

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.

Characteristics

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 cm³/rev. A wide variety of standard options is available to meet specific application requirements.

Heavy-duty aluminium Pumps and Motors Series PGP, PGM 500



Characteristics

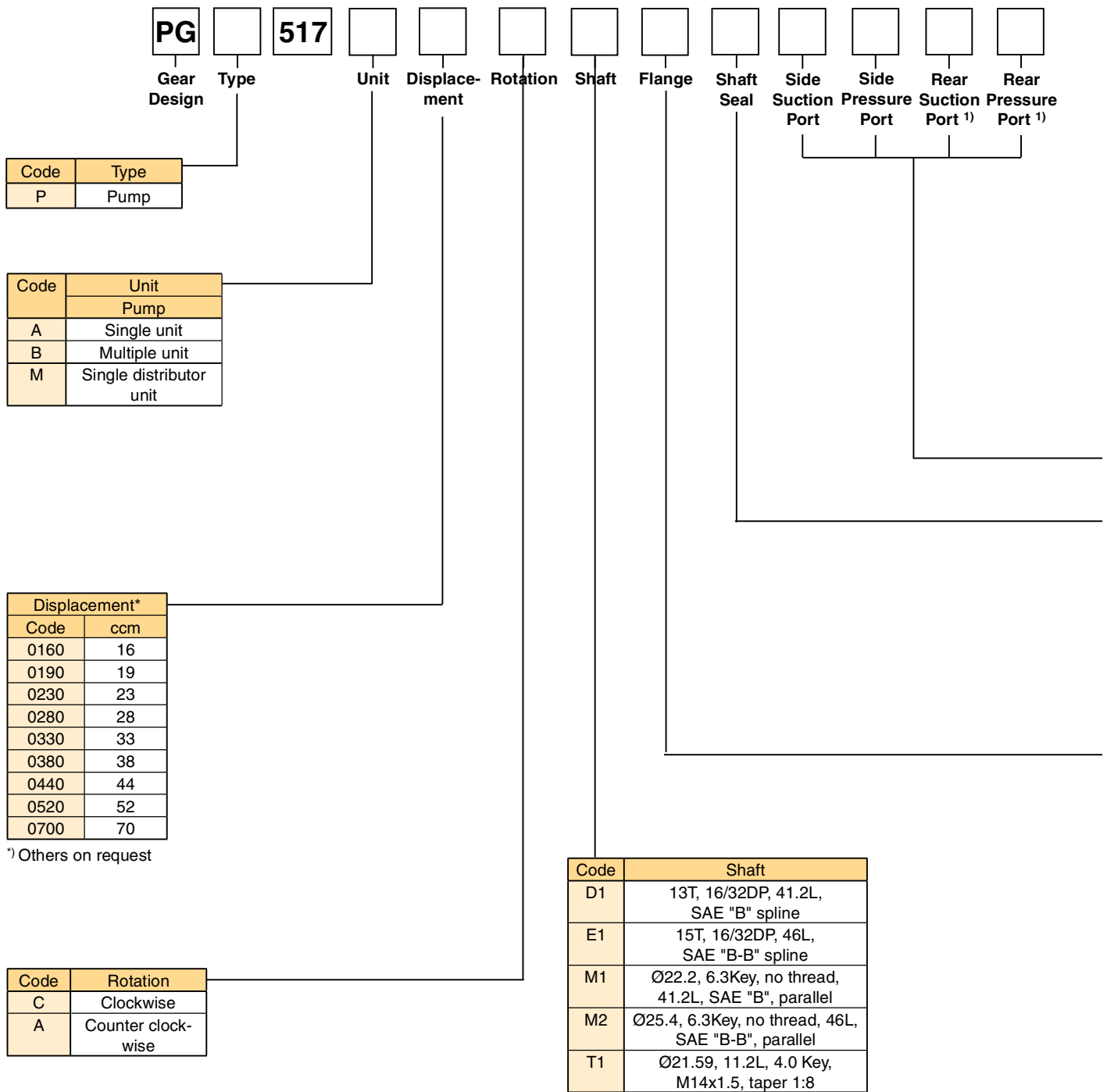
- Up to 280 bar continuous operation**
 High strength materials and large journal diameters provide low bearing loads for high pressure operation.
- Low noise**
 PGP 502 - 9 tooth gear profile, PGP 505 and 517 - 13 tooth gear profile, PGP 511 - 12 tooth gear profile and optimized flow metering provide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

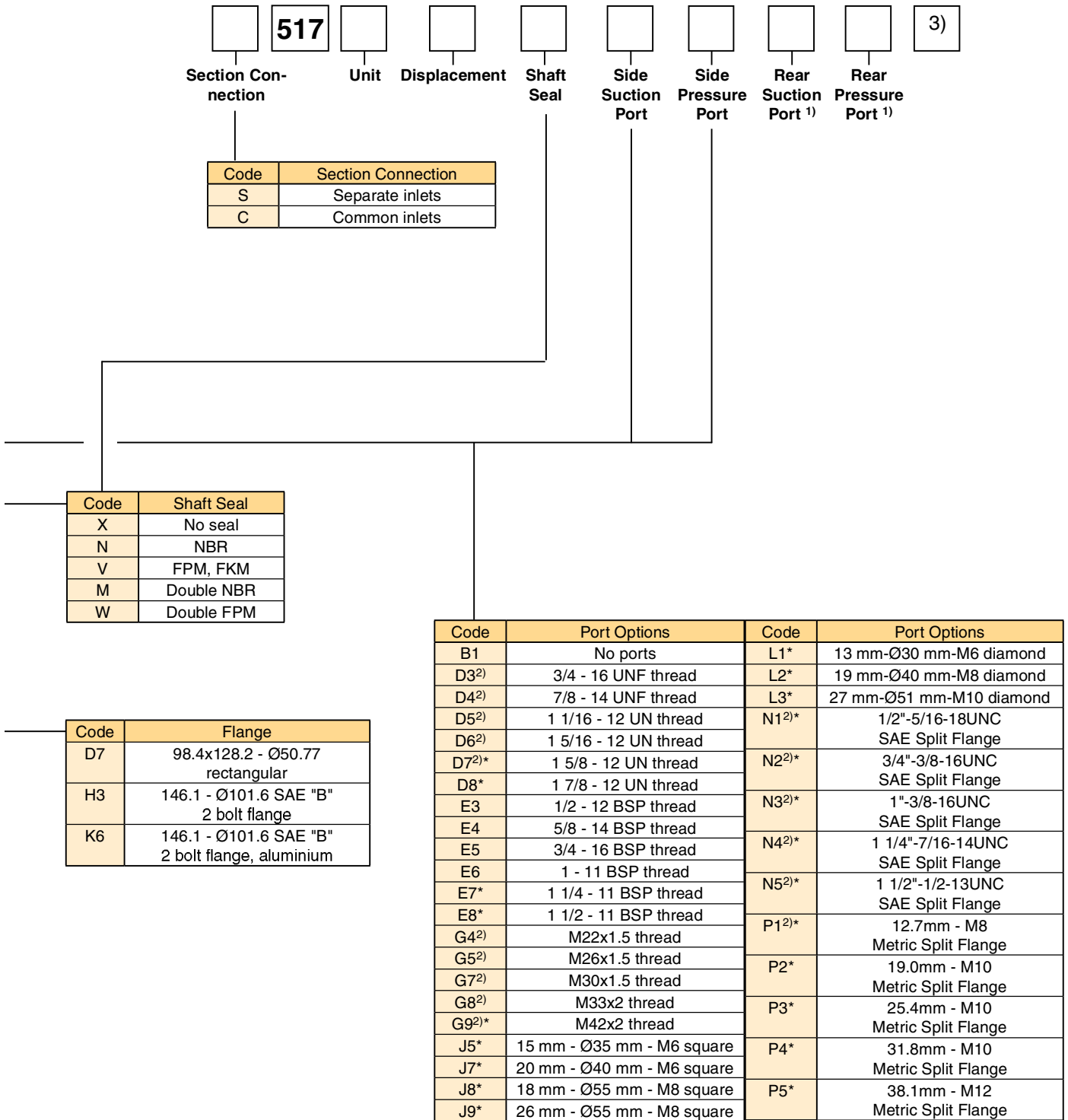
Pump type	Heavy-duty, aluminium, external gear.
Mounting	SAE, rectangular, thru-bolt standard specials on request.
Ports	SAE and metric split flanges and others
Shaft style	SAE splined, keyed, tapered, cylindrical tang drive, specials on request
Speed	500 - 5000 rpm, see Technical Data
Theor. displacement	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 ² /s (511 & 517) 20 to 1000 mm ² /s (502 & 505) Max. permissible operating pressure dependent on viscosity. Viscosity range for cold start 1000 to 2000 mm ² /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"> Available in two or three section the limitations shown in the shaft loading rating table in this catalogue. Max. load is determined by adding the torque values for each pumping section that will be simultaneously loaded.
Separate or common inlet capability	Separate inlet configuration: <ul style="list-style-type: none"> Each gear housing has individual inlet and outlet ports. Common inlet configuration: <ul style="list-style-type: none"> Two gear sets share a common inlet.



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.

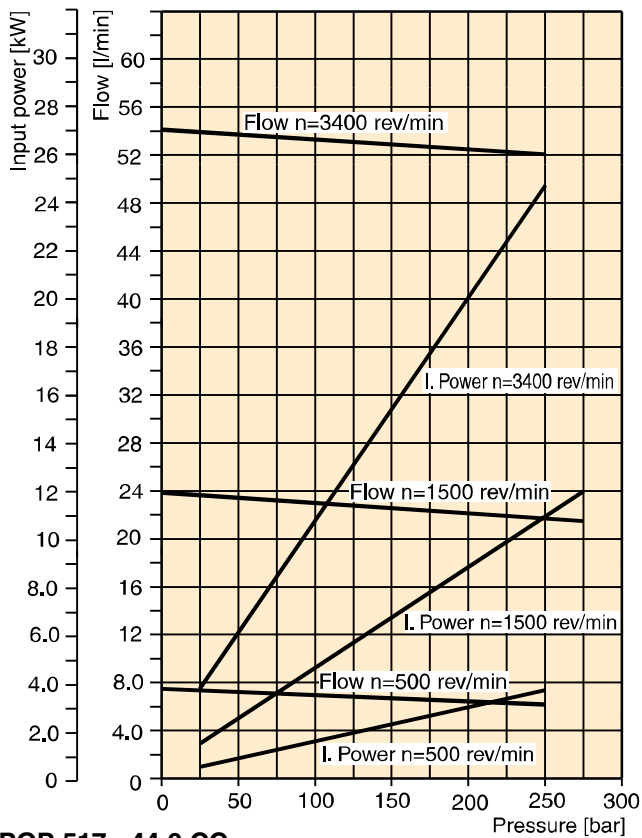


2) Non standard, on request only

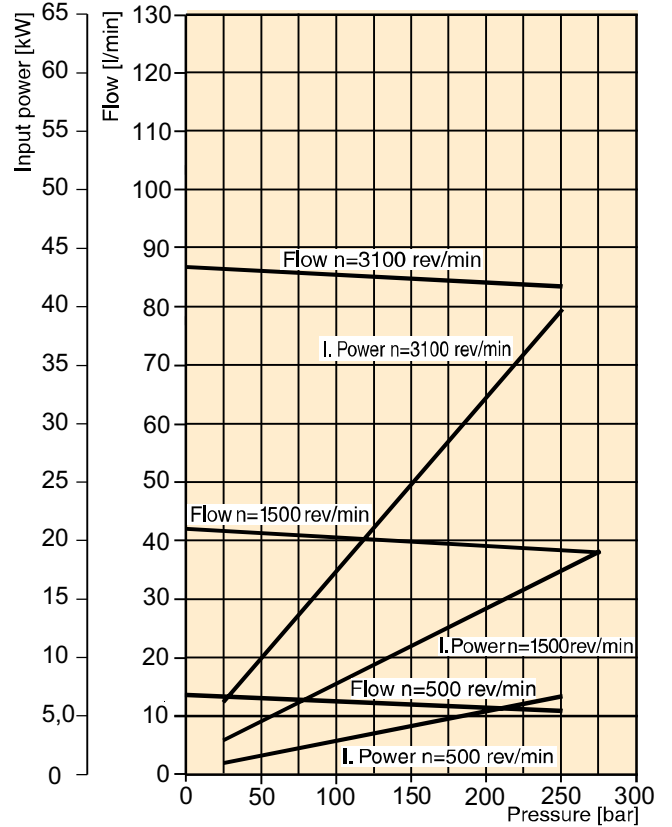
*) Not usable for rear ports

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

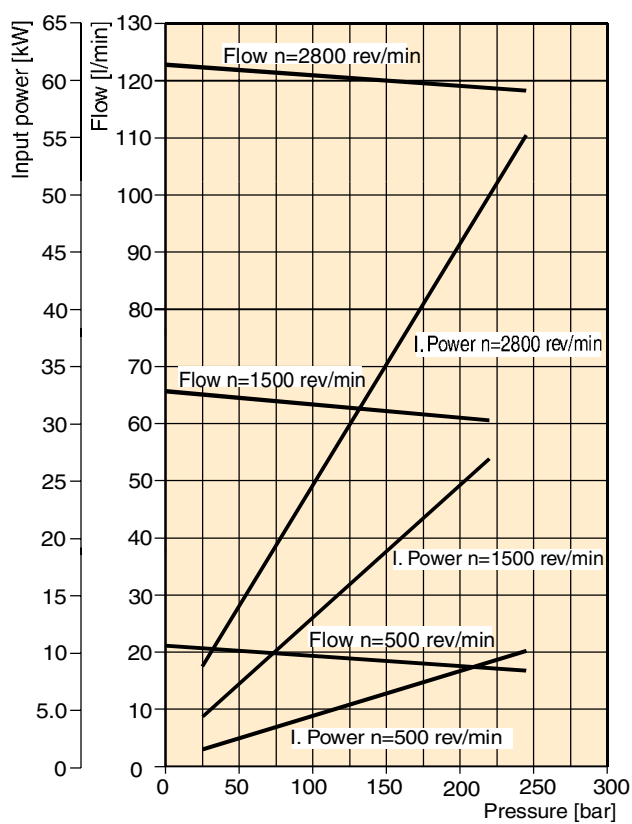
PGP 517- 16.0 CC



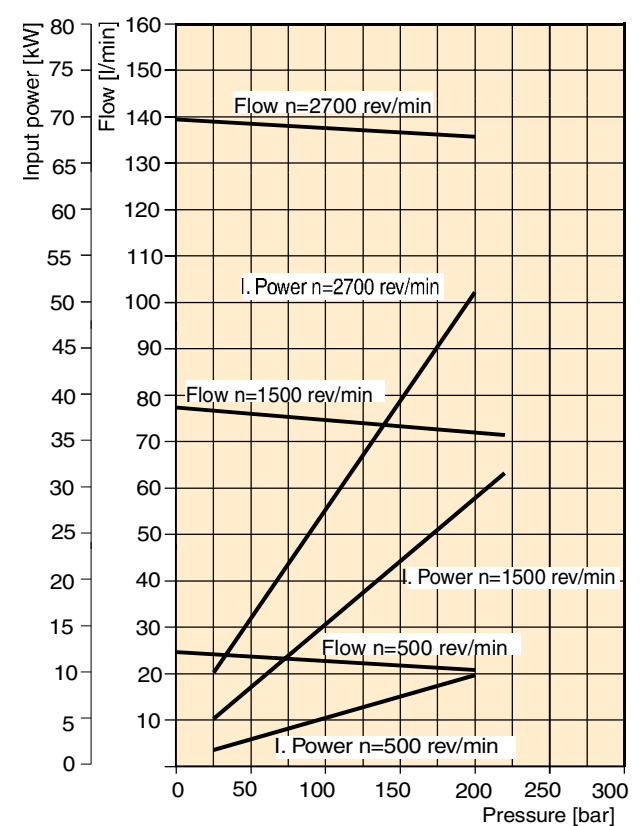
PGP 517 -28.0 CC



PGP 517 - 44.0 CC



PGP 517- 52.0 CC



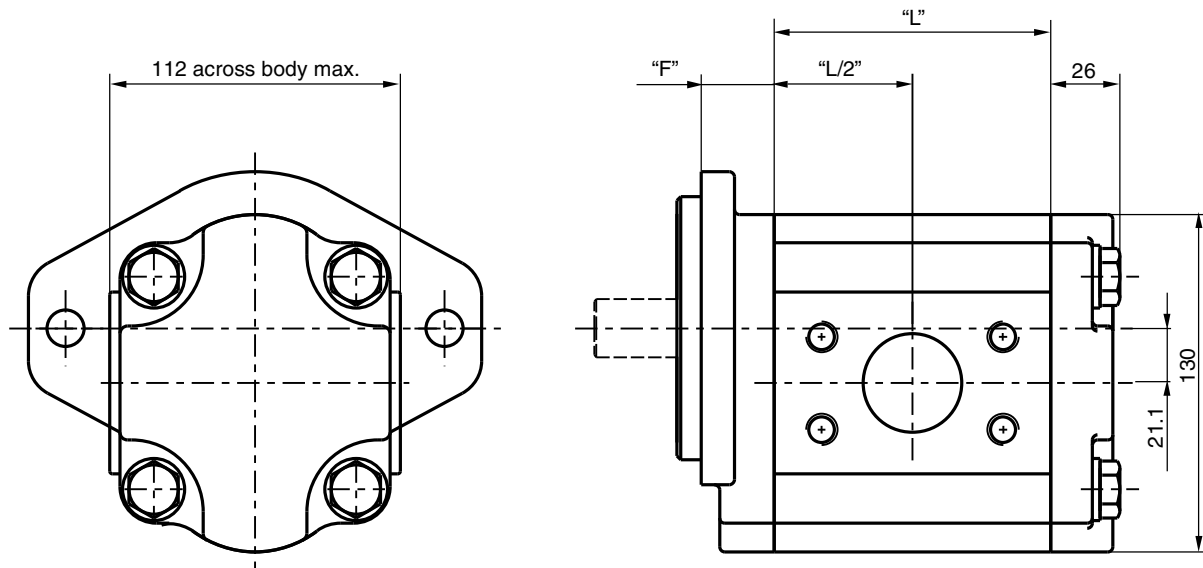
Fluid Temperature = 45± 2°C
 Viscosity = 36 mm²/s
 Inlet Pressure = 0.9 + 0.1 bar absolute

PGP 517 Specification - Standard Displacements

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

¹⁾ Single pump with Flange H3 and Port end cover B1

Single Unit PGP 517

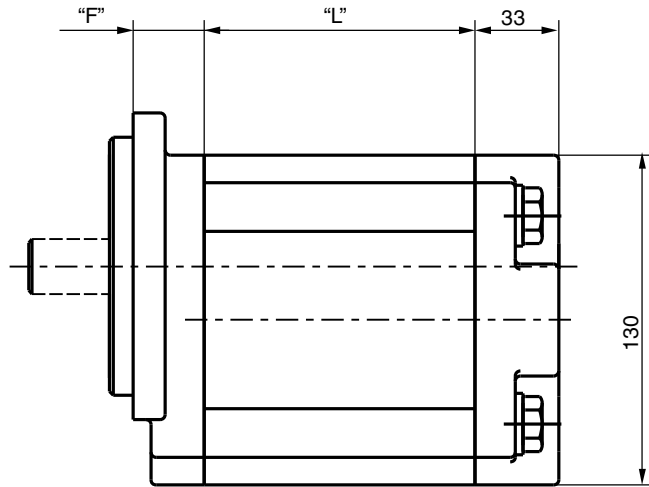
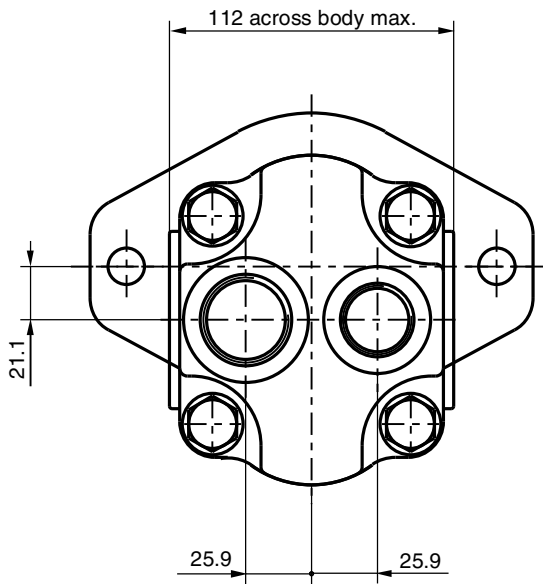


Dimension "L" see table above

Dimension "F" see flanges on page 43

Dimension Shafts see pages 46 to 48

Single Unit PGP 517 with rear ports

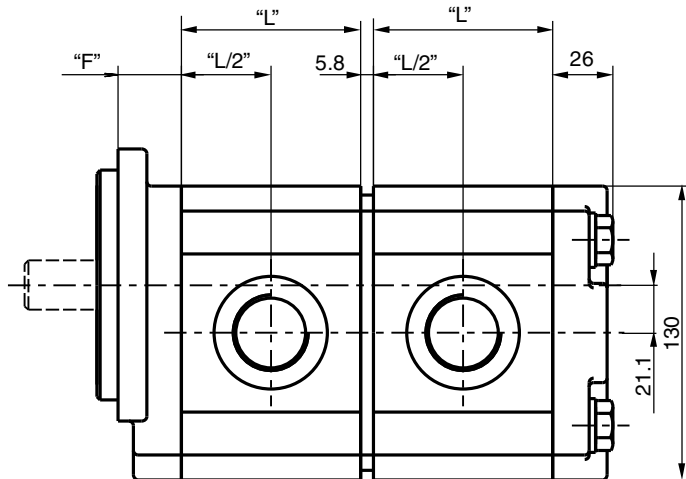
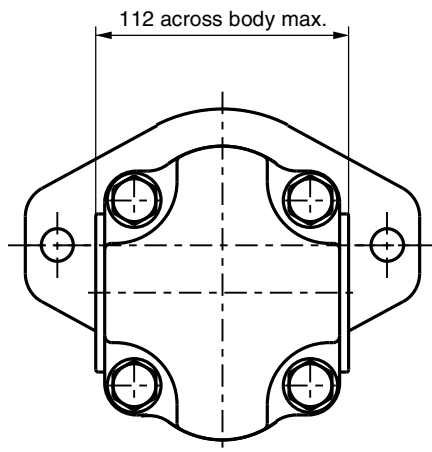


Dimension "L" see table on page 41

Dimension "F" see flanges on page 43

Dimension Shafts see pages 46 to 48

Tandem Unit PGP 517



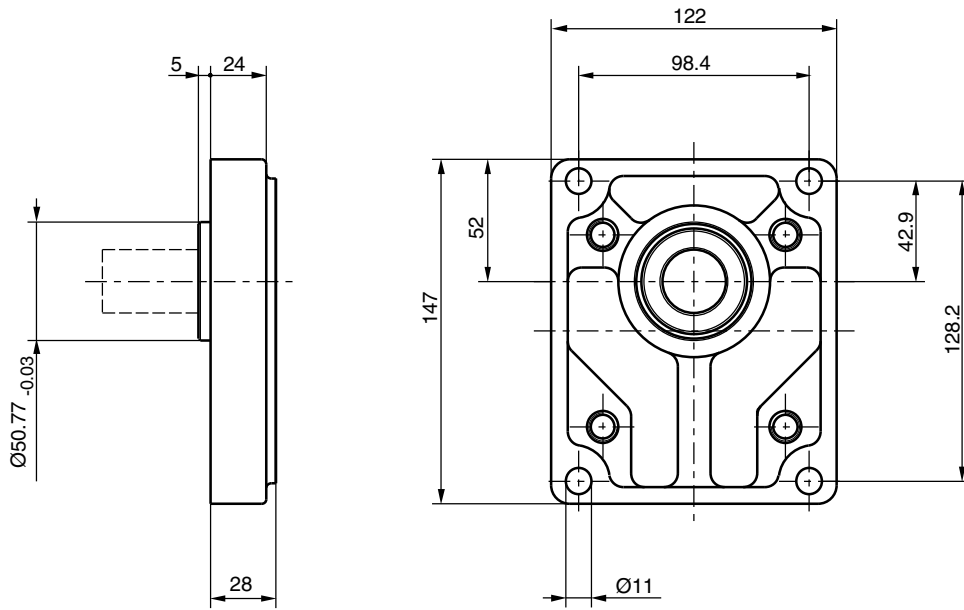
Dimension "L" see table on page 41

Dimension "F" see flanges on page 43

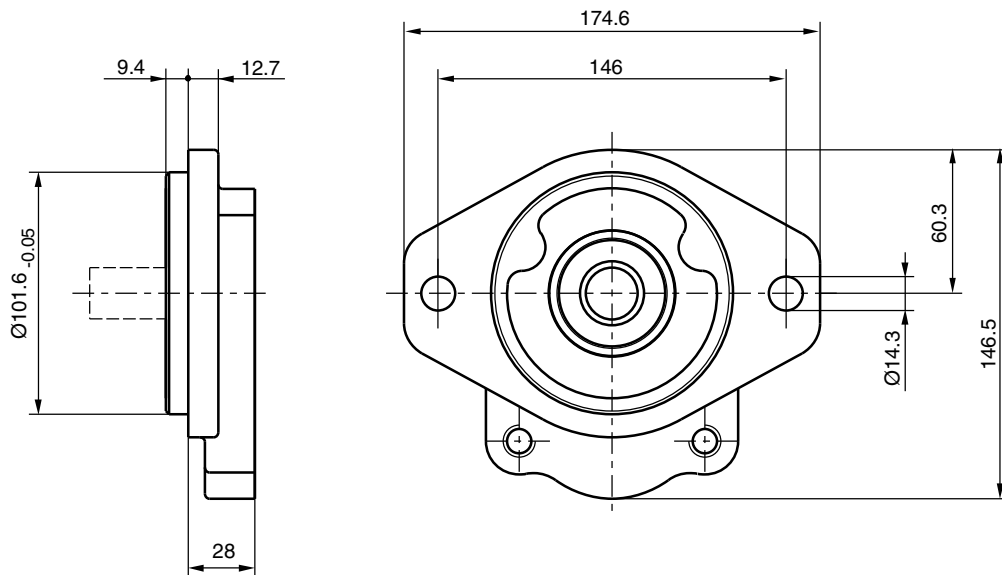
Dimension Shafts see pages 46 to 48

PGP 517 Mounting Flange

Code D7



Code H3/K6

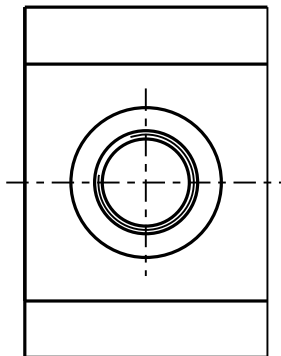
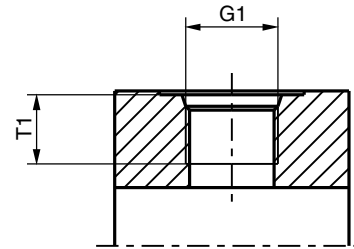
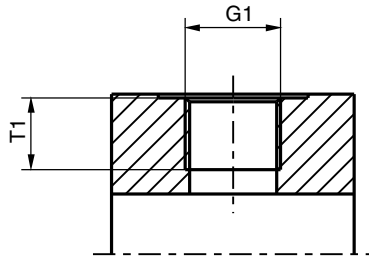


PGP 517 Porting

Code E
 British Standard Pipe

Code G
 Metric straight thread

Code D
 SAE straight thread



PGP 517

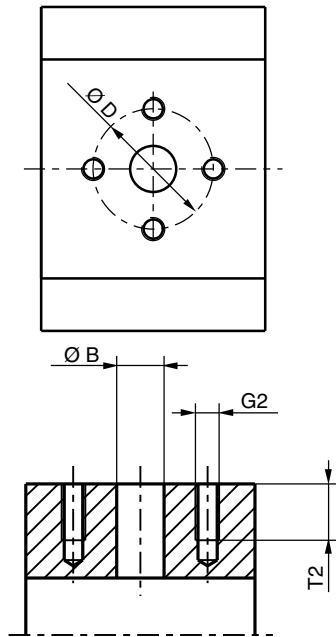
Code	G1 Thread	T1 Dimensions
D2	9/16-18 UNF	12.7
D3	3/4-16 UNF	14.3
D4	7/8-14 UNF	16.7
D5	1 1/16-12 UN	19.0
D6	1 5/16-12 UN	19.0
D7	1 5/8-12 UN	19.0
D8	1 7/8-12 UN	19.0
E2	3/8-19 BSP	12.0
E3	1/2-14 BSP	14.0
E4	5/8-14 BSP	16.3
E5	3/4-16 BSP	16.0
E6	1-11 BSP	18.0
E7	1 1/4-11 BSP	20.0
E8	1 1/2-11 BSP	22.0
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

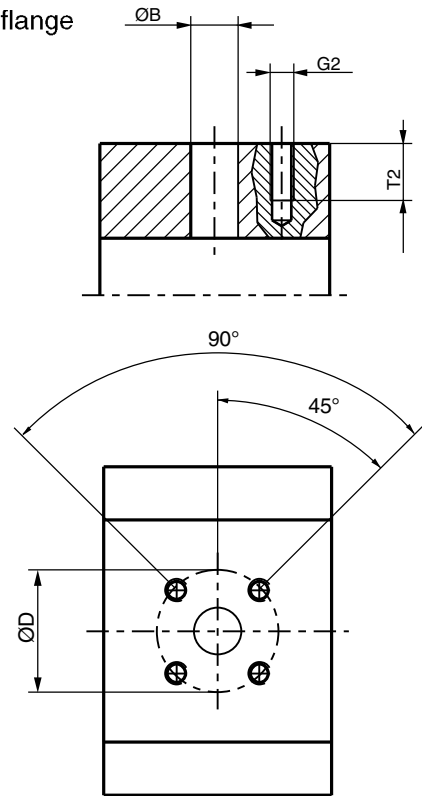
Code L

4-Bolt flange



Code J

European flange

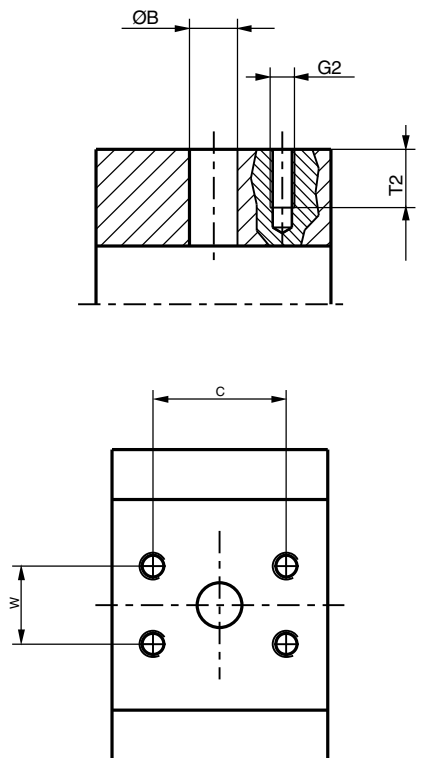


Code N

SAE split flange

Code P

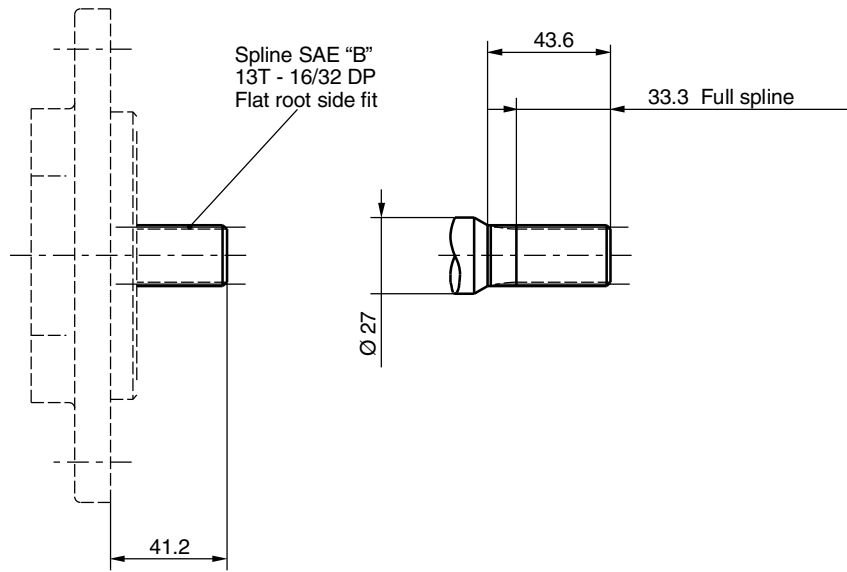
SAE split flange metric thread



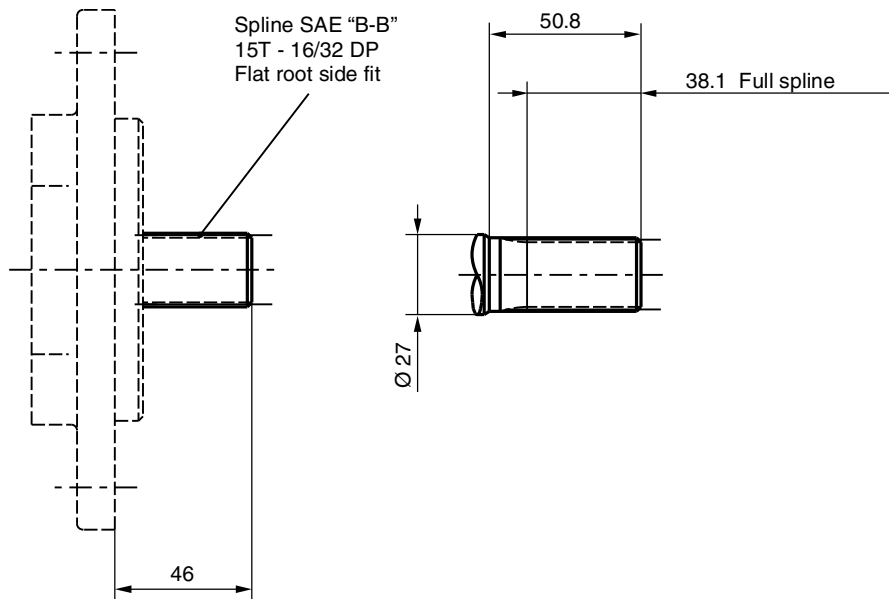
PGP 517

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

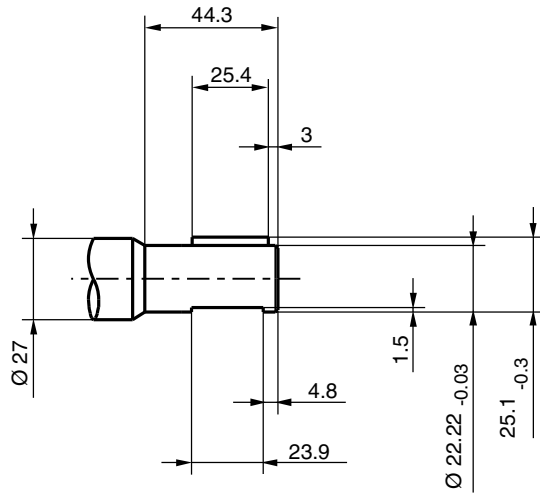
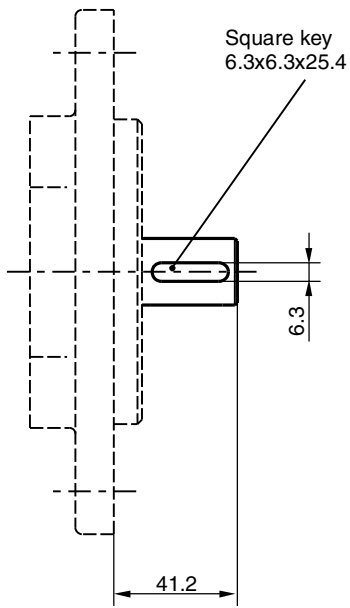
PGP 517 Drive Shaft
Code D1



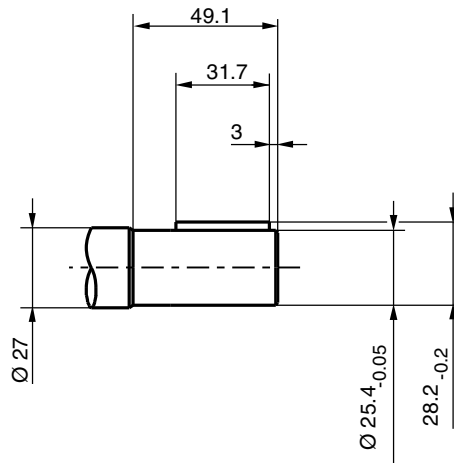
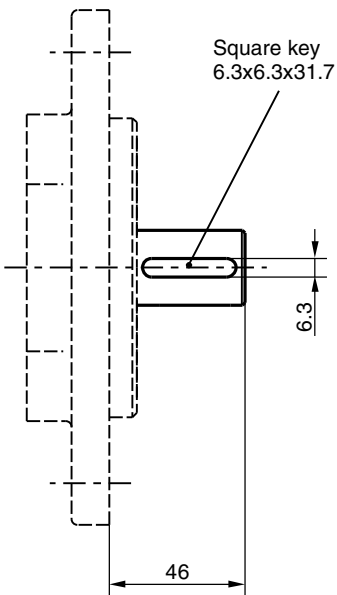
Code E1



PGP 517 Drive Shaft
Code M1

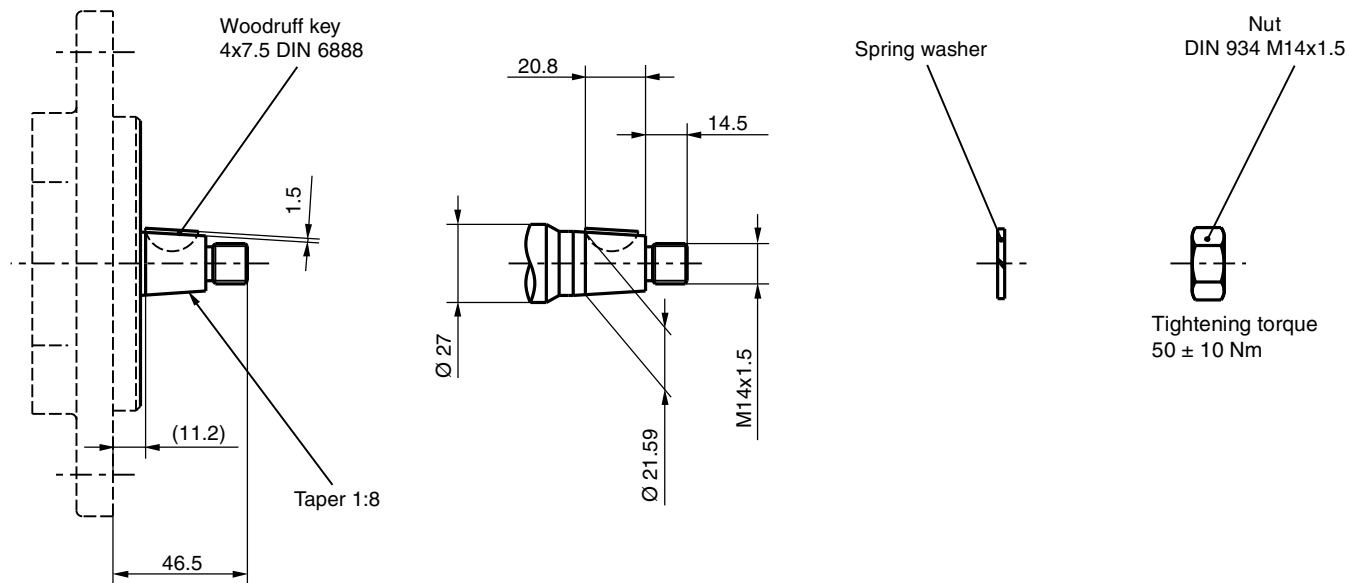


Code M2



PGP 517 Drive Shaft

Code T1



PGP/PGM 517 - Shaft Load Capacity

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

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

