

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.



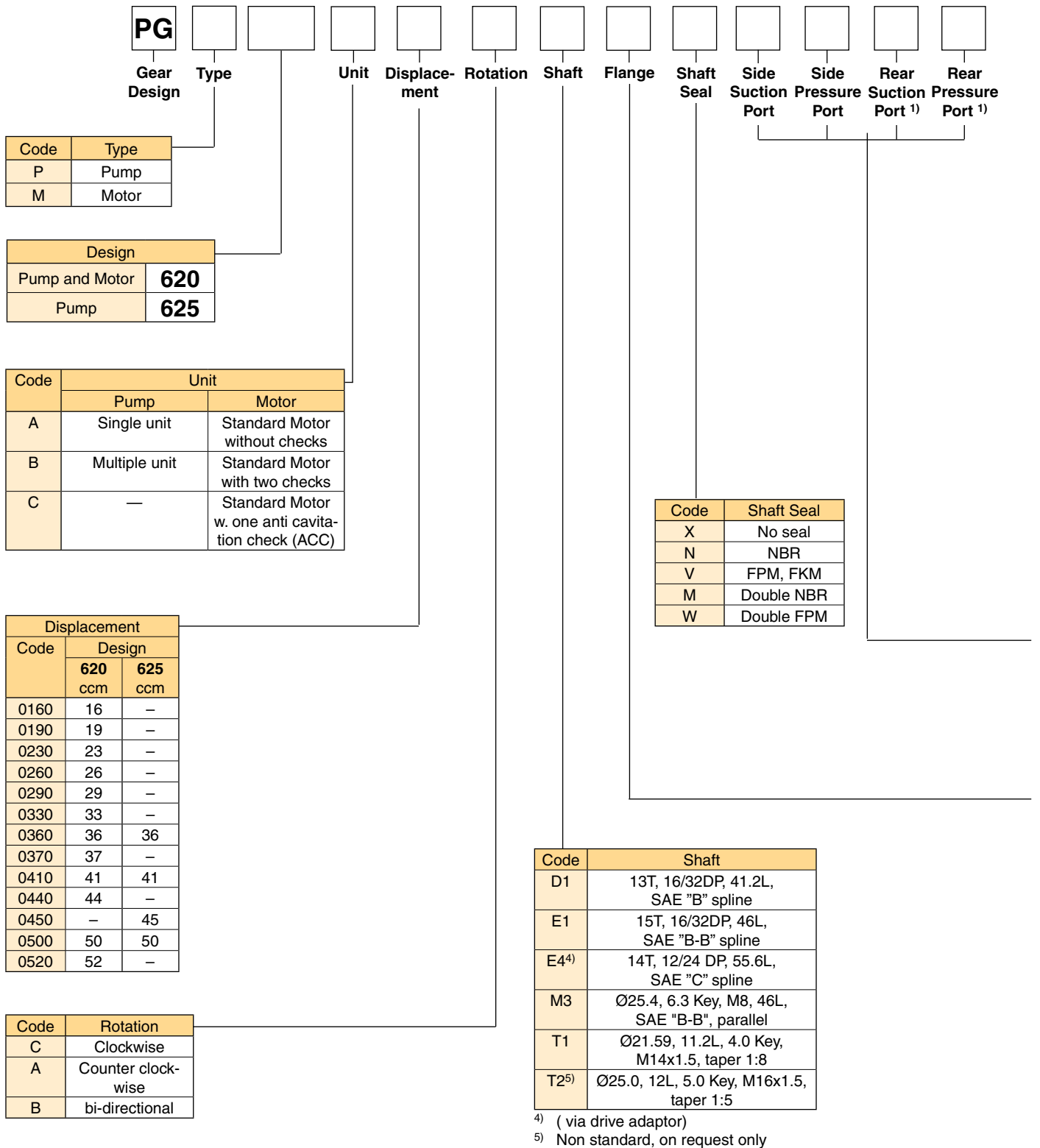
Features

- Unique interlocking body design
- 12 tooth gears, optimize 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.

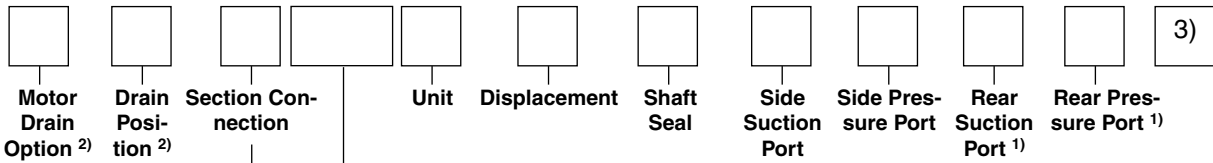
Fluid viscosity	Range of operating viscosity 8 to 1000 mm ² /s. Max. permissible operating pressure dependent on viscosity. Viscosity range for cold start 1000 to 2000 mm ² /s at operating pressure p ≤ 10 bar and speed n ≤ 1500 rpm.
Range of ambient temperature	-40 °C to +70 °C
Filtration	According to 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 configuration. • Max. shaft load must be conform to 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⁾ Only for motors



Design	
Pump and Motor	620
Pump	625

Code	Section Connection
S	Separate inlets
C	Common inlets

Code	Drain Position
2 ⁶⁾	Drain on bottom
3 ⁶⁾	Drain on top
4	Rear drain

⁶⁾ 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

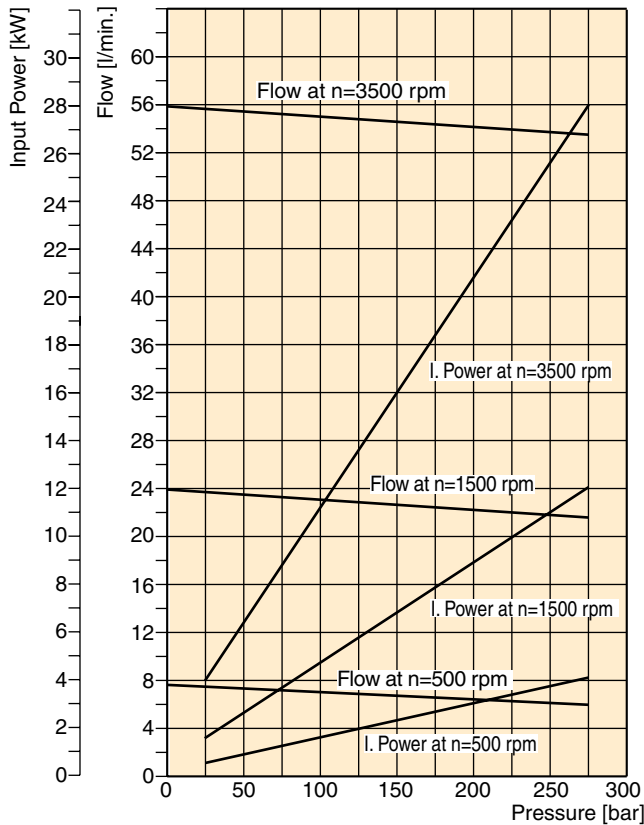
Code	Port Options	Code	Port Options
B1	No ports	S2 ⁶⁾ *	3/4"-3/8-16 UNC SAE Split Flange
D3 ⁶⁾	3/4 - 16 UNF thread	S3 ⁶⁾ *	1"-3/8-16 UNC SAE Split Flange
D4 ⁶⁾	7/8 - 14 UNF thread	S4 ⁶⁾ *	1 1/4"-7/16-14 UNC SAE Split Flange
D5 ⁶⁾	1 1/16 - 12 UN thread	S5 ⁶⁾ *	1 1/2"-1/2-13 UNC SAE Split Flange
D6 ⁶⁾ *	1 5/16 - 12 UN thread	S6 ⁶⁾ *	2"-1/2-13 UNC SAE Split Flange
D7 ⁶⁾ *	1 5/8 - 12 UN thread	T2*	19.0 mm - M10 3/4" Metric Split Flange
D8 ⁶⁾ *	1 7/8 - 12 UN thread	T3*	25.4 mm - M10 1" Metric Split Flange
E3	1/2 - 14 BSP thread	T4*	31.8 mm - M10 1 1/4" Metric Split Flange
E4	5/8 - 14 BSP thread	T5*	38.1 mm - M12 1 1/2" Metric Split Flange
E5	3/4 - 16 BSP thread	T6*	50.8 mm - M12 2" 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		

⁶⁾ Non standard, on request only

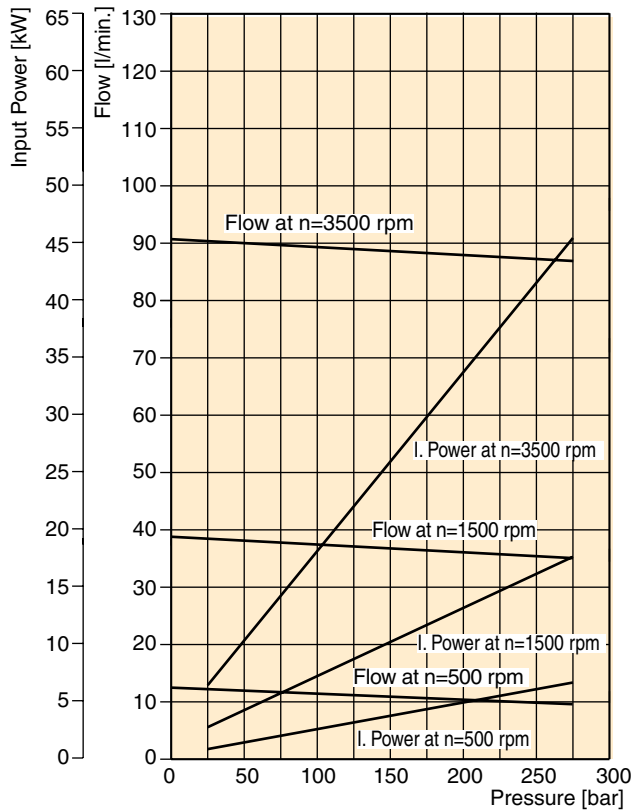
*) Not usable for rear ports

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

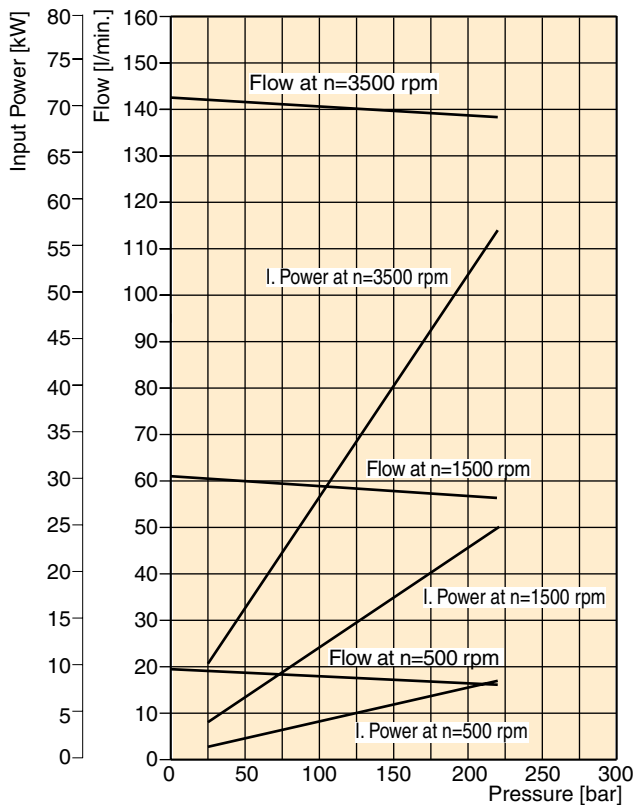
PGP 620 - 16.0 CC



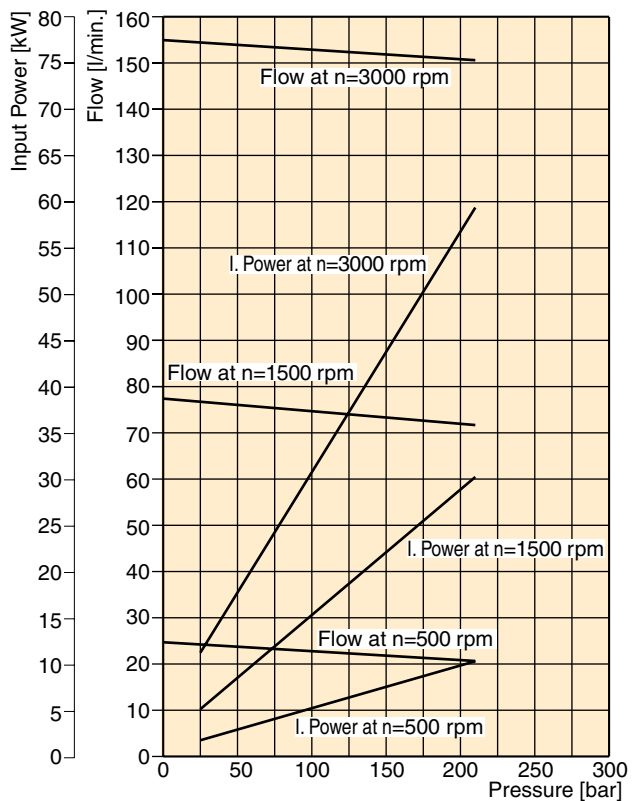
PGP 620 - 26.0 CC



PGP 620 - 41.0 CC



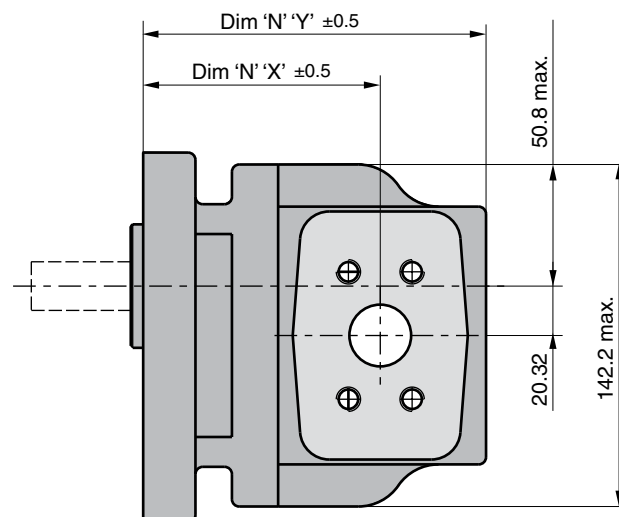
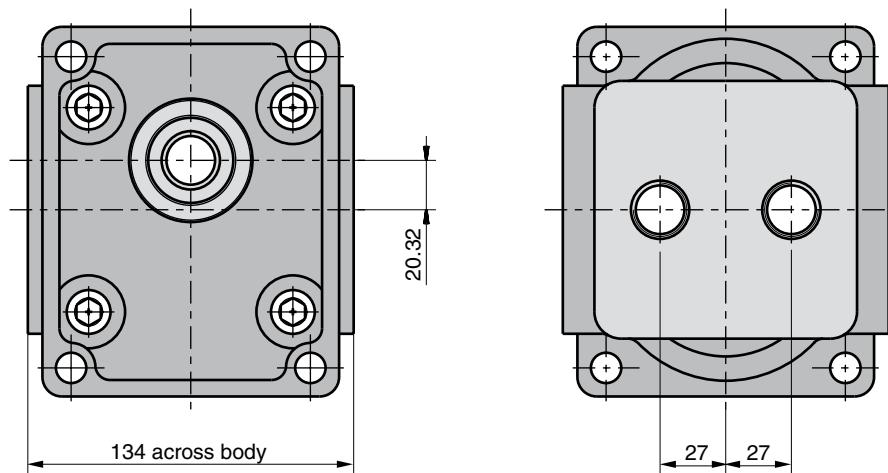
PGP 620 - 52.0 CC



Fluid Temperature = 45 ± 2 °C
 Viscosity = $36 \text{ mm}^2/\text{s}$
 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	0500	0520
	cm ³ /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
Max. Continuous Pressure	bar	275	275	275	275	275	275	250	250	220	210	210	210
Minimum Speed @ Max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet pressure	rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3000	3000
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 "Y"	mm	122.7	126.0	130.4	133.7	137.0	141.4	144.7	145.8	150.2	153.5	160.1	162.3
Approx. Weight	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

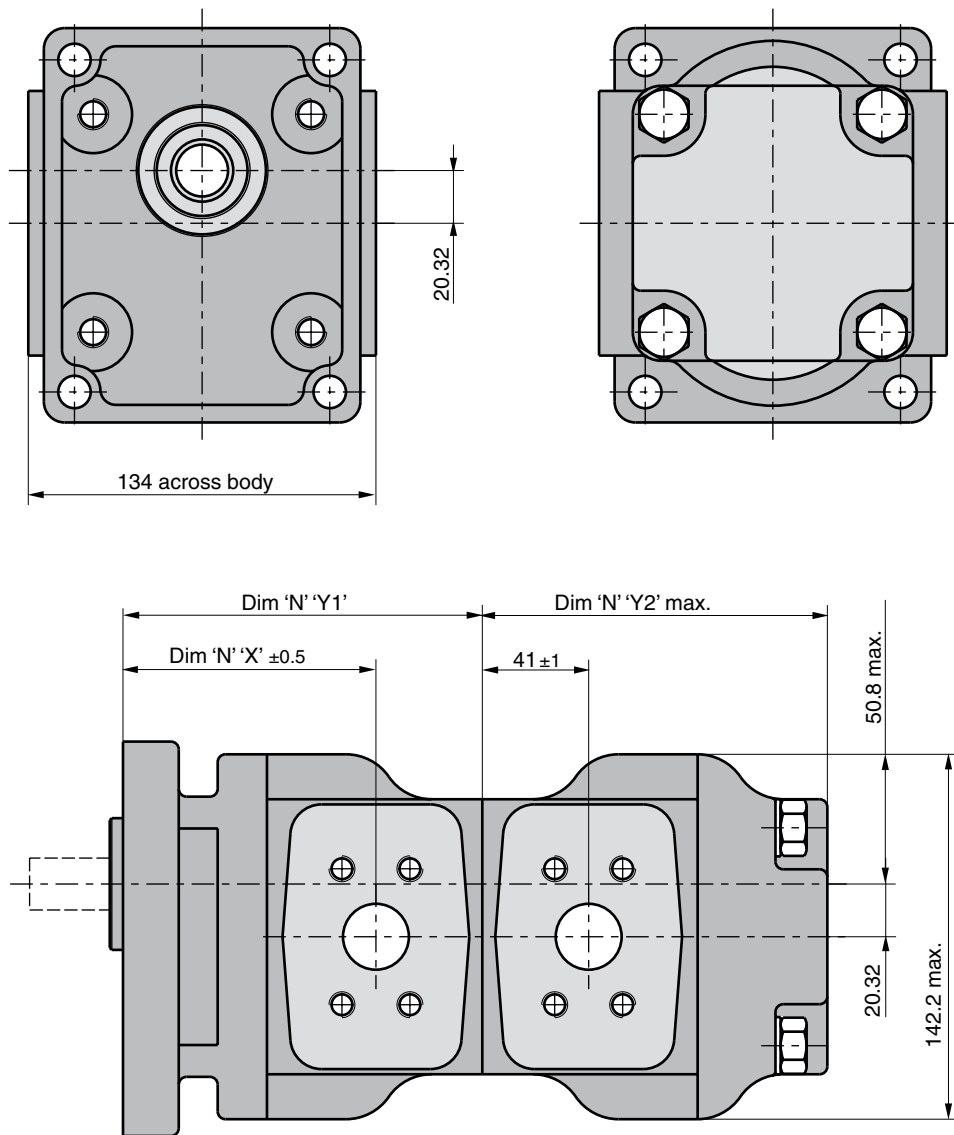


Dimension Flanges see pages 63 to 64

Dimension Shafts see pages 67 to 68

PGP/PGM 620 Specification - Standard Displacements - Tandem Unit

Pump Displacement	Code	0160	0190	0230	0260	0290	0330	0360	0370	0410	0440	0500	0520
	cm ³ /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

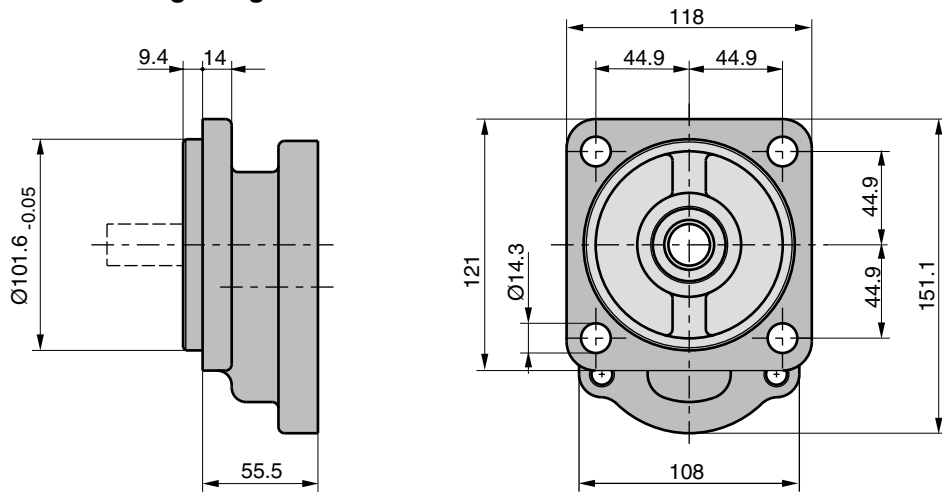


Dimension Flanges see pages 63 to 64

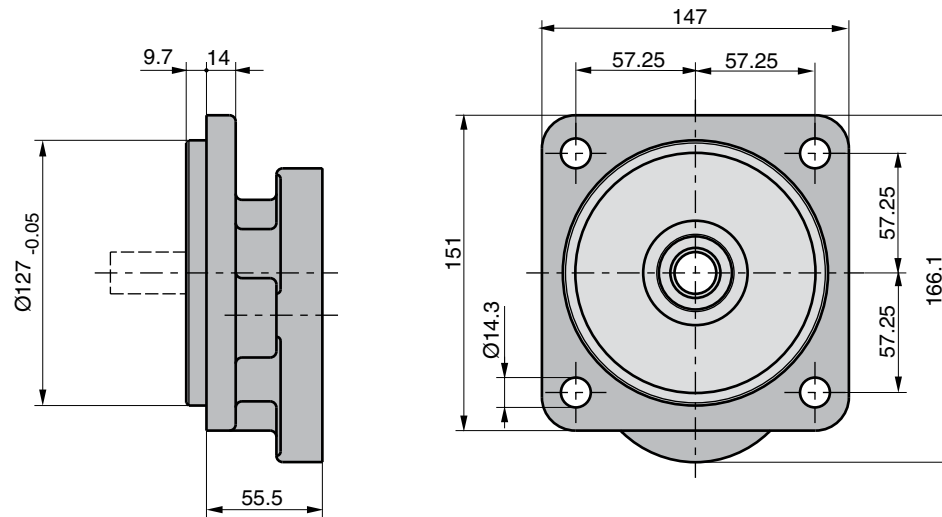
Dimension Shafts see pages 67 to 68

PGP/PGM 620 / 625 Mounting Flange

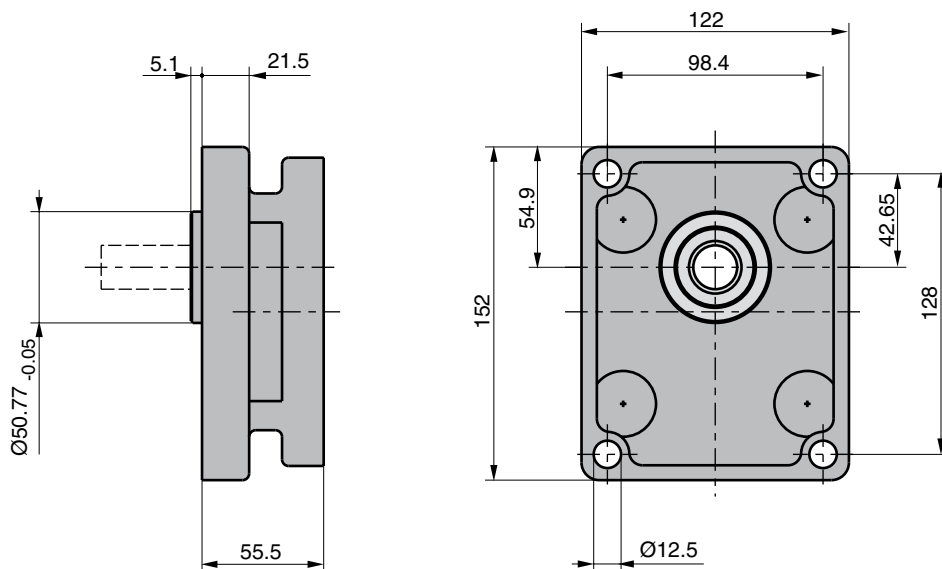
Code A3



Code A4

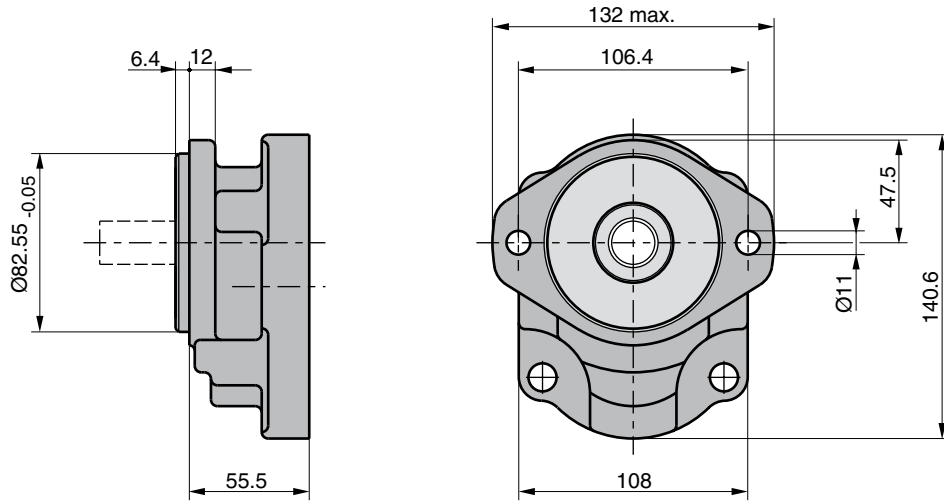


Code D7

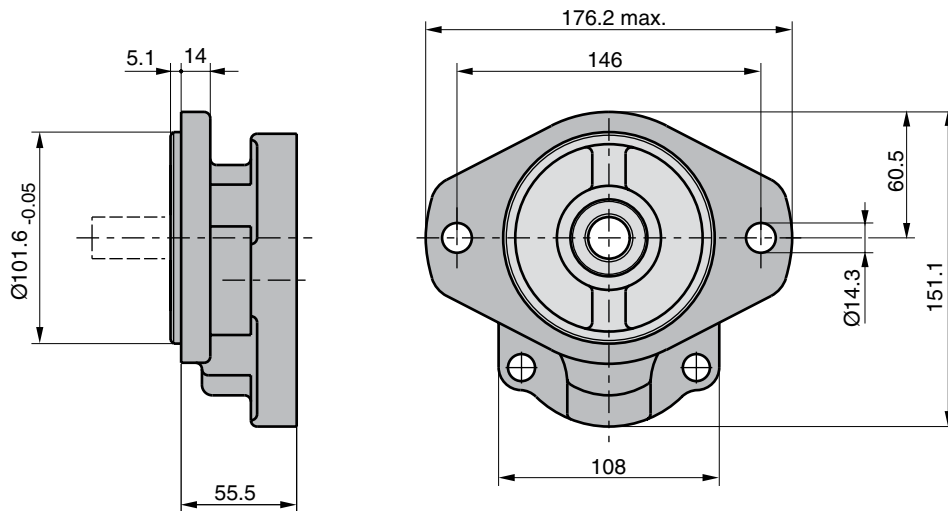


PGP/PGM 620 / 625 Mounting Flange

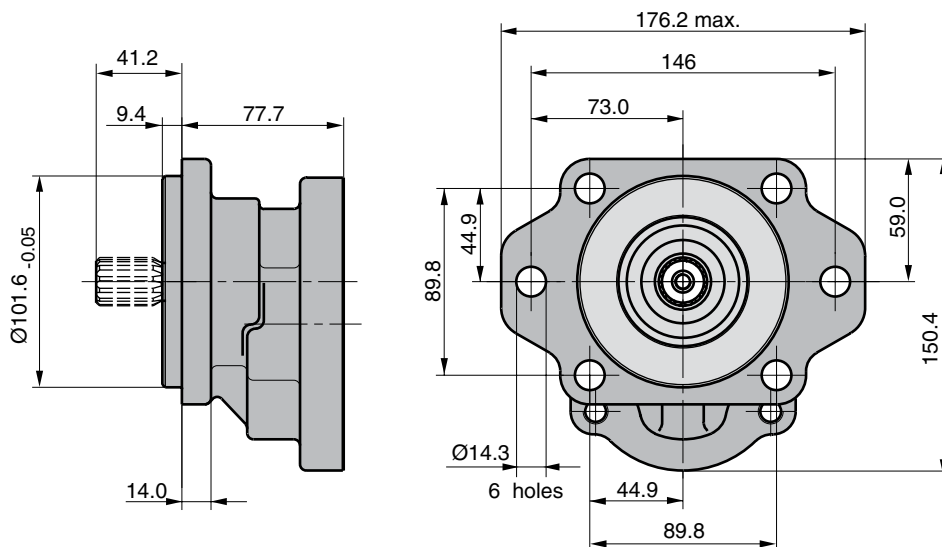
Code H2



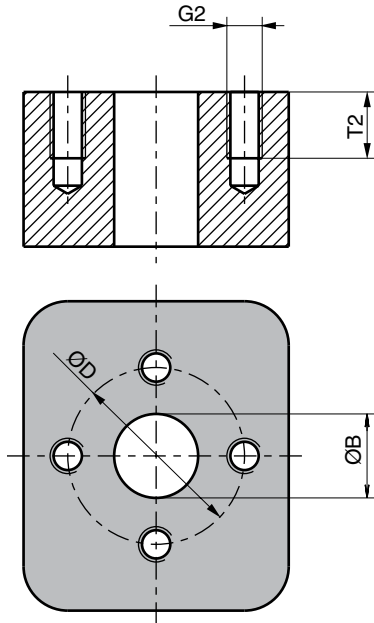
Code H3



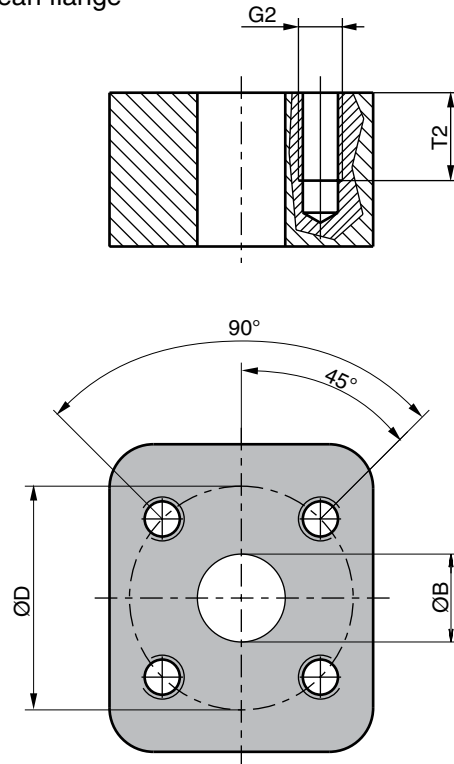
Code L3



PGP/PGM 620 / 625 Porting
Code L
 4-Bolt flange



Code J
 European flange

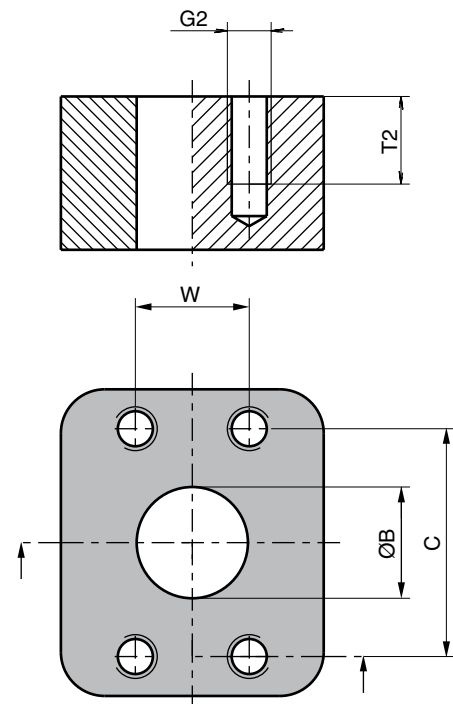


PGP/PGM / 625 620

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

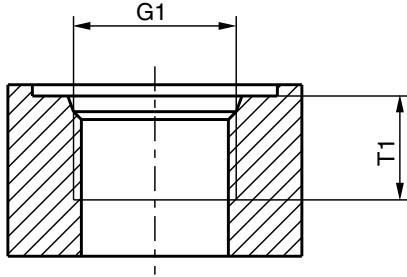
Code T
 SAE split flange metric thread



PGP/PGM 620 / 625 Porting

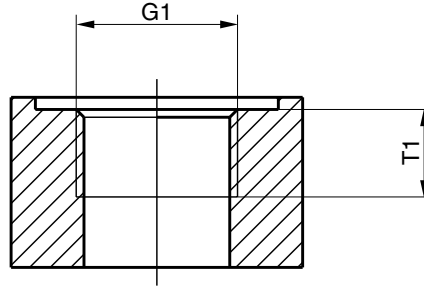
Code D

SAE straight thread



Code E

BSP - thread

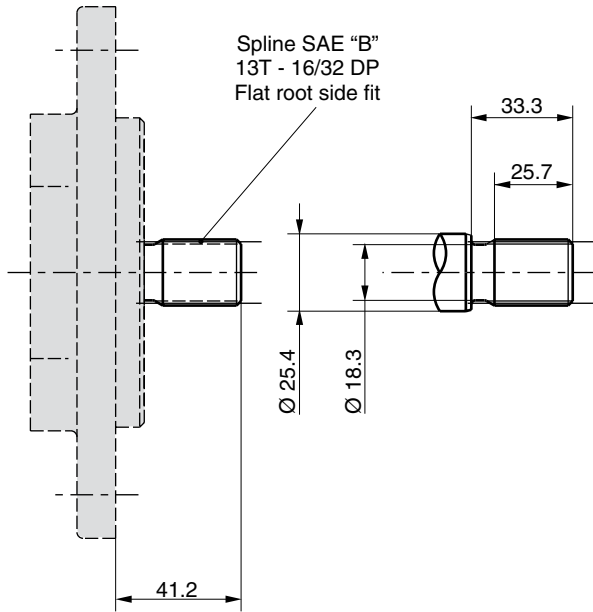


PGP/PGM 620 / 625

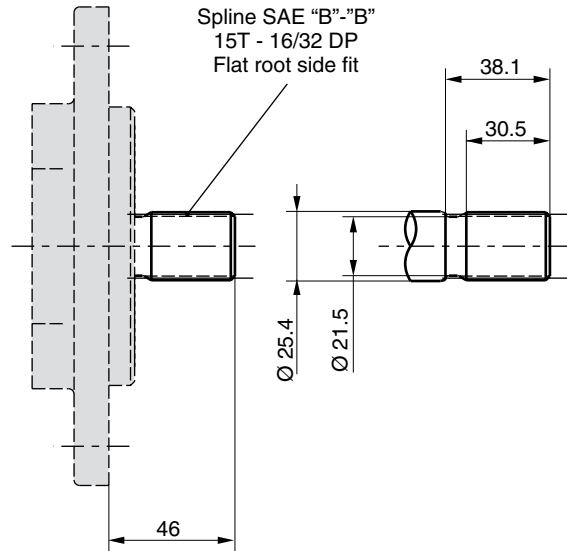
Code	G1	T1
	Thread	Dimensions
D3	3/4-16 UNF	14.3
D4	7/8-14 UNF	16.7
D5	1 1/16-12 UN	19.0
D6	1 5/16-12 UN	19.0
D7	1 5/8-12 UN	19.0
D8	1 7/8-12 UN	19.0
E3	1/2-14 BSP	14.0
E4	5/8-14 BSP	16.3
E5	3/4-16 BSP	16.0
E6	1-11 BSP	18.0
E7	1 1/4-11 BSP	20.0
E8	1 1/2-11 BSP	22.0

PGP/PGM 620 / 625 Drive Shaft

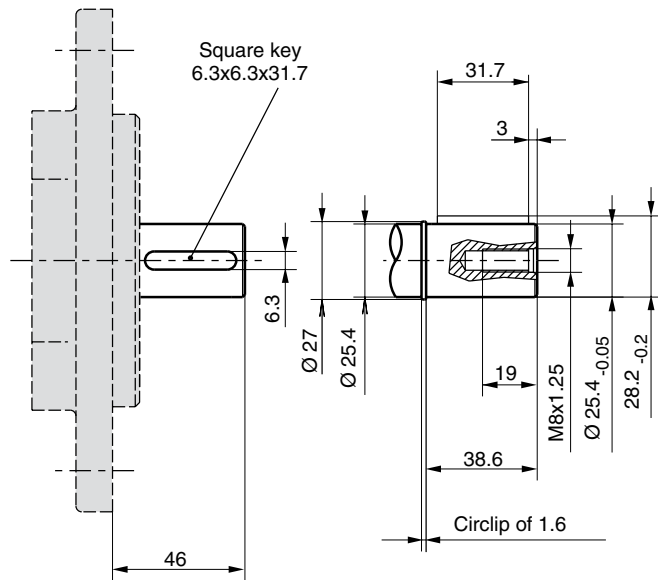
Code D1



Code E1

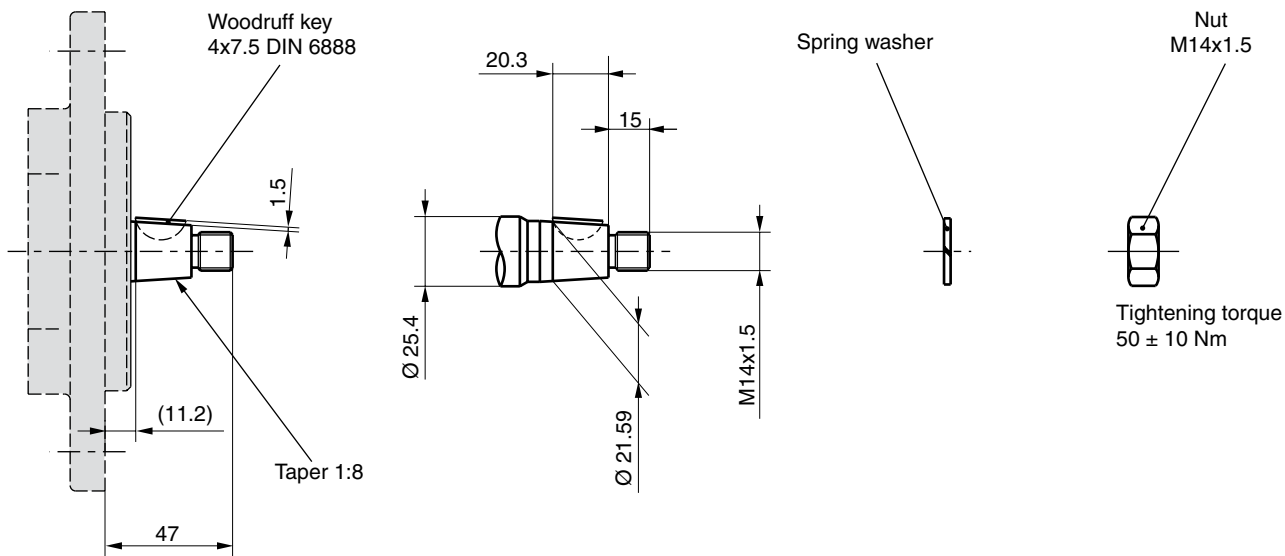


Code M3

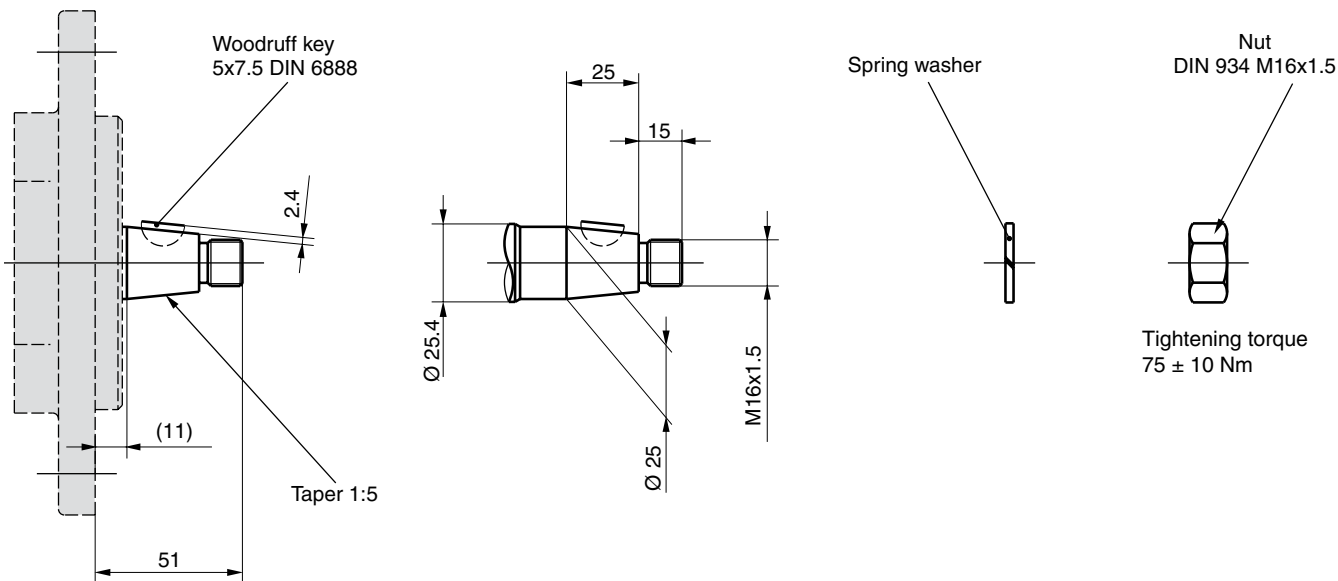


PGP/PGM 620 / 625 Drive Shaft

Code T1



Code T2



PGP/PGM 620 / 625- 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
E4	14T, 12/24 DP, 55.6L, SAE "C" splined	(272)
M3	Ø25.4, 6.3 KEY, M8, 46L, SAE "B-B" parallel	325
T1	Ø21.59, 11.2L, 4.0 KEY, M14x1.5 taper 1:8	218
T2	Ø25.0, 12.0 L, 5.0 KEY, M16x1.5 taper 1:5	301
	Multiple pump connection shaft	228

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

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	—	—	166	—
F5	B8x32x36 DIN ISO 14 (similar to DIN 5462)	splined	—	—	166	—
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]	625 [Nm]	640 [Nm]
D1	13T, 16/32 DP, 41.2L, SAE "B"	splined	272	272	328
E1	15T, 16/32 DP, 46.0L, SAE "B-B"	splined	460	460	503
E4	14T, 12/24 DP, 55.6L, SAE "C"	splined	—	(272)	960
M3	Ø25.4, 6.3 KEY, M8, 46L, SAE "B-B"	parallel	325	325	—
T1	Ø21.59, 11.2L, 4.0key, M14x1.5	tapered 1:8	218	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	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 -15 ... +120 °C	NBR 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

* to be used with cast iron pumps/motors only

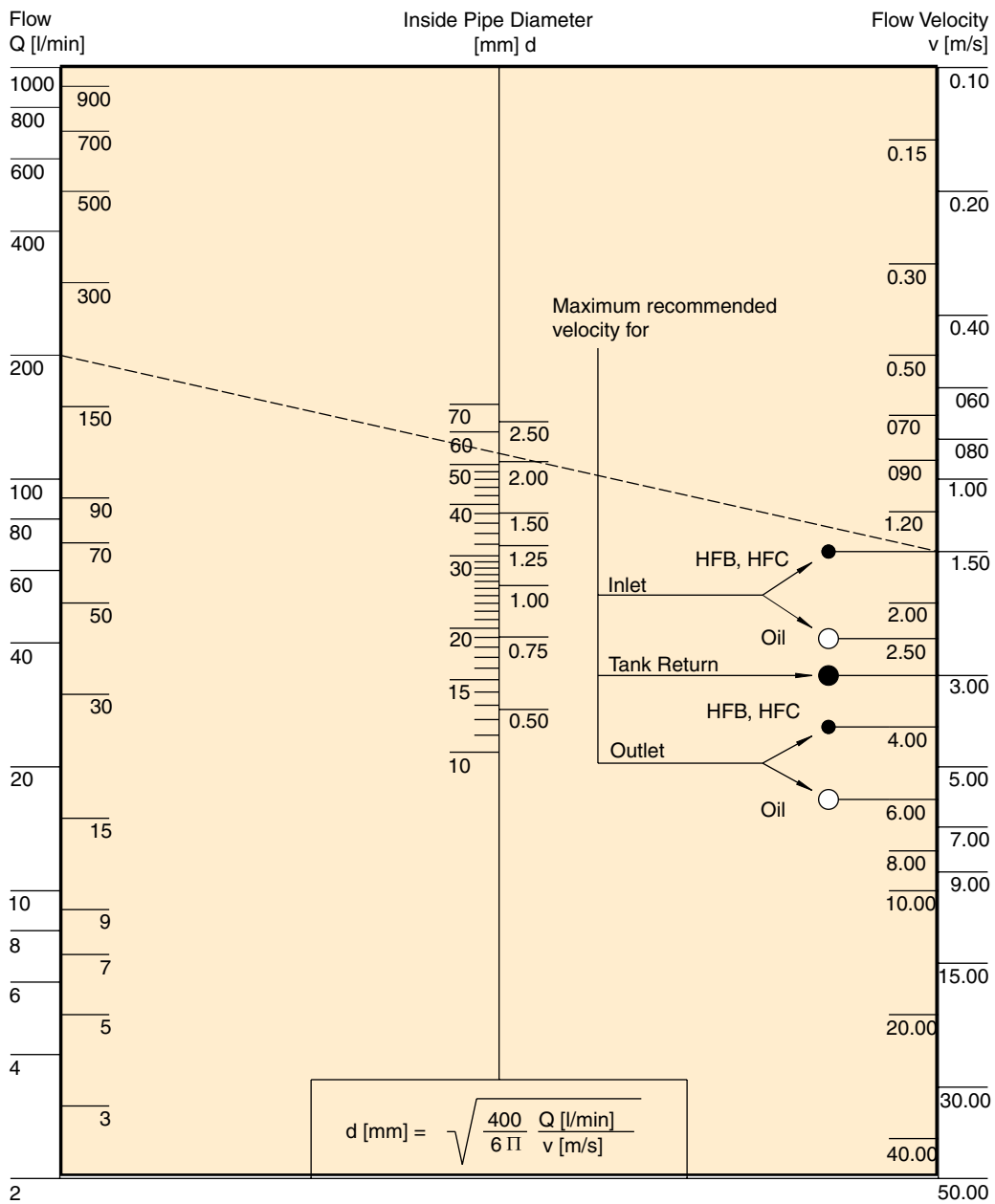
Parker does not give an explicit recommendation for certain fluid product, fluid brand or fluid manufacturer
The risk of using different kind of fluids has to be taken by the customer.

Flanges for suction and discharge ports

Please refer to Parker Bulletin 4040/UK.

First pump	Second pump						
	PGP 502	PGP 505	PGP 511	PGP 517	PGP 620	PGP 625	PGP 640
PGP 502	X						
PGP 505		X					
PGP 511	X		X				
PGP 517			X	X			
PGP 620			X		X	X	
PGP 625			X		X	X	
PGP 640			X		X	X	X

Nomograph for Pipe Velocity

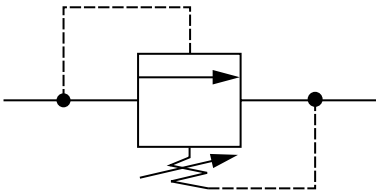


Pressure relief valve / adjustable internal vent

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 PGP 625	
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	

