inlet of the motor to prevent cavitation.

Motor available with side ports, rear ports or combination of side and rear ports.

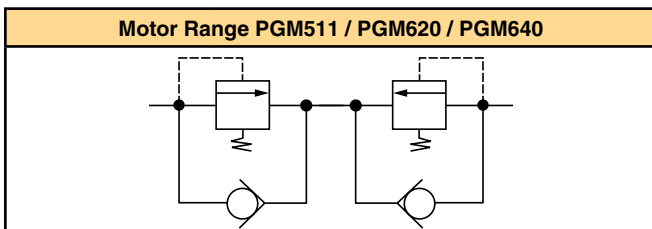
**Variations for PGM 511 / PGM 620 / PGM 640**

non-adjustable with internal or external drain

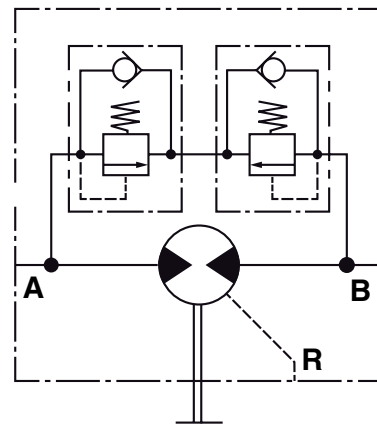
**Applications**

Fan Drives, Mower Blade Drives, Water Pump Drives and reversible hydrostatic transmissions

Motor Range PGM 511 / PGM 620 / PGM 640	
Pressure Range	35-250 bar
Maximum Flow	100 lpm



CODE	Pressure bar
RMCF	50
RMCP	90
RMCR	100
RMCV	120
RMDB	150
RMDD	160
RMDK	190
RMDP	210
RMDT	230



**Cross Port Pressure Relief Valves with Anti-Cavitation + Check Valves**

**Comments:**

Motors with cross-port relief valve and anti-cavitation check valves in case drain passages are suitable for open-circuit applications with closed center valves and hydrostatic transmissions. The check valves allow flow to return to the inlet of the motor to prevent cavitation.

For winches, make up flow at low pressure is introduced at the case drain port.

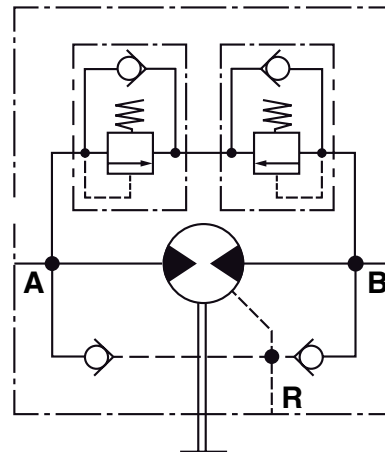
**Variations for PGM 511 / PGM 620 / PGM 640**

non-adjustable, with reverse flow check with internal or external drain

**Applications**

Fan Drives, Mower Blade Drives, Water Pump Drives and reversible hydrostatic transmissions, vibration drives on vibratory, rollers and winches

Motor Range PGM 511 / PGM 620 / PGM 640	
Pressure Range	25-250 bar
Maximum Flow	100 lpm



**Solenoid Proportional Pressure Relief Valve**

**Comments:**

In a fan drive circuit fan speed is adjusted by providing a varying Pulse Width Modulated electrical current signal to the proportional relief valve which controls the flow to the fan motor. The proportional valve is typically a normal closed type to assure failsafe full fan speed in case of a lost signal. The anti-cavitation check valve allows the motor to spin freely when the fan is powered down.

**Variations for PGM 511 / PGM 620 / PGM 640**

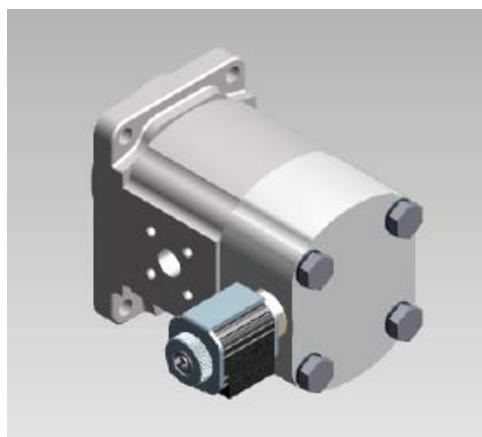
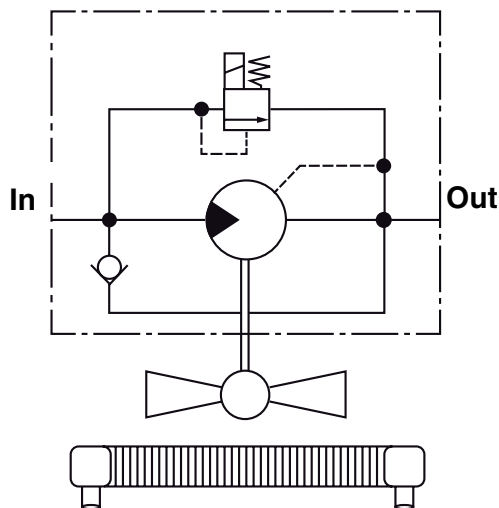
normally open valves, increasing pressure with increasing current  
 normally closed valves, decreasing pressure with increasing current with internal or tank return

**Applications**

Fan Drives

Motor Range			
Ranges	PGM 511	PGM 620	PGM 640 .
Maximum Flow	95 lpm	95 lpm	95 lpm

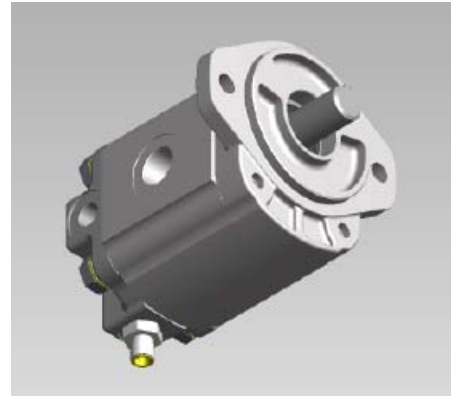
Pressure Range	
Pressure Range	standby pressure differential: 5 bar max. : equal to the max. pressure rating of the motor
Standard Pressure Relief Settings	100 / 210 / 350 bar other's on request
Termination	on request



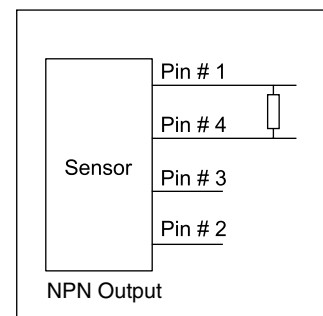
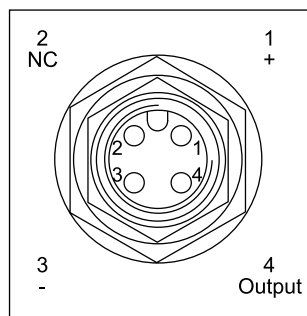
**Speed Sensor**

This rugged, weather resistant speed sensor is a Hall effect device. When externally powered, 30 square wave digital pulses per output shaft revolution are produced. By signal multiplication, 60 pulses per revolution can be obtained. The installation of this economical sensor does not affect the torque or side load capability of the motor into which it is installed.

The sensor has reverse polarity protection but no short circuit protection.



Speed sensor data	
Operating voltage range	4.5...24 V (DC)
Operating temperature	-30°...100° C
Operating frequency range	0...10 KHZ
Sink current	0...20 mA (max.)
Connection	4 Pin (12mm) DIN Standard



Formula pull-up resistor value		(0.25 Watt, 5% tol.)	
Courant/Tensione	4.5...24 V	= Resistor	k Ohm
Sink current	0...20 mA		
State: off (95% +V)			
+ V			State: on (max. 0.4 V DC)
0 V			



**Standard Seal Kits for pumps/motors 500 + 600**

Model Code	Pump Series	TDN
PGP502	Single	391 1832 810
	Tandem	
PGP505	Single (FPM)	391 1832 811
	Tandem	391 1822 101
PGP511	Single	8611-023-00N
	Single (Large size shaft)	8611-023-Q1N
PGP511S	Single (FPM)	8611-023-00V
	Triple (FPM unsealed)	391 1832 770
PGP517	Tandem	8677-023-0NE
	Tandem rear	8677-023-000
PGP517 / PGP505	Triple PGP511	8832-023-0NX
	Tandem (sealed section)	3911832766
PGP517 / PGP511	Pump with outboard bearing	3911832133
PGP517	Split gear	8801-023-00N
	Split gear (Large size sh.)	8801-023-Q1N
PGP517	Split gear (FPM)	8801-023-00V
	Split gear tandem rear	8850-023-000
PGP517	Single	391 1822 071
	Single FPM	391 1832 772
PGP517	Tandem	391 1822 072
	Triple	391 1822 073
PGP517	FPM 517/517/511/511	391 1832 772
PGP517 / PGP505	Tandem	391 1822 254
PGP517 / PGP511	Tandem	391 1822 531

SERIES 600	Pump Series	TDN
PGP620	Single	8682-023-00N
	Tandem rear	8833-023-000
PGP620	Tandem	4070H-023-000
	Tandem (FPM)	3911822474
PGP620	Single (FPM)	8682-023-00V
	Triple Pump	3911832610
PGP620	...T2K5...	3911832635
PGP620/PGP511	Tandem	8766-023-00N
PGP620/PGP511	Tandem (FPM)	8766-023-00V
PGP620/PGP511/511	Triple (sealed)	3911832720
PGP620/620/PGP511	Triple (FPM)	3911832716
PGP640	Single	3911832598
PGP640	Single FPM	3911832611
PGP640	Tandem (M)	3911832696
PGP640/PGP511	Tandem (M)	3911832798
PGP640/620/620	Triple Pump	3911832468

Model Code	Motor Series	TDN
PGM502	Motor BI-ROT	391 1832 812
PGM505	Motor UNI-ROT	391 1822 101
	Motor BI-ROT	391 1801 304
M11 + Bearing	Motor BI-ROT + Bearing	3911801340
PGM511	Motor (Bi + Uni-Rot.)	8301-023-00N
	Motor(large size shaft)	8301-023-Q1M
("S2F3", "S8F4")	Motor with outboard bearing	3911832704
	Motor with plain bearing	8772-023-00S
PGM517	Motor FPM	8301-023-00M
	Motor FPM (large shaft)	3911832086
PGM517	Motor FPM with bearing	3911832087
	Motor UNI-ROT	3911801335
PGM517	Motor UNI-ROT FPM	3911801410
	Motor BI-ROT	3911801336

Model Code	Motor Series	TDN
PGM620	Motor (Bi + Uni-Rot.)	8782-023-00N
PGM640	Motor (Bi + Uni-Rot.)-FPM	8782-023-00V
	Motor (Bi+Uni-Rotat.)	3911801451

**Series PGP 640 Single Unit**

<b>PG P</b>	<b>640</b>	<b>A</b>	<b>0550</b>	<b>C</b>	<b>E4</b>	<b>A4</b>	<b>N</b>	<b>T5</b>	<b>T3</b>	<b>B1</b>	<b>B1</b>
<b>PGP</b>	Gear Design / Type		PARKER Gear Pump								
<b>640</b>	Series										
<b>A</b>	Unit		Single Unit								
<b>0550</b>	Displacement		55.0 cm <sup>3</sup> /rev.								
<b>C</b>	Rotation Direction		Clockwise								
<b>E4</b>	Shaft		SAE „C“ Spline, 14T, 16/32 DP								
<b>A4</b>	Flange		Mounting Flange SAE 4 bolt „C“								
<b>N</b>	Shaft Seal		Shaft Seal NBR								
<b>T5</b>	Side Suction Port		SAE Metric Split Flange 1 1/2"								
<b>T3</b>	Side Pressure Port		SAE Metric Split Flange 1"								
<b>B1</b>	Rear Suction Port		No Port								
<b>B1</b>	Rear Suction Port		No Port								

**Series PGP 517 Single Unit**

<b>PG P</b>	<b>517</b>	<b>A</b>	<b>0230</b>	<b>A</b>	<b>D1</b>	<b>H3</b>	<b>N</b>	<b>L3</b>	<b>L2</b>	<b>B1</b>	<b>B1</b>
<b>PGP</b>	Gear Design / Type		PARKER Gear Pump								
<b>517</b>	Series										
<b>A</b>	Unit		Single Unit								
<b>0230</b>	Displacement		23.0 cm <sup>3</sup> /rev.								
<b>A</b>	Rotation Direction		Counter Clockwise								
<b>D1</b>	Shaft		SAE „B“ Spline, 13T, 16/32 DP								
<b>H3</b>	Flange		Mounting Flange SAE 2 bolt „B“								
<b>N</b>	Shaft Seal		Shaft Seal NBR								
<b>L3</b>	Side Suction Port		Ø27 Diamond Flange								
<b>L2</b>	Side Pressure Port		Ø19 Diamond Flange								
<b>B1</b>	Rear Suction Port		No Port								
<b>B1</b>	Rear Pressure Port		No Port								

**Series PGP 620 Single Unit**

<b>PG P</b>	<b>620</b>	<b>A</b>	<b>0330</b>	<b>C</b>	<b>D1</b>	<b>H3</b>	<b>N</b>	<b>D6</b>	<b>D5</b>	<b>B1</b>	<b>B1</b>
<b>PGP</b>	Gear Design / Type		PARKER Gear Pump								
<b>620</b>	Series										
<b>A</b>	Unit		Single Unit								
<b>0330</b>	Displacement		33.0 cm <sup>3</sup> /rev.								
<b>C</b>	Rotation Direction		Clockwise								
<b>D1</b>	Shaft		SAE „B“ Spline, 13T, 16/32 DP								
<b>H3</b>	Flange		Mounting Flange SAE 2 bolt „B“								
<b>N</b>	Shaft Seal		Shaft Seal NBR								
<b>D6</b>	Side Suction Port		1 5/16 - 12 UN Thread								
<b>D5</b>	Side Pressure Port		1 1/16 - 12 UN Thread								
<b>B1</b>	Rear Suction Port		No Port								
<b>B1</b>	Rear Pressure Port		No Port								

**Series PGP 511 Tandem Unit**

<b>PG P</b>	<b>511</b>	<b>B</b>	<b>0100</b>	<b>A</b>	<b>C1</b>	<b>H2</b>	<b>N</b>	<b>J7</b>	<b>H3</b>	<b>S - 511</b>	<b>A</b>	<b>0110</b>	<b>X</b>	<b>J7</b>	<b>J5</b>	<b>B1</b>	<b>B1</b>
<b>PGP</b>	Gear Design / Type		PARKER Gear Pump														
<b>511</b>	Series																
<b>B</b>	Unit		Single Unit														
<b>0100</b>	Displacement		10.0 cm <sup>3</sup> /rev.														
<b>A</b>	Rotation Direction		Counter Clockwise														
<b>C1</b>	Drive shaft		SAE 19-4 Spline 11T, 16/32 DP														
<b>H2</b>	Flange		Mounting Flange SAE 2 bolt „A“														
<b>N</b>	Shaft Seal		Shaft Seal NBR														
<b>j7</b>	Side Suction Port		Ø - 20 mm European Flange														
<b>J5</b>	Side Pressure Port		Ø - 15 mm European Flange														
<b>S</b>	Section Connection		Separate Inlets														
<b>511</b>	Series Second Section																
<b>A</b>	Unit		Single Unit														
<b>110</b>	Displacement		11.0 cm <sup>3</sup> /rev.														
<b>X</b>	Shaft Seal		No Seal														
<b>J7</b>	Side Suction Port		Ø - 20 mm European Flange														
<b>J5</b>	Side Pressure Port		Ø - 15 mm European Flange														
<b>B1</b>	Rear Suction Port		No Port														
<b>B1</b>	Rear Pressure Port		No Port														

# Parker Worldwide

## Europe, Middle East, Africa

**AE – United Arab Emirates,** Dubai

Tel: +971 4 8127100  
parker.me@parker.com

**AT – Austria,** Wiener Neustadt  
Tel: +43 (0)2622 23501-0  
parker.austria@parker.com

**AT – Eastern Europe,** Wiener Neustadt  
Tel: +43 (0)2622 23501 900  
parker.easteurope@parker.com

**AZ – Azerbaijan,** Baku  
Tel: +994 50 22 33 458  
parker.azerbaijan@parker.com

**BE/LU – Belgium,** Nivelles  
Tel: +32 (0)67 280 900  
parker.belgium@parker.com

**BG – Bulgaria,** Sofia  
Tel: +359 2 980 1344  
parker.bulgaria@parker.com

**BY – Belarus,** Minsk  
Tel: +375 17 209 9399  
parker.belarus@parker.com

**CH – Switzerland,** Etoy  
Tel: +41 (0)21 821 87 00  
parker.switzerland@parker.com

**CZ – Czech Republic,** Klecany  
Tel: +420 284 083 111  
parker.czechrepublic@parker.com

**DE – Germany,** Kaarst  
Tel: +49 (0)2131 4016 0  
parker.germany@parker.com

**DK – Denmark,** Ballerup  
Tel: +45 43 56 04 00  
parker.denmark@parker.com

**ES – Spain,** Madrid  
Tel: +34 902 330 001  
parker.spain@parker.com

**FI – Finland,** Vantaa  
Tel: +358 (0)20 753 2500  
parker.finland@parker.com

**FR – France,** Contamine s/Arve  
Tel: +33 (0)4 50 25 80 25  
parker.france@parker.com

**GR – Greece,** Athens  
Tel: +30 210 933 6450  
parker.greece@parker.com

**HU – Hungary,** Budaoers  
Tel: +36 23 885 470  
parker.hungary@parker.com

**IE – Ireland,** Dublin  
Tel: +353 (0)1 466 6370  
parker.ireland@parker.com

**IT – Italy,** Corsico (MI)  
Tel: +39 02 45 19 21  
parker.italy@parker.com

**KZ – Kazakhstan,** Almaty  
Tel: +7 7273 561 000  
parker.easteurope@parker.com

**NL – The Netherlands,** Oldenzaal  
Tel: +31 (0)541 585 000  
parker.nl@parker.com

**NO – Norway,** Asker  
Tel: +47 66 75 34 00  
parker.norway@parker.com

**PL – Poland,** Warsaw  
Tel: +48 (0)22 573 24 00  
parker.poland@parker.com

**PT – Portugal,** Leca da Palmeira  
Tel: +351 22 999 7360  
parker.portugal@parker.com

**RO – Romania,** Bucharest  
Tel: +40 21 252 1382  
parker.romania@parker.com

**RU – Russia,** Moscow  
Tel: +7 495 645-2156  
parker.russia@parker.com

**SE – Sweden,** Spånga  
Tel: +46 (0)8 59 79 50 00  
parker.sweden@parker.com

**SK – Slovakia,** Banská Bystrica  
Tel: +421 484 162 252  
parker.slovakia@parker.com

**SL – Slovenia,** Novo Mesto  
Tel: +386 7 337 6650  
parker.slovenia@parker.com

**TR – Turkey,** Istanbul  
Tel: +90 216 4997081  
parker.turkey@parker.com

**UA – Ukraine,** Kiev  
Tel: +380 44 494 2731  
parker.ukraine@parker.com

**UK – United Kingdom,** Warwick  
Tel: +44 (0)1926 317 878  
parker.uk@parker.com

**ZA – South Africa,** Kempton Park  
Tel: +27 (0)11 961 0700  
parker.southafrica@parker.com

## North America

**CA – Canada,** Milton, Ontario  
Tel: +1 905 693 3000

**US – USA,** Cleveland (industrial)  
Tel: +1 216 896 3000

**US – USA,** Elk Grove Village (mobile)  
Tel: +1 847 258 6200

## Asia Pacific

**AU – Australia,** Castle Hill  
Tel: +61 (0)2-9634 7777

**CN – China,** Shanghai  
Tel: +86 21 2899 5000

**HK – Hong Kong**  
Tel: +852 2428 8008

**ID – Indonesia,** Tangerang  
Tel: +62 21 7588 1906

**IN – India,** Mumbai  
Tel: +91 22 6513 7081-85

**JP – Japan,** Fujisawa  
Tel: +81 (0)4 6635 3050

**KR – South Korea,** Seoul  
Tel: +82 2 559 0400

**MY – Malaysia,** Shah Alam  
Tel: +60 3 7849 0800

**NZ – New Zealand,** Mt Wellington  
Tel: +64 9 574 1744

**SG – Singapore**  
Tel: +65 6887 6300

**TH – Thailand,** Bangkok  
Tel: +662 717 8140

**TW – Taiwan,** New Taipei City  
Tel: +886 2 2298 8987

**VN – Vietnam,** Ho Chi Minh City  
Tel: +84 8 3999 1600

## South America

**AR – Argentina,** Buenos Aires  
Tel: +54 3327 44 4129

**BR – Brazil,** Cachoeirinha RS  
Tel: +55 51 3470 9144

**CL – Chile,** Santiago  
Tel: +56 2 623 1216

**MX – Mexico,** Toluca  
Tel: +52 72 2275 4200

### EMEA Product Information Centre

Free phone: 00 800 27 27 5374

(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL, IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)

### US Product Information Centre

Toll-free number: 1-800-27 27 537

www.parker.com

