



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



Gear Pumps/Motors

Robust and quiet pumps and motors for demanding applications



ENGINEERING YOUR SUCCESS.

Note

This document and other information from Parker Hannifin GmbH, its subsidiaries, sales offices and authorized distributors provide product or system options for further investigation by users having technical expertise. Before you select or use any product or system it is important that you analyse all aspects of your application and review the information concerning the product or system in the current product catalogue. Due to the variety of operating conditions and applications for these products or systems, the user, through his own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance and safety requirements of the application are met. The products are subject to change by Parker Hannifin GmbH at any time without notice.

Table of contents

	Page
Series 300 CAST-IRON:	
PGP/PGM 315	Ordering code 7
PGP/PGM 330	Ordering code 9
PGP/PGM 350	Ordering code 11
PGP/PGM 365	Ordering code 13
Series 300	Performance data 15
PGP/PGM 315	Performance data 16
PGP/PGM 330	Performance data 17
PGP/PGM 350	Performance data 18
PGP/PGM 365	Performance data 19
Series 300	Dimensions single unit 20
NOTE: PGP300 Series	Dimensions tandem unit 21
is phased out and	Mounting flange options 22
replaced by PGP Series!!!	Port options 23
	Drive shaft options 24
Series 500 ALUMINIUM:	
PGP/PGM 502	Ordering code 27
PGP/PGM 505	Ordering code 29
PGP/PGM 511	Ordering code 31
PGP/PGM 517	Ordering code 33
PGP/PGM 502	Performance data 35
PGP/PGM 505	Performance data 36
PGP/PGM 511	Performance data 37
PGP/PGM 517	Performance data 38
PGP/PGM 502	Specification standard displacements 39
	Dimensions single unit with side ports 39
	Dimensions single unit with rear ports 40
	Dimensions tandem unit 40
	Mounting flange options 41
	Port options 43
	Drive shaft options 44
PGP/PGM 505	Specification standard displacements 46
	Dimensions single unit with side ports 46
	Dimensions single unit with rear ports 47
	Dimensions tandem unit 47
	Mounting flange options 48
	Port options 50
	Drive shaft options 51
PGP/PGM 511	Specification standard displacements 53
	Dimensions single unit with side ports 53
	Dimensions single unit with rear ports 54
	Dimensions tandem unit 54
	Mounting flange options 55
	Port options 60
	Drive shaft options 62

Table of contents

<u>Series 500 ALUMINIUM:</u>	Page
PGP/PGM 517	
Specification standard displacements	68
Dimensions single unit with side ports	68
Dimensions single unit with rear ports	69
Dimensions tandem unit	69
Mounting flange options	70
Port options	72
Drive shaft options	74
Series 500	
Standard pump range ex-stock	77
<u>Series 600 CAST-IRON:</u>	
PGP/PGM 620	
Characteristics	78
Ordering code	79
Performance data	81
Specification standard displacements	82
Dimensions single unit	82
Dimensions tandem unit	83
Mounting flange options	84
Port options	86
Drive shaft options	88
PGP/PGM 640	
Ordering code	91
Performance data	92
Specification standard displacements	93
Dimensions single unit	94
Split gear pumps	96
Driveshaft options / Shaft loads	97
<u>All series:</u>	
List of available pump combinations	98
Diagram for pipe velocity	98
Valve options pumps	
.....	99
Pressure Relief Valve	99
Load Sensing Pressure Relief Valve	100
Solenoid Unloading Pressure Relief Valve	100
Unloading Relief Valve, Pressure Operated	100
Unloading Relief Valve, Solenoid Operated	101
Priority Flow Divider	102

	Load Sense Priority Valve	103
	Two-Stage Pump	103
	Single Accumulator Charge Valve	104
	Dual Accumulator Charge Valve	105
	Steering and Accumulator Charge (STAC) Valve	105
	Composite Priority and Accumulator Charge Valve	105
	Combined Valve for Boosted Brakes and Power Steering	106
Valve options for motors		107
	Single Pressure Relief Valve	107
	Single Pressure Relief Valve with Anti-Cavitation	107
	Cross Port Pressure Relief Valve	108
	Cross Port Pressure Relief Valve with Anti-Cavitation	108
	Brake Valve	109
	Solenoid Unloading Pressure Relief Valve for Motors	109
	Check Valve and Restrictor	109
Ordering Examples		110

Parker Series 300

Design

- Three-piece cast-iron construction
- Low-friction bushing design
- Heavy-duty application
- Single, multiple, piggyback, and thru-drive assemblies

Description

The Parker 300 Series pumps and motors set the standard for superior performance and reliability in heavy-duty hydraulic application. The three-piece cast-iron construction with large area, low-friction bushings provide strength, high efficiency, and long life in severe operating environments. The design includes an advanced thrust plate and seal configuration, which optimizes performance even in high temperature and low viscosity conditions.

300 Series pumps are available in single, multiple, piggyback, and thru-drive assemblies. Multiple pumps reduce mounting costs, allow for a small package size and common inlet capabilities. Assemblies up to six pumping sections are available.

Piggyback pumps allow the combination of pump sections of different frame sizes in a common inlet, tandem configuration, while the thru-drive feature allows an independent piston or gear pump to be mounted to a rear SAE drive pad.



PGP 315B

Multiple section motors are also available providing enhanced torque and speed control as well as smooth torque ripple.

Relief valve, priority valve, load-sense unloading, and other integrated or bolt-on valve options are also available.

Characteristics

Pump type	Heavy-duty, cast-iron, external gear
Mounting	SAE standard flanges, ZF, others
Ports	SAE split flanges and other types of threaded ports (cp. table)
Shaft style	SAE splined, keyed, and others (see table)
Drive	Clockwise, counter-clockwise, double. Drive direct with flexible coupling is recommended. Pumps subject to radial loads must be specified with an outward bearing. Axial loading is not allowed.
Speed	From 400 to 3000 rev/min
Theoretical displacem.	See table
Max. radial loads with outboard bearing	PGP 315 = 3200 N PGP 330 = 3500 N PGP 350 = 5000 N PGP 365 = 6500 N
Inlet pressure	0.8 to 2 bar absolute at operating temp.
Outlet pressure	See table
Hydraulic fluids	Mineral oil, fire resistant fluids: - water-oil emulsions 60/40, HFB - water-glycol, HFC - phosphate-esters, HFD
Fluid temperature	Mineral oil with standard seals: -20°C to 80°C Fire resistant fluids HFB, HFC -20°C to +60°C
Fluid viscosity	From 7.5 to 1600 cSt Recommended 15 to 75 cSt

Filtration	ISO 4406 code: - 19/16 at 140 bar - 17/14 at 210 bar - 15/12 at 275 bar
Flow velocity	Mineral oil and HFD - Inlet up to 2.5 m/s - Outlet up to 6.0 m/s Fire resistant fluids HFB, HFC - Inlet up to 1.5 m/s - Outlet up to 4.0 m/s
Multiple pump assemblies	Up to 6 gear sections of the same model, even with different gear widths
Piggyback assemblies	Several models can be mounted together, one at the rear of the other. Fluids are intermixing even from separate reservoirs: 330/315, 350/315, 365/330, 365/330/315
Add-a-pump assemblies	Similar to piggyback, but fluids are not intermixing.
Priority outlet pumps	(Al: aluminium pumps) 350/Al, 350/330, 350/350, 330/Al, 365/Al, 365/330, 365/350
General	Available for models 315, 330, 350 - For operations outside given parameters, please contact us. - The smallest gear is not recommended for single units at the max. rated pressure. - Theoretical displacement is equal to theoretical flow at 1.000 rev/min.

Ordering code

Code	Type	PG Type 315 Unit Rotation Direction Shaft End Cover Port End Cover
P M	Pump Motor ¹⁾	

¹⁾ No tandem motors available

Code	Unit
A	Single unit
B	Tandem unit (flush studs)
L	Unit with extended studs

Code	Rotation Direction
1	Pump, cw w/o O.B. bearing
2	Pump, ccw w/o O.B. bearing
4	Pump, cw with O.B. bearing (code 490 only)
5	Pump, ccw with O.B. bearing (code 590 only)
9	Motor double-rotation w/o O.B. bearing + 1/4" ODT drain

Code	Shaft End Cover
90	4 bolt 72x100mm, 80mm pilot
93	SAE *A* 2 bolt
95	Pad mount for clutch
96	SAE *B* 2 bolt

Port End Cover

Side Ported Pumps

Rear Ported Pumps

Ports		OD Tube Porting		BSPP Porting		SAE Split Flange		National Pipe Thread		Metric Split Flange		OD Tube Porting		BSPP Porting	
IN	OUT	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code
1 1/4"	1"	FB	BF	FN	NF	—	—	AJ	JA	—	—	UC	CU	US	SU
1 1/4"	7/8"	FC	CF	FP	PF	—	—	—	—	—	—	UF	FU	UT	TU
1 1/4"	3/4"	FG	GF	FR	RF	—	—	AK	KA	—	—	UN	NU	UV	VU
1 1/4"	5/8"	FJ	JF	—	—	—	—	—	—	—	—	—	—	—	—
1"	1"	FL	LF	FS	SF	—	—	AL	LA	—	—	UD	DU	UW	WU
1"	7/8"	FV	VF	FT	TF	—	—	—	—	—	—	UP	PU	UX	XU
1"	3/4"	FW	WF	BP	PB	EJ	JE	AM	MA	EV	VE	UQ	QU	UY	YU
1"	5/8"	FX	XF	—	—	—	—	—	—	—	—	UR	RU	—	—
1"	1/2"	—	—	—	—	EK	KE	—	—	EW	WE	—	—	—	—
7/8"	7/8"	FY	YF	BQ	QB	—	—	—	—	—	—	LN	NL	LU	UL
7/8"	3/4"	FZ	ZF	BR	RB	—	—	—	—	—	—	LP	PL	LV	VL
7/8"	5/8"	BC	CB	—	—	—	—	—	—	—	—	LQ	QL	—	—
7/8"	1/2"	BG	GB	BT	TB	—	—	—	—	—	—	—	—	—	—
3/4"	3/4"	BJ	JB	BU	UB	EL	LE	AR	RA	EX	XE	LR	RL	LX	XL
3/4"	5/8"	BL	LB	—	—	—	—	—	—	—	—	LS	SL	—	—
3/4"	1/2"	BN	NB	PQ	QP	EM	ME	—	—	EY	YE	LT	TL	LZ	ZL
1 1/4"	—	BV	VB	PR	RP	—	—	—	—	—	—	—	—	—	—
1"	—	BW	WB	PS	SP	OE	EO	—	—	OP	PO	—	—	—	—
7/8"	—	BX	XB	PT	TP	—	—	—	—	—	—	—	—	—	—
3/4"	—	BY	YB	PV	VP	—	—	—	—	OR	RO	—	—	—	—
—	1"	BZ	ZB	PW	WP	—	—	—	—	—	—	—	—	—	—
—	7/8"	PD	DP	PX	XP	—	—	—	—	—	—	—	—	—	—
—	3/4"	PE	EP	PY	YP	OJ	JO	—	—	OT	TO	—	—	—	—
—	5/8"	PM	MP	—	—	—	—	—	—	—	—	—	—	—	—
—	1/2"	PN	NP	PZ	ZP	OL	LO	—	—	OV	VO	—	—	—	—

Unported (Tandem) Code BI

Side Ported Motors (Double Rotation)

Rear Ported Motors (Double Rotation)

Ports		OD Tube Porting	BSPP Porting	SAE Split Flange	National Pipe Thread	Metric Split Flange	OD Tube Porting	BSPP Porting	National Pipe Thread
IN	OUT	Code	Code	Code	Code	Code	Code	Code	Code
1"	1"	VN	VY	DR	DM	DV	RN	RT	RX
3/4"	3/4"	VR	VZ	DS	DN	DW	RQ	RV	RY
1/2"	1/2"	VQ	VV	—	DQ	—	RS	RW	RZ

Gear Housing

Gear Width

Shaft Type

Bearing Carriers

**Gear Housing
(repeat for tandem unit)**

**Gear Width
(repeat for tandem unit)**

1

**Connecting Shaft
(for connecting tandem units)**

Code	Gear Housing
AB	Pump
EB	Motor

Gear Width			
Code	Gear Width	cm ³ /rev	Max. Pressure
03	3/8"	7.6	245 bar
05	1/2"	10.2	245 bar
06	5/8"	12.7	245 bar
07	3/4"	15.2	245 bar
08	7/8"	17.8	245 bar
10	1"	20.3	245 bar
11	1 1/8"	22.9	245 bar
12	1 1/4"	25.4	245 bar
13	1 3/8"	27.9	245 bar
15	1 1/2"	30.5	225 bar
16	1 5/8"	33.0	215 bar
17	1 3/4"	35.6	200 bar
18	1 7/8"	38.1	190 bar
20	2"	40.6	175 bar

Code	Shaft Type
97	SAE "A" Keyed
96	SAE "A" Splined
66	SAE "B" Keyed
65	SAE "B" Splined
60 ²⁾	Tapered, M12x1.5 thd. 3x5mm Keyed; 1:5 taper
56 ³⁾	Clutch Pump Tapered; 5/16 - 24 thd. (internal), Woodruff keyed; 1:4 taper

²⁾ 90 SEC only
³⁾ Single unit only

Bearing Carriers

Dual Outlet Pumps

Single Outlet Pumps

Note

Outlets: For clockwise porting the top port number comes first. For counter-clockwise porting the bottom port number comes first.

Note

Outlet for front section.

Ports			OD Tube Porting		BSPP Porting		SAE Split Flange		Metric Split Flange		Ports		OD Tube Porting		BSPP Porting		SAE Split Flange		Metric Split Flange	
			CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code			CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code
IN	OUT	OUT	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	IN	OUT	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code
1 1/2"	1"	1"	JG	GJ	HJ	JH	—	—	—	—	1 1/2"	1 1/2"	KB	BK	KR	RK	—	—	—	—
1 1/2"	1"	7/8"	KG	GK	KJ	JK	—	—	—	—	1 1/2"	1 1/4"	KC	CK	KS	SK	—	—	—	—
1 1/2"	7/8"	7/8"	LG	GL	LJ	JL	—	—	—	—	1 1/2"	1"	KF	FK	KT	TK	—	—	—	—
1 1/2"	1"	3/4"	MG	GM	MJ	JM	—	—	—	—	1 1/2"	7/8"	KL	LK	KU	UK	—	—	—	—
1 1/2"	3/4"	3/4"	NG	GN	NJ	JN	—	—	—	—	1 1/2"	3/4"	KM	MK	KV	VK	—	—	—	—
1 1/4"	1"	1"	PG	GP	PJ	JP	—	—	—	—	1 1/4"	1 1/4"	KN	NK	KW	WK	CJ	JC	CN	NC
1 1/4"	1"	7/8"	QQ	QQ	QJ	JQ	—	—	—	—	1 1/4"	1"	KO	OK	KX	XK	CL	LC	CP	PC
1 1/4"	7/8"	7/8"	RG	GR	RJ	JR	—	—	—	—	1 1/4"	7/8"	KP	PK	KY	YK	—	—	—	—
1 1/4"	1"	3/4"	SG	GS	SJ	JS	—	—	—	—	1 1/4"	3/4"	KQ	QK	KZ	ZK	CM	MC	CQ	QC
1 1/4"	3/4"	3/4"	TG	GT	TJ	JT	CA	AC	BD	DB	1 1/4"	5/8"	MB	BM	—	—	—	—	—	—
1 1/4"	3/4"	5/8"	UG	GU	—	—	—	—	—	—	1 1/4"	1/2"	ML	LM	HO	OH	HB	BH	HR	RH
1 1/4"	3/4"	1/2"	VG	GV	UJ	JU	DA	AD	CD	DC	1"	1"	MN	NM	HP	PH	HC	CH	HS	SH
1 1/4"	5/8"	5/8"	WG	GW	—	—	—	—	—	—	1"	7/8"	MQ	QM	HQ	QH	—	—	—	—
1 1/4"	1/2"	1/2"	XG	GX	VJ	JV	EA	AE	ED	DE	1"	3/4"	MR	RM	HX	XH	HF	FH	HT	TH
1"	1"	1"	YG	GY	WJ	JW	—	—	—	—	1"	5/8"	MS	SM	—	—	—	—	—	—
1"	1"	7/8"	ZG	GZ	XJ	JX	—	—	—	—	1"	1/2"	MT	TM	HY	YH	HL	LH	HU	UH
1"	7/8"	7/8"	RC	CR	YJ	JY	—	—	—	—	3/4"	3/4"	MU	UM	HZ	ZH	HM	MH	HV	VH
1"	1"	3/4"	SC	CS	ZJ	JZ	—	—	—	—	3/4"	5/8"	MV	VM	—	—	—	—	—	—
1"	3/4"	3/4"	TC	CT	JD	DJ	FA	AF	FD	DF	3/4"	1/2"	MW	WM	MX	XM	HN	NH	HW	WH
1"	3/4"	5/8"	VC	CV	—	—	—	—	—	—	Common inlet passage				CW	CCW				
1"	5/8"	5/8"	XC	CX	—	—	—	—	—	—	No ports				C	D				
1"	3/4"	1/2"	WC	CW	KD	DK	GA	AG	GD	DG										
1"	1/2"	1/2"	YC	CY	LD	DL	HA	AH	HD	DH										

Ordering code

Series PGP, PGM 300

Code	Type
P	Pump
M	Motor

Code	Unit
A	Single unit
B	Tandem unit (flush studs)
C	Single or Tandem w. two piece shaft (O.B. bearing required)
L	Unit with extended studs

Code	Rotation Direction
1	Pump, cw w/o O.B. bearing
2	Pump, ccw w/o O.B. bearing
4	Pump, cw with O.B. bearing
5	Pump, ccw with O.B. bearing
8	Motor double-rotation with O.B. bearing + 1/4" ODT drain
9	Motor double-rotation w/o O.B. bearing + 1/4" ODT drain
18 ²⁾	Motor double-rotation with O.B. bearing + 1/4" BSPP drain
19 ³⁾	Motor double-rotation w/o O.B. bearing + 1/4" BSPP drain

²⁾ 78 only
³⁾ 42 and 78 only

Code	Shaft End Cover
42	SAE 4 bolt "B"
78	SAE 4 bolt "C"
97	SAE 2 bolt "B"

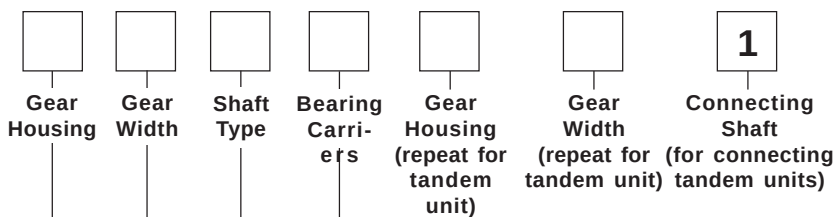
Port End Cover									
Side Ported Pumps									
Ports		OD Tube Porting		BSPP Porting		SAE Split Flange		Metric Split Flange	
		CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code
1 1/2"	1 1/4"	—	—	—	—	EJ	JE	EV	VE
1 1/2"	1"	—	—	—	—	EK	KE	EW	WE
1 1/4"	1 1/4"	—	—	—	—	EL	LE	EX	XE
1 1/4"	1"	FJ	JF	FS	SF	EM	ME	EY	YE
1"	1"	FL	LF	FT	TF	EN	NE	EZ	ZE
1 1/2"	—	—	—	—	—	OF	FO	OR	RO
1 1/4"	—	BG	GB	BQ	QB	OG	GO	OS	SO
1"	—	BJ	JB	BR	RB	OJ	JO	OT	TO
—	1 1/4"	—	—	—	—	OM	MO	OW	WO
—	1"	BN	NB	BU	UB	ON	NO	OX	XO

Unported (Tandem) Code BI

Side Ported Motors (Double Rotation)						
Ports		OD Tube Porting	BSPP Porting	SAE Split Flange	Metr. Straight Thread	Metric Split Flange
N	OUT	Code	Code	Code	Code	Code
1 1/4"	1 1/4"	VC	VX	CS	VS	CX
1"	1"	VN	VY	CT	VT	CY
3/4"	3/4"	VR	VZ	CV	VW	CZ

Unported (Tandem) Code BA

PI PG500-600_UK-11.PM6.5MM



Code	Gear Housing
AB	Pump
EB	Motor

Gear Width			
Code	Gear Width	cm ³ /rev	Max. Pressure
05	1/2"	16.1	245 bar
07	3/4"	24.2	245 bar
10	1"	32.3	245 bar
12	1 1/4"	40.4	245 bar
15	1 1/2"	48.4	245 bar
17	1 3/4"	56.5	225 bar
20	2"	64.6	210 bar

Code	Shaft Type ⁴⁾
07	SAE "C" Spline (two piece only)
25	SAE "B" Spline
30	SAE "B" Keyed
98	SAE "BB" Splined
43	SAE "BB" Keyed

⁴⁾ For single, tandem or two piece shaft, unless noted.

Bearing Carriers																				
Dual Outlet Pumps									Single Outlet Pumps								Combined Outlet Pumps			
Note Outlets: For clockwise porting the top port number comes first. For counter-clockwise porting the bottom port number comes first.									Note Outlet for front section.											
Ports			SAE Split Flange		Metric Split Flange		OD Tube Porting		Ports		SAE Split Flange		Metric Split Flange		OD Tube Porting			SAE Split Flange		OD Tube Porting
IN	OUT	OUT	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	IN	OUT	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code
2"	1 ¼"	1 ¼"	AM	MA	DM	MD	—	—	2"	1 ½"	HB	BH	HR	RH	—	—	UN	NU	—	—
2"	1 ¼"	1"	AN	NA	DN	ND	—	—	2"	1 ¼"	HC	CH	HS	SH	—	—	UO	OU	—	—
2"	1"	1"	AP	PA	DP	PD	—	—	2"	1"	HF	FH	HT	TH	—	—	—	—	—	—
1 ½"	1 ¼"	1 ¼"	AT	TA	DT	TD	—	—	1 ½"	1 ½"	HL	LH	HU	UH	—	—	UP	PU	—	—
1 ½"	1 ¼"	1"	AU	UA	DU	UD	—	—	1 ½"	1 ¼"	HM	MH	HV	VH	KM	MK	UQ	QU	PQ	QP
1 ½"	1"	1"	AV	VA	DV	VD	GV	VG	1 ½"	1"	HN	NH	HW	WH	KN	NK	—	—	—	—
1 ¾"	1 ¼"	1 ¼"	AW	WA	DW	WD	—	—	1 ¾"	1 ¼"	HO	OH	HX	XH	KO	OK	UR	RU	PR	RP
1 ¾"	1 ¼"	1"	AX	XA	DX	XD	—	—	1 ¾"	1"	HP	PH	HY	YH	KP	PK	—	—	—	—
1 ¾"	1"	1"	AY	YA	—	—	GY	YG	1"	1"	HQ	QH	HZ	ZH	KQ	QK	—	—	—	—
1"	1"	1"	AZ	ZA	DZ	ZD	GZ	ZG	5)1¾"	1"	RS	SR	—	—	—	—	—	—	—	—

Common inlet passage	CW	CCW
No ports	C	D

⁵⁾ Outlet port for rear section

Combined Outlet Motors (Double Rotation)						
Ports		OD Tube Porting	BSPP Porting	SAE Split Flange	Metr. Straight Thread	Metric Split Flange
N	OUT	Code	Code	Code	Code	Code
1 1/2"	1 1/2"	—	—	BB	—	HH
1 1/4"	1 1/4"	NN	XX	CC	TT	JJ
1"	1"	QQ	YY	EE	UU	KK
3/4"	3/4"	RR	ZZ	FF	VV	LL

Ordering code

Series PGP, PGM 300

Code	Type							
P	Pump							
M	Motor							

Code	Unit					
A	Single unit					
B	Tandem unit (flush studs)					
C	Single or Tandem w. two piece shaft (O.B. bearing required)					
L	Unit with extended studs					

Code	Rotation Direction				
1	Pump, cw w/o O.B. bearing				
2	Pump, ccw w/o O.B. bearing				
4	Pump, cw with O.B. bearing				
5	Pump, ccw with O.B. bearing				
8	Motor double-rotation with O.B. bearing + 1/4" ODT drain				
9	Motor double-rotation w/o O.B. bearing + 1/4" ODT drain				
18 ²⁾	Motor double-rotation with O.B. bearing + 1/4" BSPP drain				
19 ²⁾	Motor double-rotation w/o O.B. bearing + 1/4" BSPP drain				

Code	Shaft End Cover
42	SAE 4 bolt "B"
46	SAE 2/4 bolt "B"
62	"ZF" 4 bolt (462 only), 80mm pilot, 80x80mm
78	SAE 4 bolt "C"
97	SAE 2 bolt "B"
98	SAE 2 bolt "C"

²⁾ For shaft end cover code 78 only

Port End Cover

Side Ported Pumps

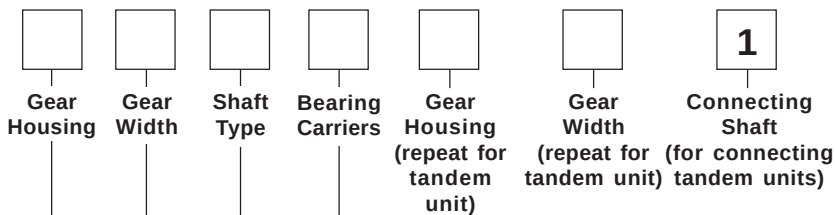
Ports		OD Tube Porting		BSPP Porting		SAE Split Flange		Metric Split Flange	
		CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code
2"	1 1/2"	—	—	—	—	EC	CE	ER	RE
2"	1 1/4"	—	—	—	—	EF	FE	ES	SE
2"	1"	—	—	—	—	EG	GE	ET	TE
1 1/2"	1 1/2"	—	—	—	—	EH	HE	EU	UE
1 1/2"	1 1/4"	FB	BF	FN	NF	EJ	JE	EV	VE
1 1/2"	1"	FC	CF	FP	PF	EK	KE	EW	WE
1 1/4"	1 1/4"	FG	GF	FR	RF	EL	LE	EX	XE
1 1/4"	1"	FJ	JF	FS	SF	EM	ME	EY	YE
1"	1"	FL	LF	FT	TF	EN	NE	EZ	ZE
2"	—	—	—	—	—	OE	EO	OP	PO
1 1/2"	—	BC	CB	BP	PB	OF	FO	OR	RO
1 1/4"	—	BG	GB	BQ	QB	OG	GO	OS	SO
1"	—	BJ	JB	BR	RB	OJ	JO	OT	TO
—	1 1/2"	—	—	—	—	OL	LO	OV	VO
—	1 1/4"	BL	LB	BT	TB	OM	MO	OW	WO
—	1"	BN	NB	BU	UB	ON	NO	OX	XO

Unported (Tandem) CW Code BI CCW Code IB

Side Ported Motors (Double Rotation)

Ports		OD Tube Porting	BSPP Porting	SAE Split Flange	Metr. Straight Thread	Metric Split Flange
N	OUT	Code	Code	Code	Code	Code
1 1/2"	1 1/2"	—	—	CR	—	CW
1 1/4"	1 1/4"	VC	VX	CS	VS	CX
1"	1"	VN	VY	CT	VT	CY
3/4"	3/4"	VR	VZ	CV	VW	CZ

Unported (Tandem) Code BA



Code	Gear Housing
AB	Pump
EB	Motor

Gear Width			
Code	Gear Width	cm ³ /rev	Max. Pressure
05	½"	20.9	245 bar
07	¾"	31.3	245 bar
10	1"	41.8	245 bar
12	1 ¼"	52.2	245 bar
15	1 ½"	62.7	245 bar
17	1 ¾"	73.1	225 bar
20	2"	83.6	210 bar
22	2 ¼"	94.0	190 bar
25	2 ½"	104.5	175 bar

Code	Shaft Type ³⁾
06	B8x32x36 DIN 5462 Spline (two piece only)
07	SAE "C" Spline
11	SAE "C" Keyed
25	SAE "B" Spline
43	SAE "BB" Keyed
73	SAE "C" Keyed long (single and two piece only)
98	SAE "BB" Splined (tandem only)

³⁾ For single, tandem or two piece shaft, unless noted.

Bearing Carriers

Dual Outlet Pumps	Single Outlet Pumps
Note Outlets: For clockwise porting the top port number comes first. For counter-clockwise porting the bottom port number comes first.	
Note Outlet for front section.	

Ports			SAE Split Flange		Metric Split Flange		OD Tube Porting		Ports		SAE Split Flange		Metric Split Flange		BSPP Porting		OD Tube Porting	
			CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code			CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code
IN	OUT	OUT							IN	OUT								
2 ½"	1 ¼"	1 ¼"	AF	FA	—	—	—	—	2"	1 ½"	HB	BH	RH	HR	KR	RK	KB	BK
2 ½"	1 ¼"	1"	AG	GA	—	—	—	—	2"	1 ¼"	HC	CH	SH	HS	KS	SK	KC	CK
2 ½"	1"	1"	AH	HA	—	—	—	—	2"	1"	HF	FH	TH	HT	KT	TK	KF	FK
2"	1 ¼"	1 ¼"	AM	MA	DM	MD	GM	MG	1 ½"	1 ½"	HL	LH	UH	HU	KU	UK	KL	LK
2"	1 ¼"	1"	AN	NA	DN	ND	GN	NG	1 ½"	1 ¼"	HM	MH	VH	HV	KV	VK	KM	MK
2"	1"	1"	AP	PA	DP	PD	GP	PG	1 ½"	1"	HN	NH	WH	HW	KW	WK	KN	NK
1 ½"	1 ¼"	1 ¼"	AT	TA	DT	TD	GT	TG	1 ¼"	1 ¼"	HO	OH	XH	HX	KX	XK	KO	OK
1 ½"	1 ¼"	1"	AU	UA	DU	UD	GU	UG	1 ¼"	1"	HP	PH	YH	HY	KY	YK	KP	PK
1 ½"	1"	1"	AV	VA	DV	VD	GV	VG	1"	1"	HQ	QH	ZH	HZ	KZ	ZK	KQ	QK
1 ¼"	1 ¼"	1 ¼"	AW	WA	DW	WD	GW	WG	4)1¼"	1"	RS	SR	—	—	—	—	—	—
1 ¼"	1 ¼"	1"	AX	XA	DX	XD	GX	XG	Common inlet passage			CW	CCW	4) Outlet port for rear section				
1 ¼"	1"	1"	AY	YA	DY	YD	GY	YG				No ports						C
1"	1"	1"	AZ	ZA	DZ	ZD	GZ	ZG										

Combined Outlet Motors (Double Rotation)

Ports		OD Tube Porting	BSPP Porting	SAE Split Flange	Metr. Straight Thread	Metric Split Flange
IN	OUT	Code	Code	Code	Code	Code
2"	2"	—	—	AA	—	GG
1 ½"	1 ½"	MM	WW	BB	SS	HH
1 ¼"	1 ¼"	NN	XX	CC	TT	JJ
1"	1"	QQ	YY	EE	UU	KK
¾"	¾"	RR	ZZ	FF	VV	LL

Combined Outlet Pumps

Ports		SAE Split Flange		Metric Split Flange		OD Tube Porting	
IN	OUT	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code
2"	1 ½"	UN	NU	VU	UV	PE	EP
2"	1 ¼"	UO	OU	WU	UW	PM	MP
1 ½"	1 ½"	UP	PU	XU	UX	PN	NP
1 ½"	1 ¼"	UQ	QU	YU	UY	PQ	QP
1 ¼"	1 ¼"	UR	RU	ZU	UZ	PR	RP

Ordering code

Series PGP, PGM 300

Code	Type
P	Pump
M	Motor

Code	Unit
A	Single unit
B	Tandem unit (flush studs)
C	Single or Tandem w. two piece shaft (O.B. bearing required)
L	Unit with extended studs

Code	Rotation Direction
1	Pump, cw w/o O.B. bearing
2	Pump, ccw w/o O.B. bearing
4	Pump, cw with O.B. bearing
5	Pump, ccw with O.B. bearing
8	Motor double-rotation with O.B. bearing + ¼" ODT drain
9	Motor double-rotation w/o O.B. bearing + ¼" ODT drain

Code	Shaft End Cover
42	SAE 4 bolt "B"
78	SAE 4 bolt "C"
97	SAE 2 bolt "B"
98	SAE 2 bolt "C"

Port End Cover									
Side Ported Pumps									
Ports		OD Tube Porting		BSPP Porting		SAE Split Flange		Metric Split Flange	
N	OUT	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code
2"	1 ½"	—	—	—	—	EC	OE	ER	RE
2"	1 ¼"	—	—	—	—	EF	FE	ES	SE
2"	1"	—	—	—	—	EG	GE	ET	TE
1 ½"	1 ½"	—	—	—	—	EH	HE	EU	UE
1 ½"	1 ¼"	FB	BF	FN	NF	EJ	JE	EV	VE
1 ½"	1"	FC	CF	FP	PF	EK	KE	EW	WE
1 ¼"	1 ¼"	FG	GF	FR	RF	EL	LE	EX	XE
1 ¼"	1"	FJ	JF	FS	SF	EM	ME	EY	YE
1"	1"	FL	LF	FT	TF	EN	NE	EZ	ZE
2"	—	—	—	—	—	OE	EO	OP	PO
1 ½"	—	BC	CB	BP	PB	OF	FO	OR	RO
1 ¼"	—	BG	GB	BQ	QB	OG	GO	OS	SO
1"	—	BJ	JB	BR	RB	OJ	JO	OT	TO
—	1 ½"	—	—	—	—	OL	LO	OV	VO
—	1 ¼"	BL	LB	BT	TB	OM	MO	OW	WO
—	1"	BN	NB	BU	UB	ON	NO	OX	XO

Unported (Tandem)	CW Code	BI	CCW Code	IB
-------------------	---------	----	----------	----

Side Ported Motors (Double Rotation)						
Ports		OD Tube Porting	BSPP Porting	SAE Split Flange	Metr. Straight Thread	Metric Split Flange
N	OUT	Code	Code	Code	Code	Code
1 ½"	1 ½"	—	—	CR	—	CW
1 ¼"	1 ¼"	VC	VX	CS	VS	CX
1"	1"	VN	VY	CT	VT	CY
¾"	¾"	VR	VZ	CV	VW	CZ

Unported (Tandem)	Code BA
-------------------	---------

Gear Housing

Gear Width

Shaft Type

Bearing Carriers

Gear Housing

Gear Width

1

Connecting Shaft

(repeat for tandem unit) (repeat for tandem unit) (for connecting tandem units)

Code	Gear Housing
AB	Pump
EB	Motor

Gear Width			
Code	Gear Width	cm ³ /rev	Max. Pressure
07	¾"	44.3	245 bar
10	1"	59.0	245 bar
12	1 ¼"	73.8	245 bar
15	1 ½"	88.5	245 bar
17	1 ¾"	103.3	245 bar
20	2"	118.0	245 bar
22	2 ¼"	132.8	225 bar
25	2 ½"	147.5	210 bar

Code	Shaft Type ³⁾
07	SAE "C" Spline (single and tandem only)
11	SAE "C" Keyed
25	SAE "B" Spline (single only)

Bearing Carriers													
Dual Outlet Pumps													
Note Outlets: For clockwise porting the top port number comes first. For counter-clockwise porting the bottom port number comes first.													
Ports			SAE Split Flange		Metric Split Flange		OD Tube Porting		BSPP Porting				
			CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code			
2 ½"	1 ½"	1 ½"	AC	CA	DB	BD	—	—	—	—			
2 ½"	1 ½"	1 ¼"	AD	DA	DC	CD	—	—	—	—			
2 ½"	1 ½"	1"	AE	EA	DE	ED	—	—	—	—			
2 ½"	1 ¼"	1 ¼"	AF	FA	DF	FD	—	—	—	—			
2 ½"	1 ¼"	1"	AG	GA	DG	GD	—	—	—	—			
2 ½"	1"	1"	AH	HA	DH	HD	—	—	—	—			
2"	1 ½"	1 ½"	AJ	JA	DJ	JD	GJ	JG	JH	HJ			
2"	1 ½"	1 ¼"	AK	KA	DK	KD	GK	KG	JK	KJ			
2"	1 ½"	1"	AL	LA	DL	LD	GL	LG	JL	LJ			
2"	1 ¼"	1 ¼"	AM	MA	DM	MD	GM	MG	JM	MJ			
2"	1 ¼"	1"	AN	NA	DN	ND	GN	NG	JN	NJ			
2"	1"	1"	AP	PA	DP	PD	GP	PG	JP	PJ			
1 ½"	1 ½"	1 ½"	AQ	QA	DQ	QD	GQ	QG	JQ	QJ			
1 ½"	1 ½"	1 ¼"	AR	RA	DR	RD	GR	RG	JR	RJ			
1 ½"	1 ½"	1"	AS	SA	DS	SD	GS	SG	JS	SJ			
1 ½"	1 ¼"	1 ¼"	AT	TA	DT	TD	GT	TG	JT	TJ			
1 ½"	1 ¼"	1"	AU	UA	DU	UD	GU	UG	JU	UJ			
1 ½"	1"	1"	AV	VA	DV	VD	GV	VG	JV	VJ			
1 ¼"	1 ¼"	1 ¼"	AW	WA	DW	WD	GW	WG	JW	WJ			
1 ¼"	1 ¼"	1"	AX	XA	DX	XD	GX	XG	JX	XJ			
1 ¼"	1"	1"	AY	YA	DY	YD	GY	YG	JY	YJ			
1"	1"	1"	AZ	ZA	DZ	ZD	GZ	ZG	JZ	ZJ			
Single Outlet Pumps													
Note Outlet for front section.													
Ports		SAE Split Flange		Metric Split Flange		OD Tube Porting							
		CW Code	CCW Code	CW Code	CCW Code	CW Code	CCW Code						
2 ½"	1 ½"	CJ	JC	CN	NC	—	—						
2 ½"	1 ¼"	CL	LC	CP	PC	—	—						
2 ½"	1"	CM	MC	CQ	QC	—	—						
2"	1 ½"	HB	BH	HR	RH	KB	BK						
2"	1 ¼"	HC	CH	HS	SH	KC	CK						
2"	1"	HF	FH	HT	TH	KF	FK						
1 ½"	1 ½"	HL	LH	HU	UH	KL	LK						
1 ½"	1 ¼"	HM	MH	HV	VH	KM	MK						
1 ½"	1"	HN	NH	HW	WH	KN	NK						
1 ¼"	1 ¼"	HO	OH	HX	XH	KO	OK						
1 ¼"	1"	HP	PH	HY	YH	KP	PK						
1"	1"	HQ	QH	HZ	ZH	KQ	QK						
⁴⁾ 2 ½"	1 ½"	NR	RN	—	—	—	—						
⁴⁾ 1 ¼"	1"	RS	SR	—	—	—	—						
Combined Outlet Pumps													
Ports		SAE Split Flange		OD Tube Porting									
		CW Code	CCW Code	CW Code	CCW Code								
2 ½"	1 ½"	UC	CU	—	—								
2 ½"	1 ¼"	UF	FU	—	—								
2"	1 ½"	UN	NU	PE	EP								
2"	1 ¼"	UO	OU	PM	MP								
1 ½"	1 ½"	UP	PU	PN	NP								
1 ½"	1 ¼"	UQ	QU	PQ	QP								
1 ¼"	1 ¼"	UR	RU	PR	RP								
Common inlet passage						CW	CCW						
No ports						C	D						
Combined Outlet Motors													
Ports		OD Tube Porting	BSPP Porting	SAE Split Flange	Metr. Straight Thread	Metric Split Flange							
		Code	Code	Code	Code	Code							
2"	2"	—	—	AA	—	GG							
1 ½"	1 ½"	MM	WW	BB	SS	HH							
1 ¼"	1 ¼"	NN	XX	CC	TT	JJ							
1"	1"	QQ	YY	EE	UU	KK							
¾"	¾"	RR	ZZ	FF	VV	LL							

⁴⁾ Outlet port for rear section

PGP/PGM

Model PGP =pump PGM =motor	Gear width			Theoret. displacem. cm ³ /rev.	Mineral Oil max. pressure bar		Weight	
	Inch	Code	mm		Cont.	Intermitt.	Single kg	Multiple add per sect. kg
PGP 315 PGM 315	1/2	05	12.7	10.2	245	275	6.7	6.7
	5/8	06	15.9	12.7	245	275	6.9	6.9
	3/4	07	19.1	15.2	245	275	7.1	7.1
	7/8	08	22.2	17.8	245	275	7.3	7.3
	1	10	25.4	20.3	245	275	7.6	7.6
	1 1/8	11	28.6	22.9	245	275	7.8	7.8
	1 1/4	12	31.8	25.4	245	265	8.1	8.1
	1 3/8	13	34.9	27.9	245	255	8.3	8.3
	1 1/2	15	38.1	30.5	225	245	8.5	8.5
	1 5/8	16	41.3	33.0	215	230	8.7	8.7
	1 3/4	17	44.5	35.6	200	215	9.0	9.0
	1 7/8	18	47.6	38.1	190	205	9.2	9.2
	2	20	50.8	40.6	175	190	9.4	9.4
PGP 330 PGM 330	1/2	05	12.7	16.1	245	275	15.0	12.0
	3/4	07	19.1	24.2	245	275	15.5	12.5
	1	10	25.4	32.3	245	275	16.0	13.0
	1 1/4	12	31.8	40.4	245	275	16.5	13.5
	1 1/2	15	38.1	48.4	245	265	17.0	14.0
	1 3/4	17	44.5	56.5	225	245	17.5	14.5
	2	20	50.8	64.6	210	225	18.0	15.0
PGP 350 PGM 350	1/2	05	12.7	20.9	245	275	19.0	16.0
	3/4	07	19.1	31.3	245	275	20.0	17.0
	1	10	25.4	41.8	245	275	21.0	18.0
	1 1/4	12	31.8	52.2	245	275	22.0	19.0
	1 1/2	15	38.1	62.7	245	265	23.0	20.0
	1 3/4	17	44.5	73.1	225	245	24.0	21.0
	2	20	50.8	83.6	210	225	25.0	22.0
	2 1/4	22	57.2	94.0	190	210	26.0	23.0
	2 1/2	25	63.5	104.5	175	190	27.0	24.0
PGP 365 PGM 365	3/4	07	19.1	44.3	245	275	26.0	23.0
	1	10	25.4	59.0	245	275	27.0	24.0
	1 1/4	12	31.8	73.8	245	275	28.0	25.0
	1 1/2	15	38.1	88.5	245	275	29.0	26.0
	1 3/4	17	44.5	103.3	245	275	30.0	27.0
	2	20	50.8	118.0	245	265	31.0	28.0
	2 1/4	22	57.2	132.8	225	245	32.0	29.0
	2 1/2	25	63.5	147.5	210	225	33.0	30.0

Pump Performance Data**PGP 315**

Speed RPM	Output flow	Gear Widths						
	Input power	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"
900	LPM	8	12	17	21	26	30	34
	kW	4	6	8	10	11	11	11
1200	LPM	11	17	23	29	35	40	46
	kW	5	8	11	13	15	15	15
1500	LPM	14	21	29	36	44	51	58
	kW	7	10	13	16	19	19	19
1800	LPM	17	26	35	44	53	62	70
	kW	8	12	16	20	22	23	23
2100	LPM	20	30	41	51	62	72	83
	kW	9	14	18	23	26	27	26
2400	LPM	23	35	47	59	71	83	95
	kW	11	16	21	26	30	31	30
3000	LPM	29	44	59	74	90	104	119
	kW	13	20	26	33	37	38	38

Performance data shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with an oil reservoir temperature of 50°C and a viscosity of 38mm²/s at 40°C.

Note:

Pump output flow is at the maximum rated pressure (see page14).

Motor Performance Data**PGM 315**

Speed RPM	Gear Widths									
	1"		1 1/4"		1 1/2"		1 3/4"		2"	
	245 bar		245 bar		225 bar		200 bar		175 bar	
	A	B	A	B	A	B	A	B	A	B
900	27	75.1	32	93.8	37	106.2	41	109.0	46	107.3
1200	33	75.1	40	93.8	46	106.2	52	109.0	59	107.3
1500	40	74.6	48	93.2	56	105.6	63	107.9	71	106.8
1800	46	74.0	56	92.6	65	105.1	74	107.3	84	106.2
2100	53	74.0	64	92.6	75	105.1	85	107.3	96	106.2
2400	59	72.3	72	90.4	84	102.8	96	105.1	109	103.9
3000	72	72.3	87	90.4	103	102.3	118	104.5	134	103.4

A: Input Flow LPM; B: Output Torque Nm

Note:

In accordance with our policy of continuing development, we reserve the right to change specifications shown in this catalogue without notice.

Pump Performance Data

PGP 330

Speed RPM	Output flow Input power	Gear Widths						
		1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"
900	LPM	12	19	26	33	40	47	54
	kW	6	10	13	16	19	21	22
1200	LPM	17	26	36	45	55	64	73
	kW	8	13	17	21	25	28	29
1500	LPM	22	34	46	57	69	81	93
	kW	11	16	21	26	32	34	36
1800	LPM	27	41	55	70	84	98	112
	kW	13	19	25	32	38	41	44
2100	LPM	32	48	65	82	98	115	131
	kW	15	22	30	37	44	48	51
2400	LPM	36	55	75	94	113	132	151
	kW	17	25	34	42	51	55	58
3000	LPM	46	70	94	118	142	166	190
	kW	21	32	42	53	64	69	73

Performance data shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with an oil reservoir temperature of 50° C and a viscosity of 38 mm²/s at 40° C.

Note:

Pump output flow is at the maximum rated pressure (see page14).

Motor Performance Data

PGM 330

Speed RPM	Gear Widths									
	1" 245 bar		1 1/4" 245 bar		1 1/2" 245 bar		1 3/4" 225 bar		2" 210 bar	
	A	B	A	B	A	B	A	B	A	B
900	38	114.1	47	143.5	55	172.9	63	188.1	72	200.0
1200	49	113.6	59	142.9	70	172.3	81	187.6	92	198.9
1500	59	113.0	72	141.8	85	171.2	99	186.4	112	197.7
1800	69	112.4	85	141.2	101	170.0	116	185.3	132	196.6
2100	80	111.9	98	140.1	116	168.9	134	183.6	152	194.3
2400	90	111.3	111	139.5	131	167.2	152	181.3	172	191.5
3000	110	110.7	136	139.0	161	166.7	186	180.2	212	190.4

A: Input Flow LPM; B: Output Torque Nm

Note:

In accordance with our policy of continuing development, we reserve the right to change specifications shown in this catalogue without notice.

Pump Performance Data**PGP 350**

Speed RPM	Output flow Input power	Gear Widths								
		1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/4"	2 1/2"
900	LPM	15	24	33	42	52	61	70	79	89
	kW	8	12	17	21	25	27	28	29	30
1200	LPM	21	33	46	58	71	83	95	108	120
	kW	11	17	22	28	33	36	38	39	39
1500	LPM	28	43	59	74	89	105	120	136	151
	kW	14	21	28	34	41	45	47	49	49
1800	LPM	34	52	71	89	108	127	145	164	183
	kW	17	25	33	41	50	54	57	58	59
2100	LPM	40	62	84	105	127	149	171	192	214
	kW	19	29	39	48	58	63	66	68	69
2400	LPM	46	71	96	121	146	171	196	220	245
	kW	22	33	44	55	66	72	76	78	79

Performance data shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with an oil reservoir temperature of 50° C and a viscosity of 38 mm²/s at 40° C.

Note:

Pump output flow is at the maximum rated pressure (see page14).

Motor Performance Data**PGM 350**

Speed RPM	Gear Widths													
	1" 245 bar		1 1/4" 245 bar		1 1/2" 245 bar		1 3/4" 225 bar		2" 210 bar		2 1/4" 190 bar		2 1/2" 175 bar	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
900	51	149.1	61	188.7	70	228.8	80	251.4	90	265.5	100	274.0	110	276.8
1200	64	148.6	77	187.6	90	227.7	103	250.3	116	264.4	129	272.3	142	275.1
1500	77	146.9	93	185.3	110	224.8	126	248.0	142	261.6	158	269.5	174	272.3
1800	91	146.3	110	184.7	129	223.7	148	246.3	167	259.9	187	268.3	206	270.6
2100	104	145.2	126	183.0	149	222.0	171	244.6	193	258.2	216	266.1	238	268.9
2400	117	142.9	143	180.8	168	219.2	194	241.2	219	254.8	245	262.7	270	265.5

A: Input Flow LPM; B: Output Torque Nm

Note:

In accordance with our policy of continuing development, we reserve the right to change specifications shown in this catalogue without notice.

Pump Performance Data

PGP 365

Speed RPM	Output flow	Gear Widths							
	Input power	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/4"	2 1/2"
900	LPM	30	44	57	70	83	96	109	122
	kW	18	23	29	35	41	47	49	50
1200	LPM	44	61	79	96	114	131	149	166
	kW	23	31	39	47	55	63	65	67
1500	LPM	57	79	101	123	145	167	188	211
	kW	29	39	49	59	68	78	82	84
1800	LPM	70	97	123	149	176	202	228	255
	kW	35	47	59	70	82	94	98	101
2100	LPM	83	114	145	176	207	238	268	299
	kW	41	55	68	82	96	110	114	117
2400	LPM	97	132	167	203	238	273	308	343
	kW	47	63	78	94	110	125	131	134

Performance data shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with an oil reservoir temperature of 50°C and a viscosity of 38 mm²/s at 40°C.

Note:

Pump output flow is at the maximum rated pressure (see page 14).

Motor Performance Data

PGM 365

Speed RPM	Gear Widths													
	1" 245 bar		1 1/4" 245 bar		1 1/2" 245 bar		1 3/4" 245 bar		2" 245 bar		2 1/4" 225 bar		2 1/2" 210 bar	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
900	70	210.7	83	266.1	97	323.1	111	380.8	124	435.0	138	454.2	152	466.1
1200	88	208.5	106	263.3	124	319.7	142	376.8	160	430.5	179	449.7	197	461.0
1500	107	205.1	129	259.3	152	314.1	174	370.6	197	423.7	219	442.3	242	454.2
1800	125	203.9	152	257.6	179	312.4	206	368.9	233	421.4	260	440.1	287	451.4
2100	144	198.3	175	250.8	206	303.9	238	357.0	269	407.9	300	426.0	332	436.7
2400	162	192.6	198	243.5	234	295.5	269	345.2	305	394.3	341	411.8	377	422.6

A: Input Flow LPM; B: Output Torque Nm

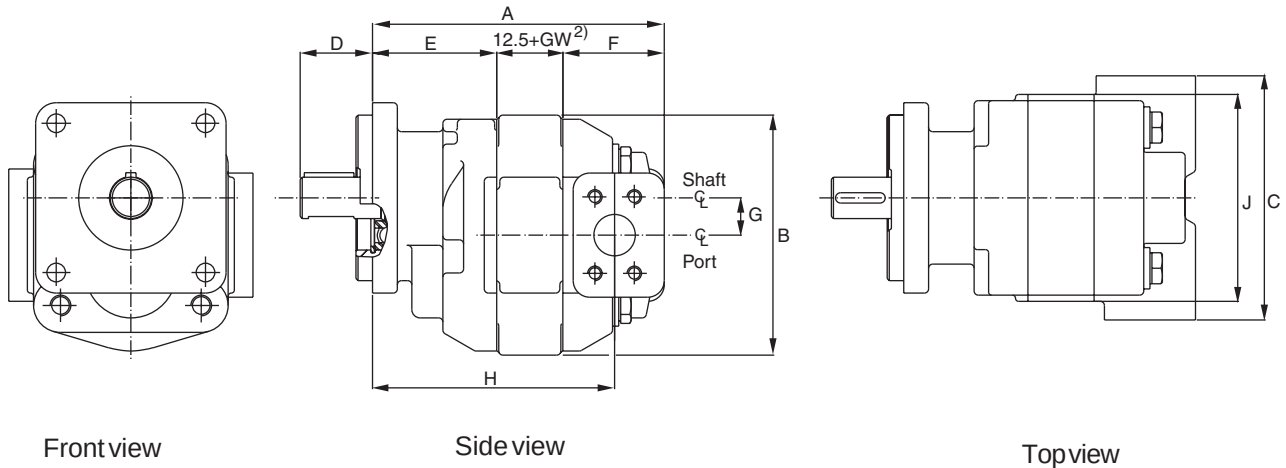
Note:

In accordance with our policy of continuing development, we reserve the right to change specifications shown in this catalogue without notice.

Dimensions

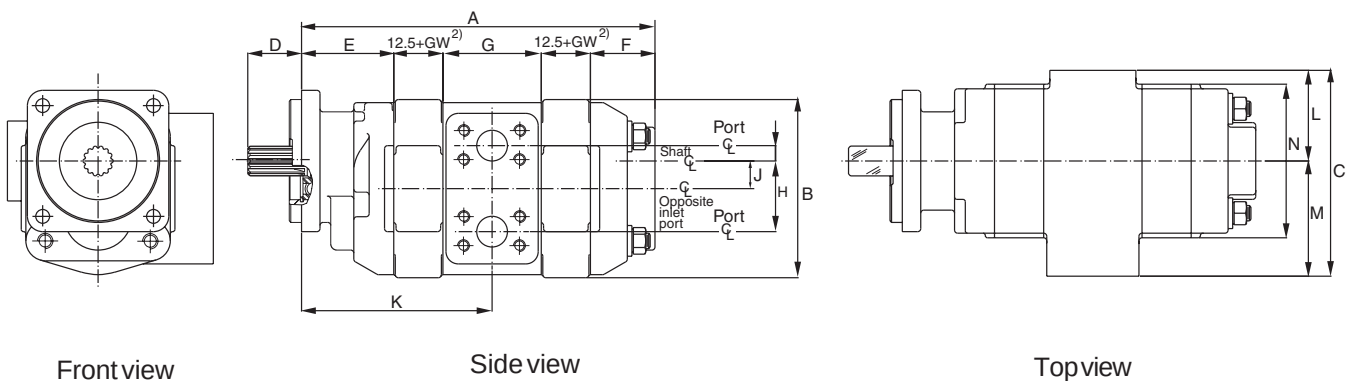
Single pumps and motors

Model	Dimensions mm									
	A	B	C ⁴⁾	D ³⁾	E	F	G	H	J(P)	J(M)
315	108.5+GW ¹⁾	120.7	108.0	41.1	47.8	50.8	19.1	83.1+GW	101.6	106.4
330	157.2+GW	149.4	174.8	41.1	79.2	65.0	22.2	125.5+GW	122.2	127.0
350	179.3+GW	152.4	108.8	55.6	88.9	77.7	25.4	141.2+GW	146.1	146.1
365	185.7+GW	184.2	187.5	55.6	95.3	77.7	28.6	147.6+GW	158.8	158.8



Tandem pumps and motors

Model	Dimensions mm														
	A	B	C ⁴⁾	D ³⁾	E	F	G	H	I	J	K	L**	M**	N(P)	N(M)
315	179.1+T.GW ¹⁾	120.7	127.0	41.1	47.8	44.5	66.5	46.7	8.6	19.1	91.2+GW	57.2	699	101.6	106.4
330	250.9+T.GW	149.4	172.2	41.1	79.2	57.2	88.9	60.5	15.7	22.2	136.7+GW	78.5	93.7	122.2	127.0
350	260.4+T.GW	152.4	195.3	55.6	88.9	57.2	88.9	63.5	12.7	25.4	146.1+GW	90.4	104.6	146.1	146.1
365	289.1+TGW	184.2	212.9	55.6	95.3	66.5	101.6	73.3	15.7	28.6	158.8+GW	93.7	119.1	158.8	158.8



¹⁾GW =Gear width

²⁾PGP 315 is 10.2+GW

³⁾This dimension will vary with type of drive shaft.

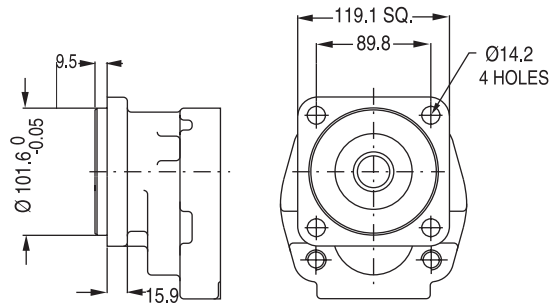
⁴⁾This dimension will vary with type of ports. T = Total.

Mounting flange options

Heavy-duty cast-iron pumps and motors Series PGP, PGM 300

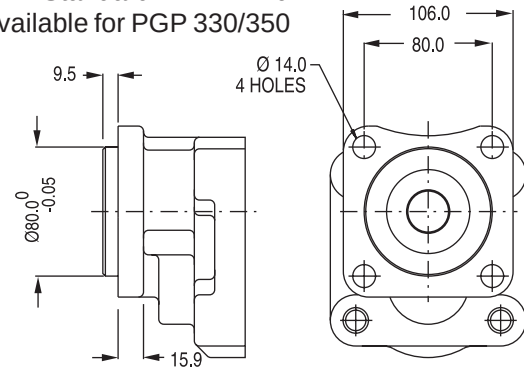
Code 42

SAE "B" 4 Bolt ANSI 101-4
available for PGP 330/350/365



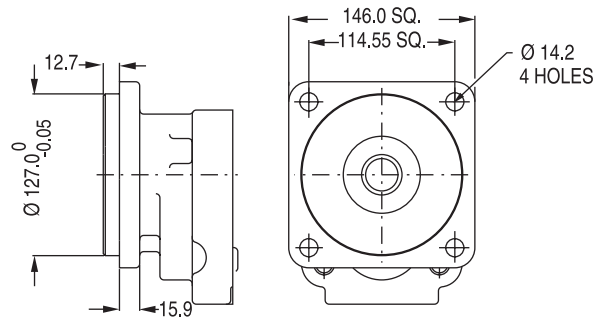
Code 62

BNA Standard NF R 17-102
available for PGP 330/350



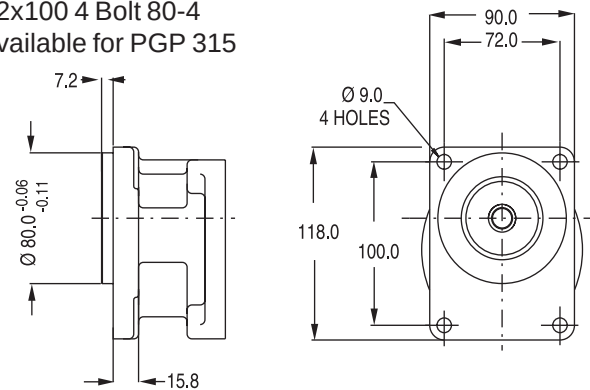
Code 78

SAE "C" 4 Bolt ANSI 127-4
available for PGP 330/350/365



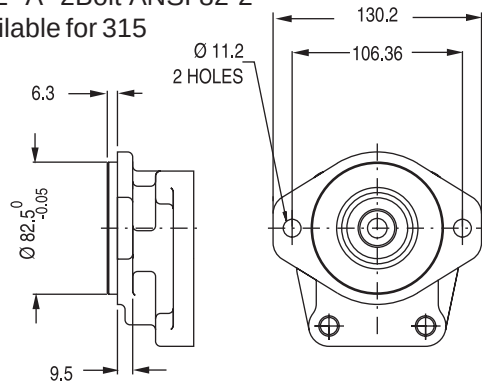
Code 90

72x100 4 Bolt 80-4
available for PGP 315



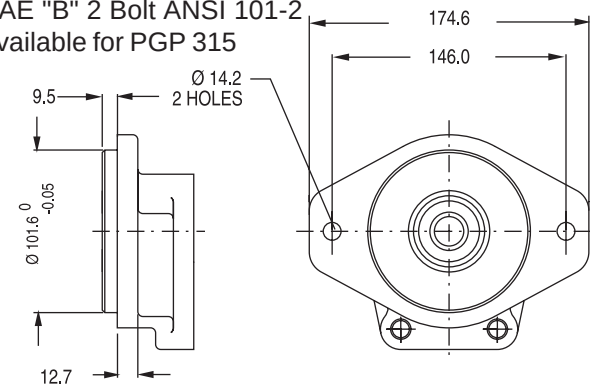
Code 93

SAE "A" 2 Bolt ANSI 82-2
available for 315



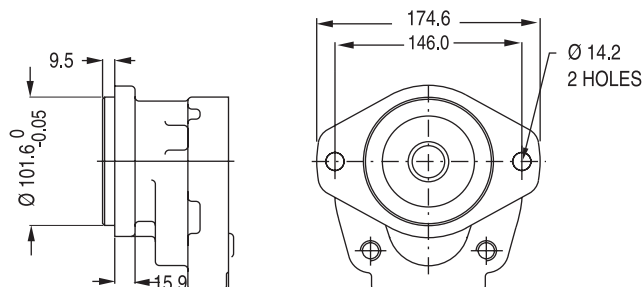
Code 96

SAE "B" 2 Bolt ANSI 101-2
available for PGP 315



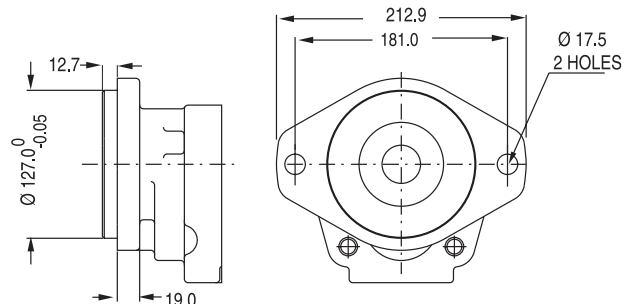
Code 97

SAE "B" 2 Bolt ANSI 101-2
available for PGP 315/330/350/365



Code 98

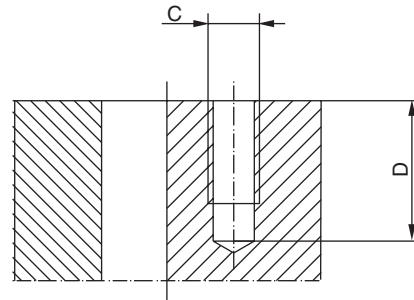
SAE "C" 2 Bolt ANSI 127-2
available for PGP 350/365



Port options

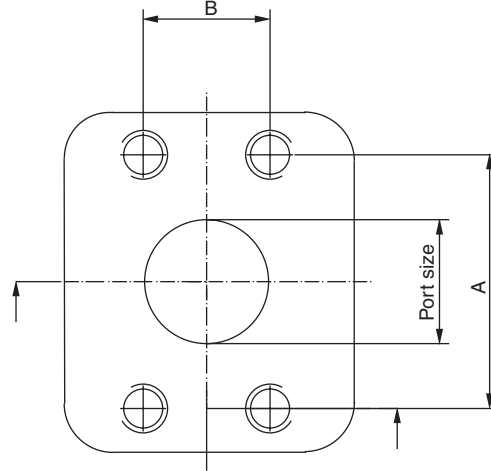
SAE flanged ports metric thread (SSM)

Port Size	B	A	C	D
mm	mm	mm	mm	mm
12.7	17.5	38.1	M8x1.25	23.9
19.1	22.2	47.6	M10x1.50	22.4
25.4	26.2	52.2	M10x1.50	22.4
31.8	30.2	58.7	M10x1.50	28.4
36.1	35.7	69.9	M12x1.75	26.9
50.8	42.9	77.8	M12x1.75	26.9
63.5	50.8	88.9	M12x1.75	30.2



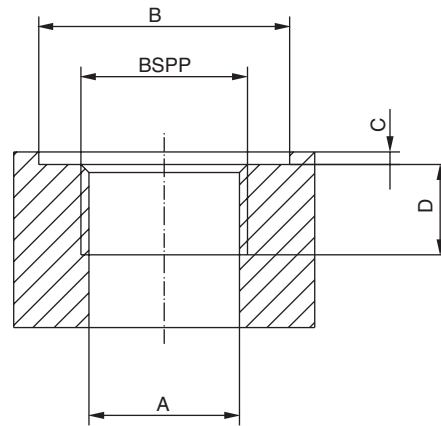
SAE flanged ports UNC (SSS)

Port Size	B	A	C	D
mm	mm	mm	mm	mm
12.7	17.5	38.1	5/16"-18	23.9
19.1	22.2	47.6	3/8"-16	22.4
25.4	26.2	52.2	3/8"-16	22.4
31.8	30.2	58.7	7/16"-14	28.4
36.1	35.7	69.9	1/2"-13	26.9
50.8	42.9	77.8	1/2"-13	26.9
63.5	50.8	88.9	1/2"-13	30.2



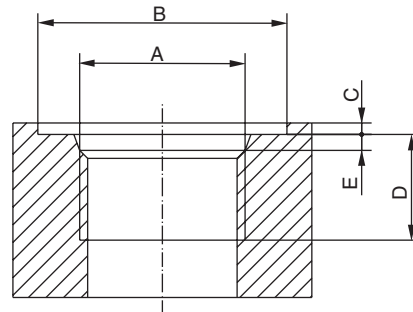
British Standard Pipe Parallel (BSPP)

BSPP	A	B	C	D
	mm	mm	mm	mm
0.50"-14	19.0	34.0	2.5	14.0
0.75"-14	24.50	40.0	2.5	16.0
1.00"-11	30.75	50.0	2.5	18.0
1.25"-11	39.50	58.0	2.5	20.0
1.50"-11	45.25	64.0	2.5	22.0
2.00"-11	56.25	78.0	3.0	24.0



SAE straight thread (ODT)

ODT	A	D	B	C	E
	UNF	mm	mm	mm	mm
1/2"	3/4"-16	14.3	30.2	2.4	2.55
5/8"	7/8"-14	16.7	34.1	2.4	2.55
3/4"	1 1/16"-12	19.1	41.3	2.4	3.30
7/8"	1 3/16"-12	19.1	44.8	2.4	3.30
1"	1 5/16"-12	19.1	48.5	2.4	3.35
1 1/4"	1 7/8"-12	19.1	57.7	2.4	3.35
1 1/2"	1 7/8"-12	19.1	65.0	2.4	3.35
2"	2 1/2"-12	19.1	88.4	2.4	3.35



Drive shaft options**PL factor**

Each section of a multiple pump should be regarded as a single unit with corresponding delivery and power input requirements. Since the entire input horsepower is fed through a common drive shaft, the power delivered to the unit is limited by the physical strength of the shaft. This limit is defined as a "PL" factor; "P" being the operating pressure in "bar" and "L" the summation of gear widths on all sections in "mm".

In multiple units the "PL" must be calculated for the first connecting shaft as well as the drive shaft. Each style or type of shaft has a unique "PL" factor as noted in the table below.

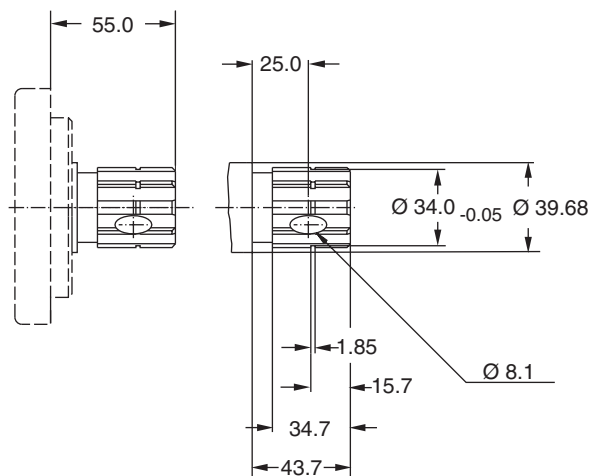
Operating Pressure (bar) x Total Gear Width (mm) = PL

PL MUST NOT EXCEED NUMBER SHOWN IN CHART FOR APPROPRIATE SHAFT.

For gear width depending on displacement, see previous tables on Pump resp. Motor Performance data.

PGP/PGM 300 Drive Shaft**Code 06**

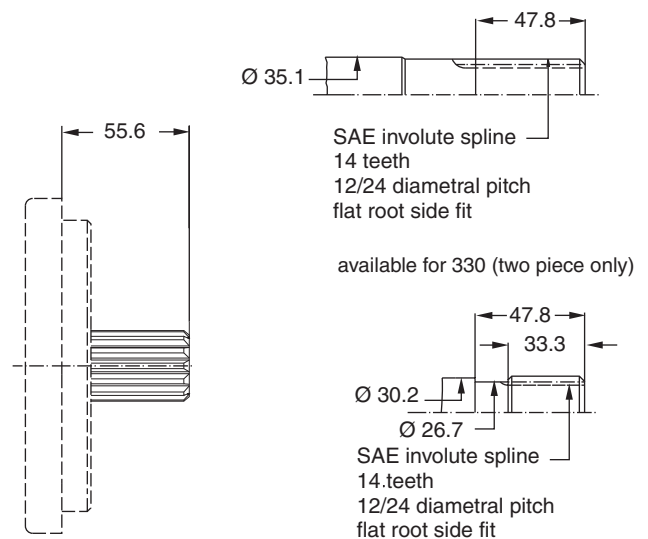
DIN 5462 B8x32x36
available for 330/350

**Heavy-duty cast-iron pumps and motors
Series PGP, PGM 300****PL chart**

Shaft style	Integral shaft a. gear	Cont. Shaft
PGP/PGM 315		
SAE "A" Spline (up to 1.25" GW)	7.793	-
SAE "A" Key	6.305	-
SAE "B" Spline	23.467	-
SAE "B" Key	17.338	-
Connecting Shaft	-	9720
PGP/PGM 330		
SAE "B" Spline	14.798	10.945
SAE "B" Key	10.945	10.945
SAE "B-B" Spline	22.766	10.945
SAE "B-B" Key	16.287	10.945
SAE "C" Spline	-	10.945
SAE "C" Key	-	10.945
Connecting Shaft	-	10.945
PGP/PGM 350		
SAE "B" Spline	11.296	11.296
SAE "B" Key	8.319	8.319
SAE "B-B" Spline	17.338	15.761
SAE "B-B" Key	12.434	12.434
SAE "C" Spline	33.449	15.761
SAE "C" Key	24.343	15.761
Connecting Shaft	-	15.761
PGP/PGM 365		
SAE "B" Spline	8.844	8.844
SAE "B" Key	6.480	6.480
SAE "B-B" Spline	13.572	13.573
SAE "B-B" Key	9.720	9.720
SAE "C" Spline	26.094	20.928
SAE "C" Key	18.914	20.928
Connecting Shaft	-	20.928

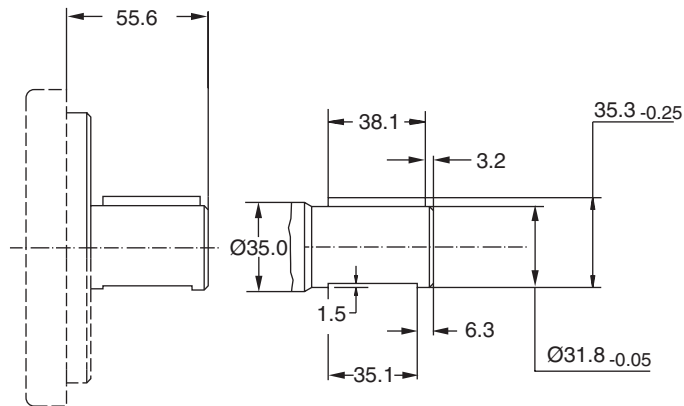
Code 07

SAE "C" teeth ANSI 32-4
available for 350/365



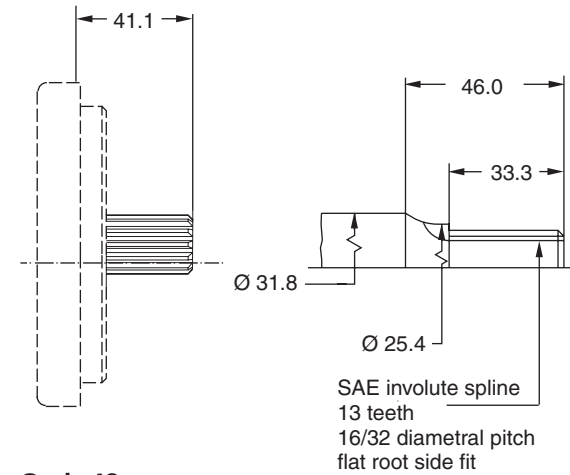
Code 11

SAE "C" keyed ANSI 32-1
available for 350/365



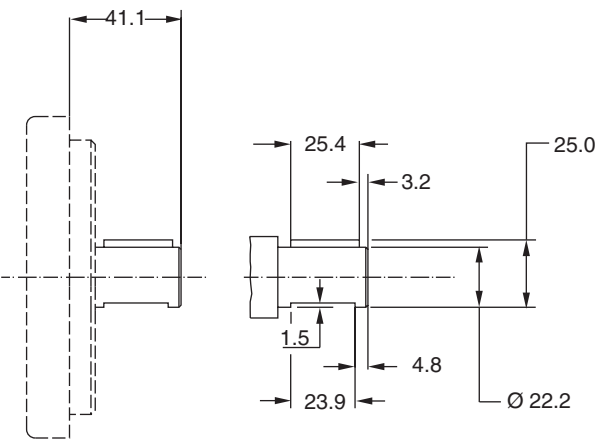
Code 25

SAE "B" 13 teeth ANSI 22-4
available for 330/350/365 (single only)



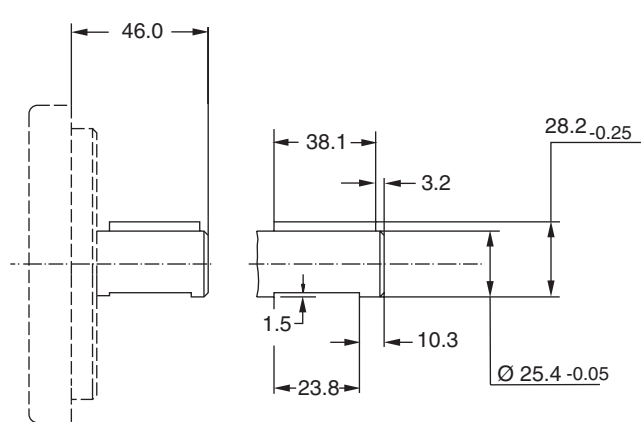
Code 30

SAE "B" keyed ANSI 22-1
available for 330



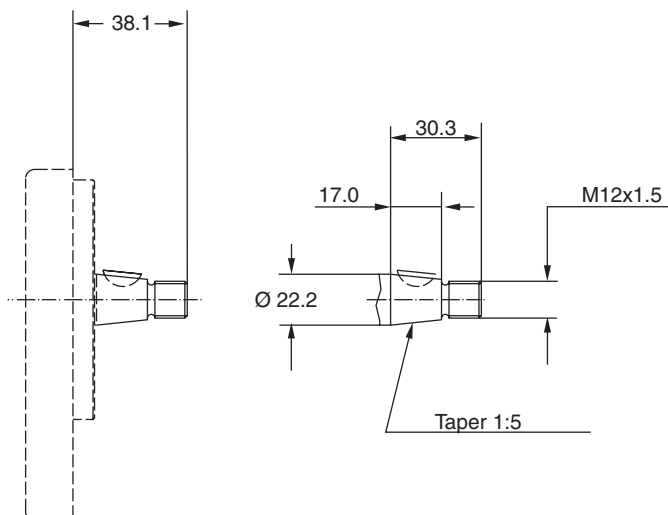
Code 43

SAE "BB" keyed ANSI 25-1
available for 330



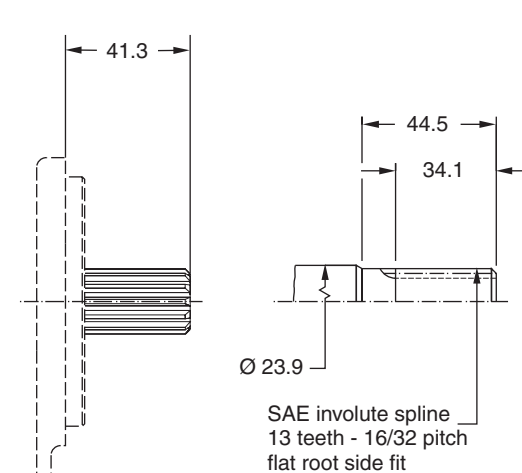
Code 60

DIN 254 tapered with thread
available for 315



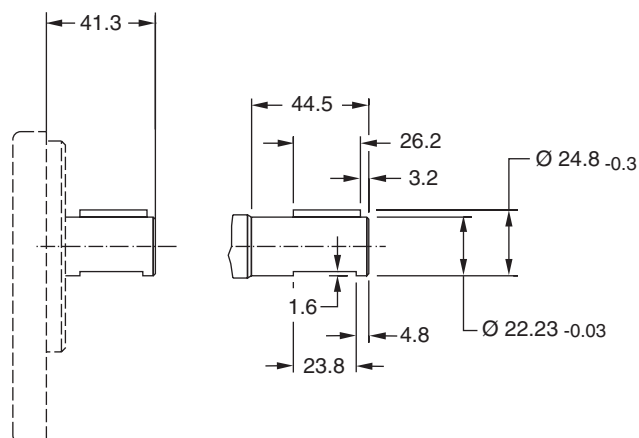
Code 65

SAE "B" 13 teeth ANSI 22-4
available for 315

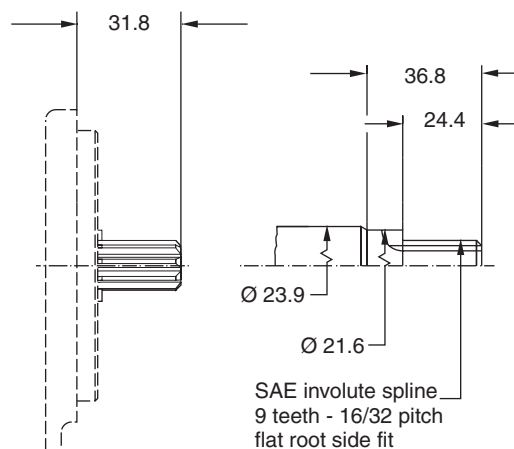


PGP/PGM 300 Drive Shaft

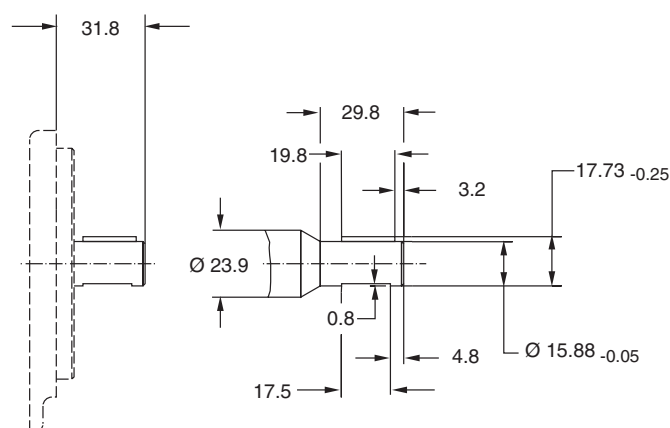
Code 66

SAE "B" keyed ANSI 22-1
available for 315

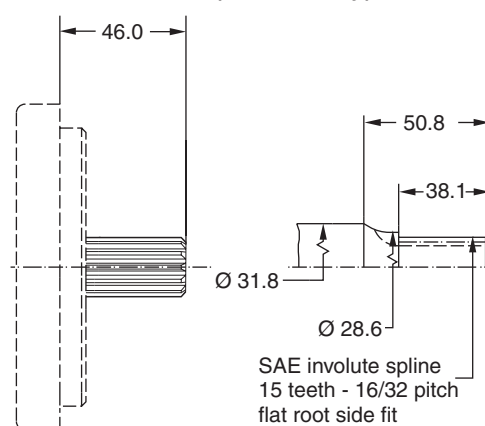
Code 96

SAE "A" 9 teeth ANSI 16-4
available for 315

Code 97

SAE "A" keyed ANSI 16-1
available for 315

Code 98

SAE "BB" 15 teeth ANSI 25-4
available for 330/350 (tandem only)

Drive Shaft max. input torque

Shaft Style ● Integral : 1 ● 2 pieces: 2			PGP 315	PGP 330	PGP 350	PGP 365
			Nm	Nm	Nm	Nm
SAE A	splined 9 teeth	1 2	109 -	- -	- -	- -
	keyed	1 2	84 -	- -	- -	- -
SAE B	splined 13 teeth	1 2	328 -	328 215	328 328	328 328
	keyed	1 2	226 -	226 215	226 226	226 226
SAE BB	splined 15 teeth	1 2	- -	503 215	503 407	503 503
	keyed	1 2	- -	339 215	339 339	339 339
SAE C	splined 14 teeth	1 2	- -	- 215	960 407	960 678
	keyed	1 2	- -	- 215	678 407	678 678
DIN 5462 B8x32x36		2	-	215	407	-
DIN 254 taper 1:5		1	74	-	-	-
Connecting Shaft			122	215	407	723

Parker Series 500**High Performance.****High Efficiency.****High pressure operation.**

PGP 500 series pumps offer superior performance, high efficiency and low noise operation at high operating pressures. They are produced in four frame sizes (PGP 503, 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.



PGP 500

Description

- **Up to 275 bar continuous operation**

High strength materials and large journal diameters provide low bearing loads for high pressure operation.

- **Low noise**

PGP 503-9 tooth gear profile, PGP 505 and 517-13 tooth gear profile, PGP 51-12 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.

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 - 4000 rpm, see tables.
Theor. displacem.	See tables.
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 short time without load Consultation is recommended.
Outlet pressure	see tables
Hydraulic fluids	Mineral oil, fire resistant fluids: - water-oil emulsions 60/40, HFB - water-glycol, HFC - phosphate-esters, HFD
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. 16/13.
Flow velocity	See table.
Direction of rotation (looking at the drive shaft)	Clockwise, counter-clockwise or double Attention! Drive pump only in indicated direction of rotation.
Multiple pump assemblies	- Available in two, three or four section configurations. - Max. shaft loading must 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: - Each gear housing has individual inlet and outlet ports. Common inlet configuration: - Two gear sets share a common inlet. - Inlet is located in the front (and third for tripple or quad constr.) gear housing section.

Ordering code

Series PGP, PGM 500

	PG	502											
	Gear Design	Type	Unit	Displace- ment	Rotation	Shaft	Flange	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port ¹⁾	Rear Pressure Port ¹⁾	

Code	Type
P	Pump
M	Motor

Code	Unit	
	Pump	Motor
A	Single unit	Standard Motor w/o checks
B	Multiple unit	Standard Motor w. two checks
C	—	Standard Motor w. one anti cavitation check (ACC)

Displacement	
Code	ccm
0008	0.8
0012	1.2
0016	1.6
0021	2.1
0025	2.5
0033	3.3
0036	3.6
0043	4.3
0048	4.8
0058	5.8
0062	6.2
0079	7.9

Code	Rotation
C	Clockwise
A	Counter clockwise
B	bi-directional

Code	Shaft
H1	Ø10, 3.0Key, no thread, 36L, parallel
P1	Ø10, 8.0L, 2.0Key, M6, taper 1:5
P2	Ø9.35, 8.8L, 2.4Key, M6, taper 1:8
P3	Ø9.35, 8.8L, 2.0Key, M6, taper 1:8
V1	5x6.5 long shaft w/o coupling tang drive
V2	5x4.5 short shaft w/o coupling tang drive
V3	5x4.5 short shaft w/ coupling tang drive

¹⁾ Only coded for the last section.

For products of short-term delivery please consult page 76

	4		503							3)
Motor Drain Option ²⁾	Drain Position ²⁾	Section Connection	Unit	Displacement	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port ¹⁾	Rear Pressure Port ¹⁾	

Code	Section Connection
S	Seperate inlets
C	Common inlets

Code	Drain Position
4	Rear drain

Code	Motor Drain Option
B1	no drain
N	M10x1 metric thread

Code	Port Options
B1	No ports
D2	9/16 - 18 UNF thread
D3*	3/4 - 16 UNF thread
E1	1/4 - 19 BSP thread
E2	3/8 - 19 BSP thread
E3*	1/2 - 14 BSP thread
G1	M14x1.5 thread
G3*	M18x1.5 thread
J1*	8mm - Ø26mm - M5 square flange
J2*	10mm - Ø26mm - M5 square flange
J3*	8mm - Ø30mm - M6 square flange
J4*	12mm - Ø30mm - M6 square flange

*) Not usable for rear ports

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

²⁾ Only for motors

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

Code	Flange
D1	52.2x72.0 - Ø25.4 rectangular
H1	82.5 - Ø50.8 SAE "A-A" 2bolt flange
P1	40.0x40.0 - Ø32.0 w/ seal ported, thrubolt flange
P2	40.0x40.0 - Ø32.0 w/o seal ported, thrubolt flange
P3	40.0x40.0 - Ø32.0 w/ seal, thrubolt flange
P4	40.0x40.0 - Ø32.0 w/ seal f. short shaft, thrubolt flange
P5	40.0x40.0 - Ø32.0 w/ seal f. long shaft, thrubolt flange

Ordering code

Heavy-duty aluminium pumps and motors
Series PGP, PGM 500

PG	505											
Gear Design	Type	Unit	Displace- ment	Rotation	Shaft	Flange	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port ¹⁾	Rear Pressure Port ¹⁾	

Code	Type
P	Pump
M	Motor

Code	Unit	
	Pump	Motor
A	Single unit	Standard Motor without checks
B	Multiple unit	Standard Motor with two checks
C	—	Standard Motor w. one anti cavitation check (ACC)
M	Single distributor unit	—
N	Multiple distributor unit	—

Displacement	
Code	ccm
0030	3.0
0040	4.0
0050	5.0
0060	6.0
0070	7.0
0080	8.0
0100	10.0
0110	11.0
0120	12.0

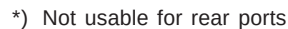
Code	Rotation
C	Clockwise
A	Counter clockwise
B	bi-directional

Code	Shaft
A1	9T, 16/32DP, 32L, SAE "A" spline
A2	9T, 20/40DP, 27L, SAE "AA" spline
J1	Ø12.7, 3.2Key, no thread, 38L, parallel
J2	Ø13.45, 3.2Key, 10-32UNF 33.3L, parallel
K1	Ø15.88, 4.0Key, no thread, 32L, SAE "A", parallel
Q1	Ø12.7, 7.6L, 2.4Key, M8x1.25, taper 1:8
Q2	Ø14.25, 5.5L, 3.0Key, M10x1, taper 1:8
V4	11x2.8, 1/4UNF for flange code A1, tang drive

Code	Flange
A1	50.8x50.8 - Ø45.25 4bolt square flange
D2	56.0x73.0 - Ø30.0 rectangular
D3	71.4x96.0 - Ø36.47 rectangular
H1	82.5 - Ø50.8 SAE "A-A" 2bolt flange
H2	106.4 - Ø82.55 SAE "A" 2bolt flange

¹⁾ Only coded for the last section.

 For products of short-term delivery
please consult page 76



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

Ordering code

Heavy-duty aluminium pumps and motors

Series PGP, PGM 500

PG		511											
Gear Design	Type		Unit	Displacement	Rotation	Shaft	Flange	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port ²⁾	Rear Pressure Port ²⁾	

Code	Type
P	Pump
M	Motor*
F	Flow divider
*) >6cc only	

Code	Unit	
	Pump	Motor
A	Single unit	Standard Motor w/o checks
B	Multiple unit	Standard Motor w. two checks
C	—	Standard Motor w. one anti cavitation check (ACC)
D	—	Standard Motor w. one ACC + restrictor
M	Single distributor unit	—
N	Multiple distributor unit	—
S ¹⁾	Single split gear unit	—
T ¹⁾	Multiple split gear unit	—

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

Code	Displacement*
Code	ccm
0040	4.0
0060	6.0
0080	8.0
0100	10.0
0110	11.0
0140	14.0
0160	16.0
0190	19.0
0230	23.0
0270	27.0
0310	31.0
0330	33.0

Code	Rotation
C	Clockwise
A	Counter clockwise
B	bi-directional

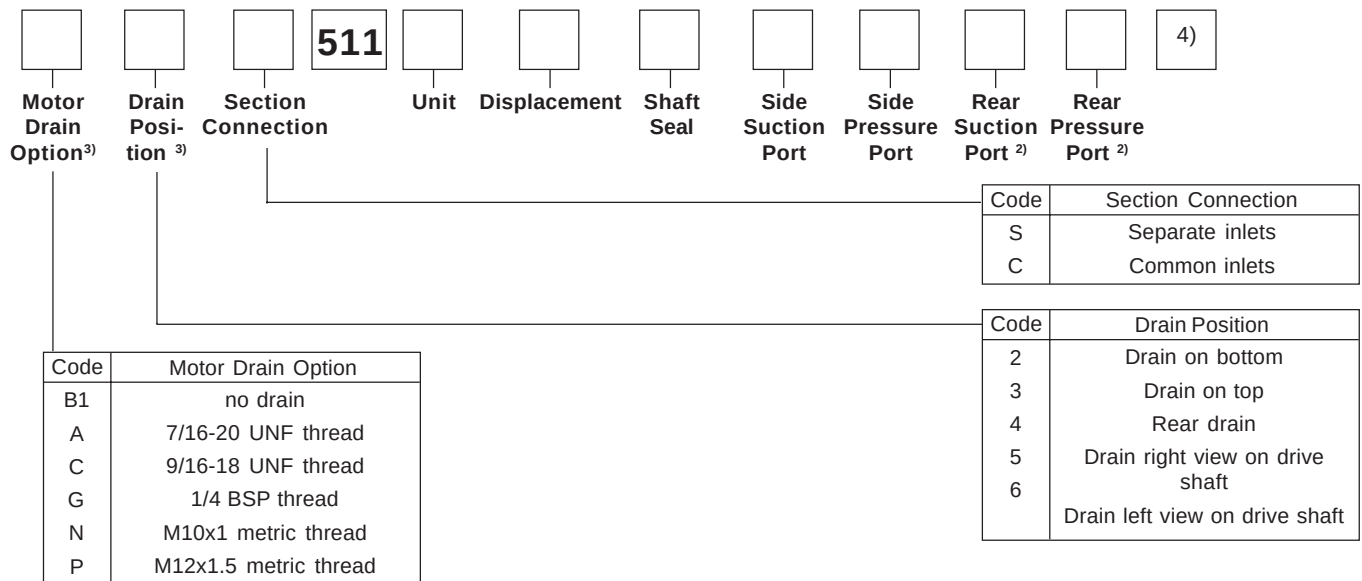
Code	Shaft
A1	9T, 16/32DP, 32L, SAE "A" spline
B1	10T, 16/32DP, 32L spline
B2	10T, 16/32DP, 38.2L spline
C1	11T, 16/32DP, 38.2L, SAE 19-4 spline
C2	11T, 16/32DP, 32.2L, SAE 19-4 spline
F1	9T, B17x14, 23L, DIN 5482 spline
F2	13T, W18x1.25, 24L, DIN 5480 spline
F3	14T, W20x1.25, 24L, DIN 5480 spline
K1	Ø15.88, 4.0Key, no thread, 32L, SAE "A", parallel
K4	Ø15.88, 3.95Key, no thread, 58.7L, parallel
L1	Ø17.46, 4.8Key, 7/16UNF ext., 44.2L, parallel
L6	Ø19.05, 4.8Key, no thread, 32L, SAE 19-1, parallel
R1	Ø15.9, 8.0L, 4.0Key, 1/2 UNF, SAE "A", taper 1:8
S1	Ø17.0, 7.7L, 3.0Key, M12x1.5, taper 1:5
S2	Ø16.65, 12.0L, 3.2Key, M12x1.5, taper 1:8
S4	Ø16.65, 12.0L, 4.0Key, M12x1.5, taper 1:8
V5	8x6.5 short shaft, tang drive

For products of short-term delivery please consult page 76

¹⁾ Only for displacement codes 0060 to 0280

²⁾ Only coded for the last section.

³⁾ Only for motors



Code	Flange
D3	71.4x96.0 - Ø36.47 rectangular
D4	72.0x100.0 - Ø80 rectangular
H2	106.4 - Ø82.55 SAE "A" 2bolt flange
H3	146.1 - Ø101.6 SAE "B" 2bolt flange
Q1	60.0x60.0 - Ø52.0 w/o seal ,O' thrubolt flange
Q2	60.0x60.0 - Ø50.0 w. seal ,O' 'thrubolt flange
Q3	60.0x60.0 - Ø52.0 w/o seal ,O' thrubolt flange
Q4	60.0x60.0 - Ø50.0 w. seal ,O',thrubolt flange
J5	H2 with slots, spec 2bolt
F3	71.4x96.0 - Ø36.47 rect., w. OBB and cont. drive shaft
F4	72.0x100.0 - Ø80.0 rect., w. OBB and cont. drive shaft
L2	106.4 - Ø82.55 SAE "A" 2bolt, w. OBB + cont. drive shaft
L3	146.1 - Ø101.6 SAE "B" 2bolt, w. OBB + cont. drive shaft

Code	Port Options	Code	Port Options
B1	No ports	K1*	19mm-30.48mm-5/16-18UNC square
C2	3/8 - 18 NPT thread	K2*	19mm-30.48mm-M8 square
C3	1/2 - 14 NPT thread	K3*	19mm-32mm-M6 square
D2	9/16 - 18 UNF thread	K4*	16mm-25.15mm-M6 square
D3	3/4 - 16 UNF thread	L1*	13mm-Ø30mm-M6 diamond
D4	7/8 - 14 UNF thread	L2*	19mm-Ø40mm-M8 diamond
D5	1 1/16 - 12 UN thread	L4*	13mm-Ø30mm-1/4-20UNF diamond
D6*	1 5/16 - 12 UN thread	L5*	19mm-Ø40mm-5/16-18UNC diamond
D7*	1 5/8 - 12 UN thread	M1*	15mm-30.16mm-M6 diamond
D8*	1 7/8 - 12 UN thread	M2*	15mm-30.16mm-1/4-20UNF diamond
E2	3/8 - 19 BSP thread	M3*	14.2mm-35.57mm-1/4-20UNF diamond
E3	1/2 - 12 BSP thread	N1*	1/2"-5/16-18UNC SAE Split Flange
E4*	5/8 - 14 BSP thread	N2*	3/4"-3/8-16UNC SAE Split Flange (>6cc only)
E5*	3/4 - 14 BSP thread	N3*	1"-3/8-16UNC SAE Split Flange
E6*	1 - 11 BSP thread	N4*	1 1/4"-7/16-14UNC SAE Split Flange
E7*	1 1/4 - 11 BSP thread		12.7mm - M8 Metric Split Flange
E8*	1 1/2 - 11 BSP thread	P1*	19.0mm - M10 Metric Split Flange
G1	M14x1.5 thread	P2*	25.4mm - M10 Metric Split Flange (>6cc only)
G3	M18x1.5 thread	P3*	31.8mm - M10 Metric Split Flange
G4	M22x1.5 thread	P4*	38.1mm - M12 Metric Split Flange
G5*	M26x1.5 thread	P5*	
G7*	M30x1.5 thread		
G8*	M33x2 thread		
H1	M14x1.5 thread w. O-ring		
H2	M16x1.5 thread w. O-ring		
H3	M18x1.5 thread w. O-ring		
H4	M22x1.5 thread w. O-ring		
H6*	M27x2 thread w. O-ring		
H8*	M33x2 thread w. O-ring		
J3*	8mm - Ø30mm - M6 square		
J4*	12mm - Ø30mm - M6 square		
J5*	15mm - Ø35mm - M6 square		
J6*	15mm - Ø40mm - M8 square		
J7*	20mm - Ø40mm - M6 square		
J8*	18mm - Ø55mm - M8 square		
J9*	26mm - Ø55mm - M8 square		

* 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 usable for rear ports.

Ordering code

Series PGP, PGM 500

	PG	517											
	Gear Design	Type	Unit	Displace- ment	Rotation	Shaft	Flange	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port ¹⁾	Rear Pressure Port ¹⁾	

Code	Type
P	Pump
F	Flow divider

Code	Unit
	Pump
A	Single unit
B	Multiple unit
C	—
M	Single distributor unit
N	Multiple distributor unit

Displacement*	
Code	ccm
0140	14
0160	16
0190	19
0230	23
0250	25
0280	28
0330	33
0380	38
0440	44
0520	52
0700	70

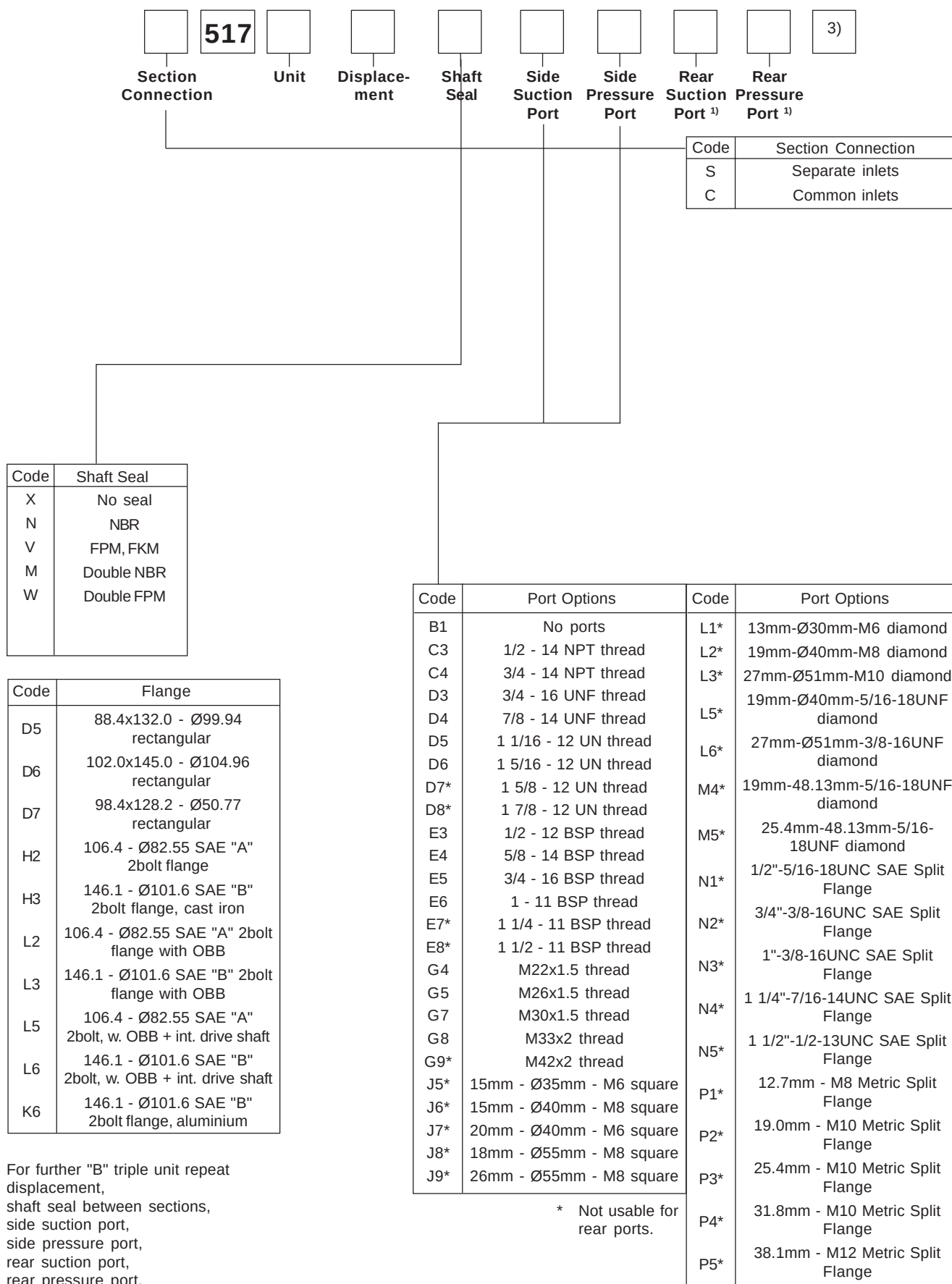
*) Others on request

Code	Rotation
C	Clockwise
A	Counter clockwise
B	bi-directional

**For products of short-term delivery
please consult page 76**

Code	Shaft
D1	13T, 16/32DP, 41.2L, SAE "B" spline
E1	15T, 16/32DP, 46L, SAE "B-B" spline
F4	18T, W25x1.25, 34L, DIN 5480 spline
M1	Ø22.2, 6.3Key, no thread, 41.2L, SAE "B", parallel
M2	Ø25.4, 6.3Key, no thread, 46L, SAE "B-B", parallel
T1	Ø21.59, 11.2L, 4.0Key, M14x1.5, taper 1:8
T2	Ø25, 12L, 5.0Key, M16x1.5, taper 1:5

¹⁾ Only coded for the last section.

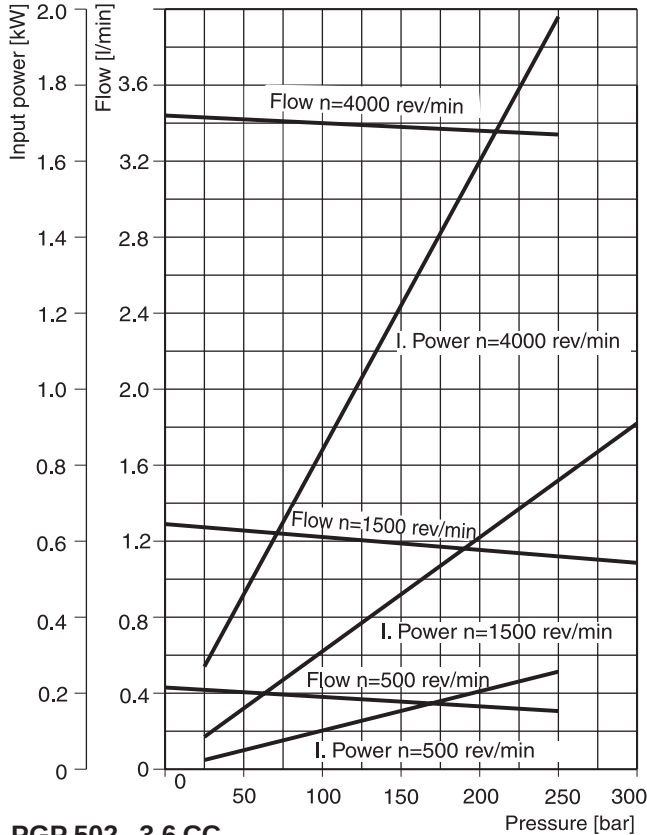


Performance data

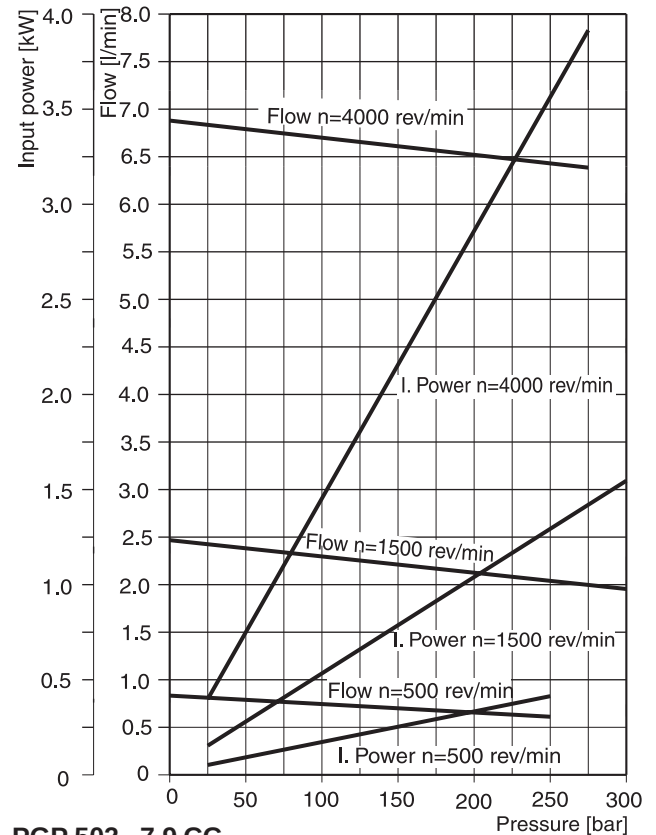
Heavy-duty aluminium pumps and motors Series PGP, PGM 500

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

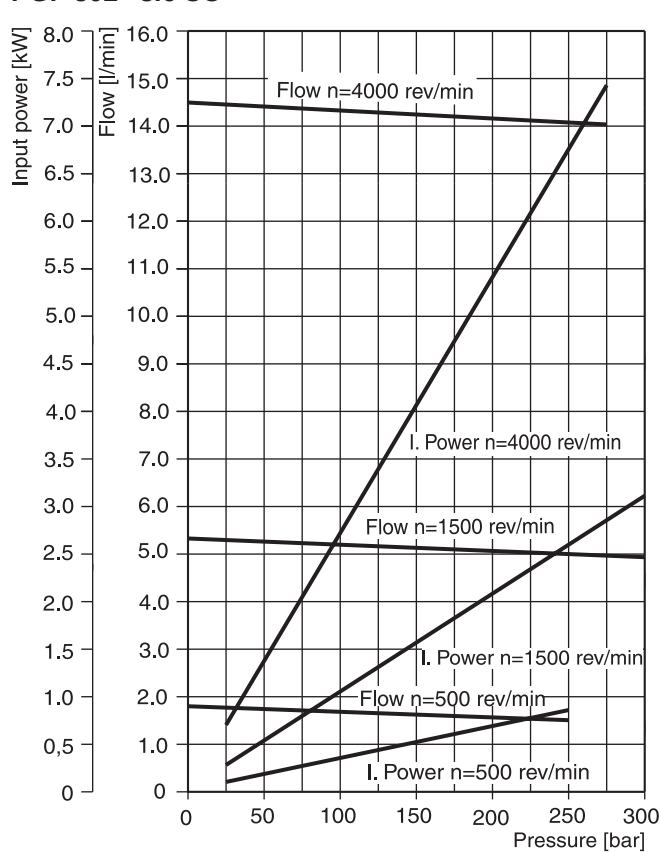
PGP 502 - 0.8 CC



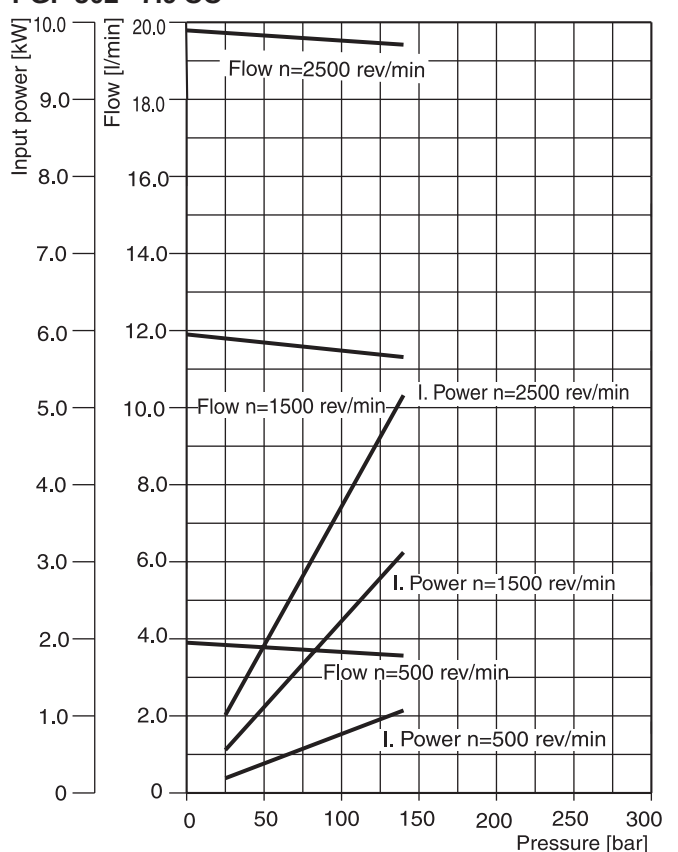
PGP 502 - 1.6 CC



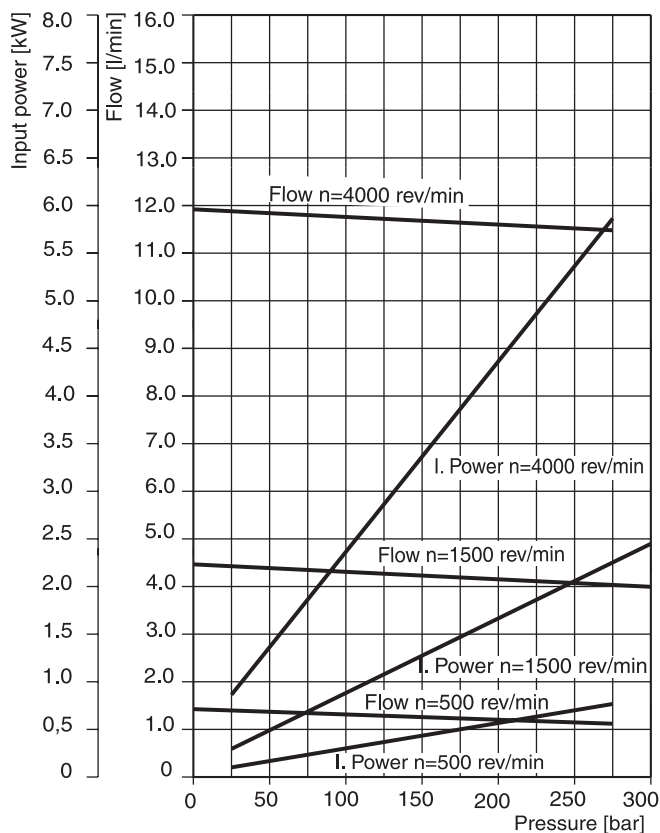
PGP 502 - 3.6 CC



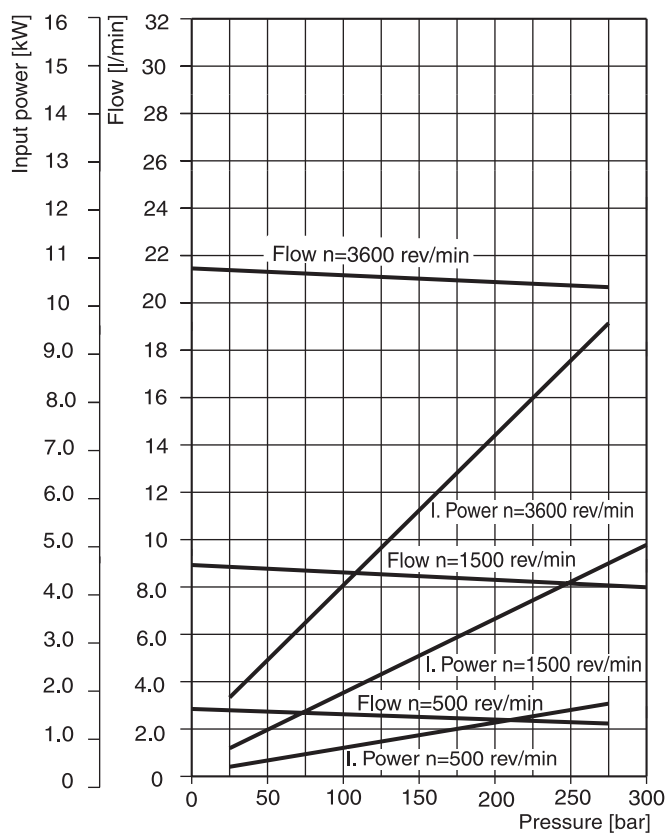
PGP 502 - 7.9 CC



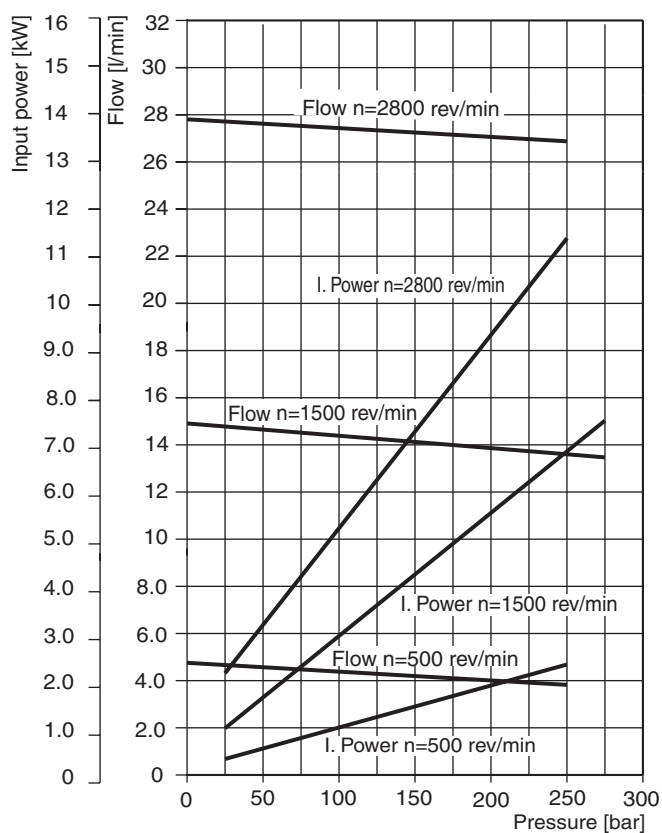
PGP 505 - 3.0CC



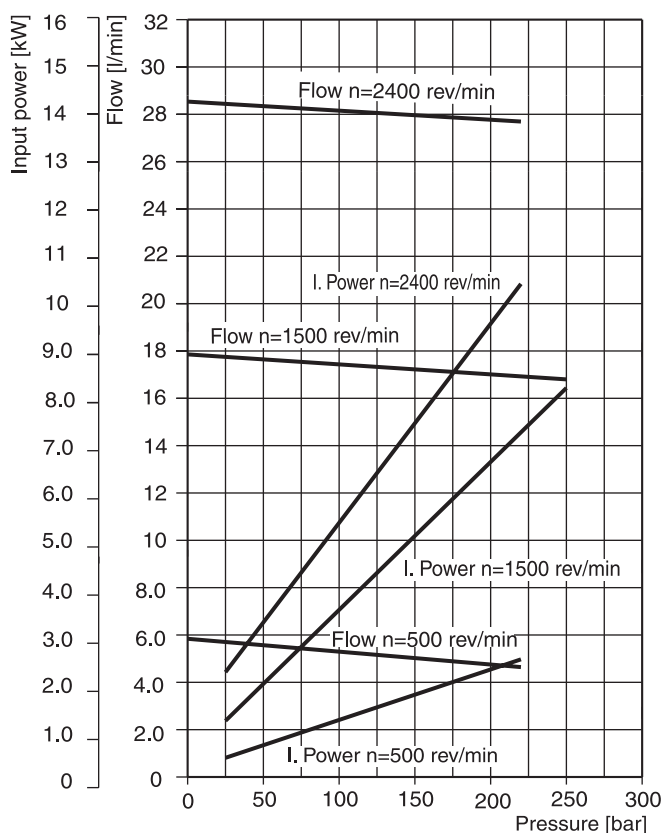
PGP 505 - 6.0 CC



PGP 505 - 10.0 CC



PGP 505 - 12.0 CC

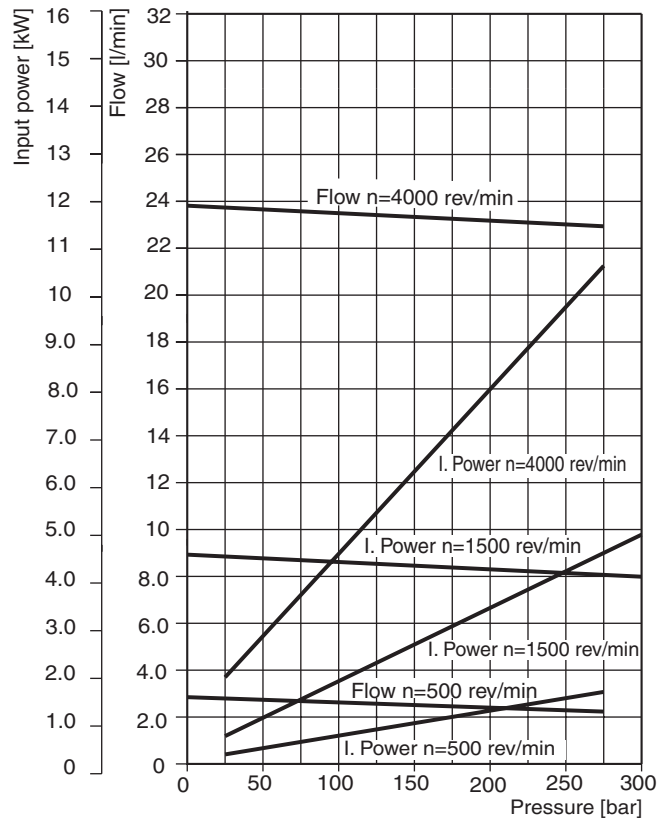


Performance data

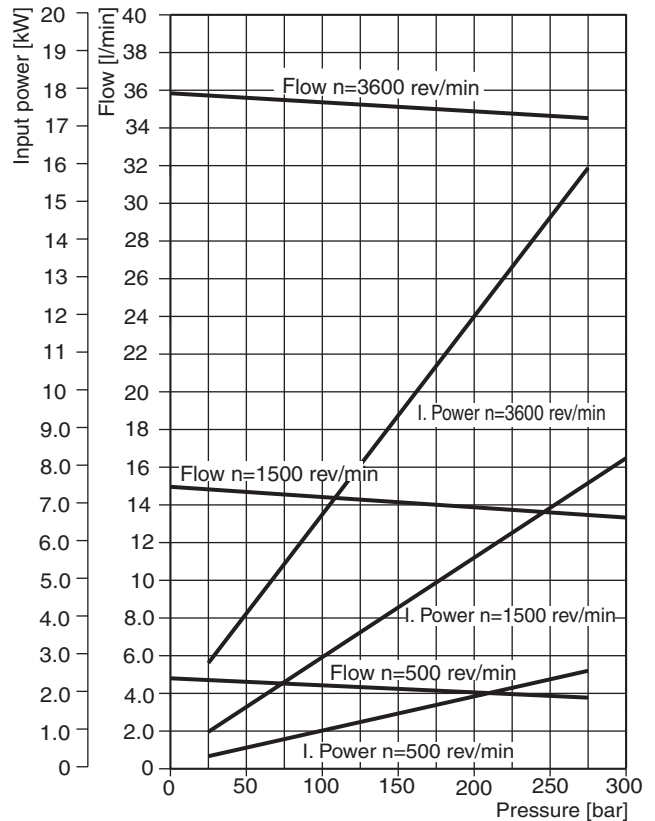
Fluid Temperature = $45 \pm 2^\circ\text{C}$
 Viscosity = $36\text{mm}^2/\text{s}$
 Inlet Pressure = $0.9 + 0.1\text{ bar absolute}$

Heavy-duty aluminium pumps and motors Series PGP, PGM 500

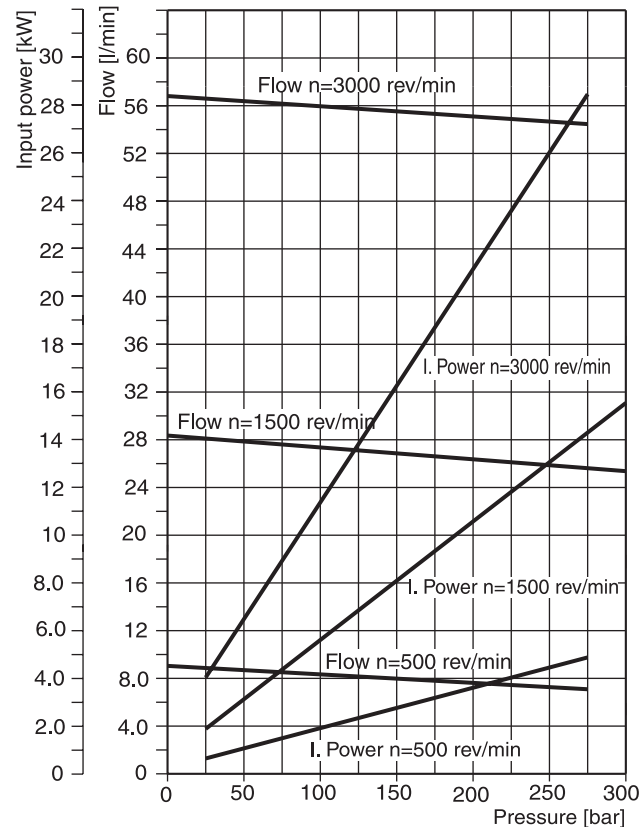
PGP/PGM 511 - 6.0 CC



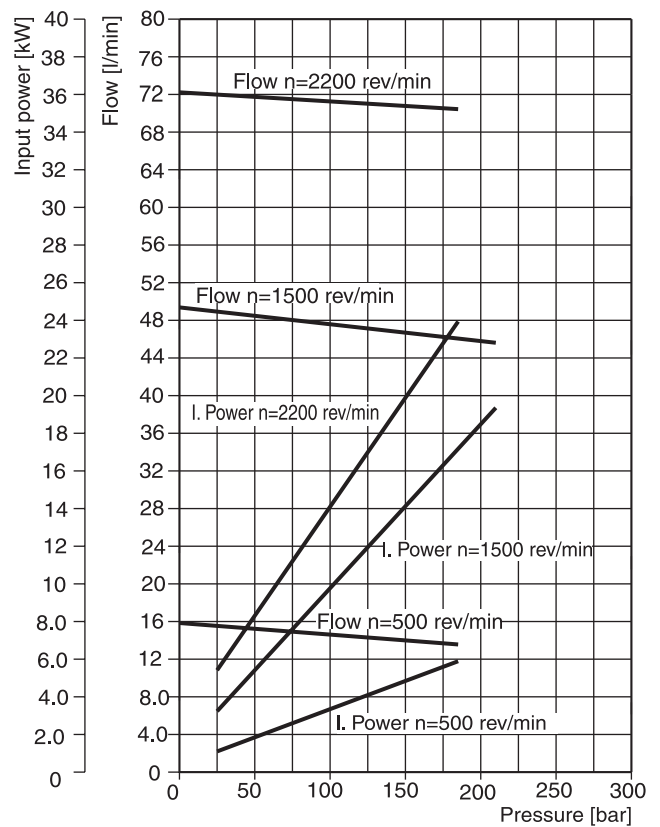
PGP 511 - 10.0 CC



PGP/PGM 511 - 19.0 CC

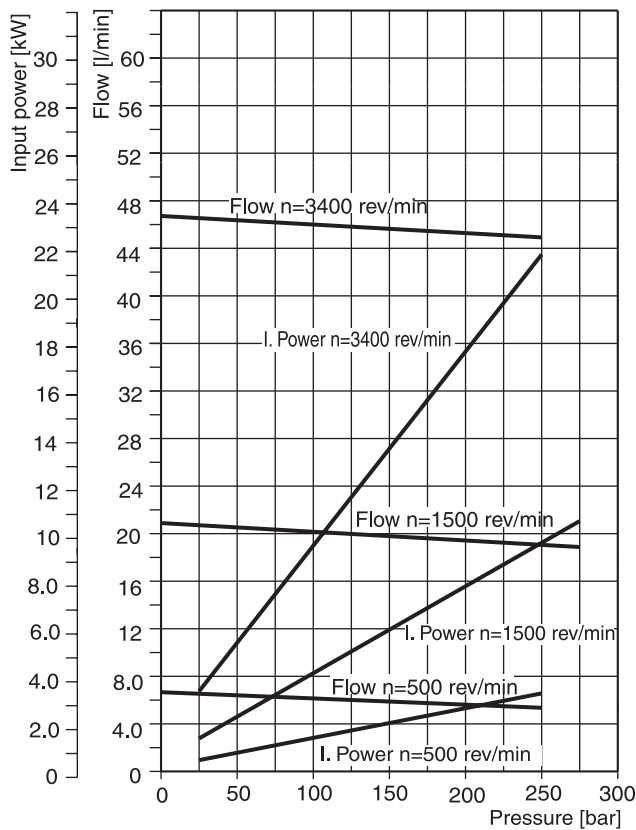


PGP 511 - 33.0 CC

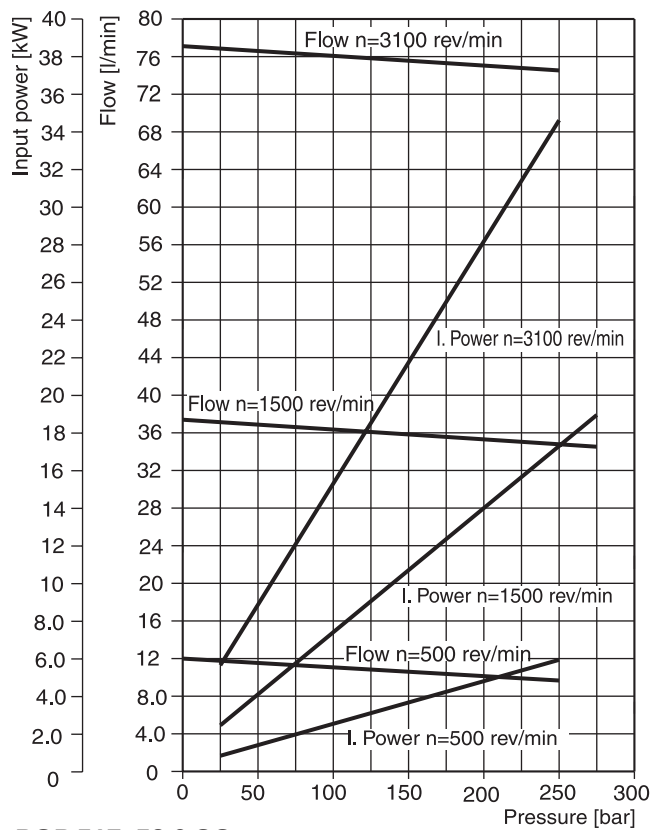


Fluid Temperature = $45 \pm 2^\circ\text{C}$
Viscosity = $36\text{mm}^2/\text{s}$
Inlet Pressure = $0.9 + 0.1\text{ bar absolute}$

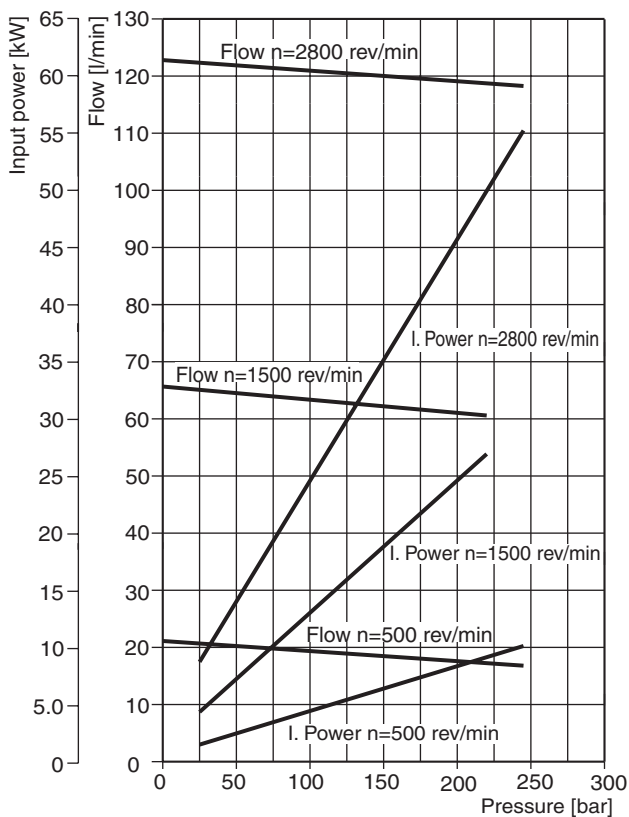
PGP 517- 14.0 CC



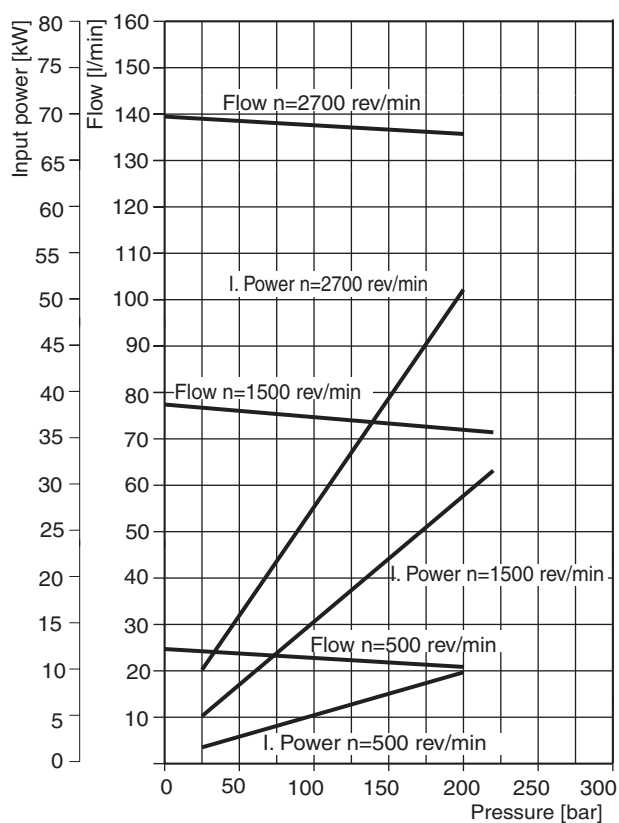
PGP/PGM 517-25.0 CC



PGP 517- 44.0 CC



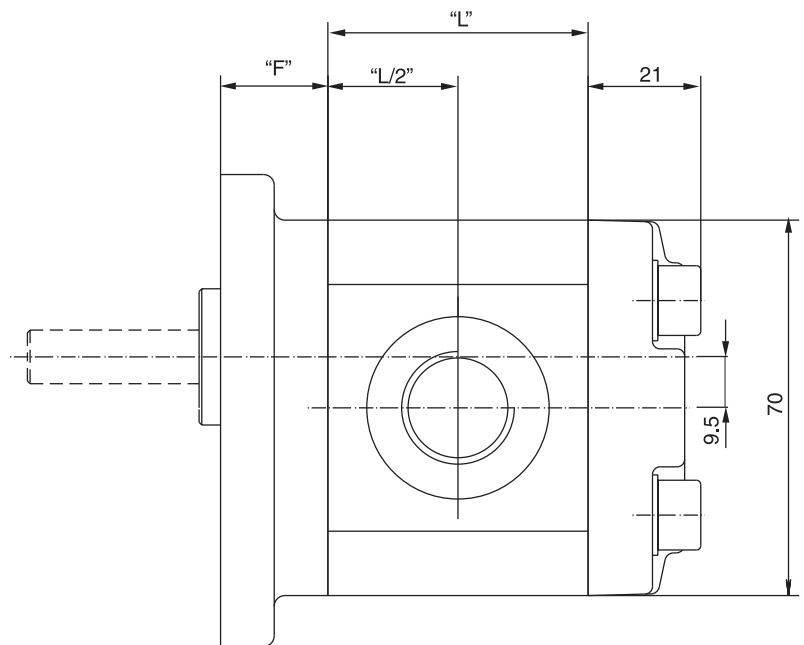
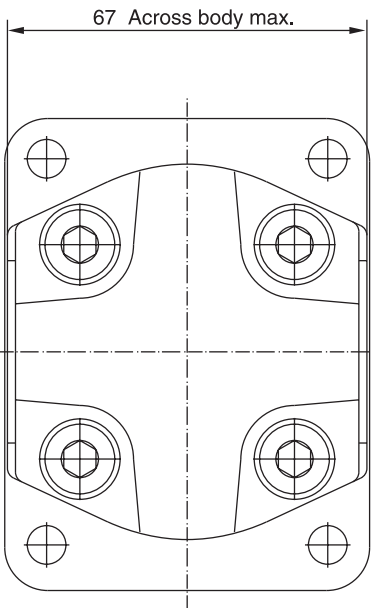
PGP 517- 52.0 CC



Dimensions**PGP/PGM 502 Pump Specification - Standard Displacements**

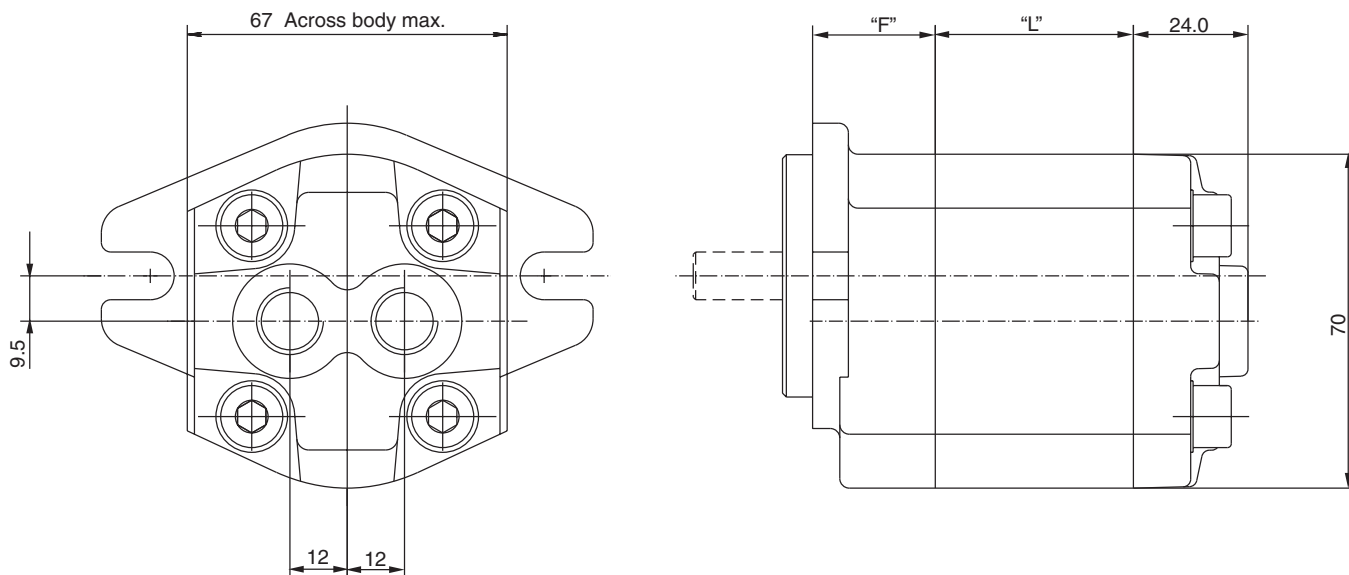
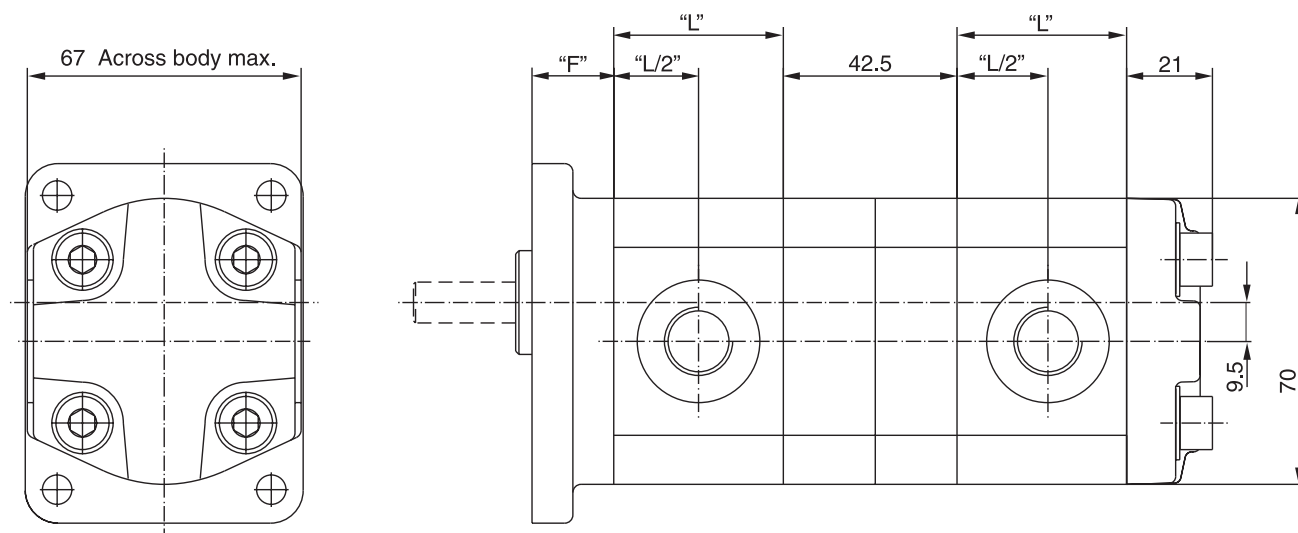
Pump Displacement	Code	0008	0012	0016	0021	0025	0033	0036	0043	0048	0058	0062	0079
	cm ³ /rev	0.8	1.2	1.6	2.1	2.5	3.3	3.6	4.3	4.8	5.8	6.2	7.9
Continuous Pressure	bar	275	275	275	275	275	275	250	210	160	160	150	120
Intermittent Pressure	bar	300	300	300	300	300	300	280	230	180	180	170	140
Minimum Speed @ Max. outlet press.	rpm	500	500	500	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max.outlet press.	rpm	4000	4000	4000	4000	4000	4000	4000	3500	3000	3000	3000	2500
Pump Input Power @ 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
Dimension "L"	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
Approximate Weight¹⁾	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

¹⁾ Single pump with Flange D1 and Port end cover B1

Single Unit PGP/PGM 502

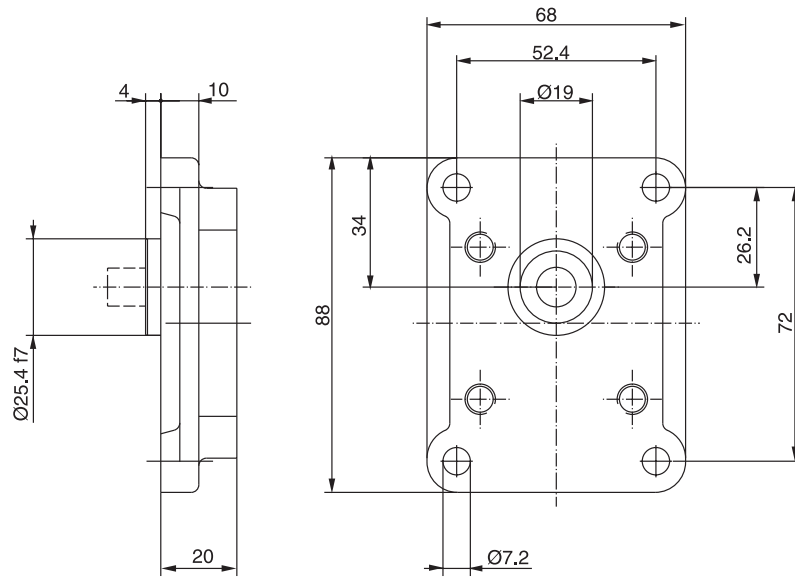
Dimension "F" see flanges

Dimension "L" see table

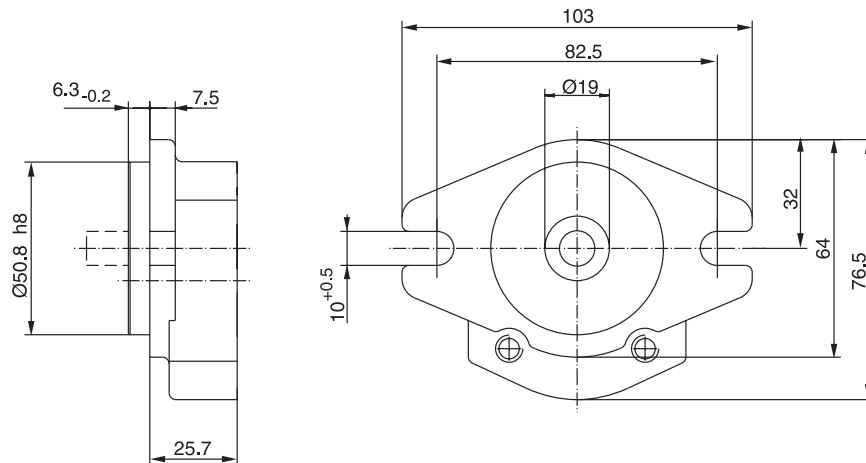
Single Unit PGP/PGM 502 with rear ports**Dimension "F"** see flanges**Dimension "L"** see table**Tandem Unit PGP/PGM 502****Dimension "F"** see flanges**Dimension "L"** see table

PGP/PGM 502 Mounting Flange

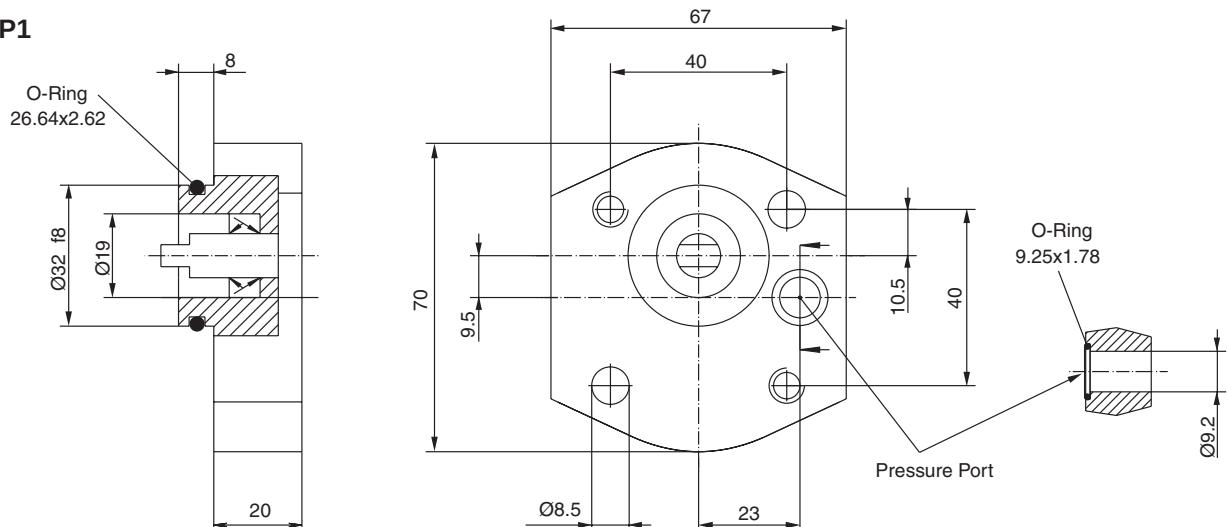
Code D1



Code H1

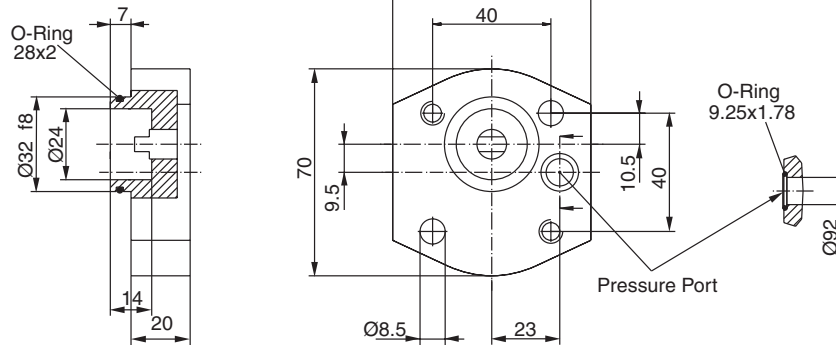


Code P1

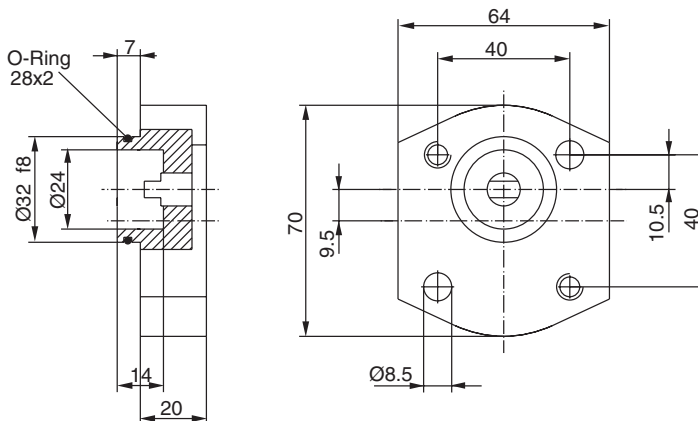


PGP/PGM 502 Mounting Flange

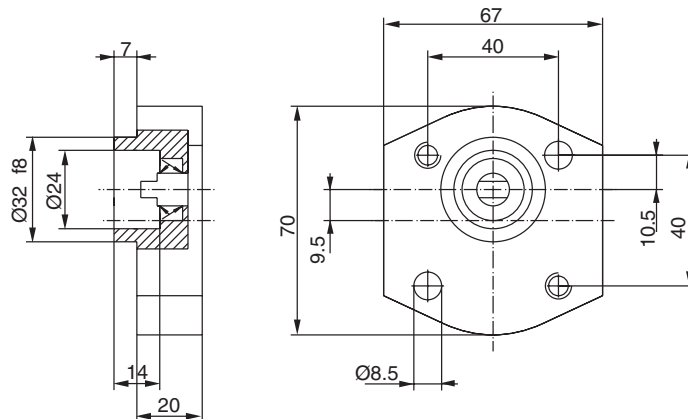
Code P2



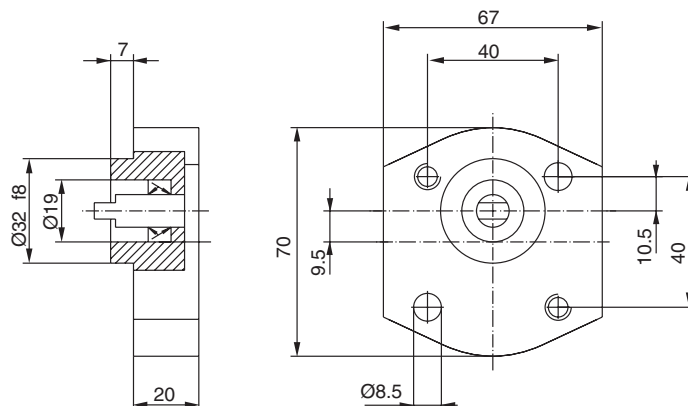
Code P3



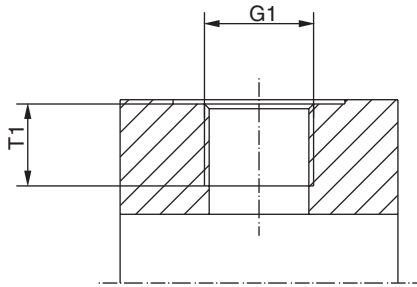
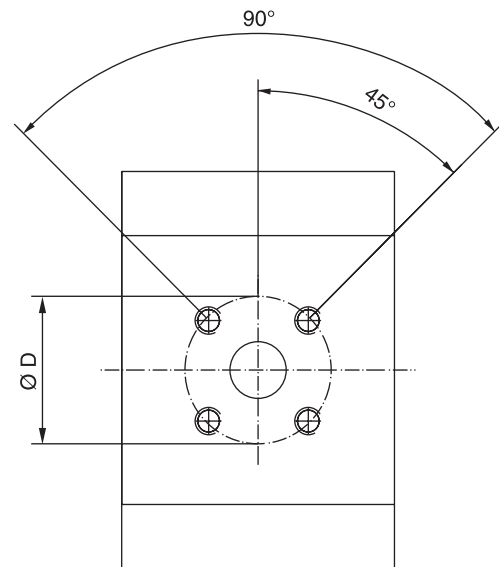
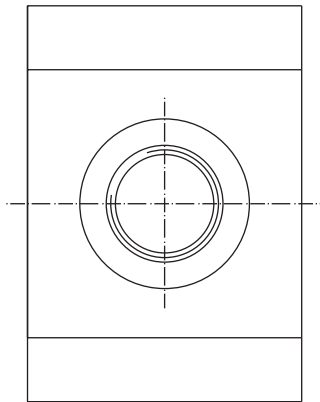
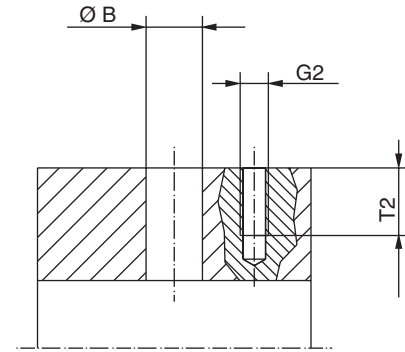
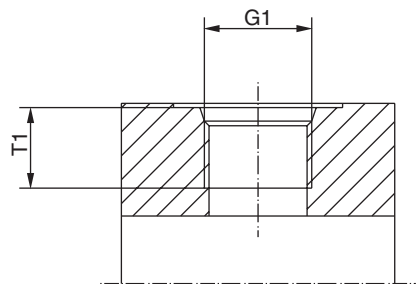
Code P4



Code P5



PGP/PGM 502 Porting

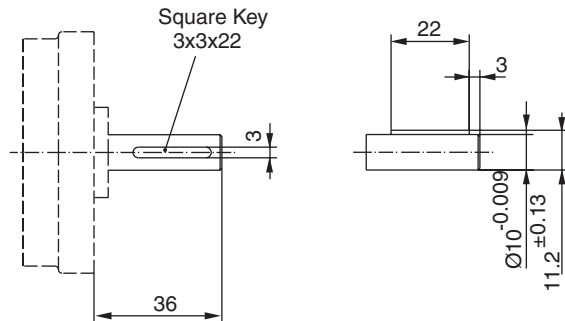
**Code E** British Standard Pipe Parallel (BSPP)**Code G** Metric straight thread**Code J** European flange**Code D** SAE straight thread

PGP/PGM 502

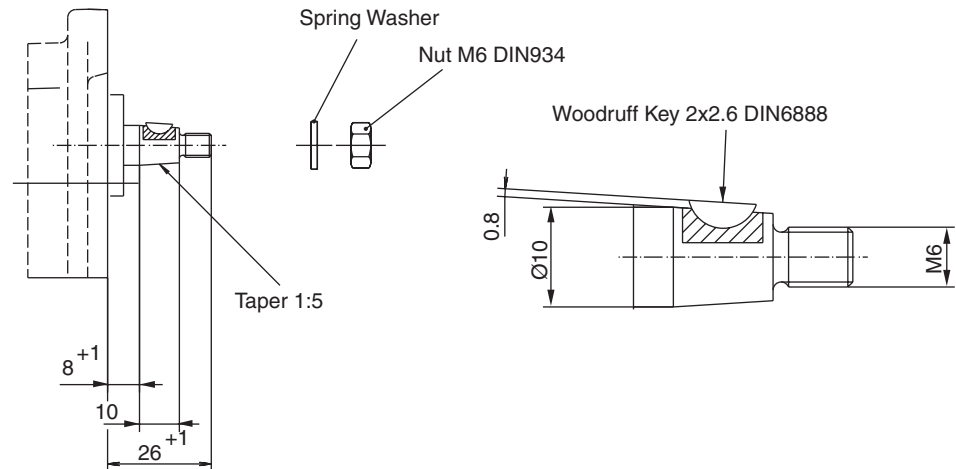
Code	G1 Thread	G2 Thread	T1	Ø B	Ø D	T2
	Dimension					
D2	9/16-18 UNF		12.7			
D3	3/4-16 UNF		14.3			
E1	1/4-19 BSP		12.0			
E2	3/8-19 BSP		12.0			
E3	1/2-14 BSP		14.0			
G1	M14x1.5		12.0			
G3	M18x1.5		12.0			
J1		M5		8.0	26.0	12.0
J2		M5		10.0	26.0	12.0
J3		M6		8.0	30.0	12.0
J4		M6		12.0	30.0	12.0

PGP/PGM 502 Drive Shaft

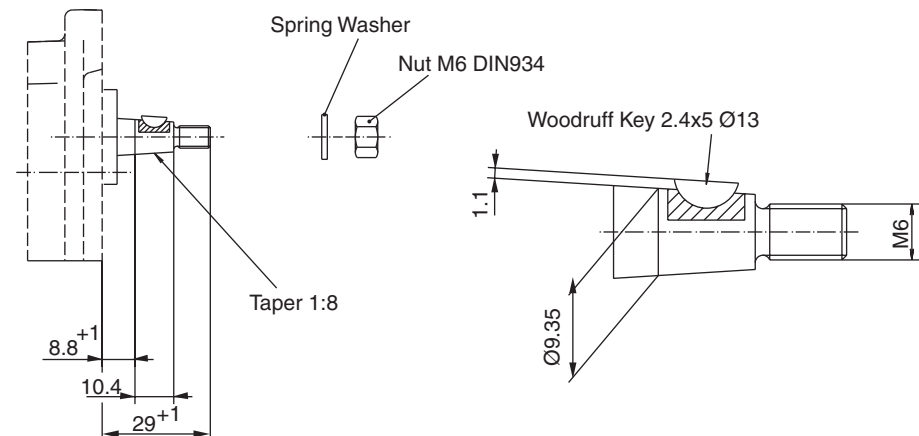
Code H1



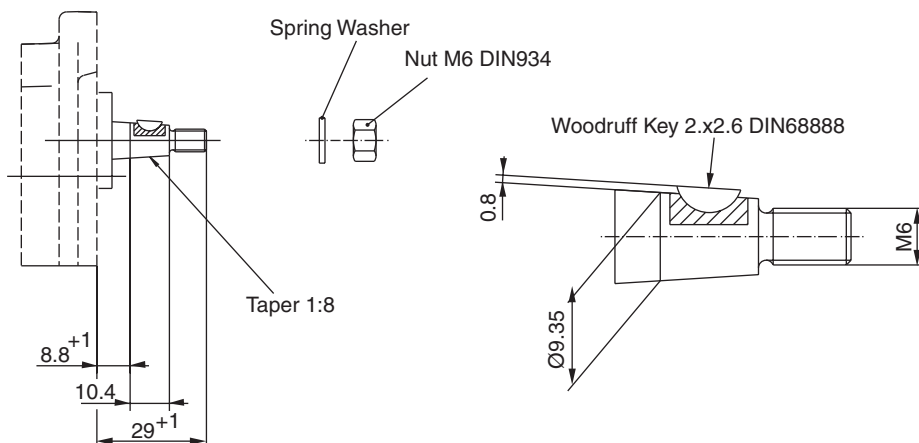
Code P1



Code P2

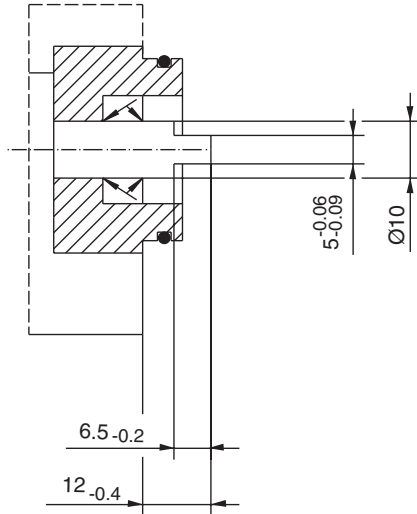


Code P3

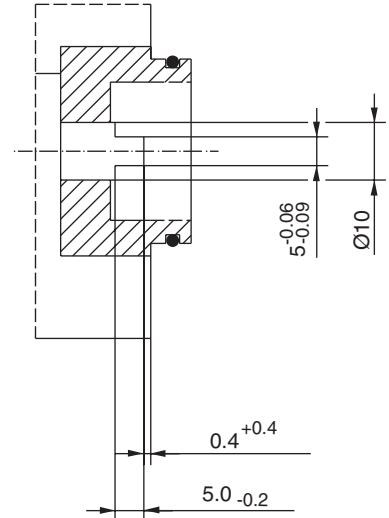


PGP/PGM 502 Drive Shaft

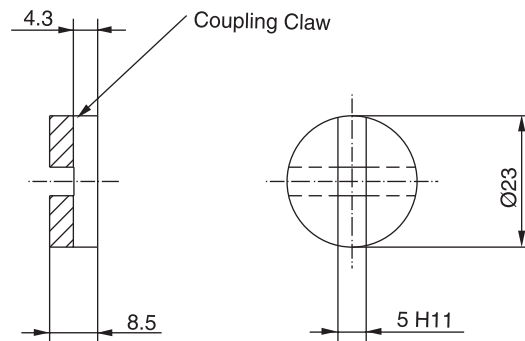
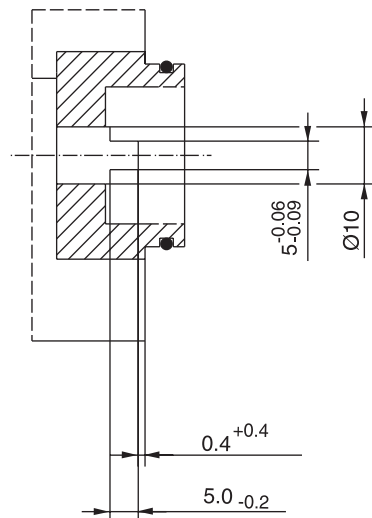
Code V1



Code V2



Code V3



PGP/PGM 502 - Shaft Load Capacity

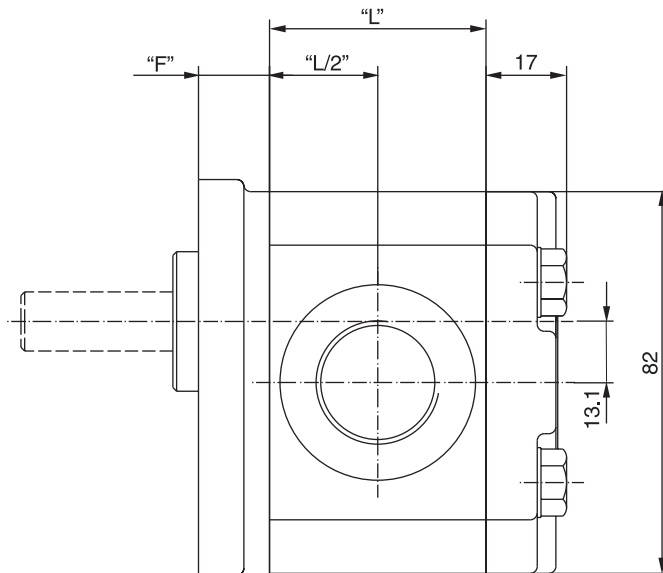
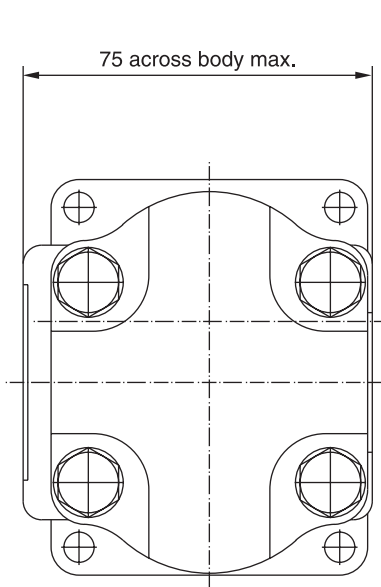
Code	Description		Torque Rating [Nm]
H1	Ø10,3.0 KEY, no thread, 36L	parallel	30
P1	Ø10.0,8.0L, 2.0 KEY, M6	taper 1:5	30
P2	Ø9.95,8.8L, 2.4 KEY, M6	taper 1:8	30
P3	Ø9.95,8.8L, 2.0 KEY, M6	taper 1:8	30
V1	5x6.5 long shaft w/o coupling	tang drive	20
V2	5x4.5 short shaft w/o coupling	tang drive	20
V3	5x4.5 short shaft w/ coupling	tang drive	20

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

Dimensions**PGP/PGM 505 Specification - Standard Displacements**

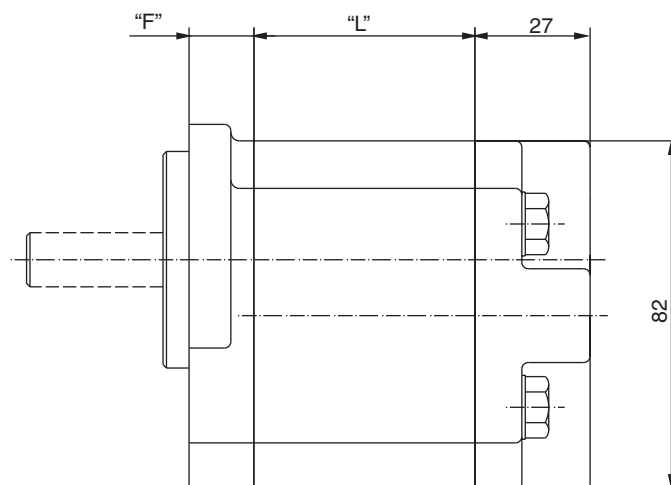
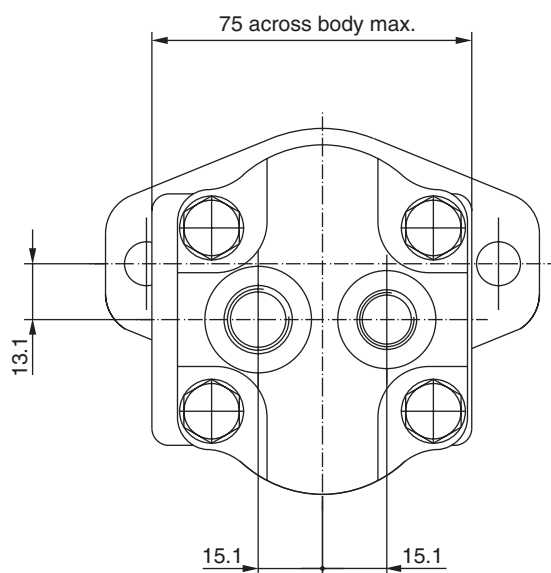
Pump Displacement	Code	0030	0040	0050	0060	0070	0080	0100	0110	0120
	cm ³ /rev	3.0	4.0	5.0	6.0	7.0	8.0	10.0	11.0	12.0
Continous Pressure	bar	275	275	275	275	275	275	250	250	220
Intermittent Pressure	bar	300	300	300	300	300	300	275	275	220
Minimum Speed	rpm	500	500	500	500	500	500	500	500	500
@ Max. outlet pressure										
Maximum Speed	rpm	4000	4000	4000	3600	3300	3000	2800	2400	2400
@ 0 Inlet & Max. outlet pressure										
Pump Input Power	kW	2.3	3.0	3.8	4.5	5.3	6.0	6.9	7.6	7.5
@ Max. Pressure and 1500 rpm										
Dimension "L"	mm	41.1	43.8	46.5	49.1	51.8	54.5	59.8	62.5	65.2
Approximate Weight¹⁾	kg	2.22	2.27	2.32	2.38	2.43	2.48	2.58	2.63	2.68

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

Single Unit PGP/PGM 505

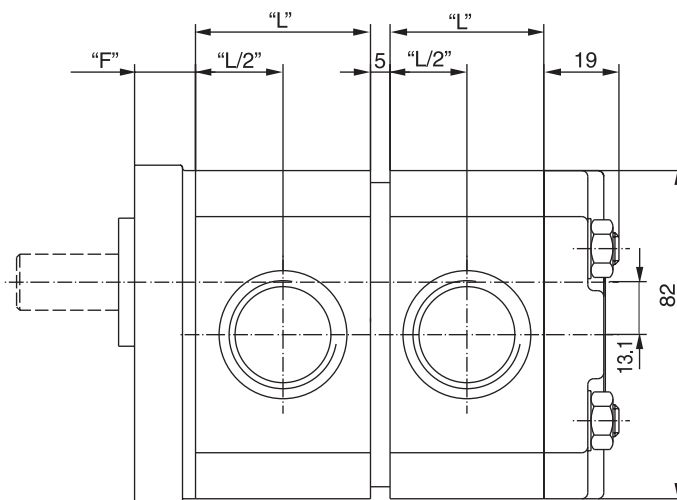
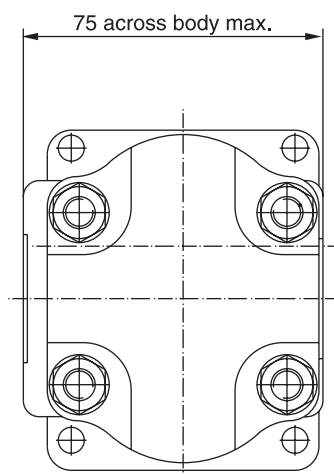
Dimension "F" see flanges

Dimension "L" see table

Single Unit PGP/PGM 505 with rear ports

Dimension "F" see flanges

Dimension "L" see table

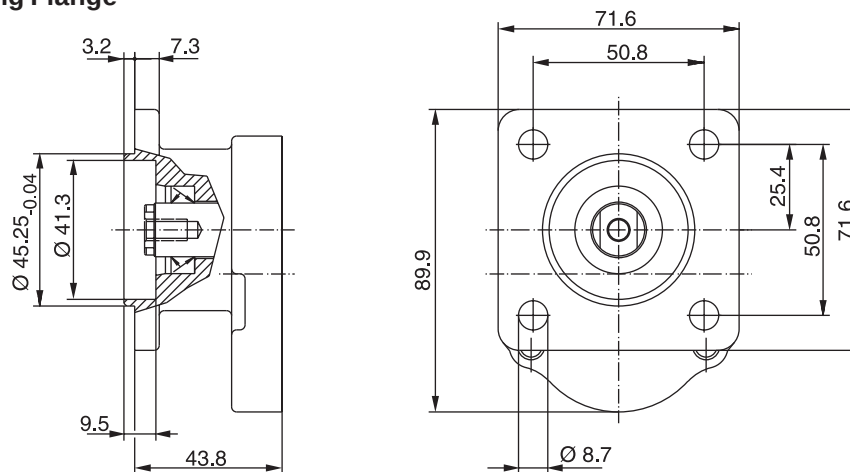
Tandem Unit PGP/PGM 505

Dimension "F" see flanges

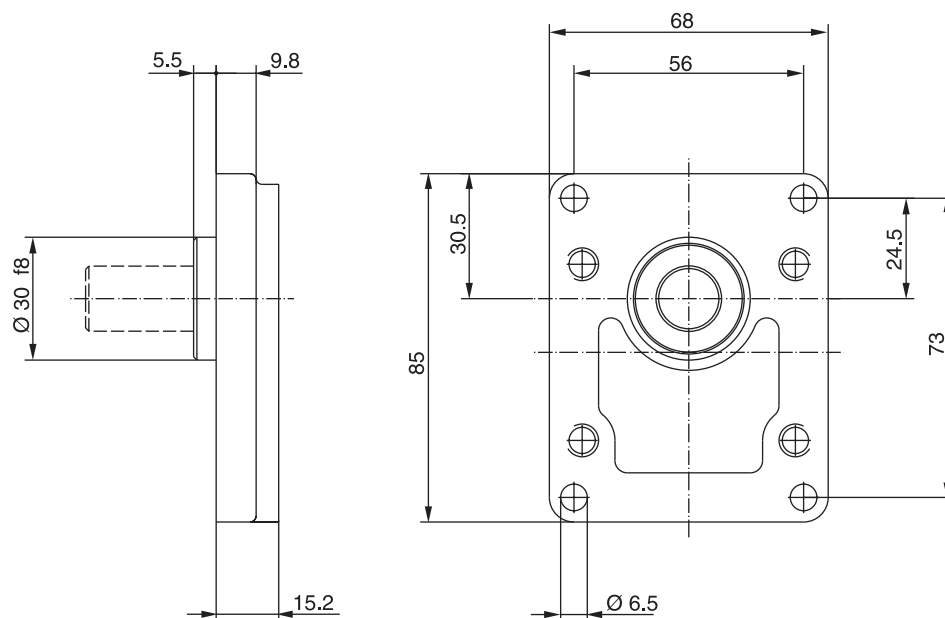
Dimension "L" see table

PGP/PGM 505 Mounting Flange

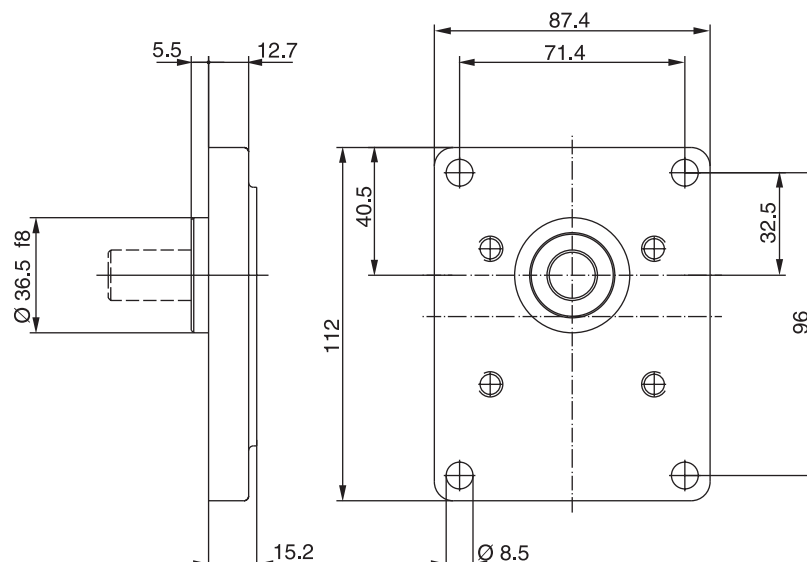
Code A1

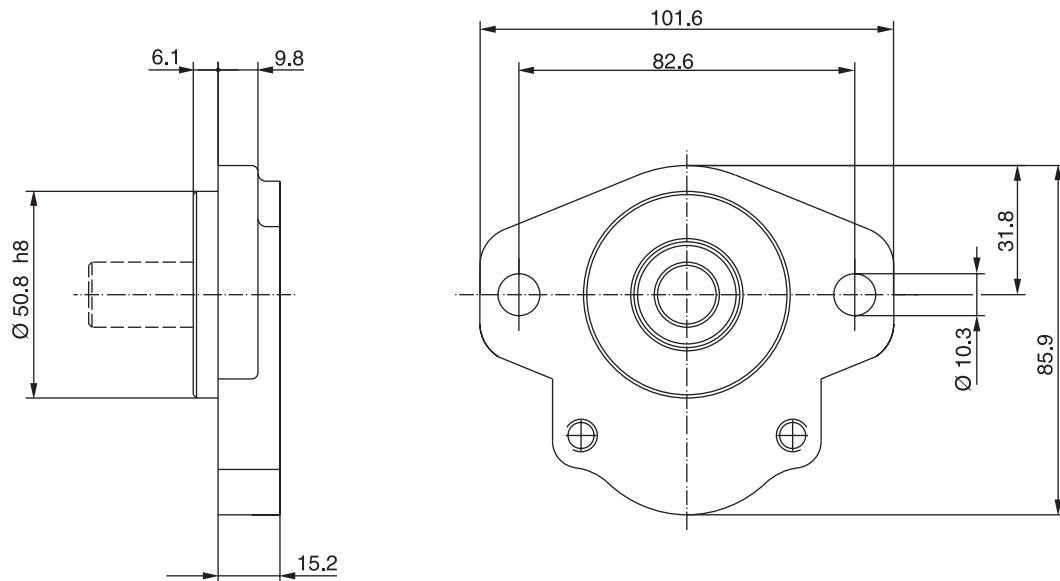
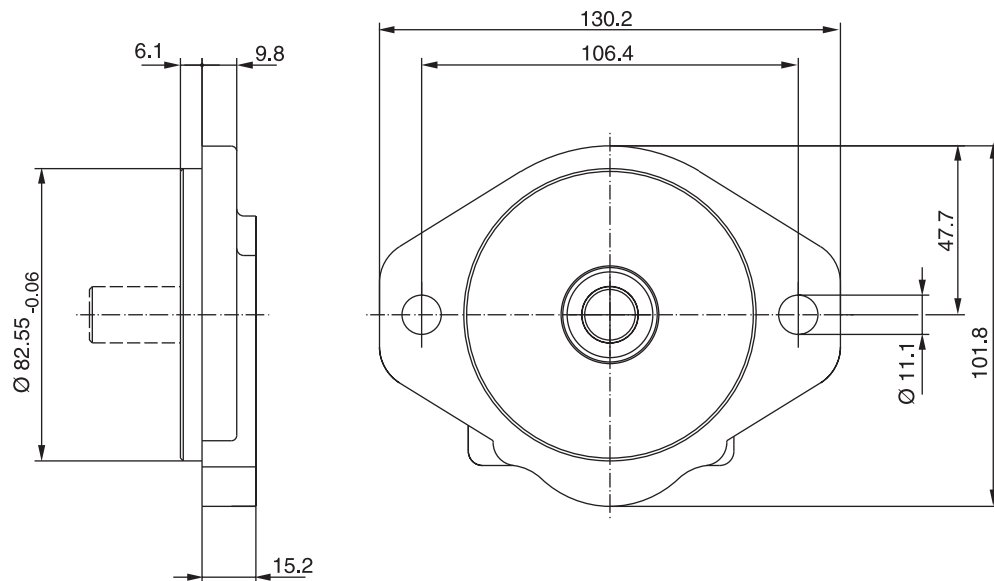


Code D2



Code D3

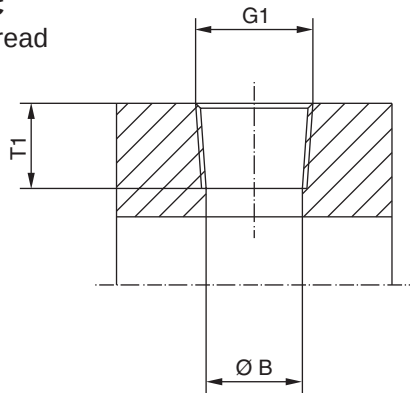


PGP/PGM 505 Mounting Flange**Code H1****Code H2**

PGP/PGM 505 Porting

Code C

NPT thread

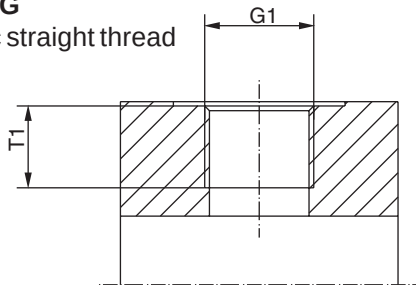


Code E

British Standard Pipe

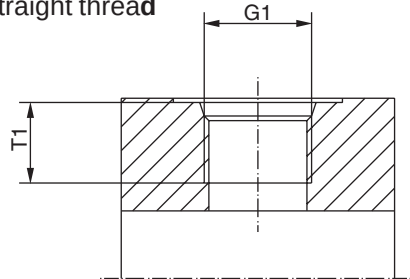
Code G

Metric straight thread



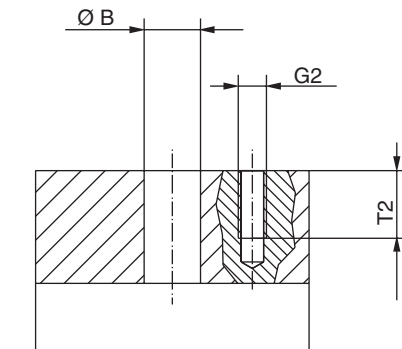
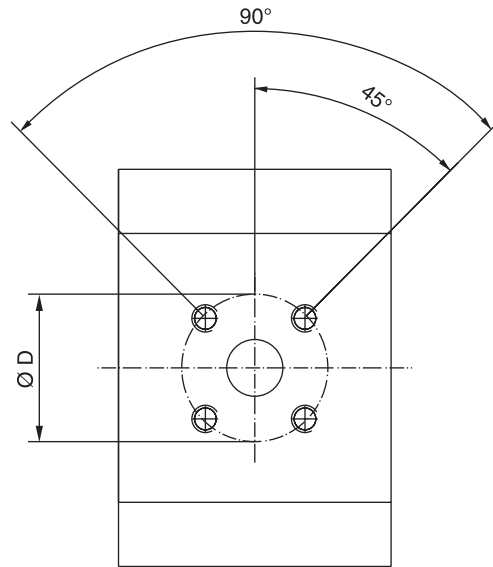
Code D

SAE straight thread



Code J

European flange

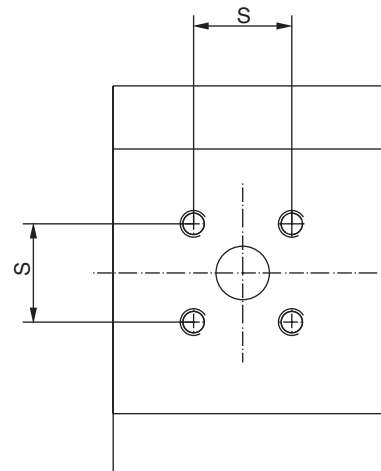


PGP/PGM 505

Code	G1 Thread	G2 Thread	T1	Ø B	Ø D	S	T2
Dimensions							
C2	3/8-18 NPT		16.0				
C3	1/2-14 NPT		20.8				
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				
E1	1/4-19 BSP		12.0				
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

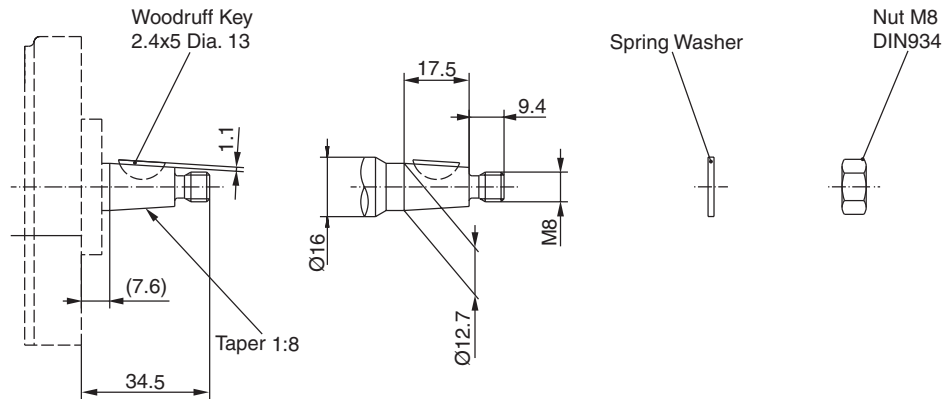
Code K

4-Bolt flange

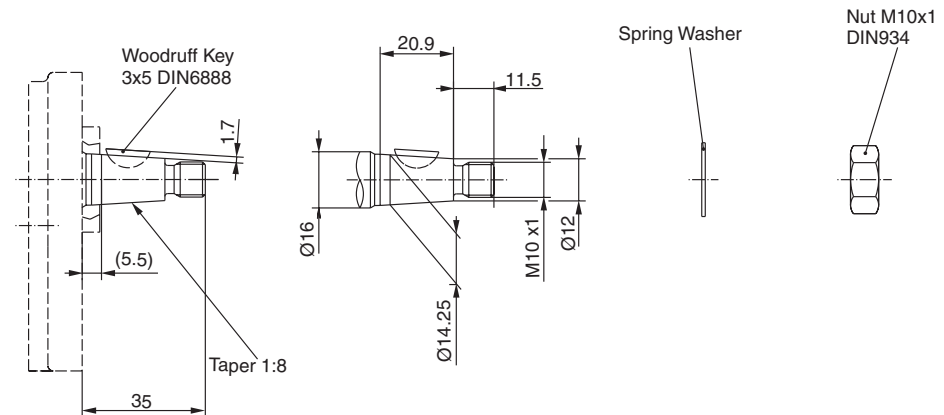


PGP/PGM 505 Drive Shaft

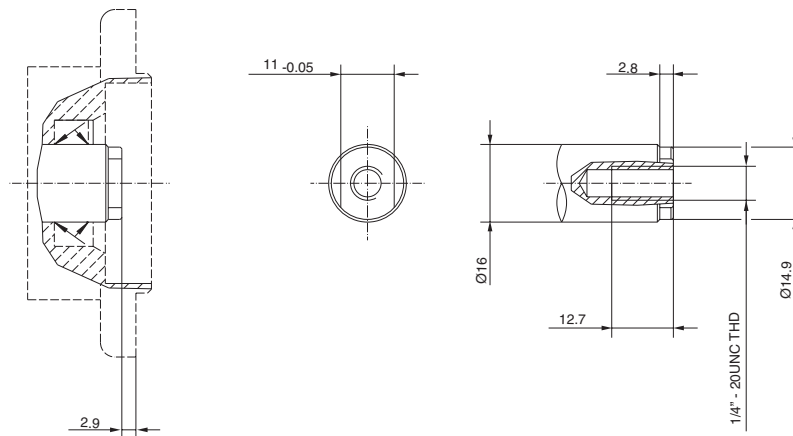
Code Q1



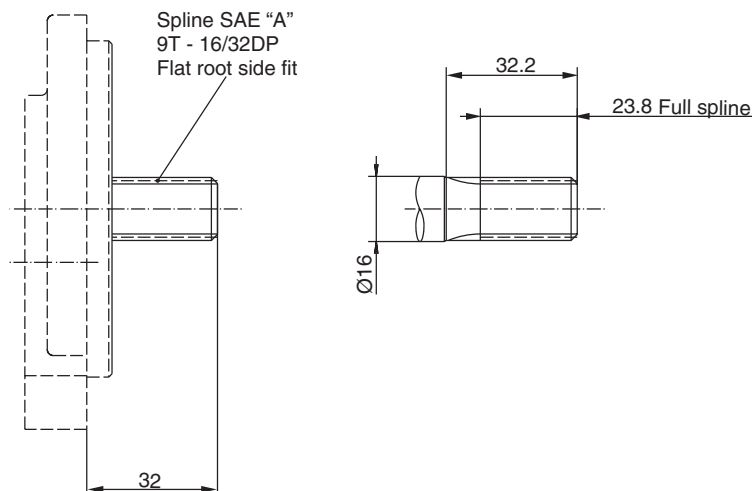
Code Q2



Code V4

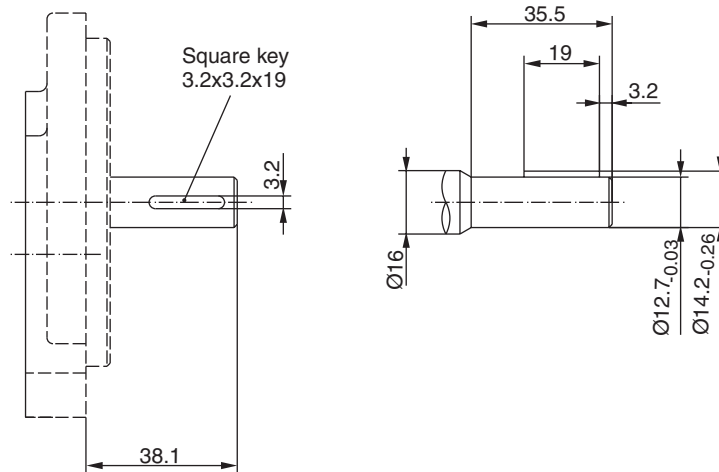


Code A1

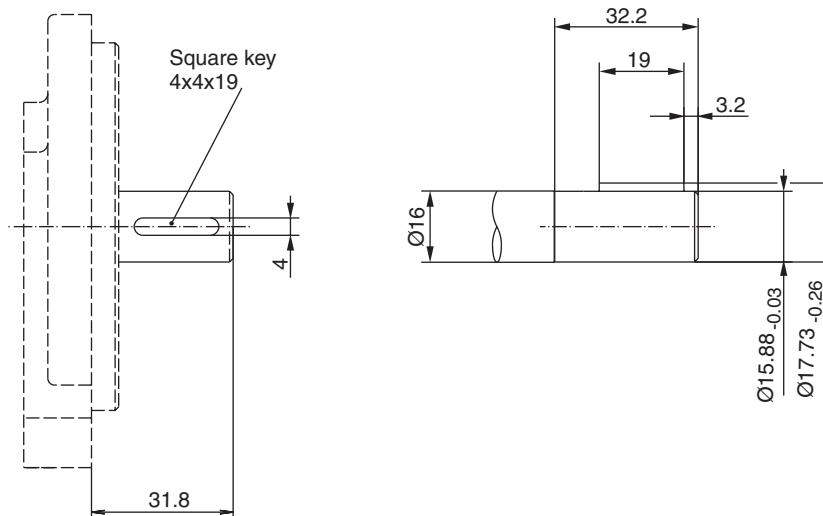


PGP/PGM 505 Drive Shaft

Code J1



Code K1



PGP/PGM 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
J2	Ø13.45, 3.2 KEY,10-32UNF, 33.3L	parallel	52
K1	Ø15.88, 4.0 KEY, no thread, 32L, SAE"A"	parallel	85
Q1	Ø12.70, 7.6L, 2.4 KEY, M8x1.25	taper 1:8	43
Q2	Ø14.25, 5.5L, 3.0 KEY, M10x1	taper 1:8	68
V4	11x2.8,1/4UNF for flange code A1	tang drive	44
	Multiple pump connection shaft		36

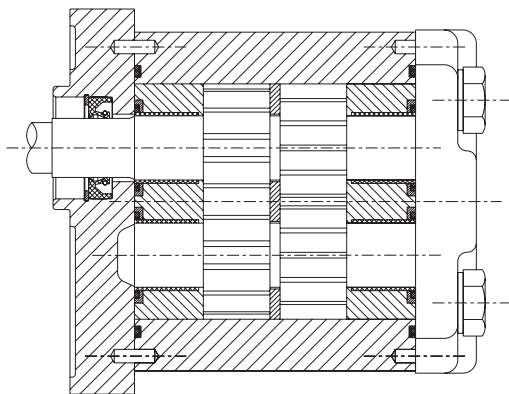
$$\text{Torque [Nm]} = \frac{\text{Displacement [cm}^3\text{/rev]} \times \text{Pressure [bar]}}{57.2}$$

PGP/PGM 511 Specification - Standard Displacements

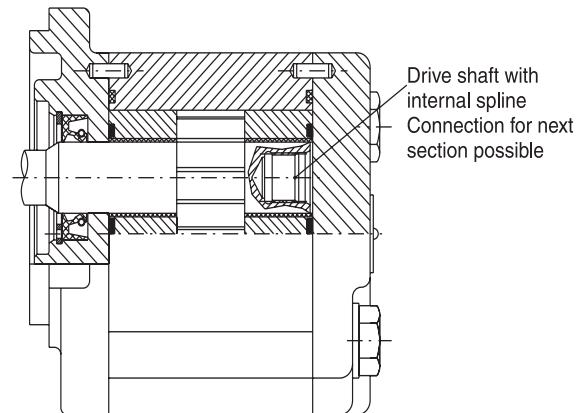
Pump Displacement	Code	0060	0080	0100	0110	0140	0160	0190	0230	0270	0310	0330
	cm ³ /rev	6.0	8.0	10.0	11.0	14.0	16.0	19.0	23.0	27.0	31.0	33.0
Continuous Pressure	bar	250	250	250	250	250	250	250	225	190	165	155
Intermittent Pressure	bar	275	275	275	275	275	275	275	245	210	180	170
Minimum Speed @ Max. outlet pressure	rpm	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	3250	2750	2350	2100	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	16.7	17.3
Dimension "L"	mm	50.1	53.3	56.5	58.0	62.8	65.9	70.6	76.9	83.2	89.5	92.6
Approximate Weight ¹⁾	kg	3.40	3.47	3.55	3.57	3.71	3.79	3.91	4.06	4.21	4.37	4.45

¹⁾ Single pump with Flange Q1 and Port end cover B1

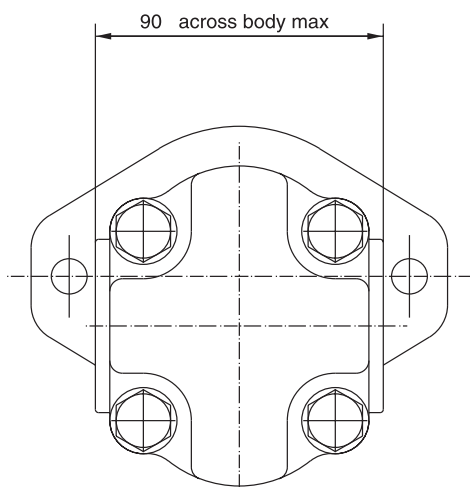
Split Gear Unit PGP 511



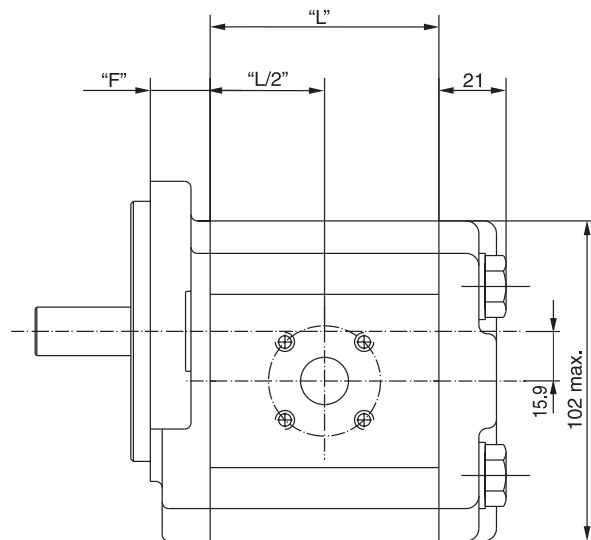
Distributor Unit PGP 511



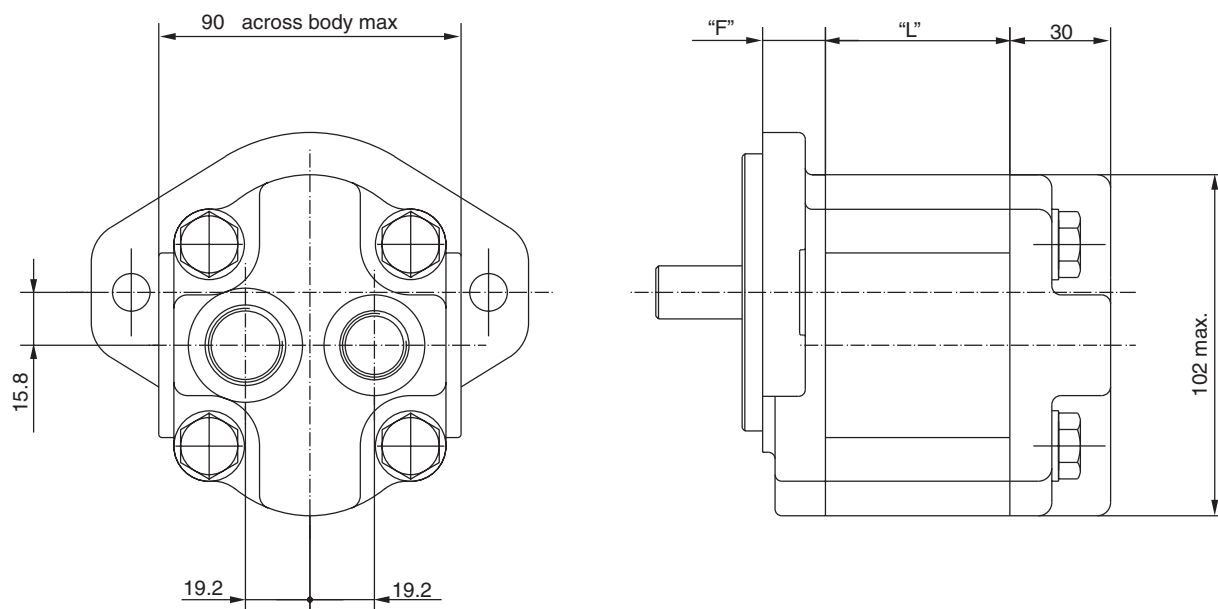
Single Unit PGP/PGM 511



Dimension "F" see flanges
Dimension "L" see table



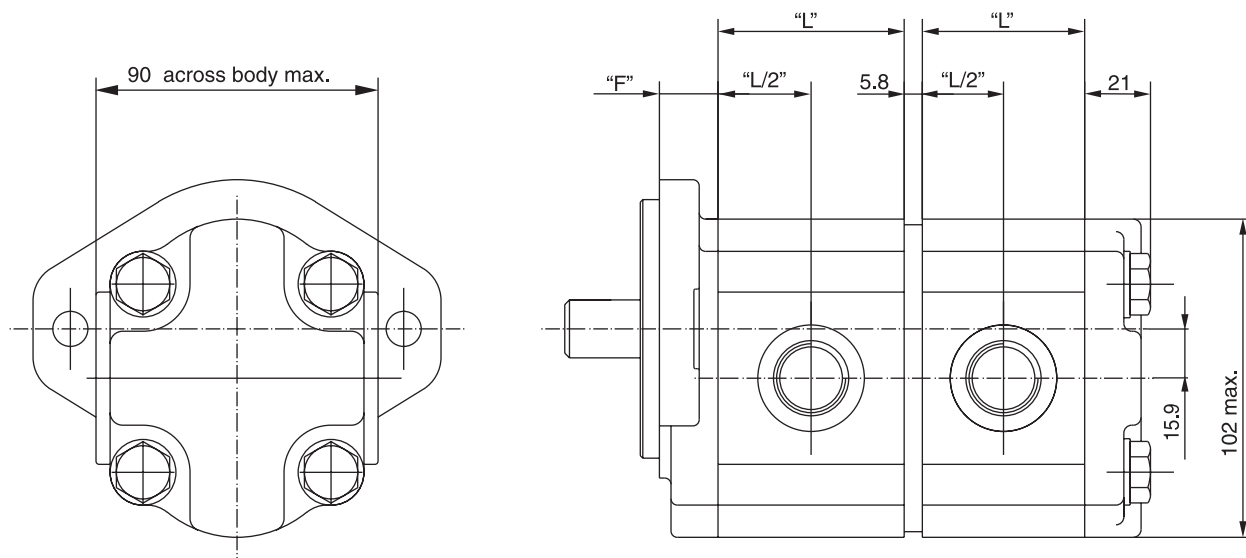
Single Unit PGP/PGM 511 with rear ports



Dimension "F" see flanges

Dimension "L" see table

Tandem Unit PGP/PGM 511

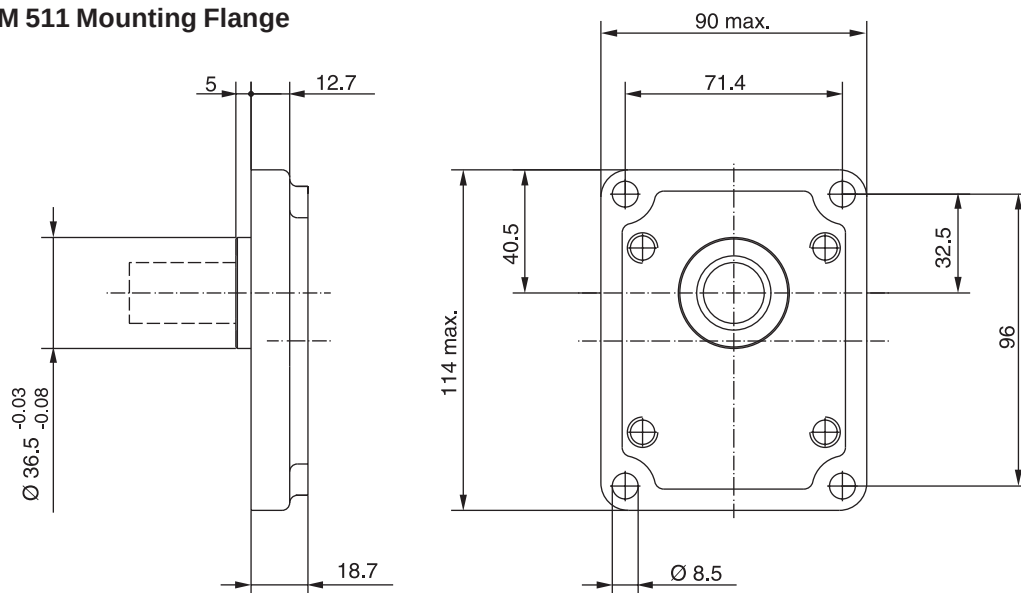


Dimension "F" see flanges

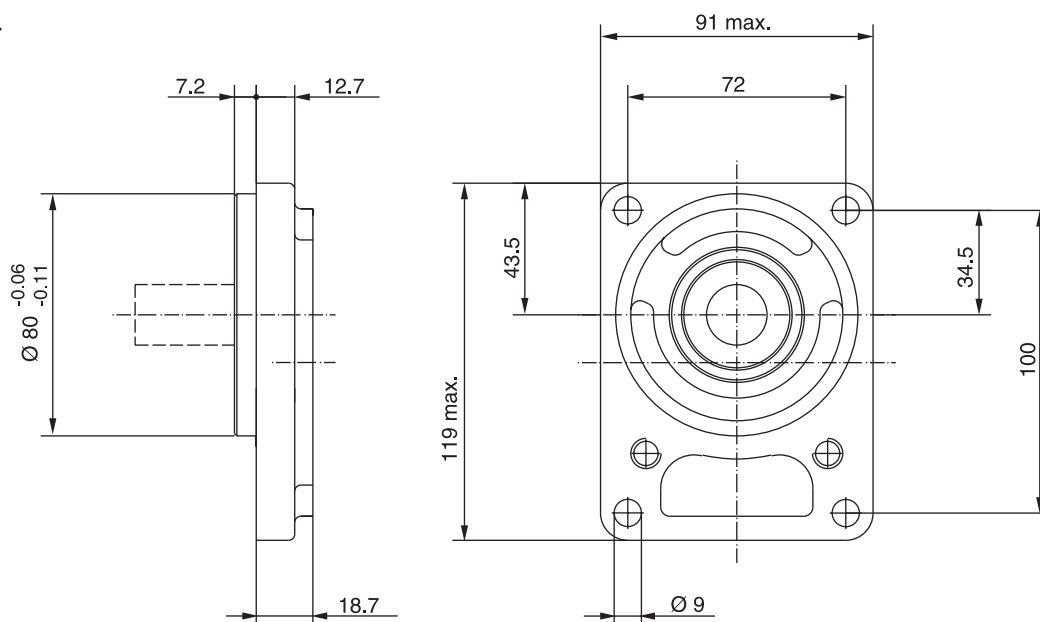
Dimension "L" see table

PGP/PGM 511 Mounting Flange

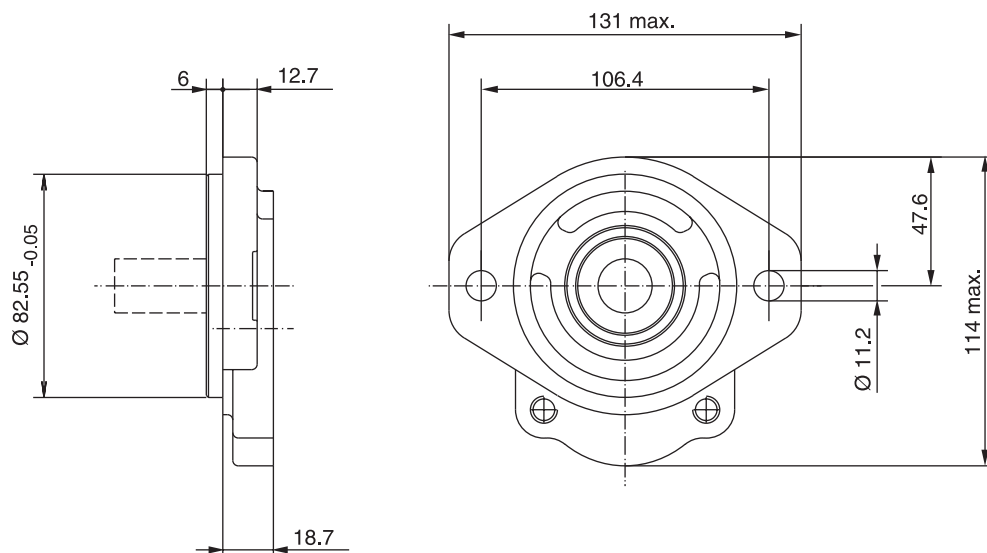
Code D3

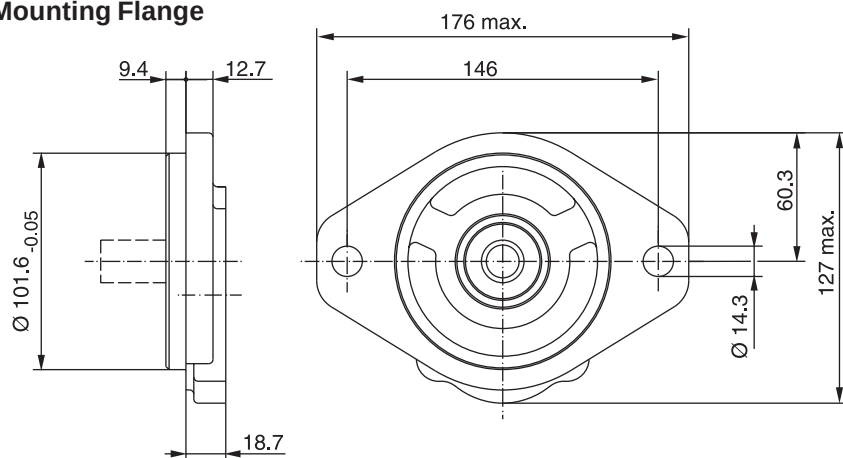
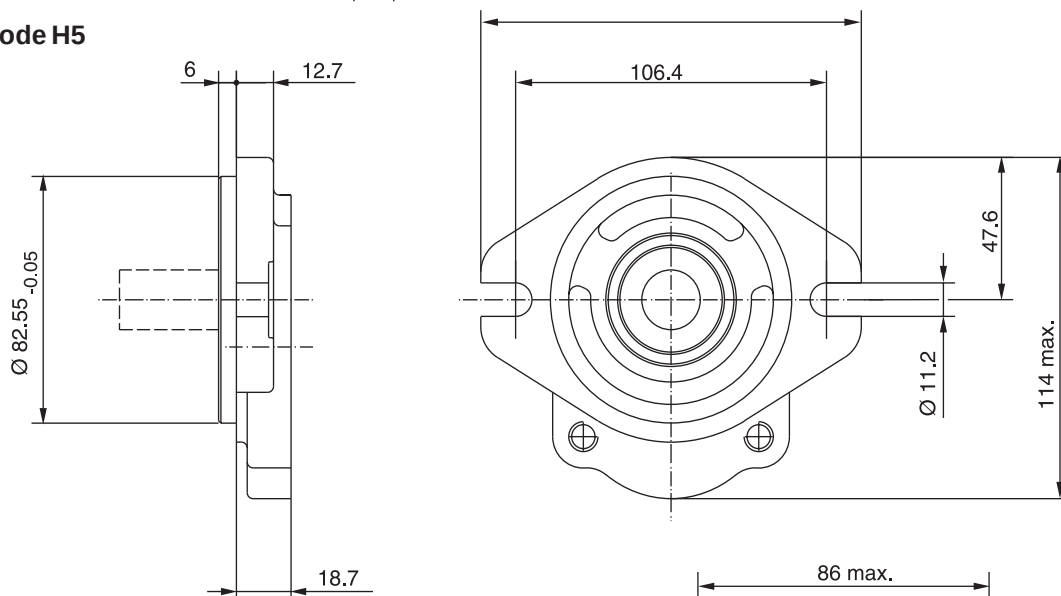
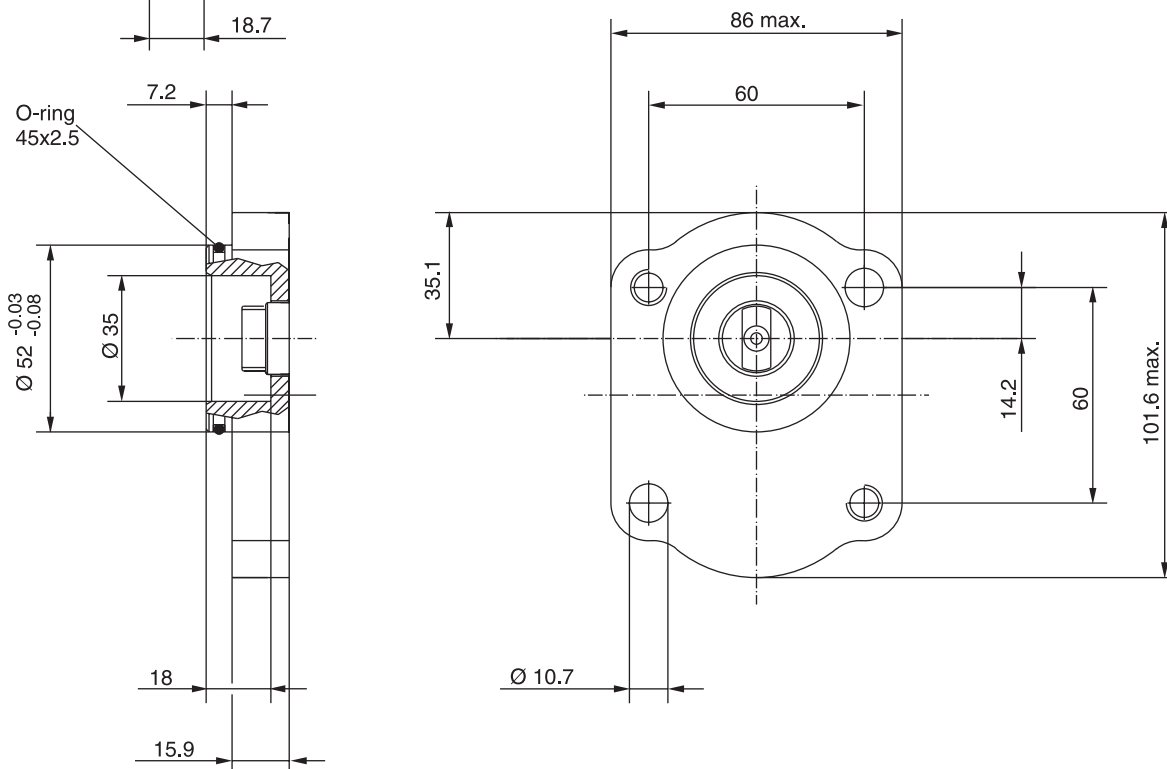


Code D4



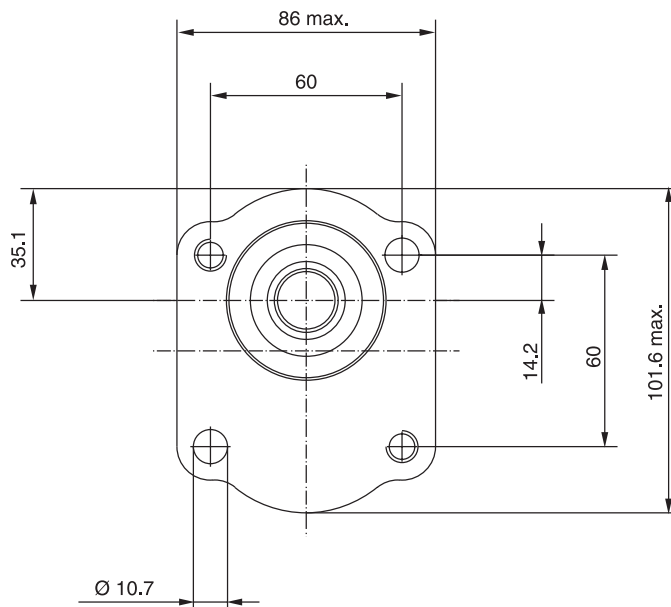
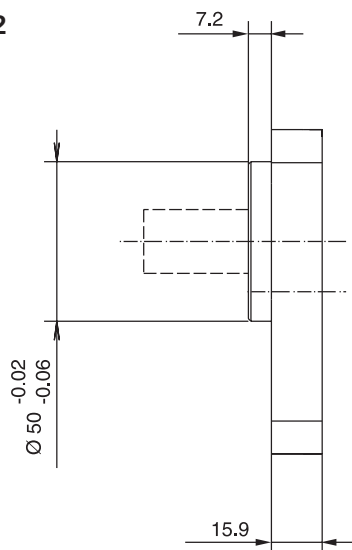
Code H2



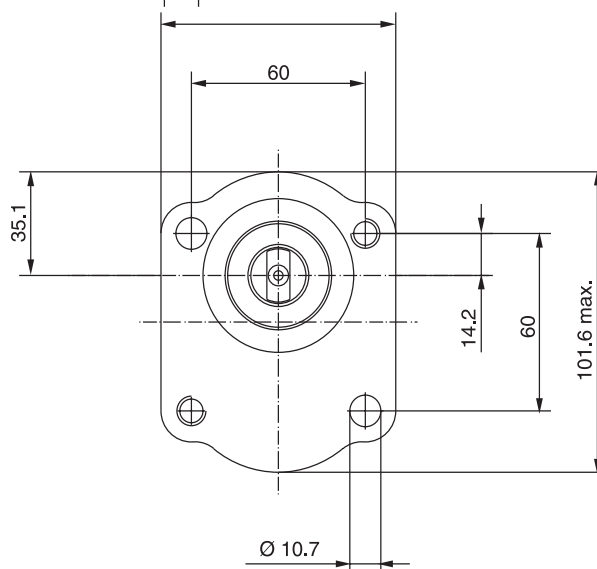
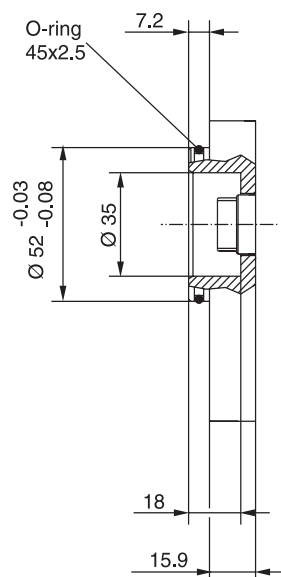
PGP/PGM 511 Mounting Flange**Code H3****Code H5****Code Q1**

PGP/PGM 511 Mounting Flange

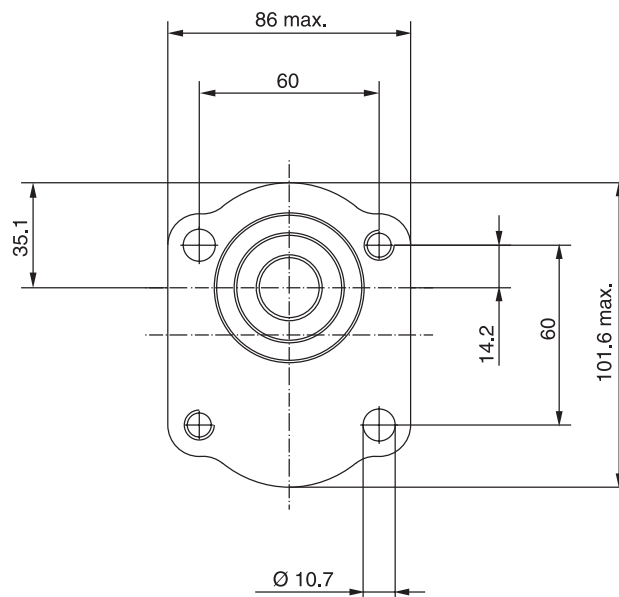
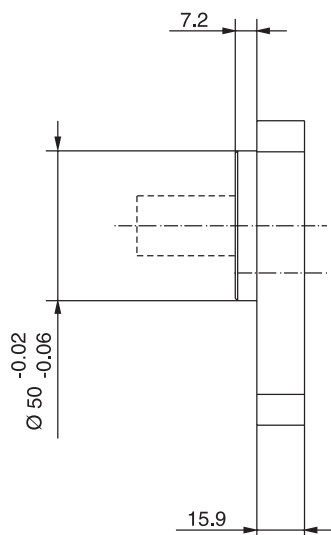
Code Q2

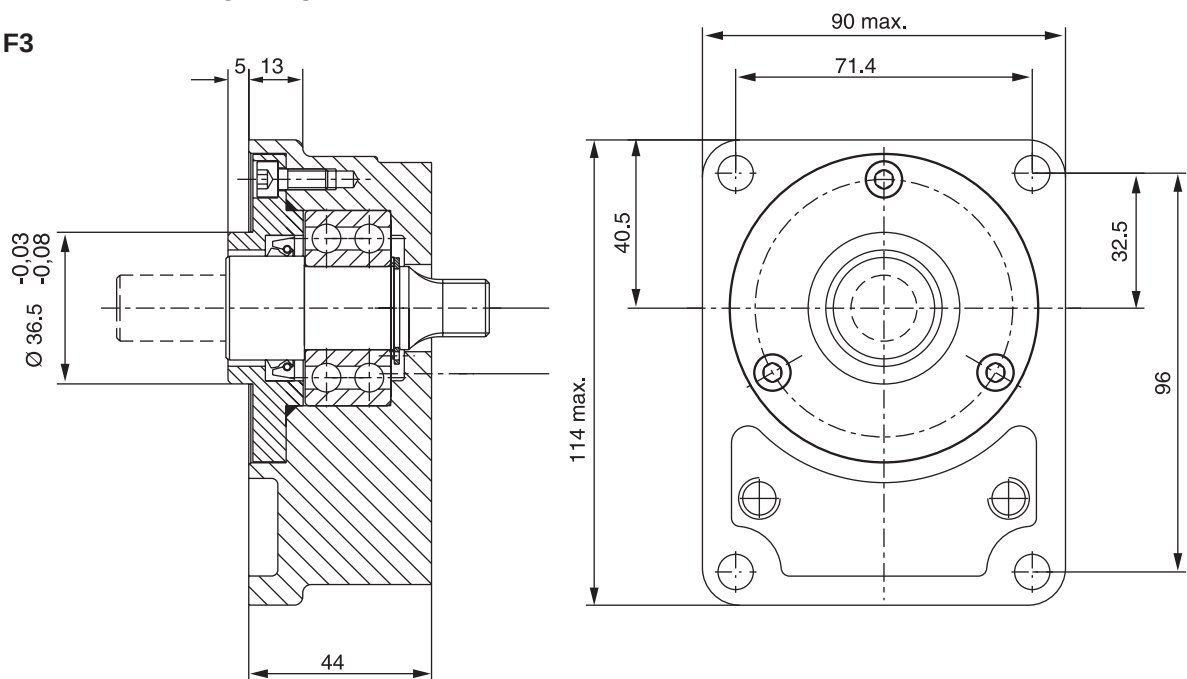
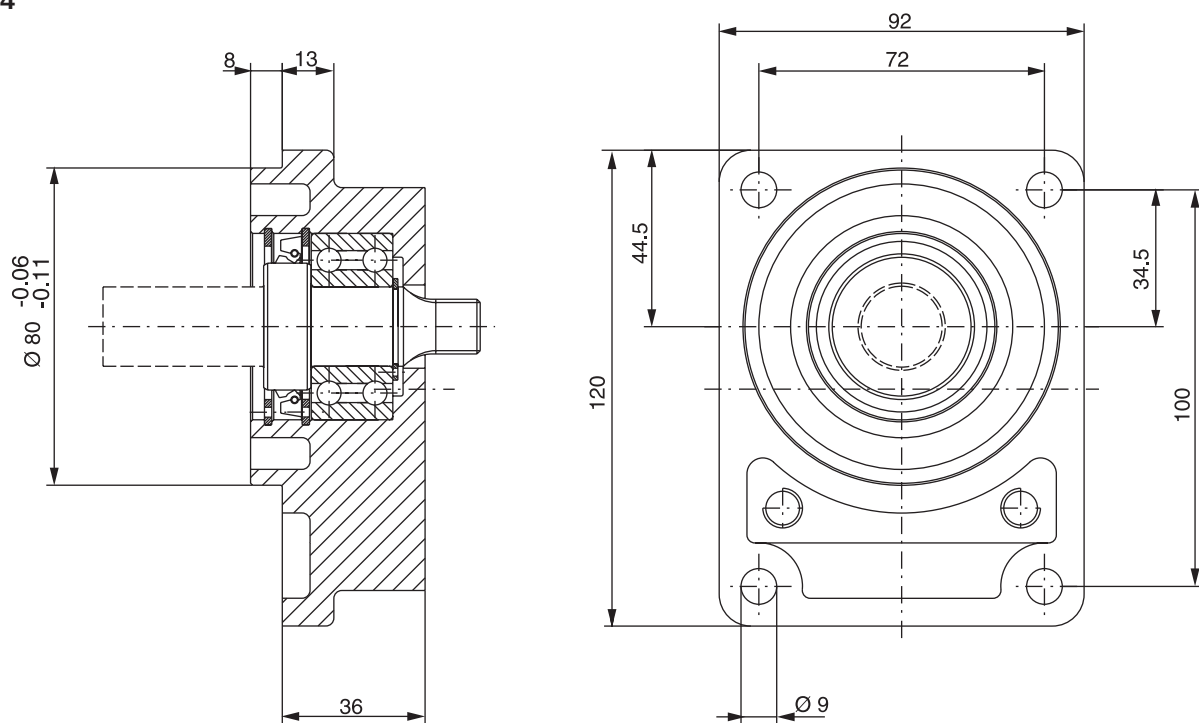


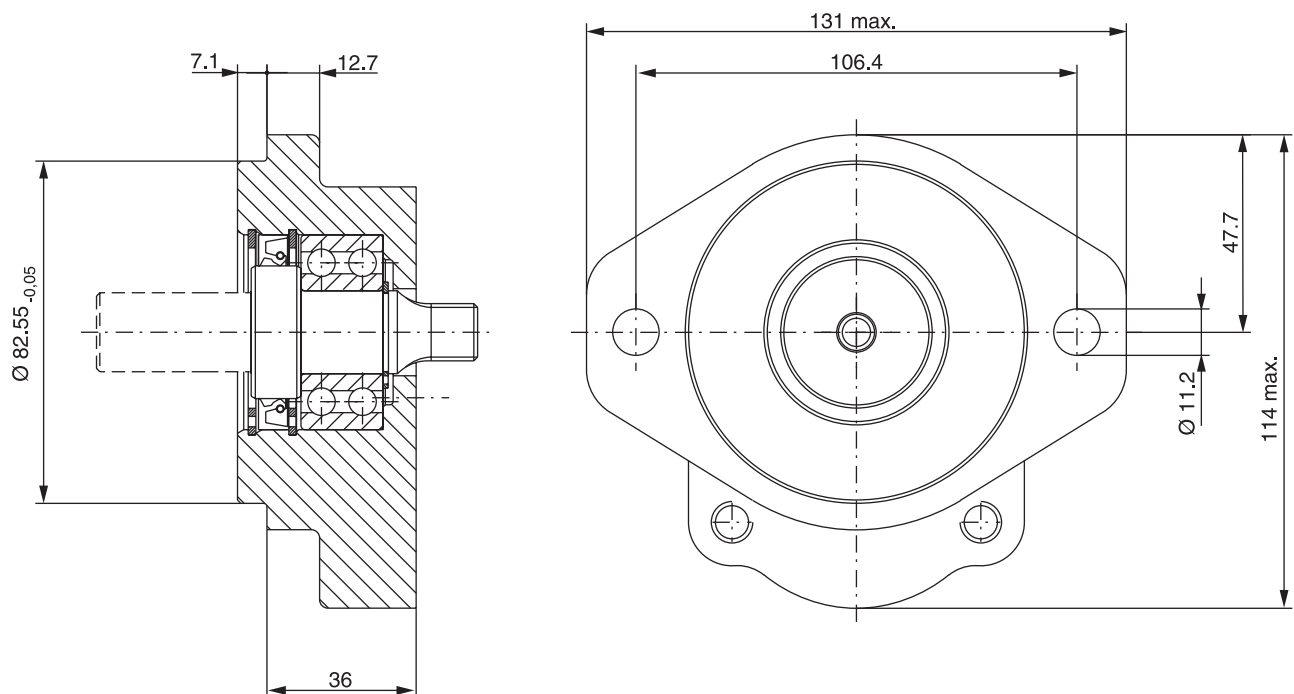
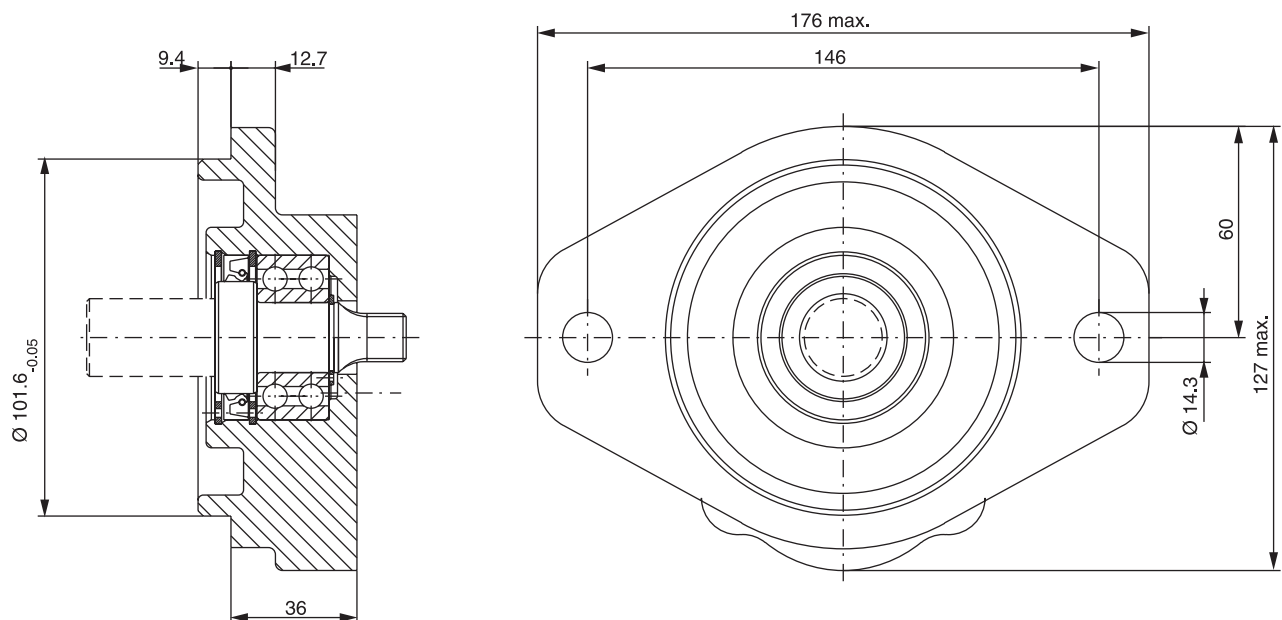
Code Q3



Code Q4



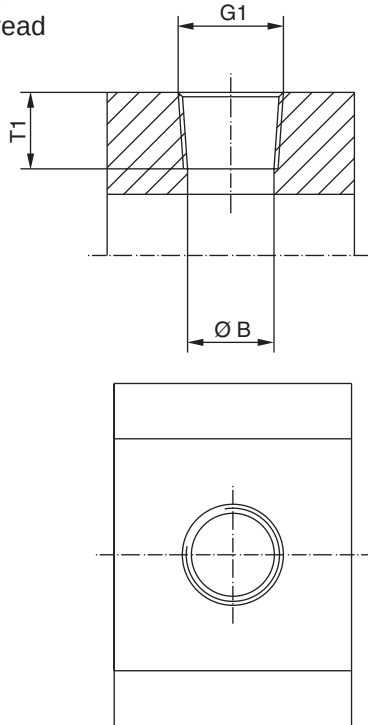
Mounting flange options**Heavy-duty aluminium pumps and motors
Series PGP, PGM 500****PGP/PGM 511 Mounting Flange****Code F3****Code F4**

PGP/PGM 511 Mounting Flange**Code L2****Code L3**

PGP/PGM 511 Porting

Code C

NPT thread

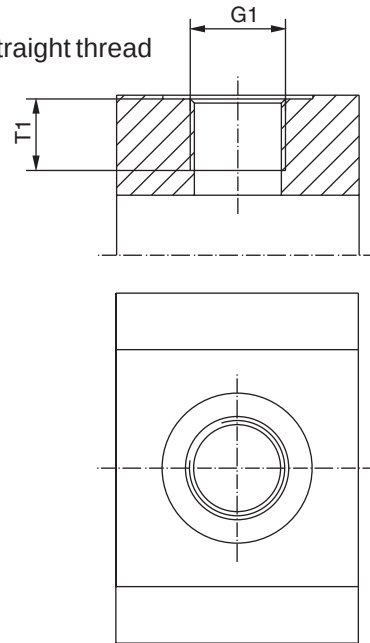


Code E

British Standard Pipe

Code G

Metric straight thread

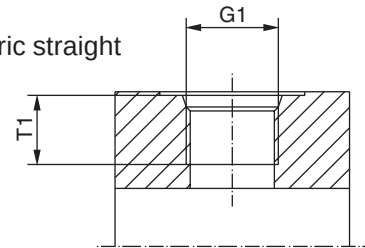


Code D

SAE straight thread

Code H

ISO metric straight

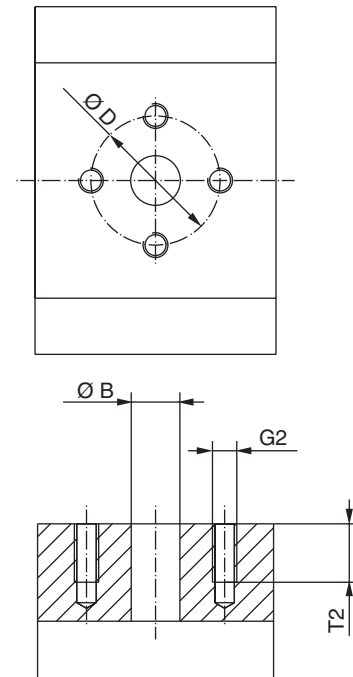


PGP/PGM 511

Code	G1	T1
	Thread	Dimensions
C2	3/8-18 NPT	16.0
C3	1/2-14 NPT	20.8
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
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
G8	M 33x2	18.0
H1	M 14x1.5 w/o	11.5
H2	M 16x1.5 w/o	13.0
H3	M 18x1.5 w/o	14.5
H4	M 22x1.5 w/o	15.5
H6	M 27x2 w/o	19.0
H8	M 33x2 w/o	19.0

Code L, M

4-Bolt flange



Port options

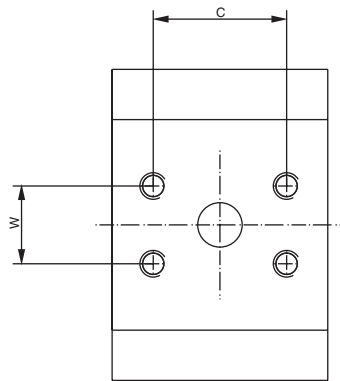
Heavy-duty aluminium pumps and motors Series PGP, PGM 500

PGP/PGM 511 Porting

Code N

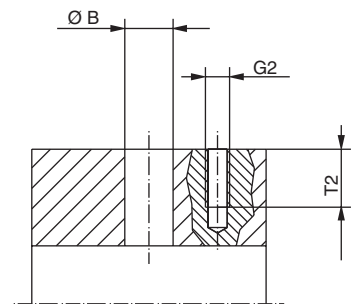
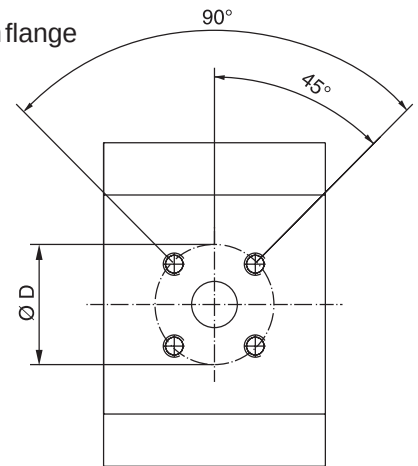
SAE Split flange

Code P

SAE Split flange
metric thread

Code J

European flange

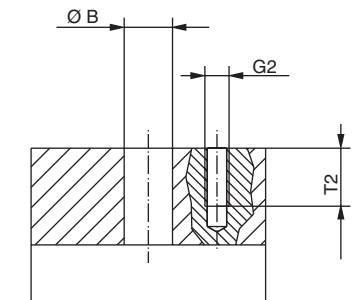
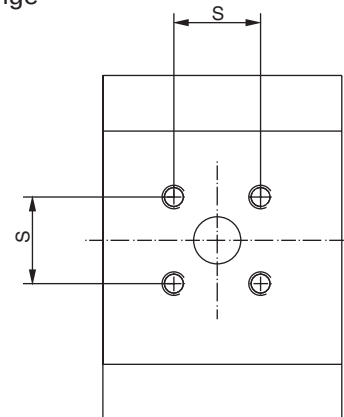


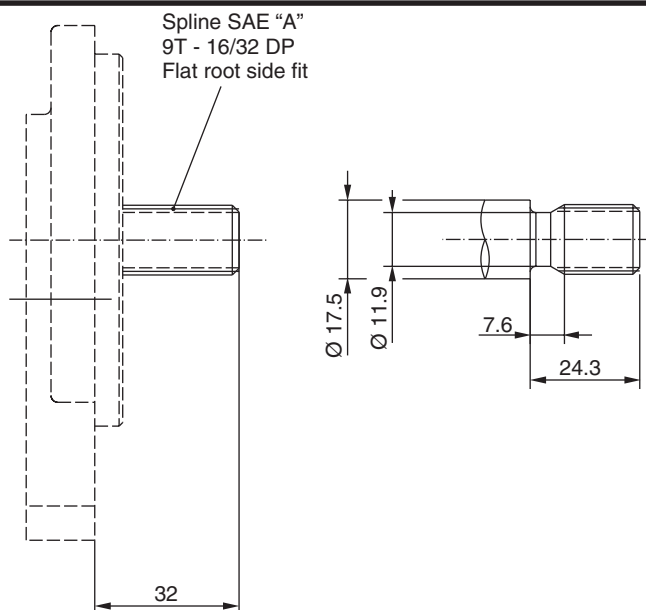
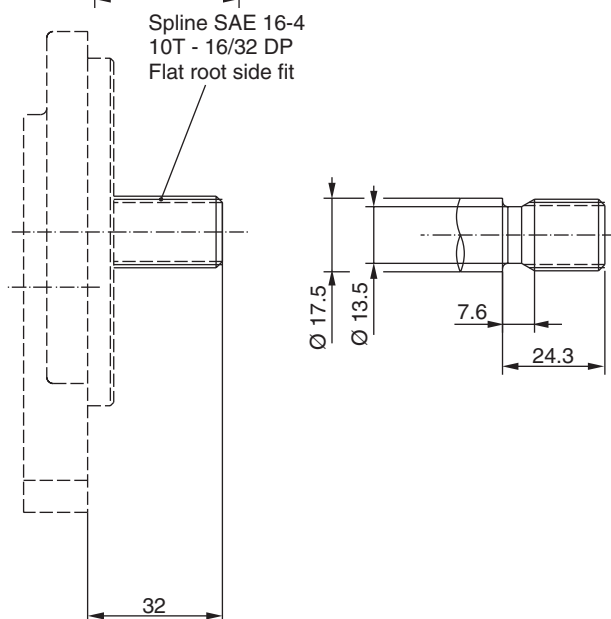
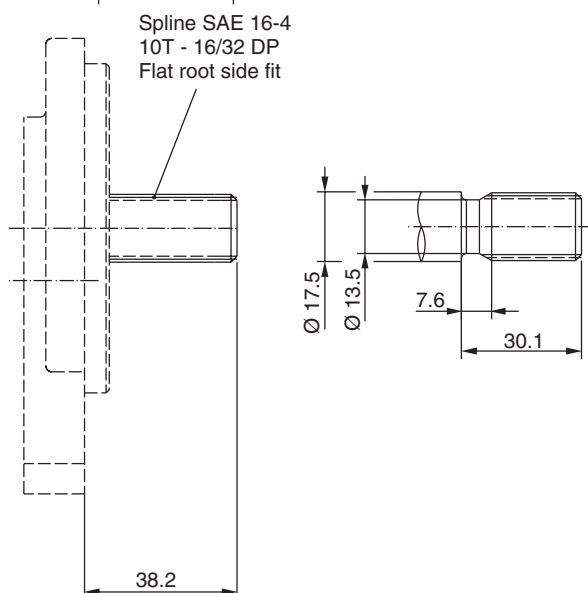
PGP/PGM 511

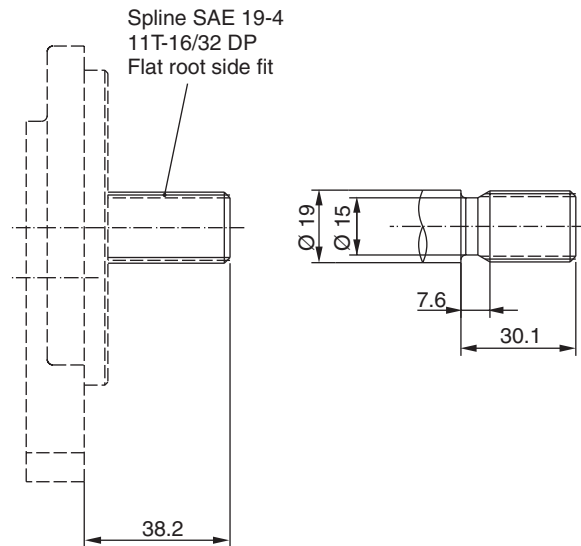
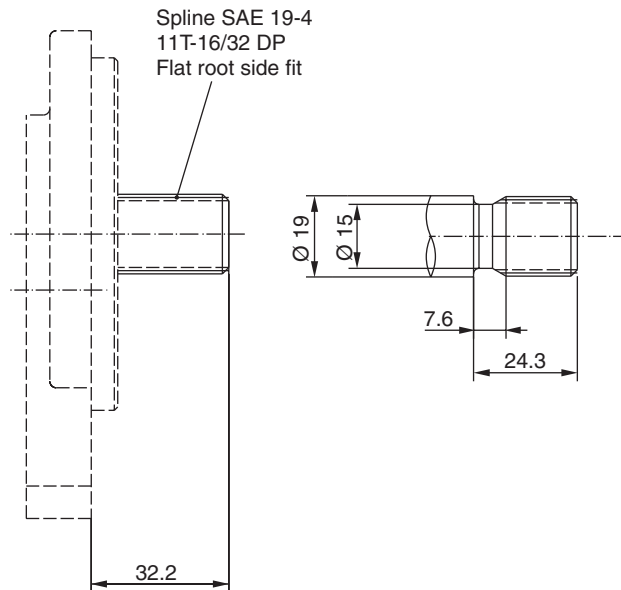
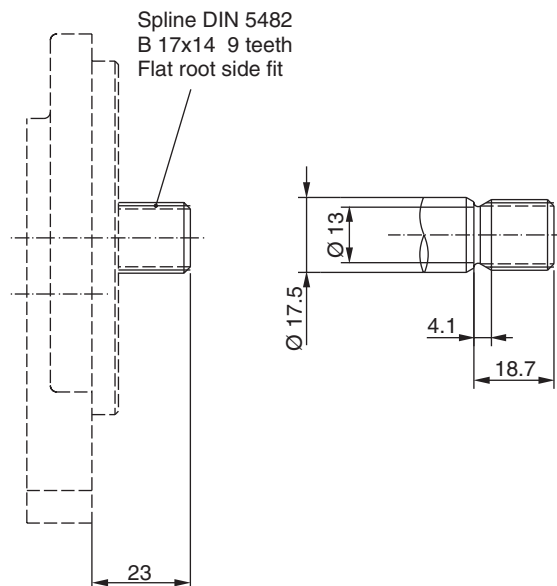
Code	G2	Ø B	Ø D	S	C	W	T2
	Thread						
J3	M6	8.0	30.0				12.0
J4	M6	12.0	30.0				12.0
J5	M6	15.0	35.0				12.5
J6	M8	15.0	40.0				15.0
J7	M6	20.0	40.0				13.0
J8	M8	18.0	55.0				15.0
J9	M8	26.0	55.0				15.0
K1	5/16-18 UNF	19.0		30.48			15.0
K2	M8	19.0		30.48			15.0
K3	M6	19.0		32.00			13.0
K4	M6	16.0		25.15			13.0
L1	M6	13.0	30.0				13.0
L2	M8	19.0	40.0				15.0
L4	1/4-20 UNF	13.0	30.0				13.0
L5	5/16-18 UNF	19.0	40.0				15.0
M1	M6	15.0	30.16				13.0
M2	1/4-20 UNF	15.0	30.16				13.0
M3	1/4-20 UNF	14.2	35.57				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
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

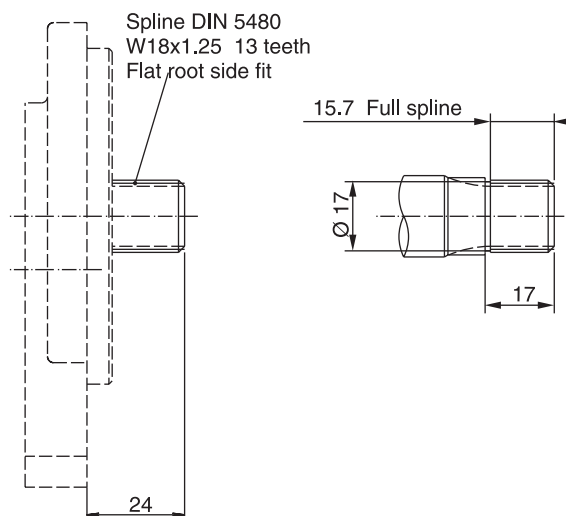
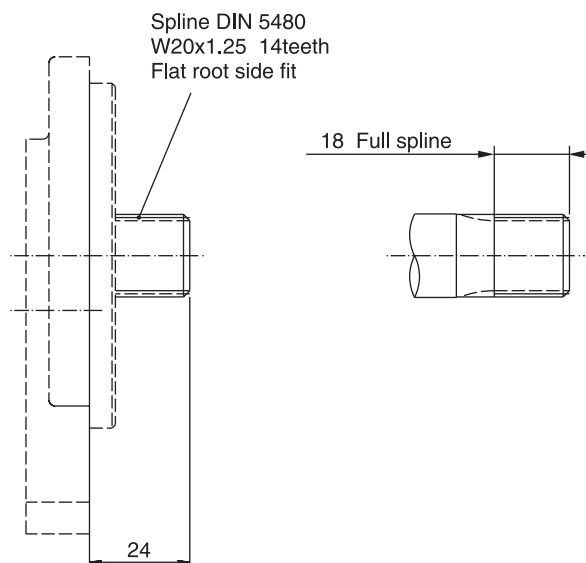
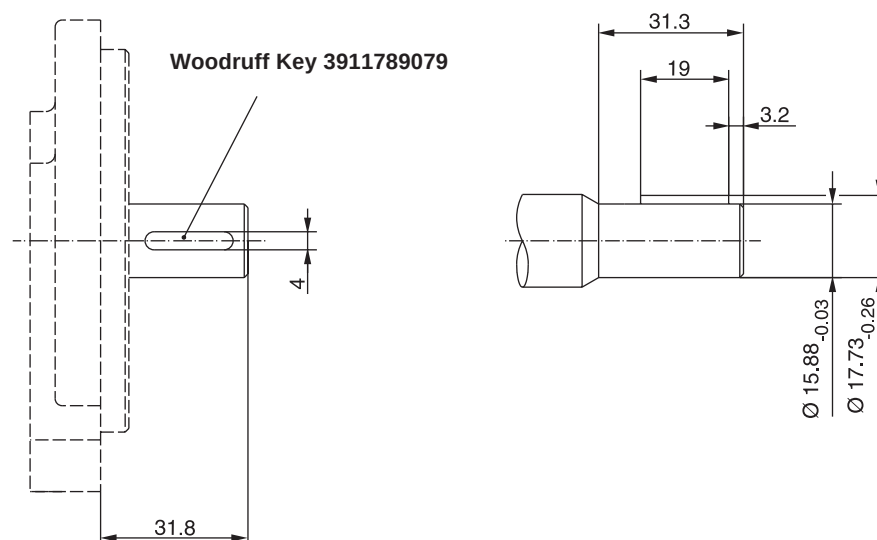
Code K

4-Bolt flange



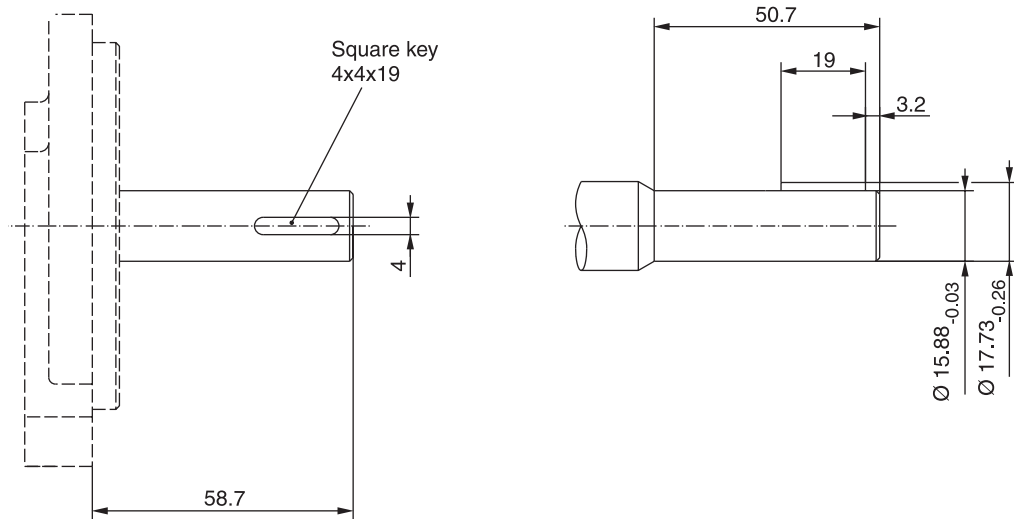
**PGP/PGM 511 Drive Shaft
Code A1****Code B1****Code B2**

PGP/PGM 511 Drive Shaft**Code C1****Code C2****Code F1**

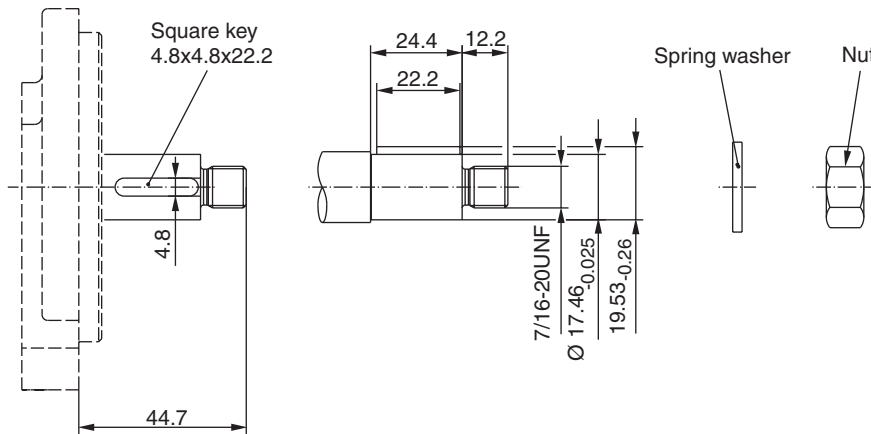
PGP/PGM 511 Drive Shaft**Code F2****Code F3****Code K1**

PGP/PGM 511 Drive Shaft

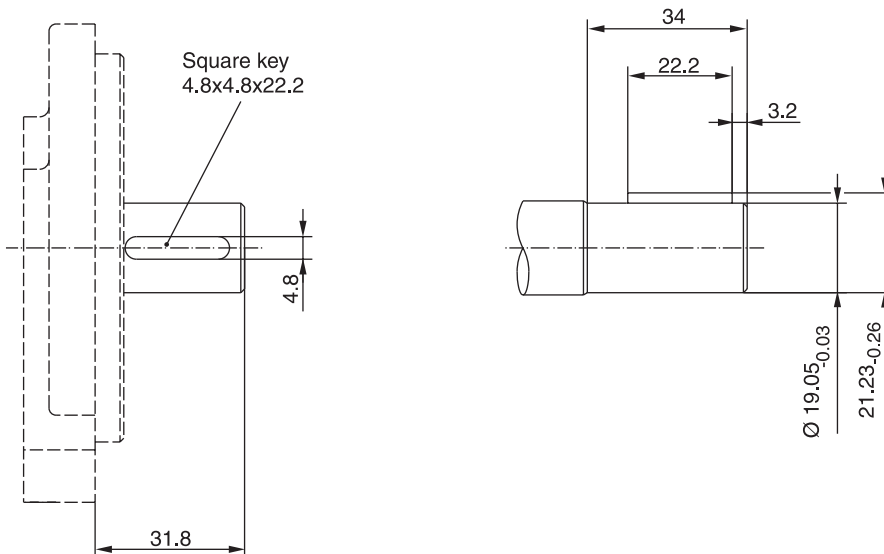
Code K4



Code L1

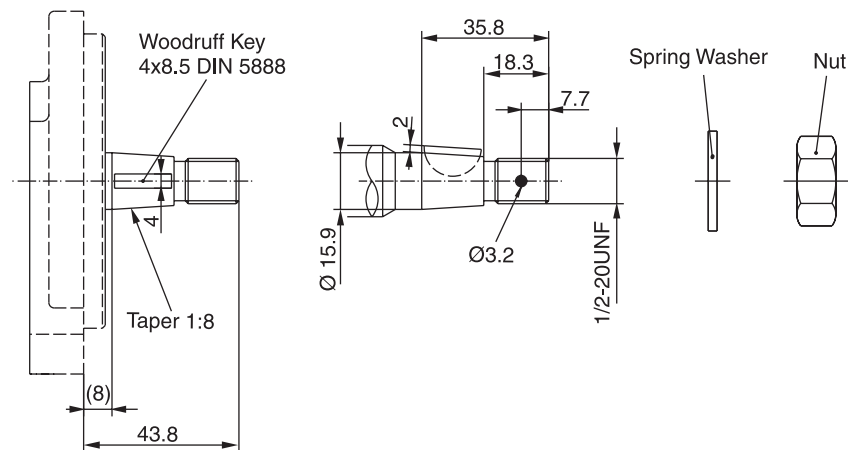


Code L6

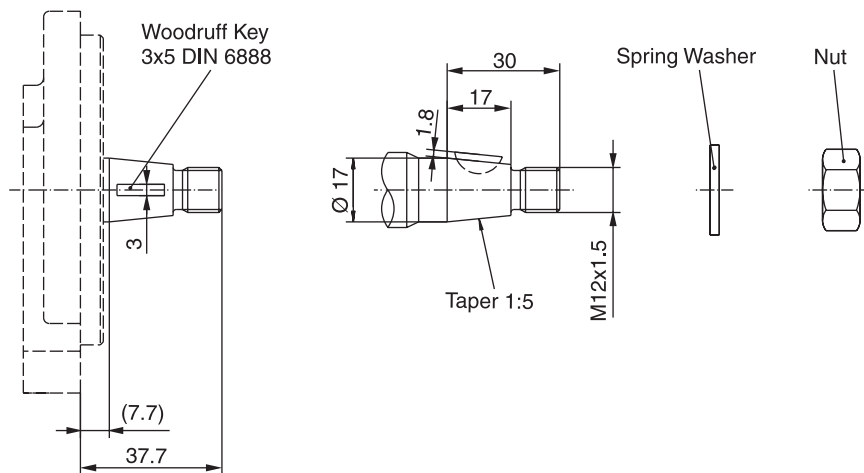


PGP/PGM 511 Drive Shaft

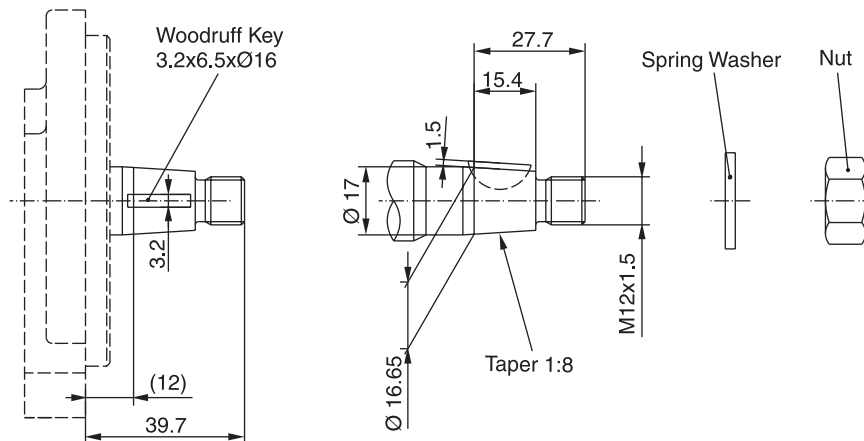
Code R1



Code S1

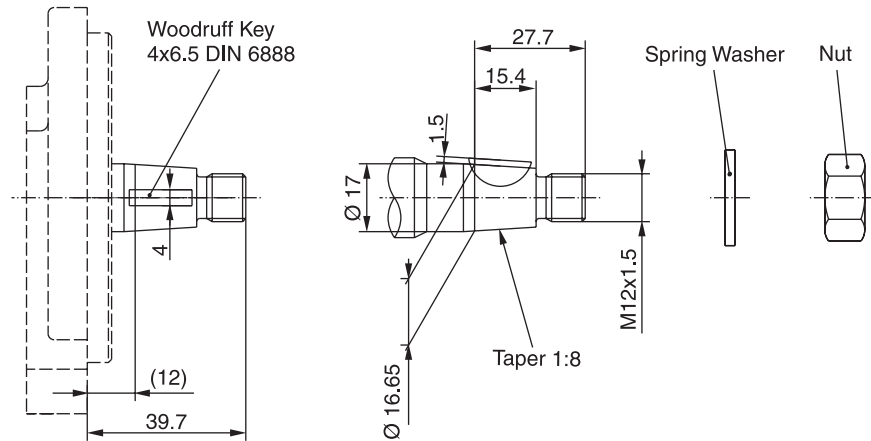


Code S2

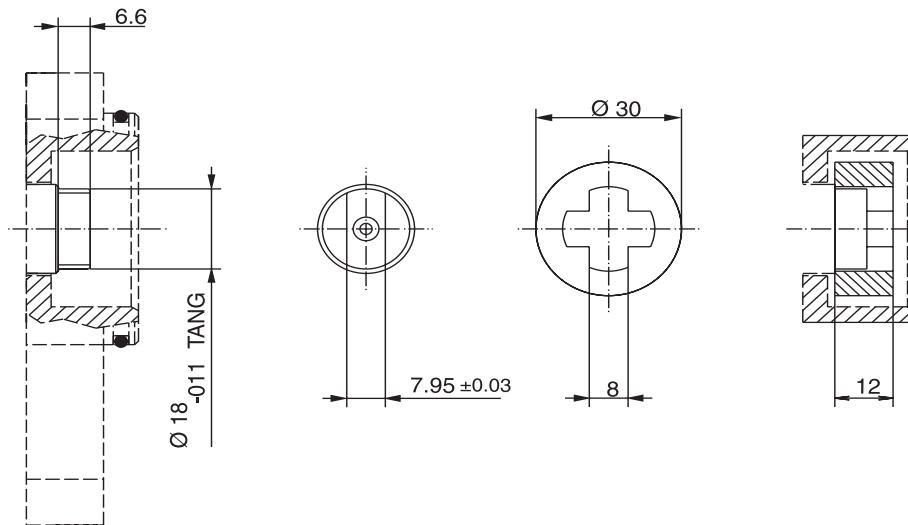


PGP/PGM 511 Drive Shaft

Code S4



Code V5



PGP/PGM 511 - Shaft Load Capacity

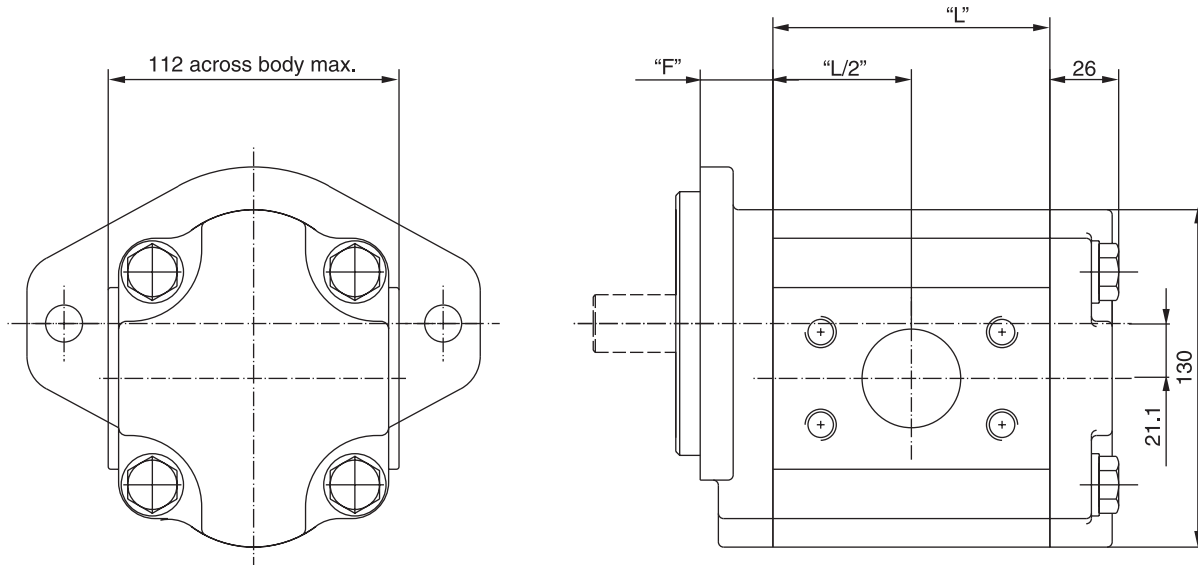
Code	Description		Torque Rating [Nm]
A1	9T,16/32DP, 32L, SAE"A"	spline	86
B1	10T,16/32DP, 32L	spline	124
B2	10T,16/32DP, 38.2L	spline	124
C1	11T, 16/32DP, 38.2L, SAE 19-4	spline	184
C2	11T,16/32DP, 32.2L, SAE 19-4	spline	184
F1	9T,B17x14,23L, DIN 5482	spline	101
F2	13T, W18x1.25,24L, DIN 5480	spline	190
F3	14T,W20x1.25,24L, DIN 5480	spline	110
K1	Ø15.88,4.0 KEY, no thread, 32L, SAE"A"	parallel	75
K4	Ø15.88,3.95 KEY, no thread, 58.7L	parallel	75
L1	Ø17.46,4.8 KEY, 7/16UNFext, 44.2L	parallel	112
L6	Ø19.05,4.8 KEY, no thread, 32L, SAE 19-1	parallel	145
R1	Ø15.9,8.0L, 4.0 KEY, 1/2UNF, SAE"A"	taper 1:8	156
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
S4	Ø16.65,12.0L,4.0 KEY, M12x1.5	taper 1:8	198
V5	8x6.5 short shaft	tang drive	60
	Multiple pump connection shaft		110

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

Dimensions**PGP/PGM 517 Specification - Standard Displacements**

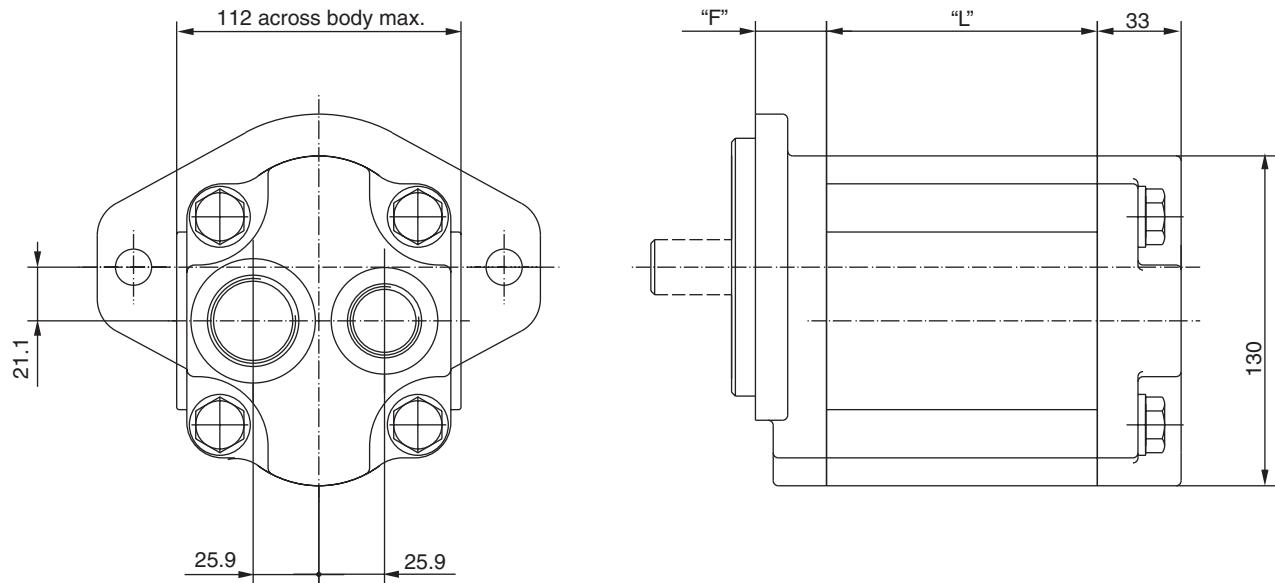
Pump Displacement	Code	0140	0160	0190	0230	0250	0280	0330	0380	0440	0520	0700
	cm ³ /rev	14.0	16.0	19.0	23.0	25.0	28.0	33.0	38.0	44.0	52.0	70.0
Continuous Pressure	bar	250	250	250	250	250	250	250	250	220	200	160
Intermittent Pressure	bar	275	275	275	275	275	275	275	255	220	215	160
Minimum Speed @ Max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet pressure	rpm	3400	3400	3300	3300	3100	3100	3000	3000	2800	2700	2400
Pump Input Power @ Max. Pressure and 1500 rpm	kW	9.6	11	13.1	15.8	17.2	19.3	22.7	26.1	27	28.6	31.2
Dimension "L"	mm	68.3	70.3	73.3	77.4	79.4	82.4	87.5	92.5	98.6	106.7	124.9
Approximate Weight¹⁾	kg	7.92	8.00	8.12	8.29	8.37	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/PGM 517

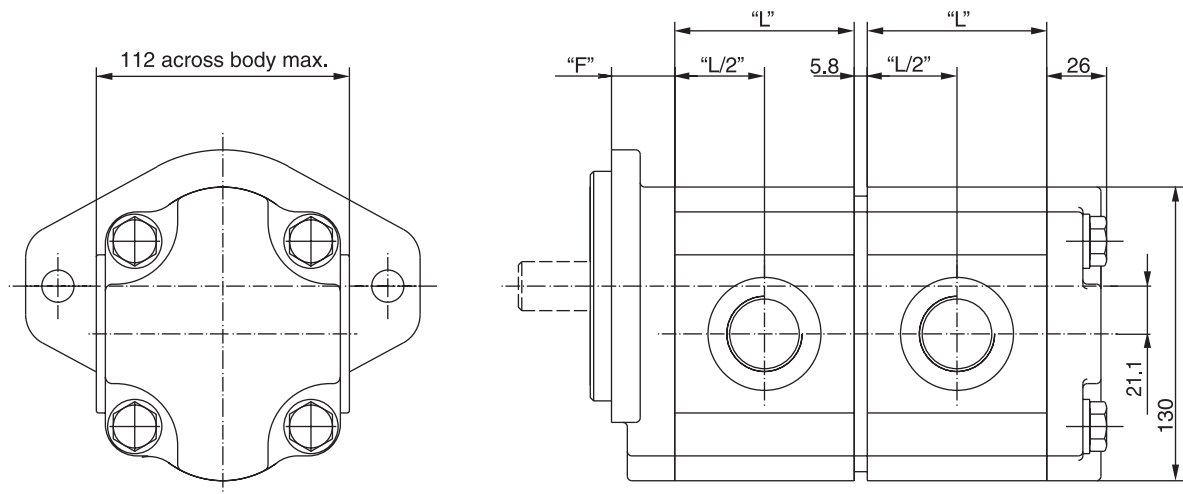
Dimension "F" see flanges

Dimension "L" see table

Single Unit PGP/PGM 517 with rear ports

Dimension "F" see flanges

Dimension "L" see table

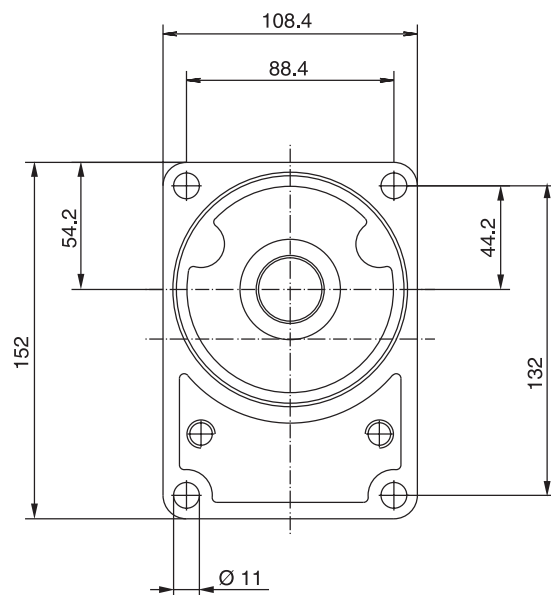
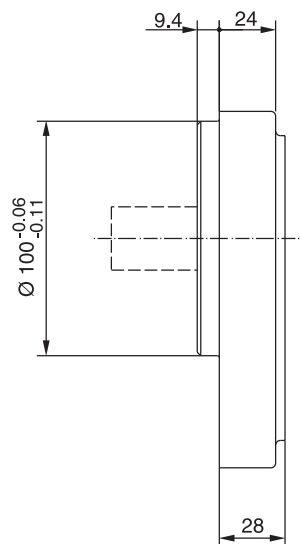
Tandem Unit PGP/PGM 517

Dimension "F" see flanges

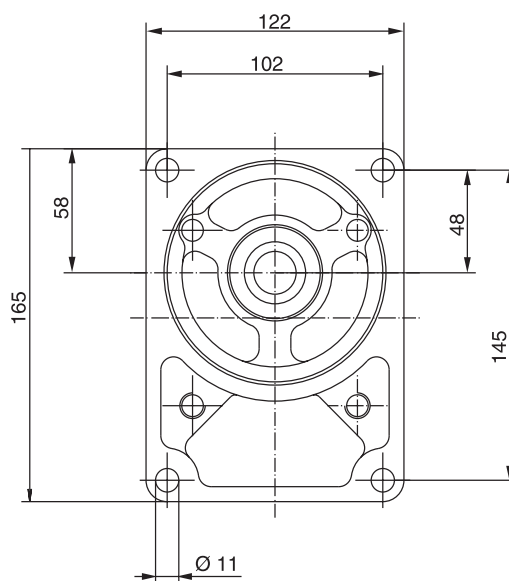
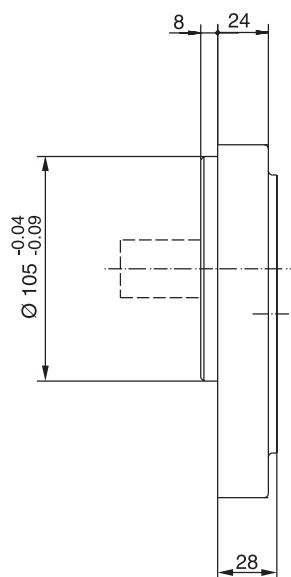
Dimension "L" see table

PGP/PGM 517 Mounting Flange

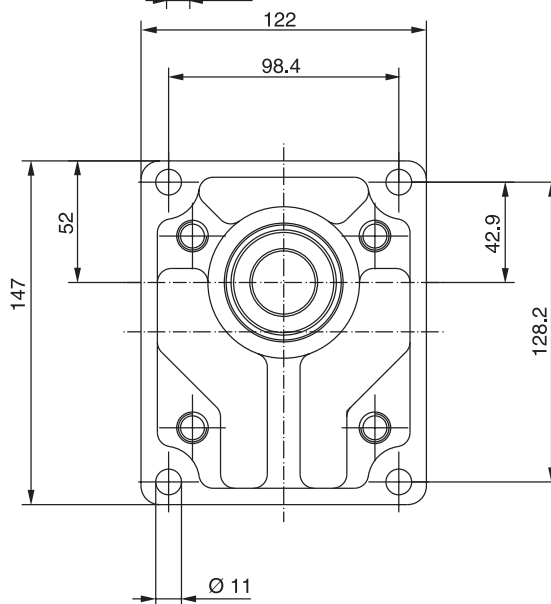
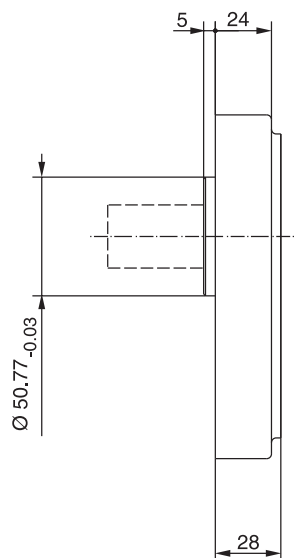
Code D5



Code D6

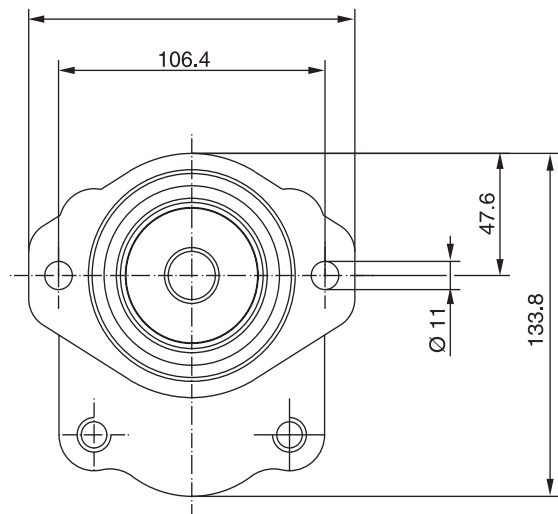
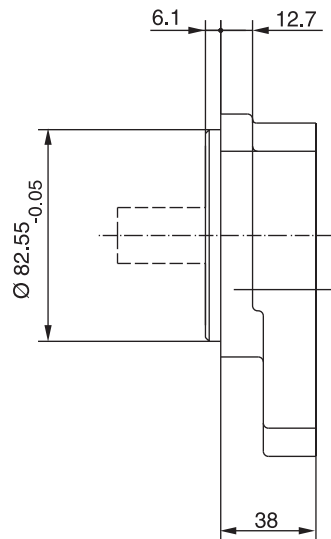


Code D7

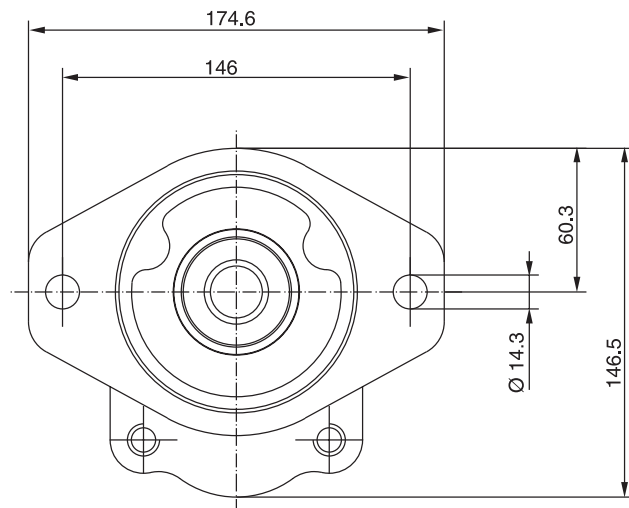
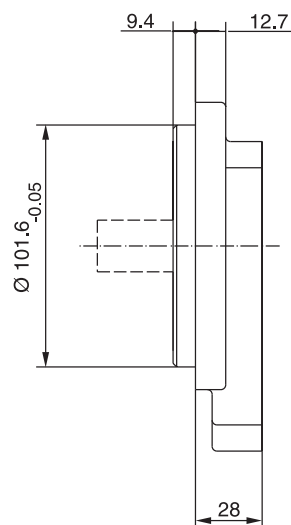


PGP/PGM 517 Mounting Flange

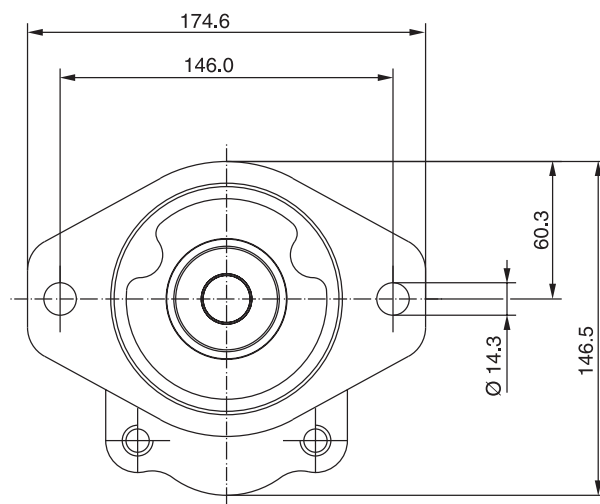
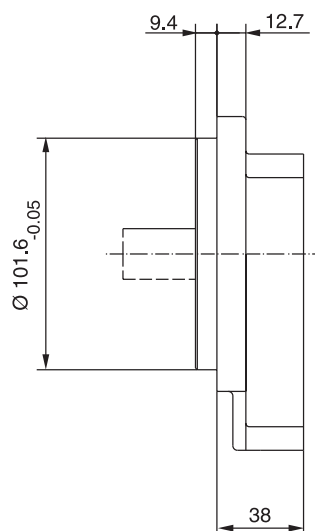
Code H2/L2



Code H3



Code L3



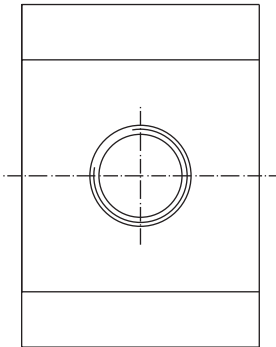
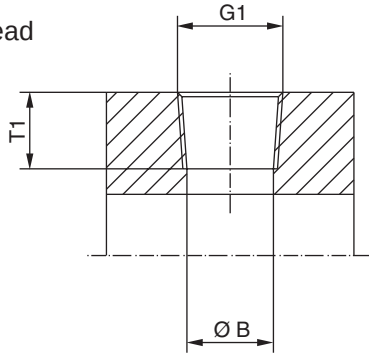
Port options

Heavy-duty aluminium pumps and motors Series PGP, PGM 500

PGP/PGM 517 Porting

Code C

NPT thread

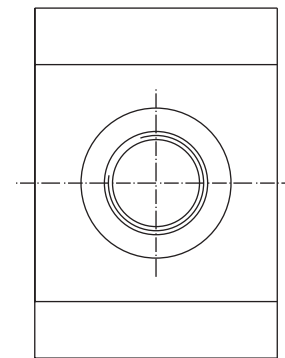
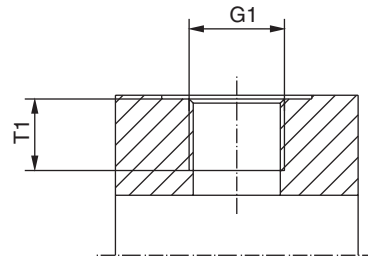


Code E

British Standard Pipe

Code G

Metric straight thread

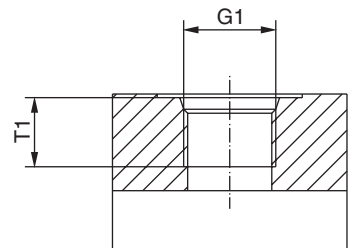


PGP/PGM 517

Code	G1	T1
	Thread	Dimensions
C3	1/2-14 NPT	20.8
C4	3/4-14 NPT	21.3
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

Code D

SAE straight thread



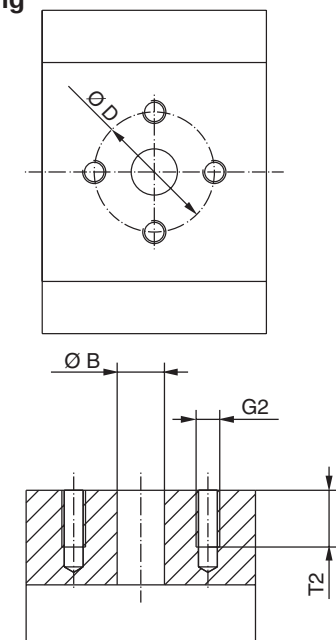
Port options

Heavy-duty aluminium pumps and motors
Series PGP, PGM 500

PGP/PGM 517 Porting

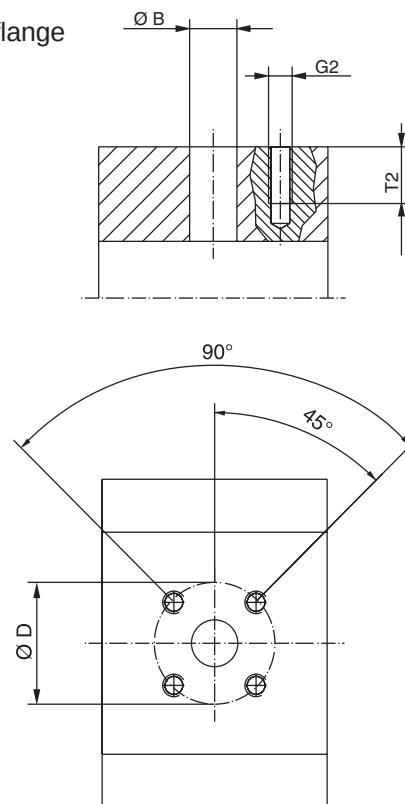
Code L, M

4-Bolt flange



Code J

European flange



Code N

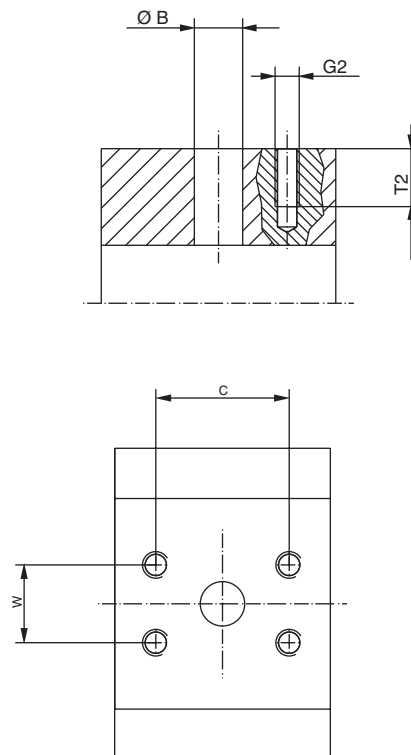
SAE split flange

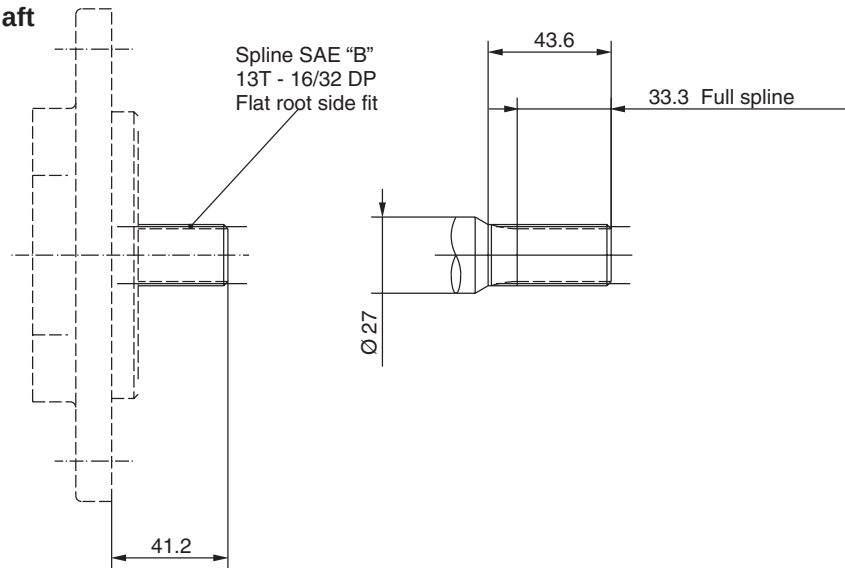
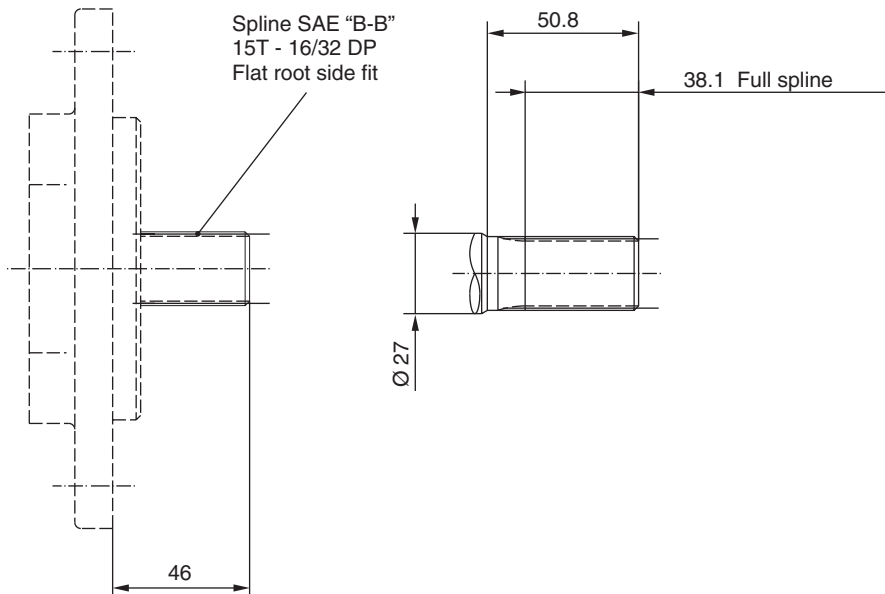
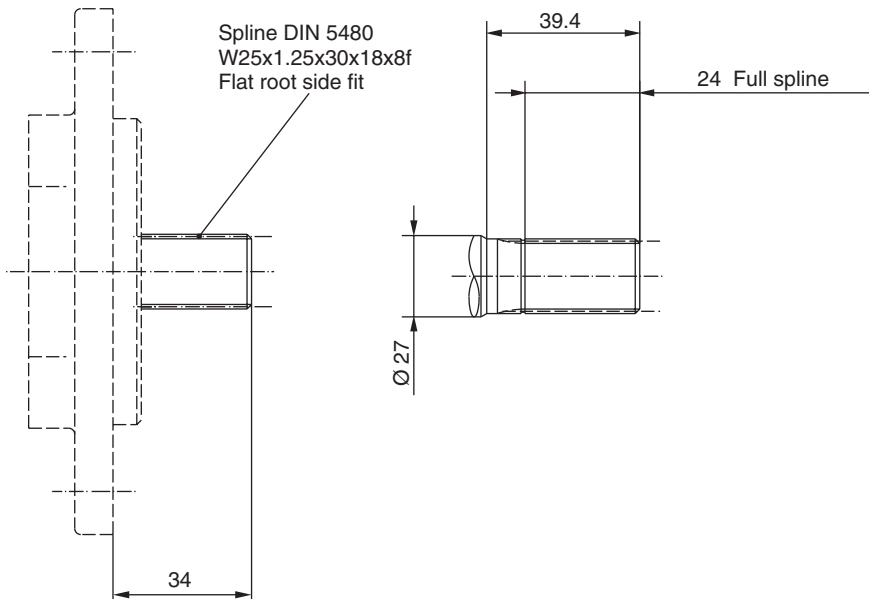
Code P

SAE split flange metric thread

PGP/PGM 517

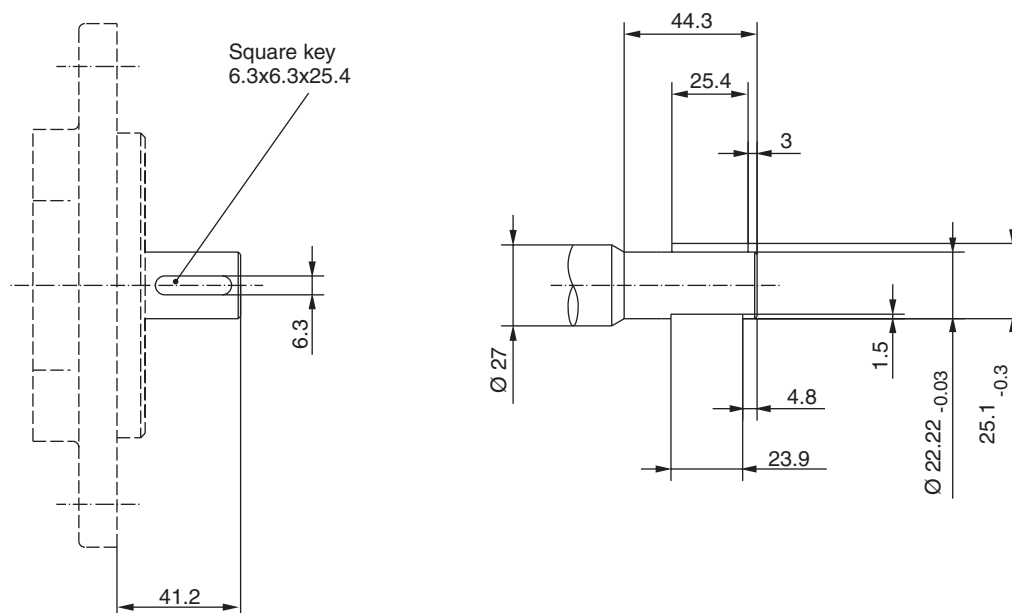
Code	G2	Ø B	Ø D	S	C	W	T2
	Thread						
J5	M6	15.0	35.0				12.5
J6	M8	15.0	40.0				15.0
J7	M6	20.0	40.0				13.0
J8	M8	18.0	55.0				15.0
J9	M8	26.0	55.0				15.0
L1	M6	13.0	30.0				13.0
L2	M8	19.0	40.0				15.0
L3	M10	27.0	51.0				18.0
L4	1/4-20 UNF	13.0	30.0				13.0
L5	5/16-18 UNF	19.0	40.0				15.0
L6	3/8-16 UNF	27.0	51.0				18.0
M4	5/16-18 UNF	19.0	48.1				15.0
M5	5/16-18 UNF	25.4	48.1				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
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



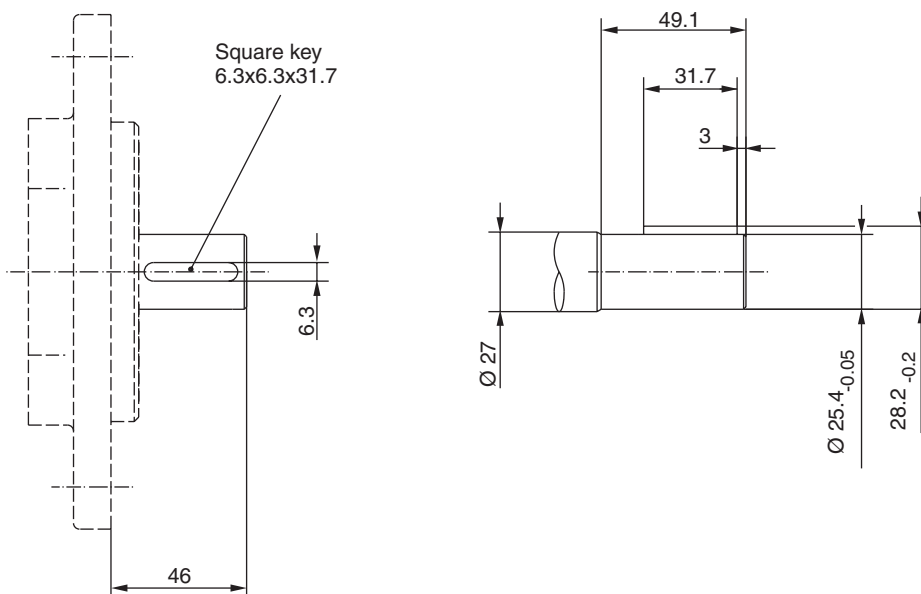
PGP/PGM 517 Drive Shaft**Code D1****Code E1****Code F4**

PGP/PGM 517 Drive Shaft

Code M1

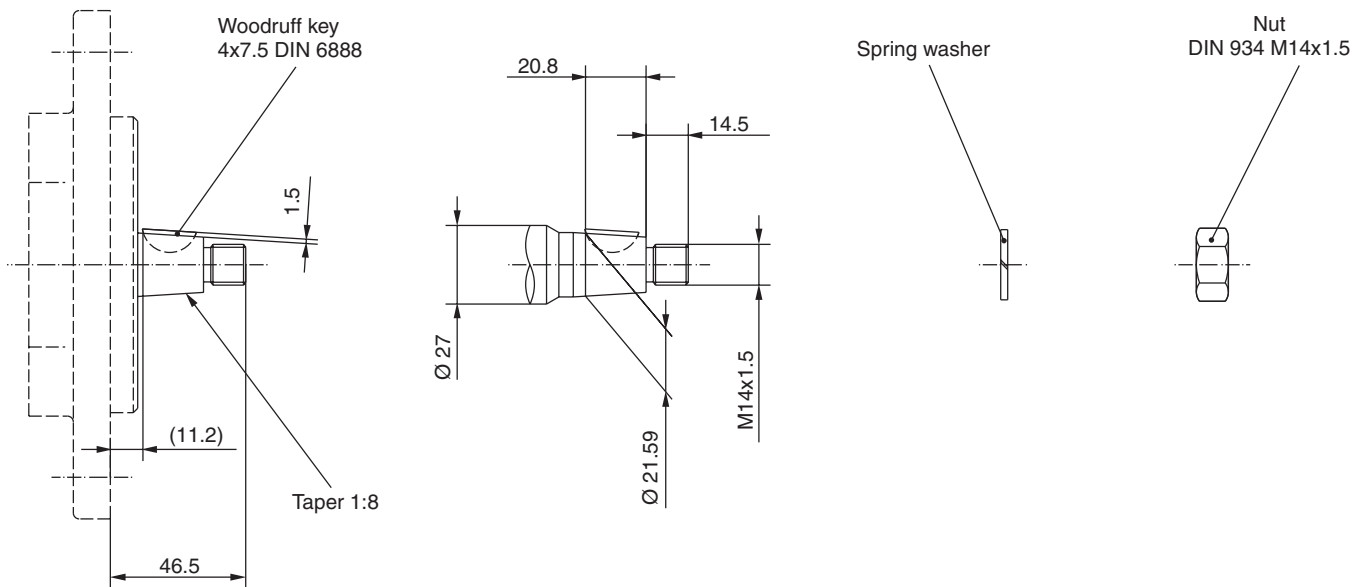


Code M2

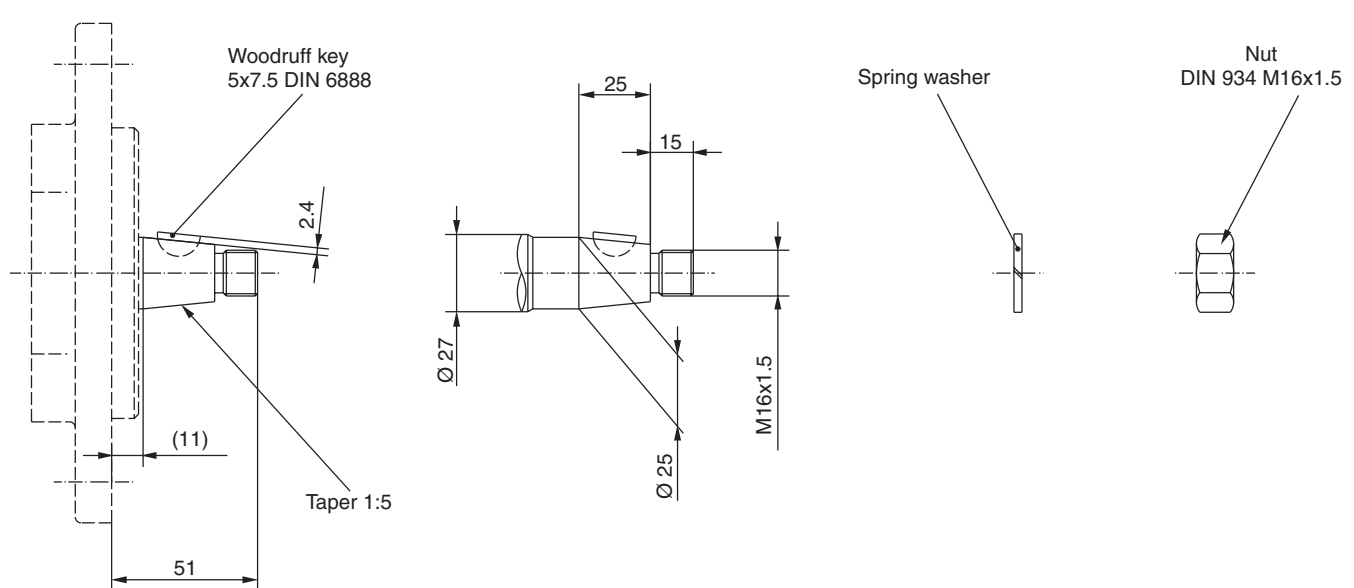


PGP/PGM 517 Drive Shaft

Code T1



Code T2



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
F4	18T, W25x1.25, 34L, DIN 5480	spline	500
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
T2	Ø25.0, 12.0 L, 5.0 KEY, M16x1.5	taper 1:5	350
	Multiple pump connection shaft		228

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

PI PG500-600_UK-11.PM6.5MM

Standard pump range**Series PGP, PGM 500****Standard pump range**

PGP 502 A	0016	C	P2	D1	N	J2	J1	B1	B1
PGP 502 A	0016	A	P2	D1	N	J2	J1	B1	B1
PGP 502 A	0025	C	P2	D1	N	J4	J3	B1	B1
PGP 502 A	0025	A	P2	D1	N	J4	J3	B1	B1
PGP 502 A	0036	C	P2	D1	N	J4	J3	B1	B1
PGP 502 A	0036	A	P2	D1	N	J4	J3	B1	B1
PGP 502 A	0058	C	P2	D1	N	J4	J3	B1	B1
PGP 502 A	0058	A	P2	D1	N	J4	J3	B1	B1
PGP 505 A	0040	C	Q2	D2	N	J7	J5	B1	B1
PGP 505 A	0040	A	Q2	D2	N	J7	J5	B1	B1
PGP 505 A	0060	C	Q2	D2	N	J7	J5	B1	B1
PGP 505 A	0060	A	Q2	D2	N	J7	J5	B1	B1
PGP 505 A	0080	C	Q2	D2	N	J7	J5	B1	B1
PGP 505 A	0080	A	Q2	D2	N	J7	J5	B1	B1
PGP 505 A	0100	C	Q2	D2	N	J7	J5	B1	B1
PGP 505 A	0100	A	Q2	D2	N	J7	J5	B1	B1
PGP 511 A	0060	C	S4	D3	N	J7	J5	B1	B1
PGP 511 A	0060	A	S4	D3	N	J7	J5	B1	B1
PGP 511 A	0120	C	S4	D3	N	J7	J5	B1	B1
PGP 511 A	0120	A	S4	D3	N	J7	J5	B1	B1
PGP 511 A	0190	C	S4	D3	N	J9	J8	B1	B1
PGP 511 A	0190	A	S4	D3	N	J9	J8	B1	B1
PGP 511 A	0270	C	S4	D3	N	J9	J8	B1	B1
PGP 511 A	0270	A	S4	D3	N	J9	J8	B1	B1
PGP 511 S	0080	C	S4	D3	N	J7	J5	B1	B1
PGP 511 S	0080	A	S4	D3	N	J7	J5	B1	B1
PGP 511 S	0120	C	S4	D3	N	J7	J5	B1	B1
PGP 511 S	0120	A	S4	D3	N	J7	J5	B1	B1
PGP 511 S	0170	C	S4	D3	N	J9	J8	B1	B1
PGP 511 S	0170	A	S4	D3	N	J9	J8	B1	B1
PGP 511 S	0250	C	S4	D3	N	J9	J8	B1	B1
PGP 511 S	0250	A	S4	D3	N	J9	J8	B1	B1
PGP 517 A	0140	C	T1	D7	N	J9	J8	B1	B1
PGP 517 A	0140	A	T1	D7	N	J9	J8	B1	B1
PGP 517 A	0250	C	T1	D7	N	J9	J8	B1	B1
PGP 517 A	0250	A	T1	D7	N	J9	J8	B1	B1
PGP 517 A	0360	C	T1	D7	N	P5	P3	B1	B1
PGP 517 A	0360	A	T1	D7	N	P5	P3	B1	B1
PGP 517 A	0500	C	T1	D7	N	P5	P3	B1	B1
PGP 517 A	0500	A	T1	D7	N	P5	P3	B1	B1

Parker Series 620

Parker Hydraulics has supplied the gear pumps and motors to mobile and industrial markets worldwide for many years, especially 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.

Description

- 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 275 bar.
- Production run-in available to suite OEM application conditions and to provide optimized volumetric efficiencies.



PGP 600

- Pressure balanced design for high efficiency.
- Reduced system noise levels compared to earlier models and competitor's pumps.
- 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, Specials on request.
Ports	SAE and metric Split flanges and others.
Shaft style	SAE splined, keyed, tapered, cylindrical. Specials on request
Speed	500 - 3500 rpm, see tables.
Theor. displacem.	See tables
Drive	Drive direct with flexible coupling is recommended.
Inlet pressure	Operating range 0.8 to 2 bar abs. Min. inlet pressure 0.5 bar short time without load, Consultation is recommended.
Outlet pressure	See tables
Axial / Radial load	Axial or Radial loading is not allowed.
Hydraulic fluids	Mineral oil Fire resistant fluids: - water-oil emulsions 60/40, HFB - water-glycol, HFC - phosphate-esters, HFD Consultation is recommended.
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. permiss. operating press. dependent on fluid temperature.

Fluid viscosity	Range of operating viscosity 20 to 100 mm ² /s. Max. operating viscosity should not exceed 1000 mm ² /s recommended min. viscosity 8 mm ² /s.
Filtration	According to ISO 4406 Cl. 16/13
Flow velocity	See table.
Direction of rotation	Clockwise, counter-clockwise or double. Attention! Drive pump only in indicated direction of rotation.
Multiple pump assemblies	- Available in two or three section configurations. - Max. shaft loading must conform to the limitations shown in the Shaft Load Rating table in this catalogue. - The max. load is determined by adding the torque values for each pumping section that will be simultaneously loaded.
Separate or common inlet capability	Separate Inlet configuration: - Each gear housing has individual inlet and outlet ports. Common Inlet configuration: - Two gear sets share a common inlet.

Ordering code

Heavy-duty cast-iron pumps and motors
Series PGP, PGM 620

	PG		620										
	Gear Design	Type		Unit	Displace- ment	Rotation	Shaft	Flange	Shaft Seal	Side Suction Port	Side Press- ure Port	Rear Suction Port ²⁾	Rear Press- ure Port

Code	Type
P	Pump
M	Motor

Code	Unit	
	Pump	Motor
A	Single unit	Standard Motor w/o checks
B	Multiple unit	Standard Motor w. two checks
C	—	Standard Motor w. one anti cavitation check (ACC)
S ¹⁾	Single split gear unit	—
T ¹⁾	Multiple split gear unit	—

¹⁾ Only for displacement codes 0190 to 0460

Displacement	
Code	ccm
0160	16
0190	19
0210	21
0230	23
0260	26
0290	29
0330	33
0360	36
0370	37
0410	41
0440	44
0460	46
0500	50
0520	52

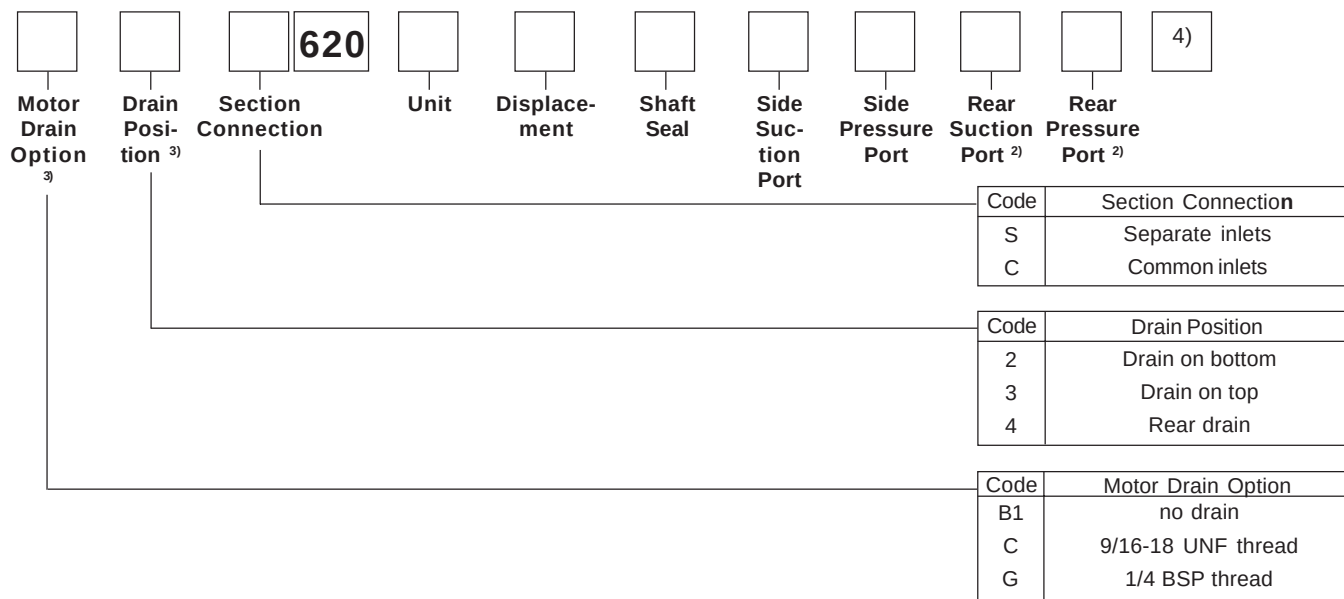
Code	Rotation
C	Clockwise
A	Counter clockwise
B	Bi-directional

Code	Shaft Seal
X	No seal
N	NBR
V	FPM, FKM
M	Double NBR
W	Double FPM
H	High Pressure (5bar)

Code	Shaft
B1	10T, 16/32DP, 32L spline
C1	11T, 16/32DP, 38.2L, SAE 19-4 spline
D1	13T, 16/32DP, 41.2L, SAE "B" spline
E1	15T, 16/32DP, 46L, SAE "B-B" spline
M3	Ø25.4, 6.3Key, M8, 46L, SAE "B-B", parallel
M4	Ø25.0, 8.0Key, M8, 72L, parallel
M6	Ø22.2, 4.8Key, no thread, 53.8L, parallel
T1	Ø21.59, 11.2L, 4.0Key, M14x1.5, taper 1:8
T2	Ø25.0, 12L, 5.0Key, M16x1.5, taper 1:5

²⁾ Only coded for the last section.

³⁾ Only for motors



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

Code	Port Options	Code	Port Options
B1	No ports	S1*	1/2"-5/16-18UNC SAE Split Flange
D3	3/4 - 16 UNF thread	S2*	3/4"-3/8-16UNC SAE Split Flange
D4	7/8 - 14 UNF thread	S3*	1"-3/8-16UNC SAE Split Flange
D5	1 1/16 - 12 UN thread	S4*	1 1/4"-7/16-14UNC SAE Split Flange
D6*	1 5/16 - 12 UN thread	S5*	1 1/2"-1/2-13UNC SAE Split Flange
D7*	1 5/8 - 12 UN thread	S6*	2"-1/2-13UNC SAE Split Flange
D8*	1 7/8 - 12 UN thread	T1*	12.7mm - M8 Metric Split Flange
E2	3/8 - 19BSP thread	T2*	19.0mm - M10 Metric Split Flange
E3	1/2 - 14 BSP thread	T3*	25.4mm - M10 Metric Split Flange
E4	5/8 - 14 BSP thread	T4*	31.8mm - M10 Metric Split Flange
E5	3/4 - 16 BSP thread	T5*	38.1mm - M12 Metric Split Flange
E6*	1 - 11 BSP thread	T6*	50.8mm - M12 Metric Split Flange
E7*	1 1/4 - 11 BSP thread		
E8*	1 1/2 - 11 BSP thread		
J5*	15mm - Ø35mm - M6 square		
J9*	26mm - Ø55mm - M8 square		
L1*	13mm-Ø30mm-M6 diamond		
L2*	19mm-Ø40mm-M8 diamond		
L3*	27mm-Ø51mm-M10 diamond		

* Not usable for rear ports.

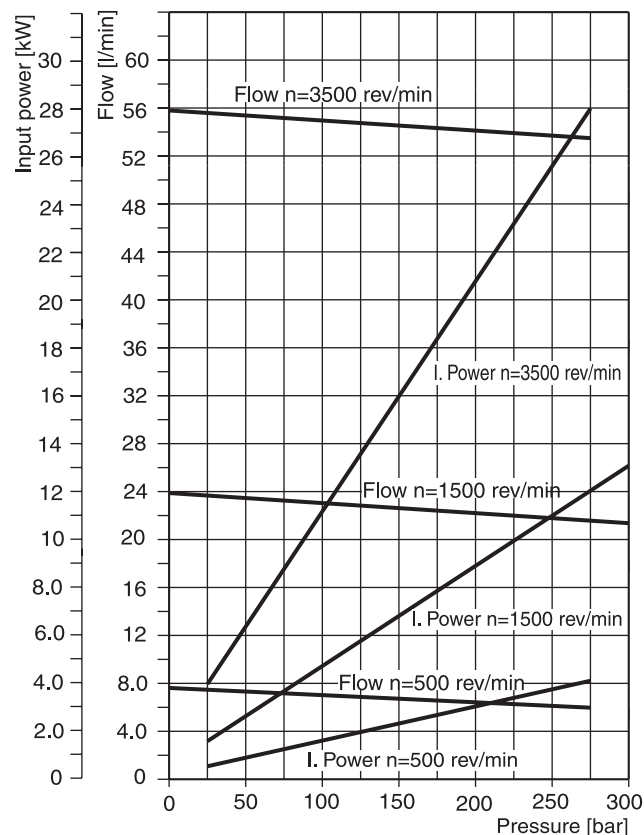
4) For further "B" triple unit repeat displacement,
shaft seal between sections,
side suction port,
side pressure port,
rear suction port,
rear pressure port.

Performance data

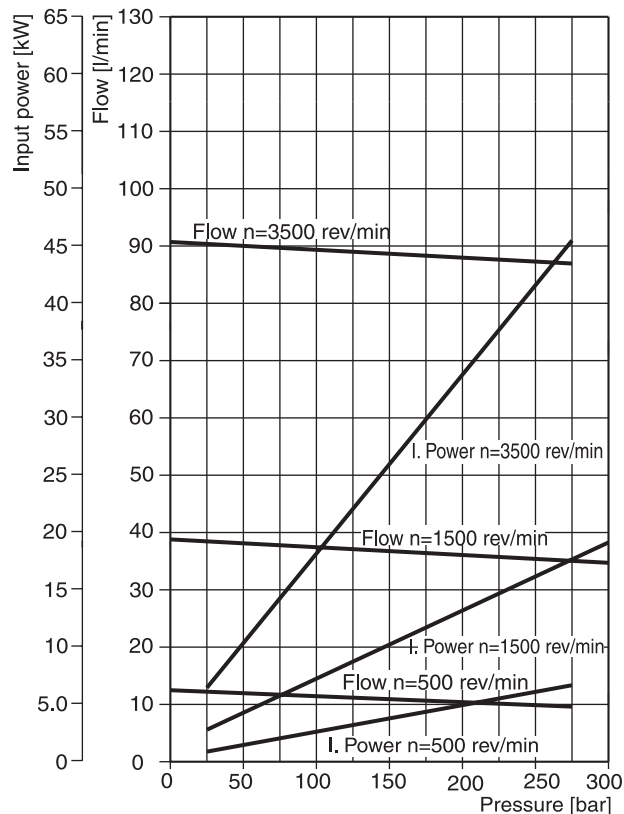
Heavy-duty cast-iron pumps and motors
Series PGP, PGM 620

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

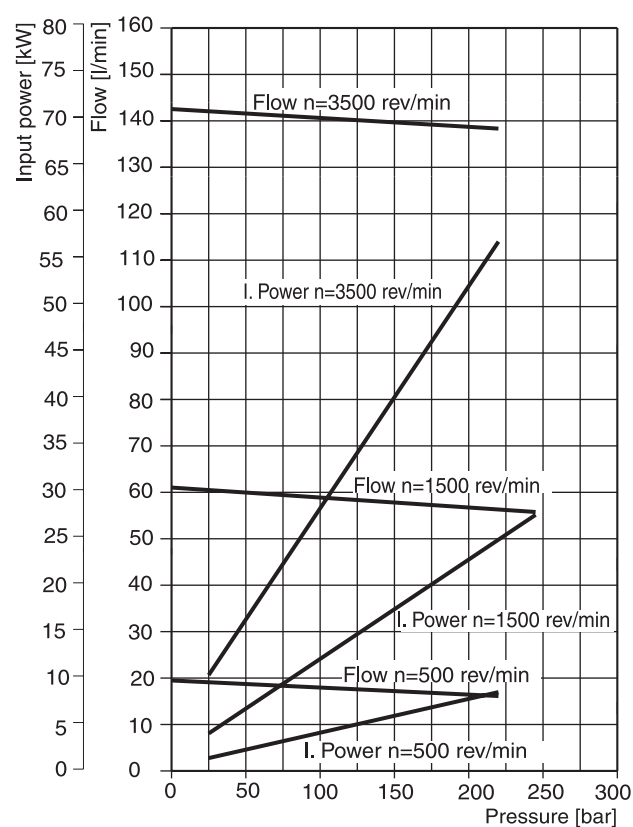
PGP 620 - 16.0 CC



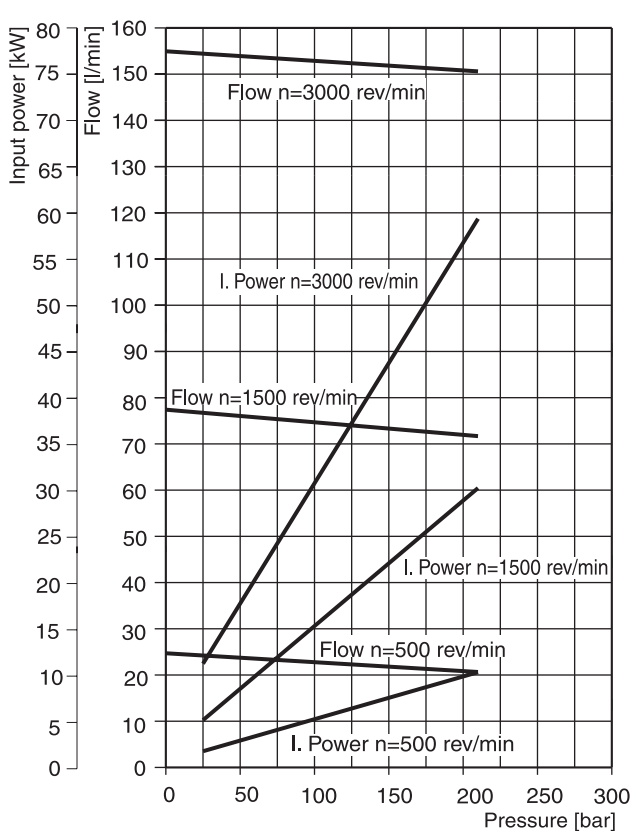
PGP 620 - 26.0 CC



PGP 620 - 41.0 CC



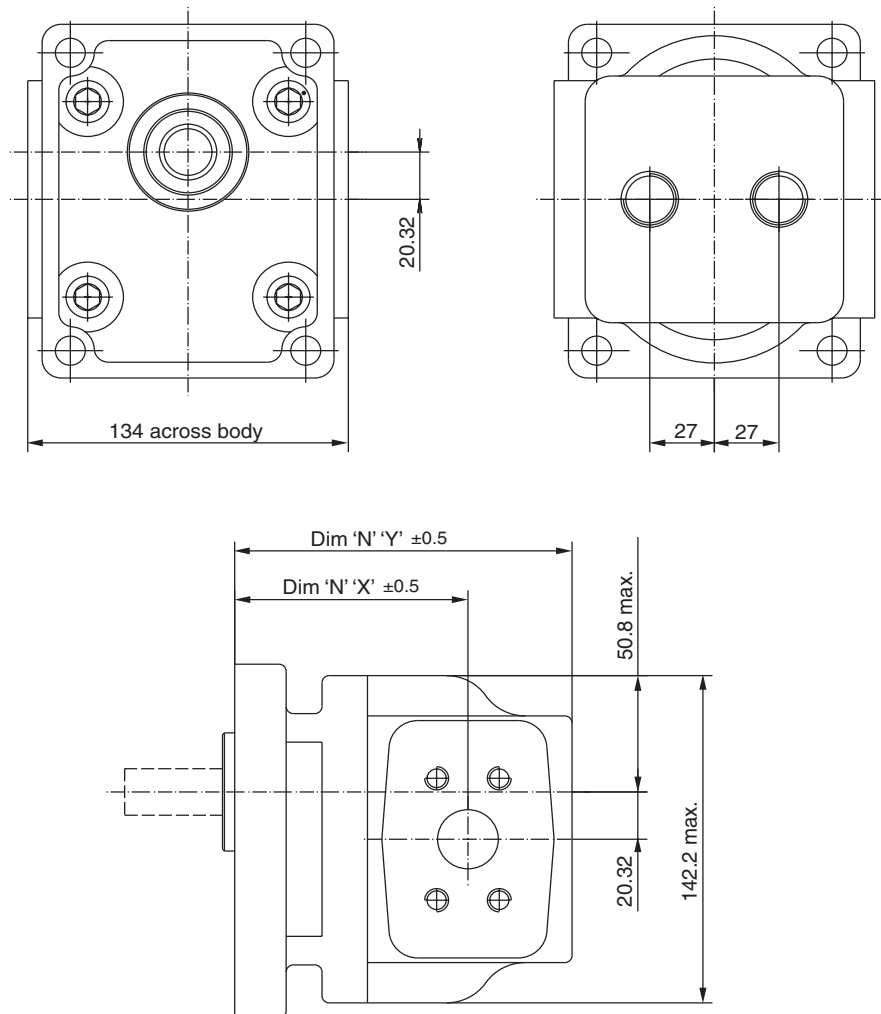
PGP 620 - 52.0 CC



PGP/PGM 620 Specification - Standard Displacements - Single Unit

Pump Displacement	Code	0160	0190	0210	0230	0260	0290	0330	0360	0370	0410	0440	0460	0500	0520
		cm³/rev	16.0	19.0	21.0	23.0	26.0	29.0	33.0	36.0	37.0	41.0	44.0	46.0	50.0
Continous Press.	bar	275	275	275	275	275	275	275	250	250	220	210	210	210	210
Intermittent Press.	bar	300	300	300	300	300	300	300	275	275	245	230	220	210	210
Minimum Speed	rpm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
@ Max. outlet press.															
Maximum Speed	rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3000	3000
@ 0 Inlet & Max. outlet press.															
Dimension "X"	mm	79.2	82.5	84.7	86.9	90.2	93.5	97.9	101.2	102.3	106.7	110.0	112.2	116.6	118.8
Dimension "Y"	mm	122.7	126.0	128.2	130.4	133.7	137.0	141.4	144.7	145.8	150.2	153.5	155.7	160.1	162.3
Approx. Weight	kg	12.0	12.1	12.1	12.2	12.3	12.6	12.7	12.8	12.9	13.0	13.1	13.2	13.3	13.4

Single Unit PGP/PGM 620



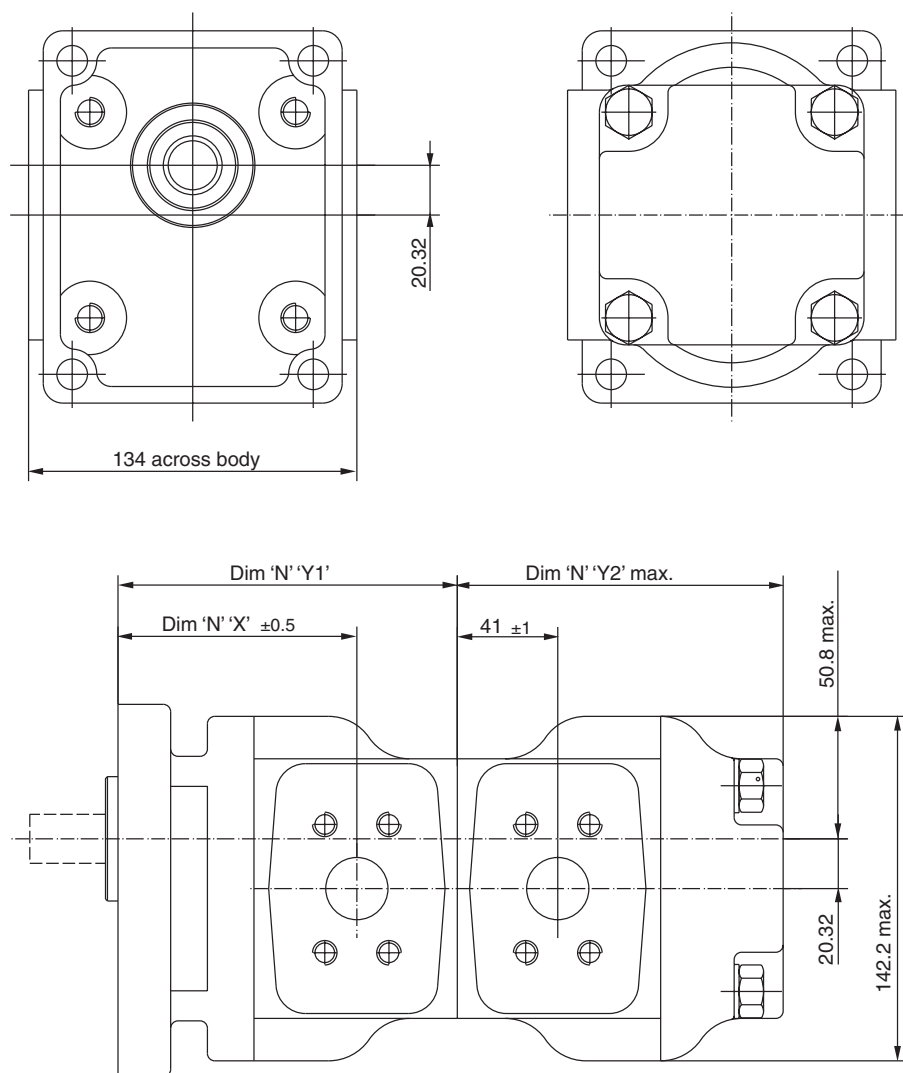
Dimensions tandem unit

Series PGP, PGM 620

PGP/PGM 620 Specification - Standard Displacements - Tandem Unit

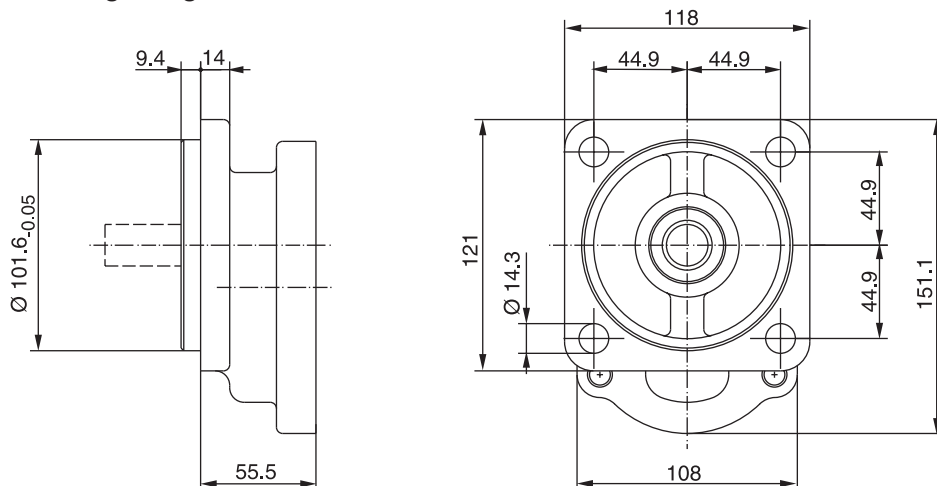
Pump Displacement	Code	0160	0190	0210	0230	0260	0290	0330	0360	0370	0410	0440	0460	0500	0520
	cm ³ /rev	16.0	19.0	21.0	23.0	26.0	29.0	33.0	36.0	37.0	41.0	44.0	46.0	50.0	52.0
Dimension "X"	mm	79.2	82.5	84.7	86.9	90.2	93.5	97.9	101.2	102.3	106.7	110.0	112.2	116.6	118.8
Dimension "Y1 "	mm	120.2	123.5	125.7	127.9	131.2	134.5	138.9	142.2	143.3	147.7	151.0	153.2	157.6	159.8
Dimension "Y2" max.	mm	115.2	118.5	120.7	122.9	126.2	129.5	133.9	137.2	138.3	142.7	146.0	148.2	152.6	154.8
Approximate Weight (front section)	kg	12.0	12.1	12.1	12.2	12.3	12.6	12.7	12.8	12.9	13.0	13.1	13.2	13.3	13.4
Approx. Weight (rear section)	kg	10.4	10.5	10.5	10.6	10.7	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8

Tandem Unit PGP/PGM 620

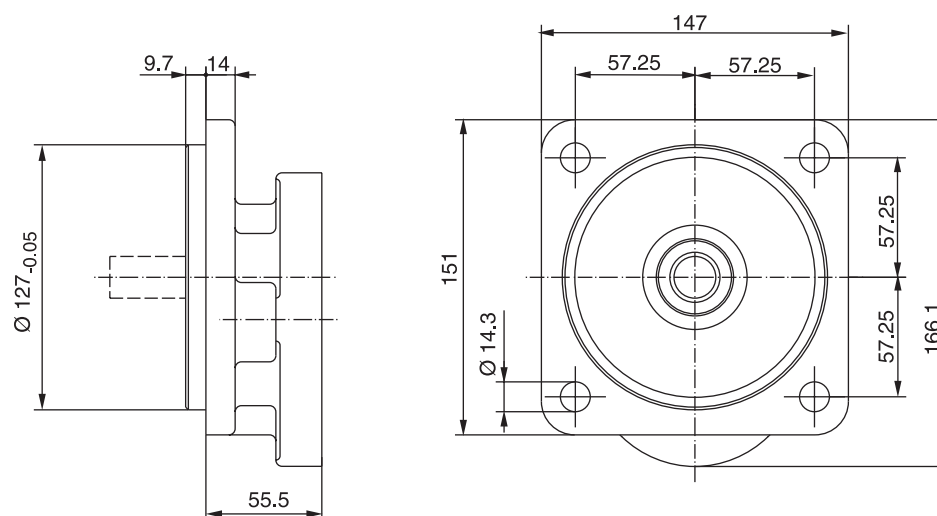


PGP/PGM 620 Mounting Flange

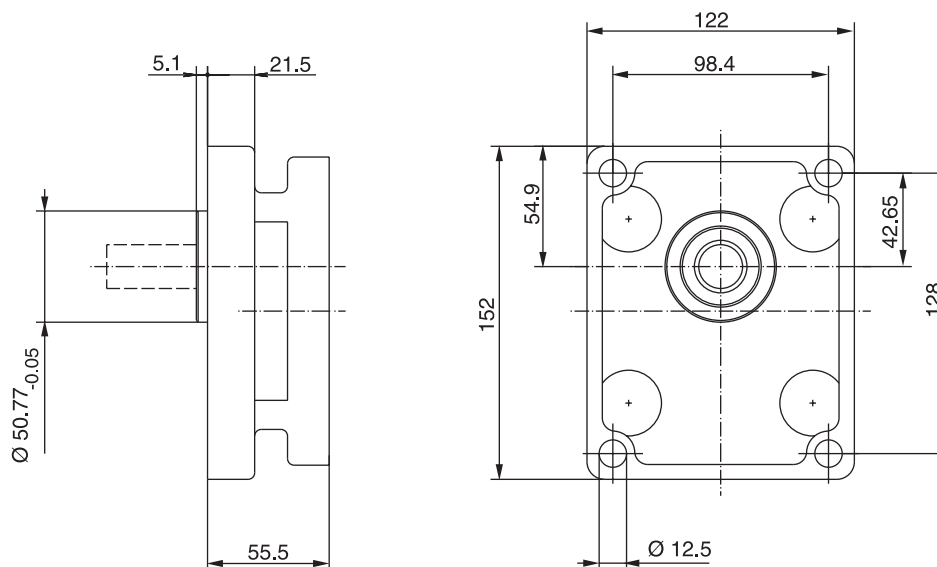
Code A3

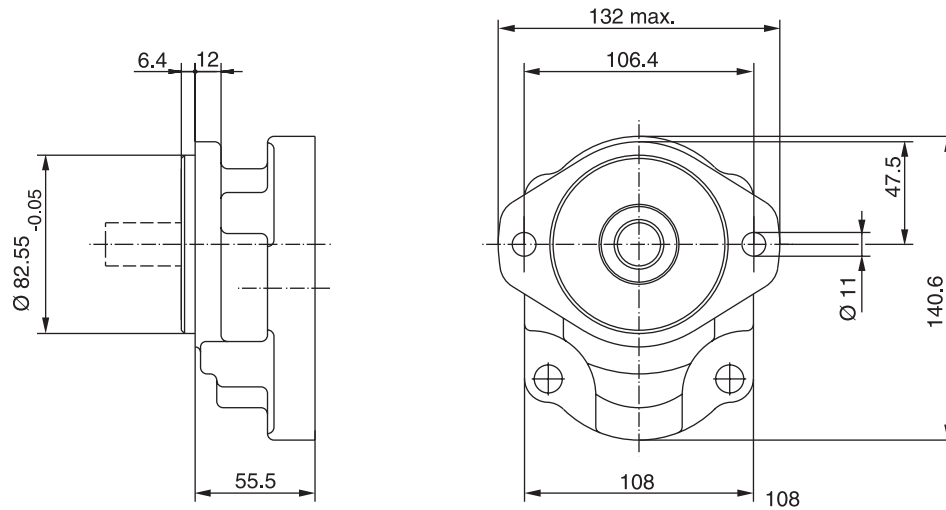
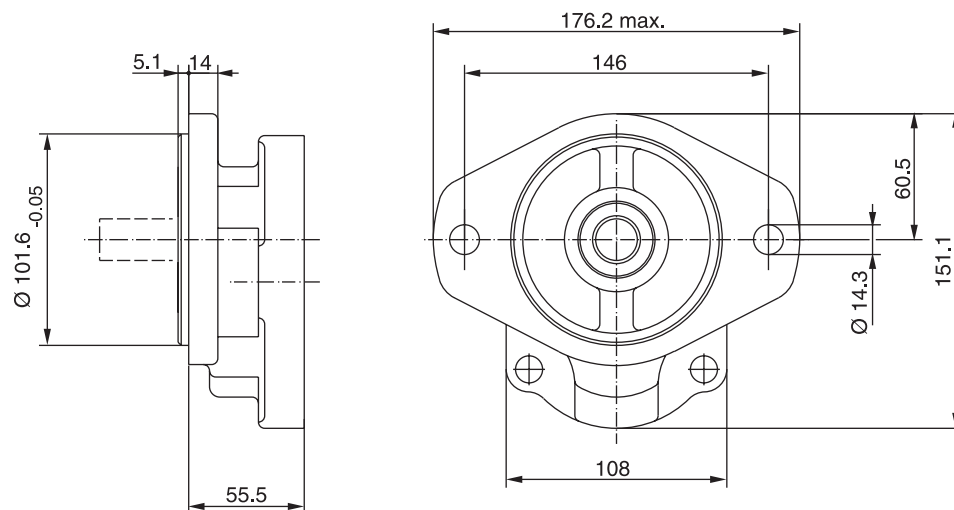


Code A4



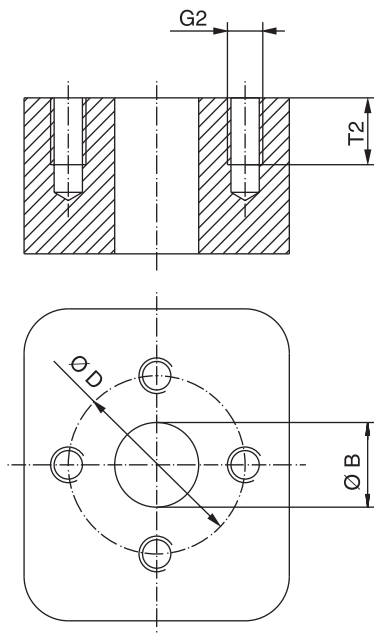
Code D7



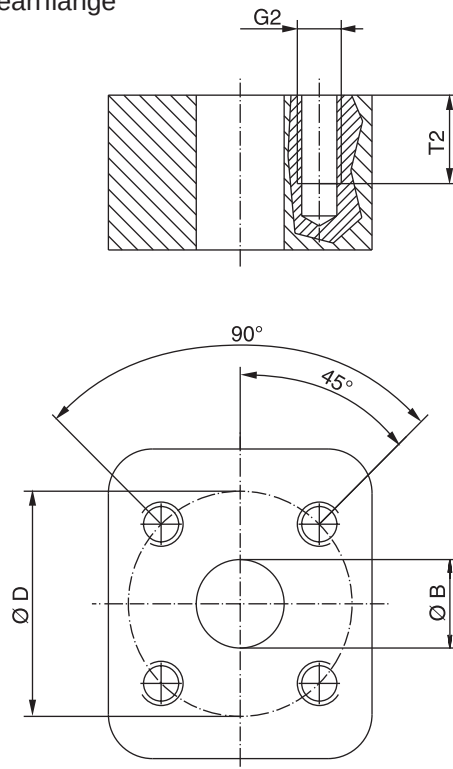
PGP/PGM 620 Mounting Flange**Code H2****Code H3**

PGP/PGM 620 Porting**Code L**

4-Bolt flange

**Code J**

European flange

**PGP/PGM 620**

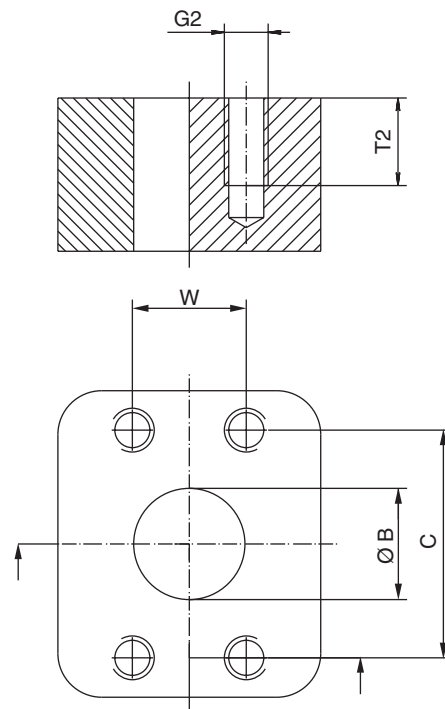
Code	G2	Ø B	Ø D	C	W	T2
	Thread					
J5	M6	15.0	35.0			12.5
J9	M8	26.0	55.0			15.0
L1	M6	13.0	30.0			13.0
L2	M8	19.0	40.0			15.0
L3	M10	27.0	51.0			18.0
S1	5/16-18 UNC	12.7		38.10	17.48	15.0
S2	3/8-16 UNC	19.0		47.63	22.23	14.0
S3	3/8-16 UNC	25.4		52.37	26.19	20.6
S4	7/16-14 UNC	31.8		58.72	30.17	20.6
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
T1	M8	12.7		38.10	17.48	15.0
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

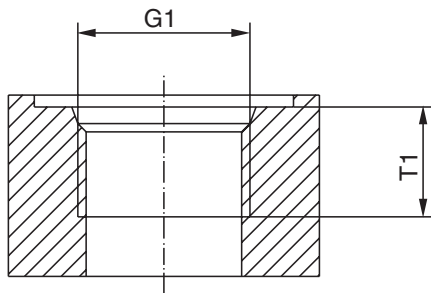
Code T

SAE split flange metric thread

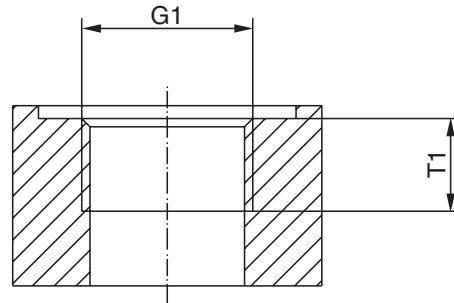


Port options**PGP/PGM 620 Porting****Code D**

SAE straight thread

**Code E**

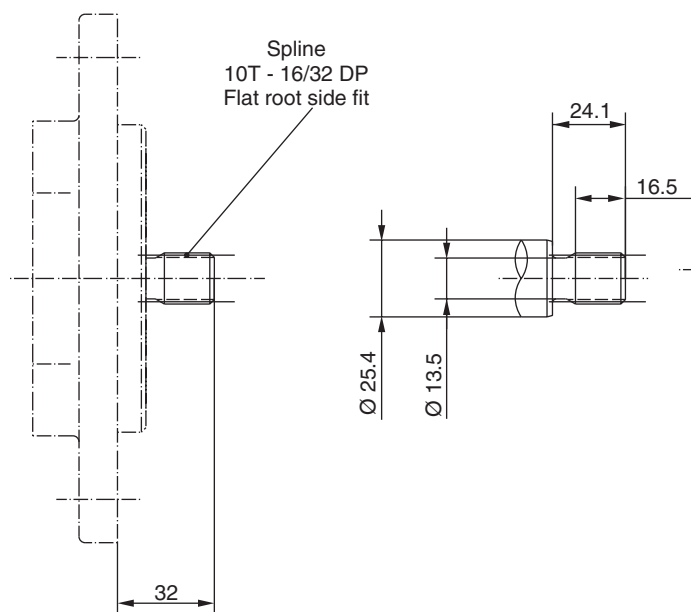
BSP - thread

**PGP/PGM 620**

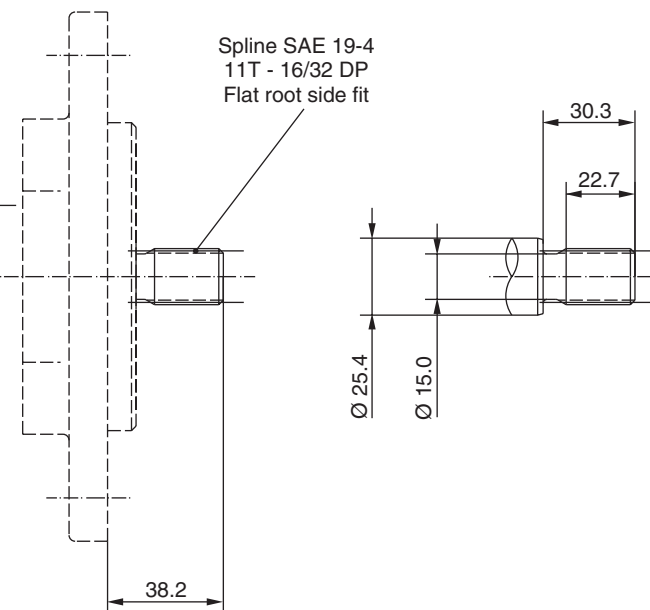
Code	G1	T1
	Thread	Dimensions
D3	3/4-16 UNF	14.3
D4	7/8-14 UNF	16.7
D5	1 1/16-12 UN	19.0
D6	1 5/16-12 UN	19.0
D7	1 5/8-12 UN	19.0
D8	1 7/8-12 UN	19.0
E2	3/8-19 BSP	12.0
E3	1/2-14 BSP	14.0
E4	5/8-14 BSP	16.3
E5	3/4-16 BSP	16.0
E6	1-11 BSP	18.0
E7	1 1/4-11 BSP	20.0
E8	1 1/2-11 BSP	22.0

PGP/PGM 620 Drive Shaft

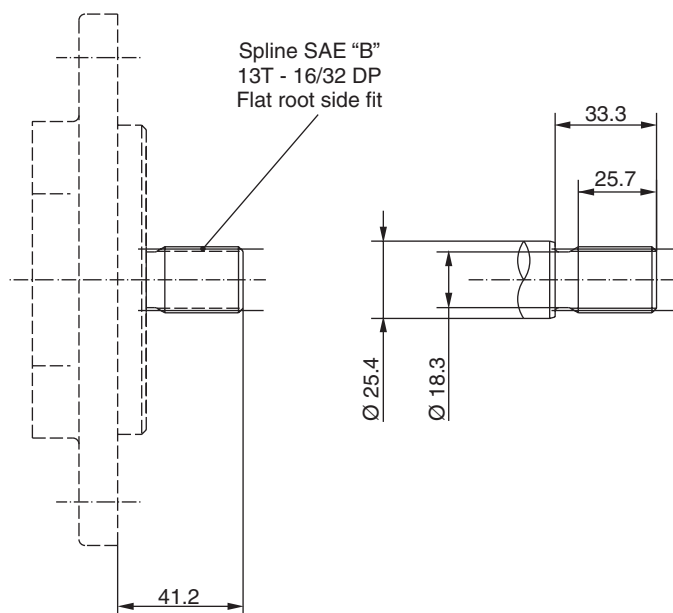
Code B1



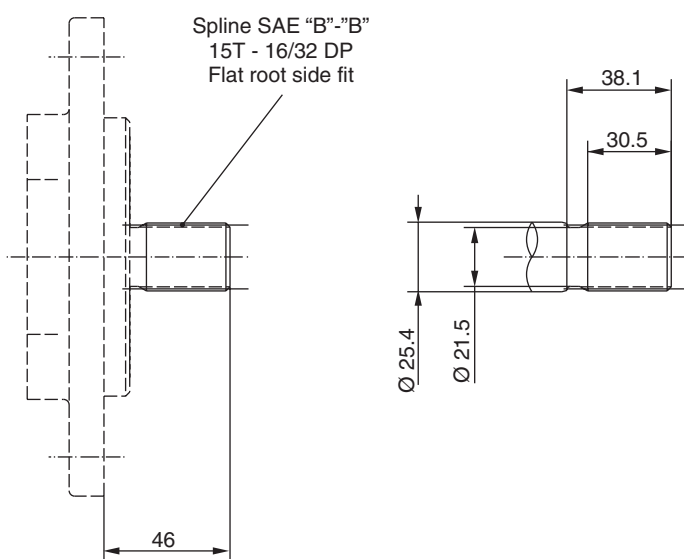
Code C1



Code D1

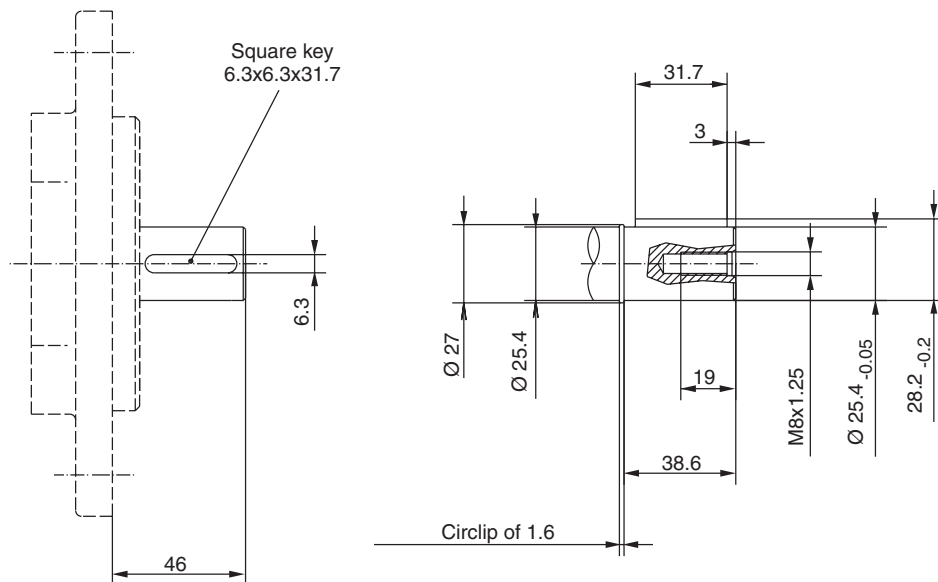


Code E1

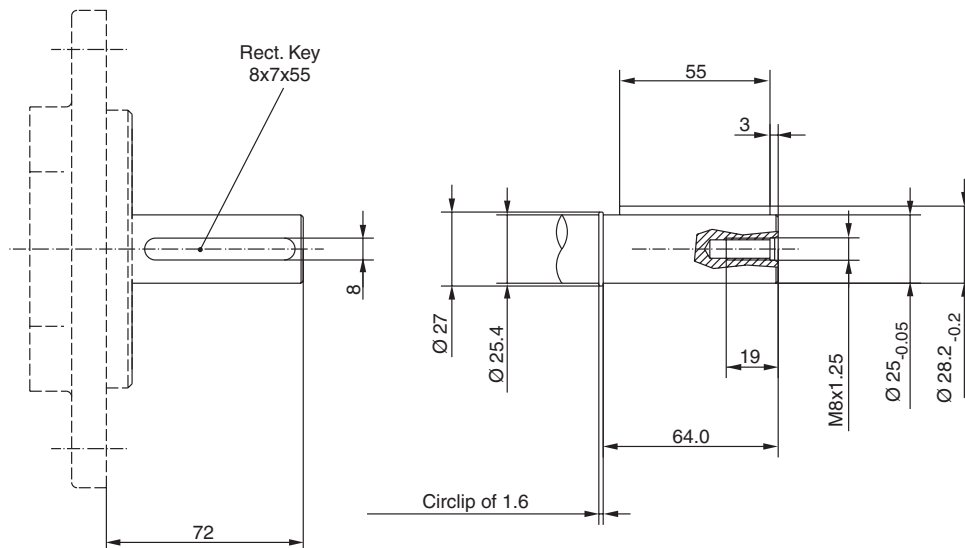


PGP/PGM 620 Drive Shaft

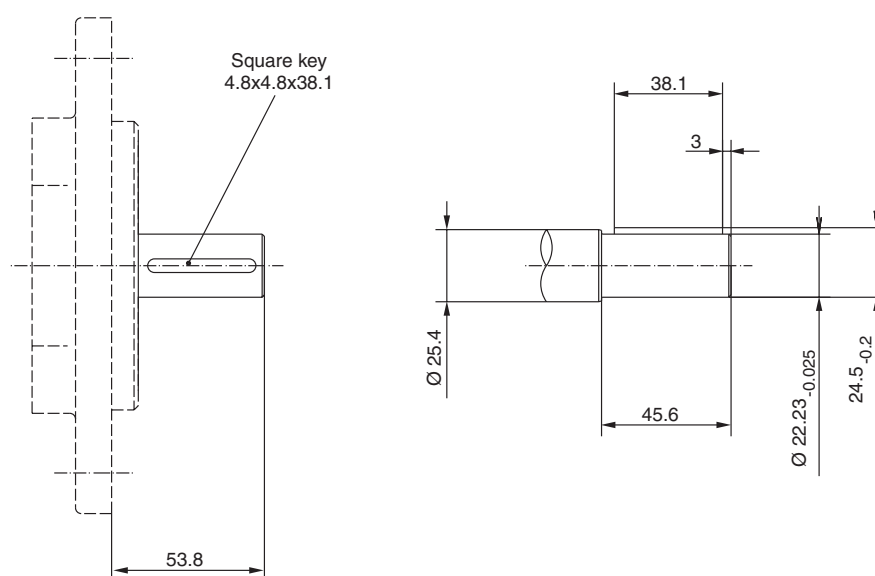
Code M3



Code M4

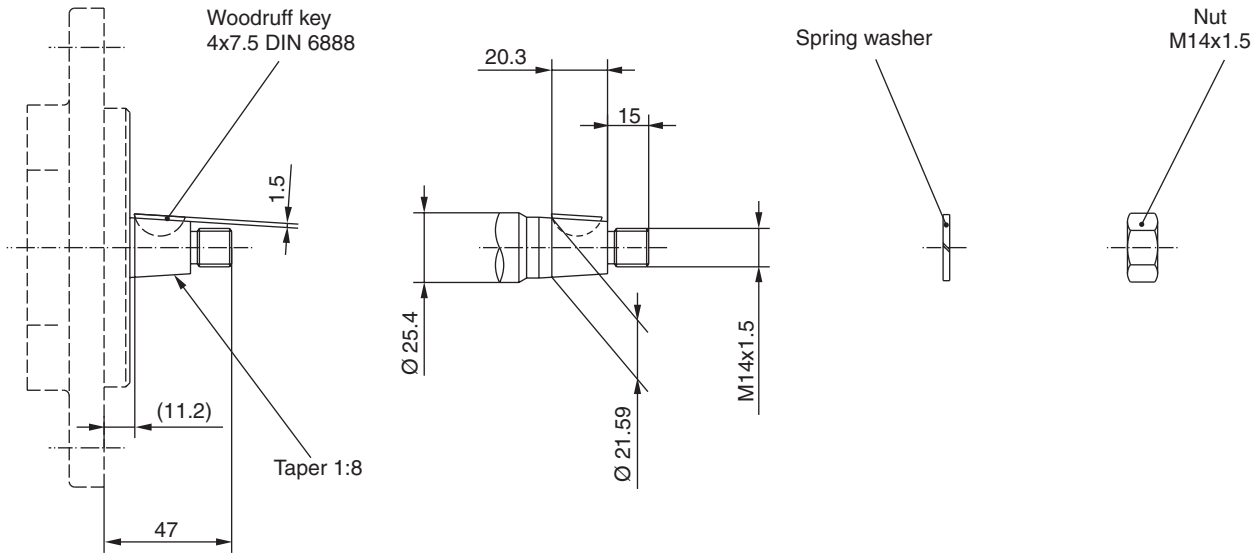


Code M6

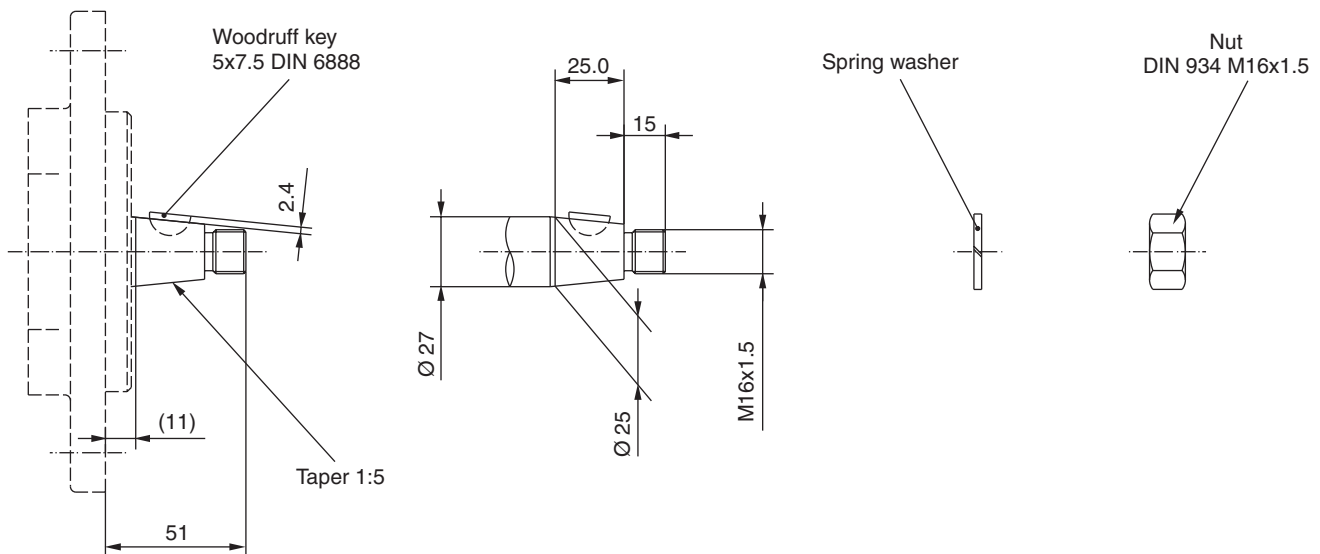


PGP/PGM 620 Drive Shaft

Code T1



Code T2



PGP/PGM 620- Shaft Load Capacity

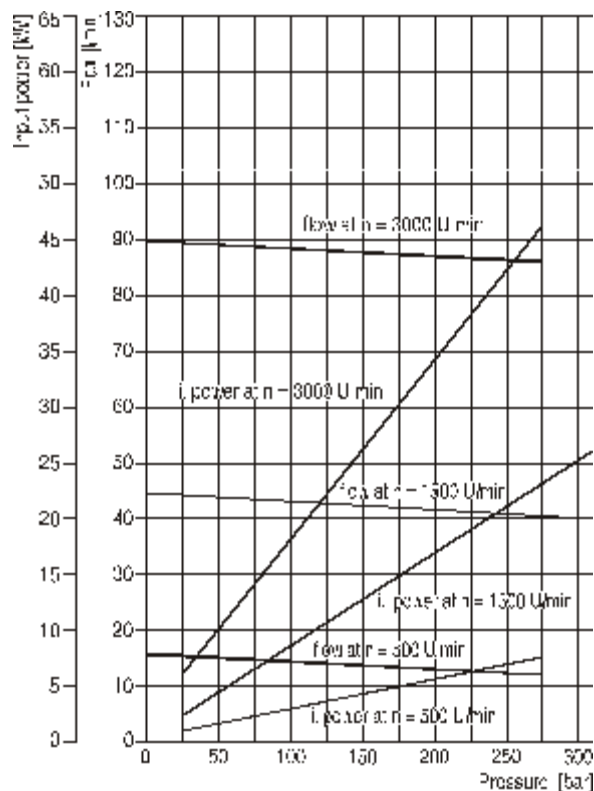
Code	Description		Torque Rating [Nm]
B1	10T,16/32 DP, 32L	spline	124
C1	11T,16/32 DP, 38.2L, SAE 19-4	spline	144
D1	13T,16/32 DP, 41.2L, SAE "B"	spline	272
E1	15T,16/32 DP, 46L, SAE "B-B"	spline	460
M3	Ø25.4,6.3 KEY, M8, 46L, SAE "B-B"	parallel	325
M4	Ø25.0,8.0 KEY, M8, 72L	parallel	325
M6	Ø22.2,4.8 KEY, no thread, 53.8L	parallel	218
T1	Ø21.59,11.2L, 4.0 KEY, M14x1.5	taper 1:8	218
T2	Ø25.0,12.0L, 5.0 KEY, M16x1.5	taper 1:5	301
	Multiple pump connection shaft		228

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

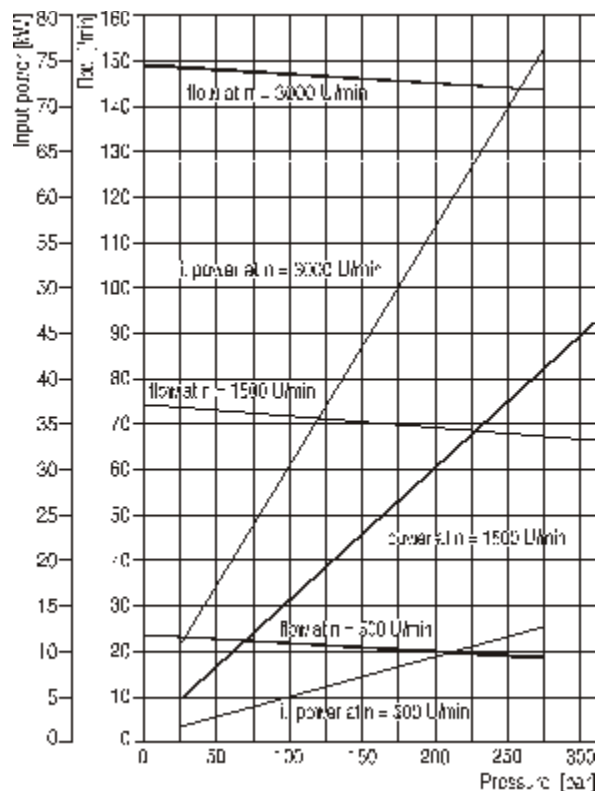
PI PG500-600_UK-11.PM6.5MM

PG	640	B	1	B	1																																						
Gear design	Type	Unit	Dis- place- ment	Rotation	Shaft																																						
Flange	Shaft seal	Inlet side ports option	Outlet side ports option	No rear ports (rear ports on request)																																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>Type</th> </tr> <tr> <td>P</td> <td>Pump</td> </tr> <tr> <td>M¹⁾</td> <td>Motor</td> </tr> </table> ¹⁾ Available from 2005		Code	Type	P	Pump	M ¹⁾	Motor	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>Unit</th> </tr> <tr> <td>A</td> <td>Single unit</td> </tr> <tr> <td>B</td> <td>Multiple unit</td> </tr> </table>		Code	Unit	A	Single unit	B	Multiple unit	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Displacement</th> </tr> <tr> <th>Code</th> <th>ccm</th> </tr> <tr><td>0300</td><td>30.0</td></tr> <tr><td>0350</td><td>35.0</td></tr> <tr><td>0400</td><td>40.0</td></tr> <tr><td>0450</td><td>45.0</td></tr> <tr><td>0500</td><td>50.0</td></tr> <tr><td>0550</td><td>55.0</td></tr> <tr><td>0600</td><td>60.0</td></tr> <tr><td>0650</td><td>65.0</td></tr> <tr><td>0700</td><td>70.0</td></tr> <tr><td>0750</td><td>75.0</td></tr> <tr><td>0800</td><td>80.0</td></tr> </table>		Displacement		Code	ccm	0300	30.0	0350	35.0	0400	40.0	0450	45.0	0500	50.0	0550	55.0	0600	60.0	0650	65.0	0700	70.0	0750	75.0	0800	80.0
Code	Type																																										
P	Pump																																										
M ¹⁾	Motor																																										
Code	Unit																																										
A	Single unit																																										
B	Multiple unit																																										
Displacement																																											
Code	ccm																																										
0300	30.0																																										
0350	35.0																																										
0400	40.0																																										
0450	45.0																																										
0500	50.0																																										
0550	55.0																																										
0600	60.0																																										
0650	65.0																																										
0700	70.0																																										
0750	75.0																																										
0800	80.0																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>Rotation</th> </tr> <tr> <td>C</td> <td>Clockwise</td> </tr> <tr> <td>A</td> <td>Counter-clockwise</td> </tr> </table>		Code	Rotation	C	Clockwise	A	Counter-clockwise	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>Shaft</th> </tr> <tr> <td>D1²⁾</td> <td>13T, 16/32DP, 41.2L, SAE "B" spline</td> </tr> <tr> <td>E1²⁾</td> <td>15T, 16/32DP, 46.0L, SAE "B-B" spline</td> </tr> <tr> <td>E4³⁾</td> <td>14T, 12/24DP, 55.6L, SAE "C" spline</td> </tr> </table> ²⁾ Only used with flange A3, H3. ³⁾ Only used with flange A4, K3.		Code	Shaft	D1 ²⁾	13T, 16/32DP, 41.2L, SAE "B" spline	E1 ²⁾	15T, 16/32DP, 46.0L, SAE "B-B" spline	E4 ³⁾	14T, 12/24DP, 55.6L, SAE "C" spline	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>Shaft seal</th> </tr> <tr> <td>X</td> <td>No seal</td> </tr> <tr> <td>N</td> <td>NBR</td> </tr> </table>		Code	Shaft seal	X	No seal	N	NBR																		
Code	Rotation																																										
C	Clockwise																																										
A	Counter-clockwise																																										
Code	Shaft																																										
D1 ²⁾	13T, 16/32DP, 41.2L, SAE "B" spline																																										
E1 ²⁾	15T, 16/32DP, 46.0L, SAE "B-B" spline																																										
E4 ³⁾	14T, 12/24DP, 55.6L, SAE "C" spline																																										
Code	Shaft seal																																										
X	No seal																																										
N	NBR																																										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>Flange</th> </tr> <tr> <td>A3</td> <td>89.8x89.8 - Ø101.06 4bolt square flange</td> </tr> <tr> <td>A4</td> <td>114.5x114.5 - Ø127 SAE "C" 4bolt square flange</td> </tr> <tr> <td>H3</td> <td>146.1 - Ø101.06 SAE "B" 2bolt flange</td> </tr> <tr> <td>K3</td> <td>181.0 - Ø127 SAE "C" 2bolt flange</td> </tr> </table>		Code	Flange	A3	89.8x89.8 - Ø101.06 4bolt square flange	A4	114.5x114.5 - Ø127 SAE "C" 4bolt square flange	H3	146.1 - Ø101.06 SAE "B" 2bolt flange	K3	181.0 - Ø127 SAE "C" 2bolt flange	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Code</th> <th>Port options (pumps)</th> </tr> <tr> <td>E8E7</td> <td>1½" -11 BSP Thread / 1¼" -11 BSP Thread only from 30ccm to 50ccm</td> </tr> <tr> <td>S4S3</td> <td>1¼" - 7/16-14 UNC SAE split flange 1" - 3/8-16 UNC SAE split flange only from 30ccm to 40ccm</td> </tr> <tr> <td>S5S3</td> <td>1½" - ½-13 UNC SAE split flange 1" - 3/8-16 UNC SAE split flange only from 45ccm to 55ccm</td> </tr> <tr> <td>S6S3</td> <td>2" - ½-13 UNC SAE split flange 1" - 3/8-16 UNC SAE split flange only for 60ccm</td> </tr> <tr> <td>S6S4</td> <td>2" - ½-13 UNC SAE split flange 1¼" - 7/16-14 UNC SAE split flange only from 65ccm to 80ccm</td> </tr> <tr> <td>T4T3</td> <td>1¼" - M10 SAE metr. split flange 1" - M10 SAE split flange only from 30ccm to 40ccm</td> </tr> <tr> <td>T5T3</td> <td>1½" - M12 SAE metr. split flange 1" - M10 SAE split flange only from 45ccm to 55ccm</td> </tr> <tr> <td>T6T3</td> <td>2" - M12 SAE metr. split flange 1¼" - M10 SAE metr. split flange only for 60ccm</td> </tr> <tr> <td>T6T4</td> <td>2" - M12 SAE metr. split flange 1¼" - M10 SAE metr. split flange only from 65ccm to 80ccm</td> </tr> </table> Example: T5 = inlet port T4 = outlet port			Code	Port options (pumps)	E8E7	1½" -11 BSP Thread / 1¼" -11 BSP Thread only from 30ccm to 50ccm	S4S3	1¼" - 7/16-14 UNC SAE split flange 1" - 3/8-16 UNC SAE split flange only from 30ccm to 40ccm	S5S3	1½" - ½-13 UNC SAE split flange 1" - 3/8-16 UNC SAE split flange only from 45ccm to 55ccm	S6S3	2" - ½-13 UNC SAE split flange 1" - 3/8-16 UNC SAE split flange only for 60ccm	S6S4	2" - ½-13 UNC SAE split flange 1¼" - 7/16-14 UNC SAE split flange only from 65ccm to 80ccm	T4T3	1¼" - M10 SAE metr. split flange 1" - M10 SAE split flange only from 30ccm to 40ccm	T5T3	1½" - M12 SAE metr. split flange 1" - M10 SAE split flange only from 45ccm to 55ccm	T6T3	2" - M12 SAE metr. split flange 1¼" - M10 SAE metr. split flange only for 60ccm	T6T4	2" - M12 SAE metr. split flange 1¼" - M10 SAE metr. split flange only from 65ccm to 80ccm									
Code	Flange																																										
A3	89.8x89.8 - Ø101.06 4bolt square flange																																										
A4	114.5x114.5 - Ø127 SAE "C" 4bolt square flange																																										
H3	146.1 - Ø101.06 SAE "B" 2bolt flange																																										
K3	181.0 - Ø127 SAE "C" 2bolt flange																																										
Code	Port options (pumps)																																										
E8E7	1½" -11 BSP Thread / 1¼" -11 BSP Thread only from 30ccm to 50ccm																																										
S4S3	1¼" - 7/16-14 UNC SAE split flange 1" - 3/8-16 UNC SAE split flange only from 30ccm to 40ccm																																										
S5S3	1½" - ½-13 UNC SAE split flange 1" - 3/8-16 UNC SAE split flange only from 45ccm to 55ccm																																										
S6S3	2" - ½-13 UNC SAE split flange 1" - 3/8-16 UNC SAE split flange only for 60ccm																																										
S6S4	2" - ½-13 UNC SAE split flange 1¼" - 7/16-14 UNC SAE split flange only from 65ccm to 80ccm																																										
T4T3	1¼" - M10 SAE metr. split flange 1" - M10 SAE split flange only from 30ccm to 40ccm																																										
T5T3	1½" - M12 SAE metr. split flange 1" - M10 SAE split flange only from 45ccm to 55ccm																																										
T6T3	2" - M12 SAE metr. split flange 1¼" - M10 SAE metr. split flange only for 60ccm																																										
T6T4	2" - M12 SAE metr. split flange 1¼" - M10 SAE metr. split flange only from 65ccm to 80ccm																																										

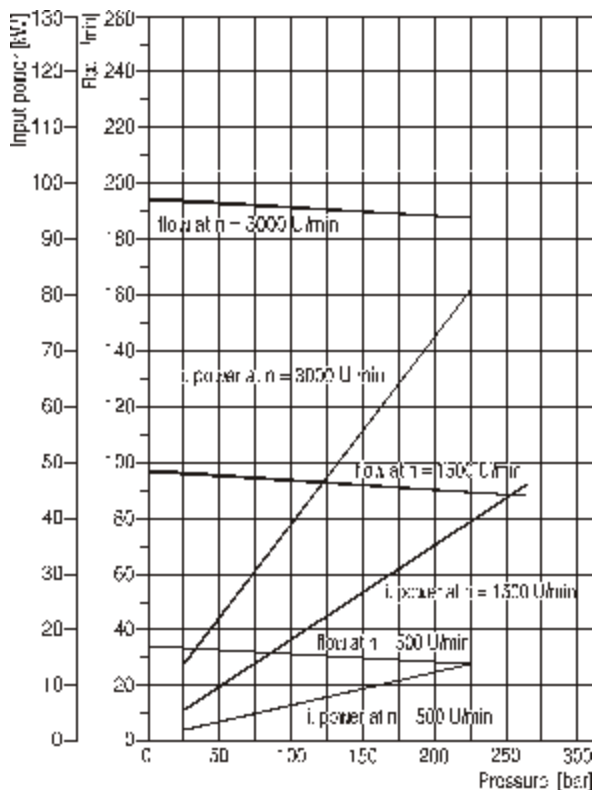
PGP 640 - 30.0 CC



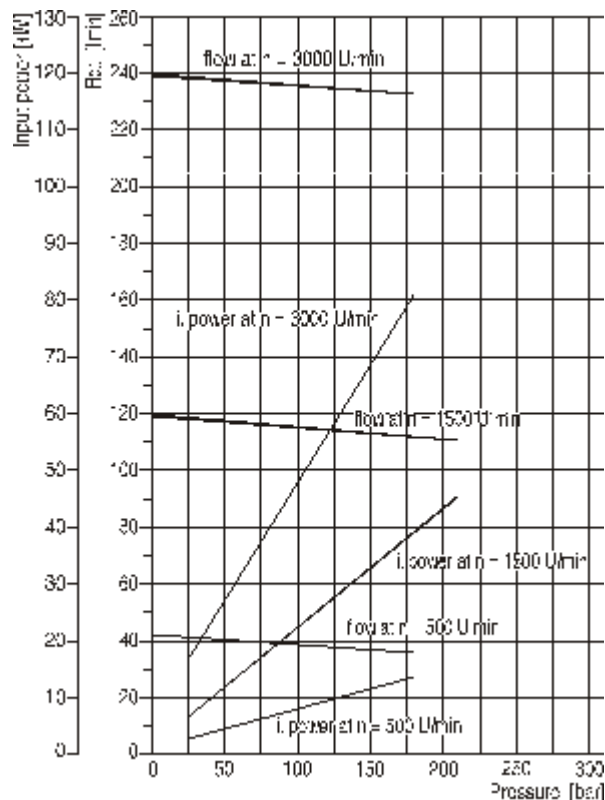
PGP 640 - 50.0 CC



PGP 640 - 65.0 CC



PGP 640 - 80.0 CC



Fluid temperature: 45± 2°C ;

Viscosity: 36mm²/s ;

Inlet pressure: 0.9 + 0.1 bar absolute

Technical Data / Dimensions

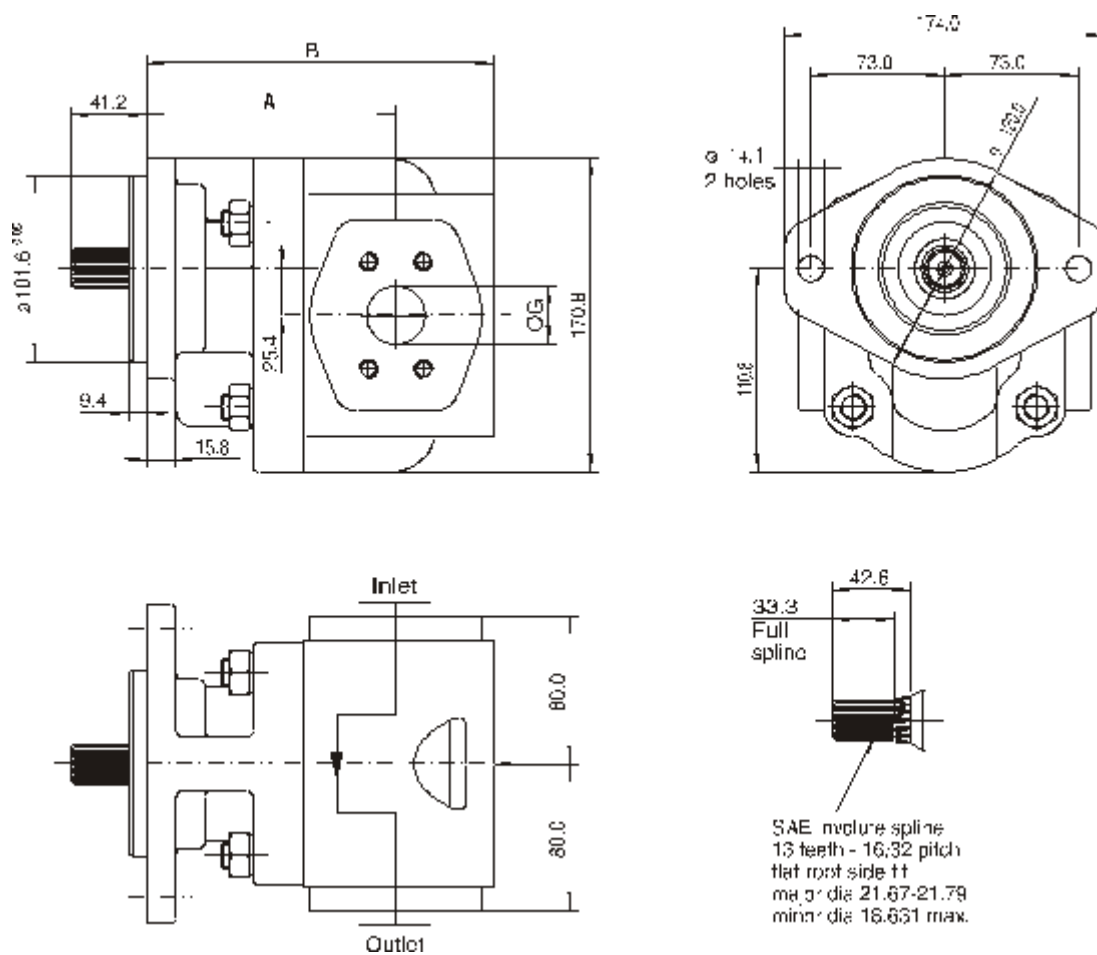
PGP640 A XXXX Y D1 H3 N SS PP B1 B1

“Y” = C (clockwise rotation)

= A (counter-clockwise rotation)

Displacement		Dimension		Inlet port		Outlet port		Speed of rotation		Working pressure	Order number	
XXXX	cm ³ /rev	A	B		G		G	min. rpm	max. rpm	max. bar	direction of rotation	
											clockwise	counter-clockwise
0300	30	128.6	176.1	T4	1-1/4"	T3	1"	500	3000	310		
0350	35	128.6	176.1	T4	1-1/4"	T3	1"	500	3000	310		
0400	40	131.8	182.7	T4	1-1/4"	T3	1"	500	3000	310		
0450	45	131.8	182.7	T5	1-1/2"	T3	1"	500	3000	310		
0500	50	135.6	189.3	T5	1-1/2"	T3	1"	500	3000	310		
0550	55	135.6	189.3	T5	1-1/2"	T3	1"	500	3000	310		
0600	60	138.4	195.8	T6	2"	T3	1"	500	3000	290		
0650	65	138.4	195.8	T6	2"	T4	1-1/4"	500	3000	265		
0700	70	142.2	203.2	T6	2"	T4	1-1/4"	500	3000	245		
0750	75	142.2	203.2	T6	2"	T4	1-1/4"	500	3000	225		
0800	80	142.2	203.2	T6	2"	T4	1-1/4"	500	3000	210		

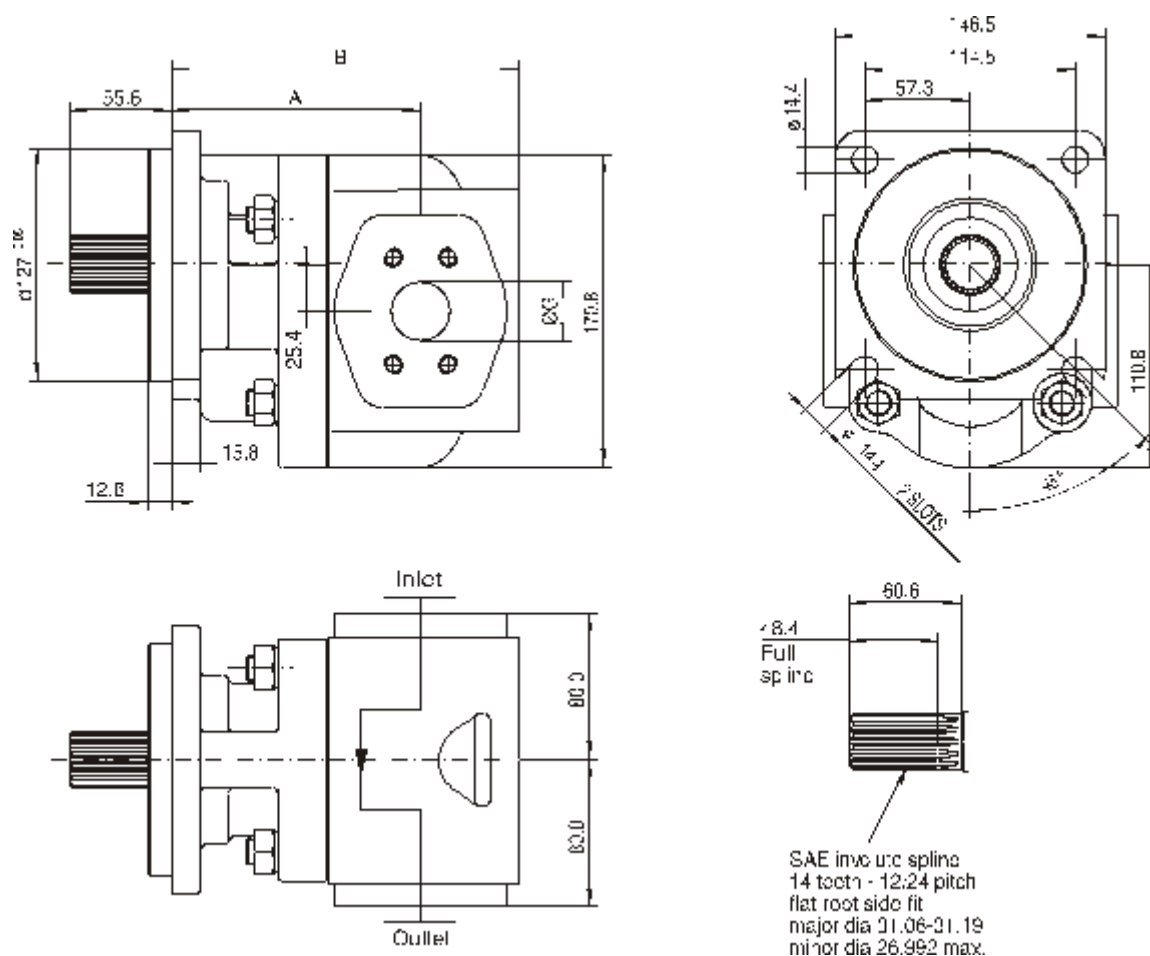
Dimensions (clockwise rotation shown)



“Y” = C (clockwise rotation)
= A (counter-clockwise rotation)

Displacement		Dimension		Inlet port		Outlet port		Speed of rotation		Working pressure	Order number	
XXXX	cm³/rev	A	B		G		G	min. rpm	max. rpm	max. bar	clockwise	counter-clockwise
0300	30	128.6	176.1	T4	1-¼"	T3	1"	500	3000	310		
0350	35	128.6	176.1	T4	1-¼"	T3	1"	500	3000	310		
0400	40	131.8	182.7	T4	1-¼"	T3	1"	500	3000	310		
0450	45	131.8	182.7	T5	1-½"	T3	1"	500	3000	310		
0500	50	135.6	189.3	T5	1-½"	T3	1"	500	3000	310		
0550	55	135.6	189.3	T5	1-½"	T3	1"	500	3000	310		
0600	60	138.4	195.8	T6	2"	T3	1"	500	3000	290		
0650	65	138.4	195.8	T6	2"	T4	1-¼"	500	3000	265		
0700	70	142.2	203.2	T6	2"	T4	1-¼"	500	3000	245		
0750	75	142.2	203.2	T6	2"	T4	1-¼"	500	3000	225		
0800	80	142.2	203.2	T6	2"	T4	1-¼"	500	3000	210		

Dimensions (clockwise rotation shown)



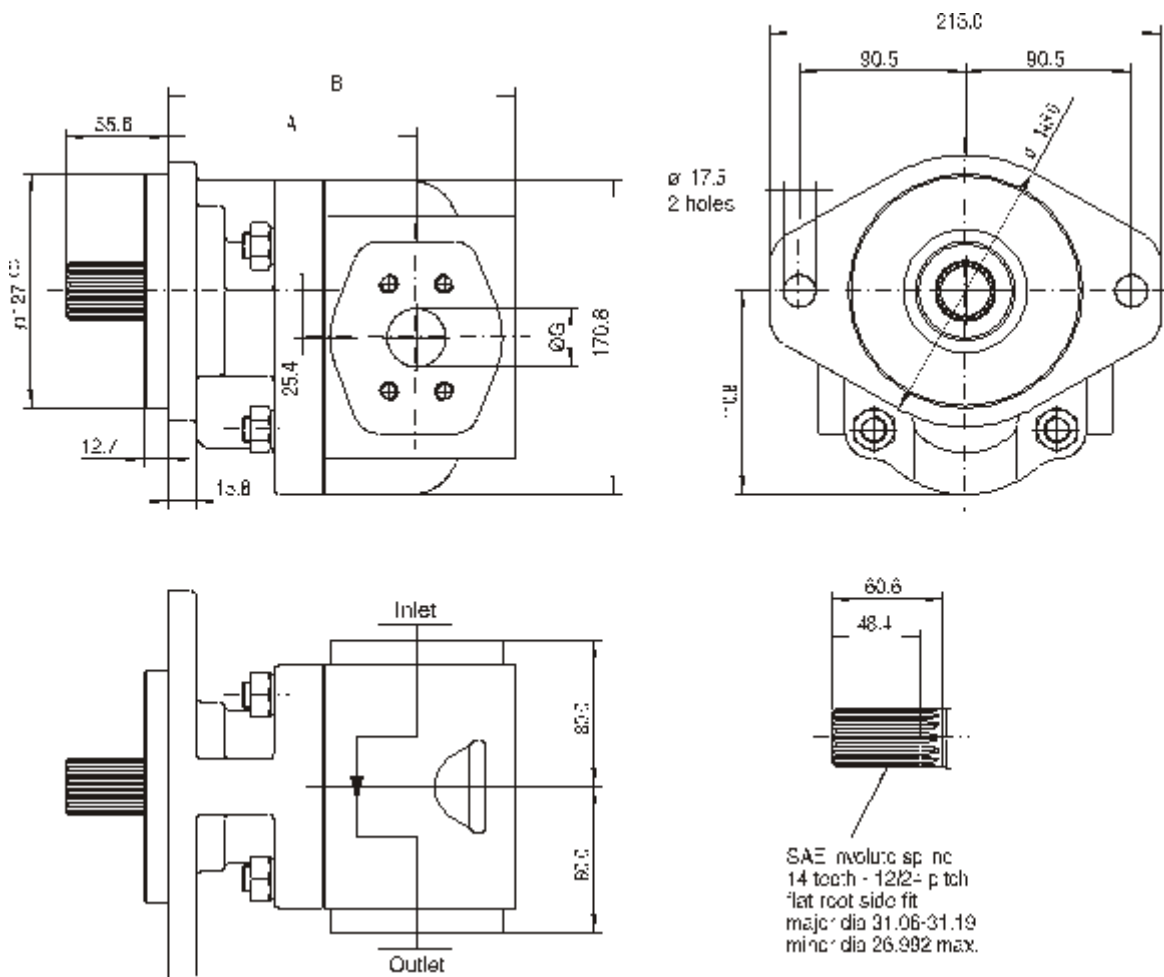
PGP640 A XXXX Y E4 K3 N SS PP B1 B1

"Y" = C (clockwise rotation)

= A (counter-clockwise rotation)

Displacement		Dimension		Inlet port		Outlet port		Speed of rotation		Working pressure	Order number	
XXXX	cm ³ /rev	A	B		G		G	min. rpm	max. rpm	max. bar	direction of rotation	
											clockwise	counter-clockwise
0300	30	128.6	176.1	T4	1- $\frac{1}{4}$ "	T3	1"	500	3000	310		
0350	35	128.6	176.1	T4	1- $\frac{1}{4}$ "	T3	1"	500	3000	310		
0400	40	131.8	182.7	T4	1- $\frac{1}{4}$ "	T3	1"	500	3000	310		
0450	45	131.8	182.7	T5	1- $\frac{1}{2}$ "	T3	1"	500	3000	310		
0500	50	135.6	189.3	T5	1- $\frac{1}{2}$ "	T3	1"	500	3000	310		
0550	55	135.6	189.3	T5	1- $\frac{1}{2}$ "	T3	1"	500	3000	310		
0600	60	138.4	195.8	T6	2"	T3	1"	500	3000	290		
0650	65	138.4	195.8	T6	2"	T4	1- $\frac{1}{4}$ "	500	3000	265		
0700	70	142.2	203.2	T6	2"	T4	1- $\frac{1}{4}$ "	500	3000	245		
0750	75	142.2	203.2	T6	2"	T4	1- $\frac{1}{4}$ "	500	3000	225		
0800	80	142.2	203.2	T6	2"	T4	1- $\frac{1}{4}$ "	500	3000	210		

Dimensions (clockwise rotation shown)



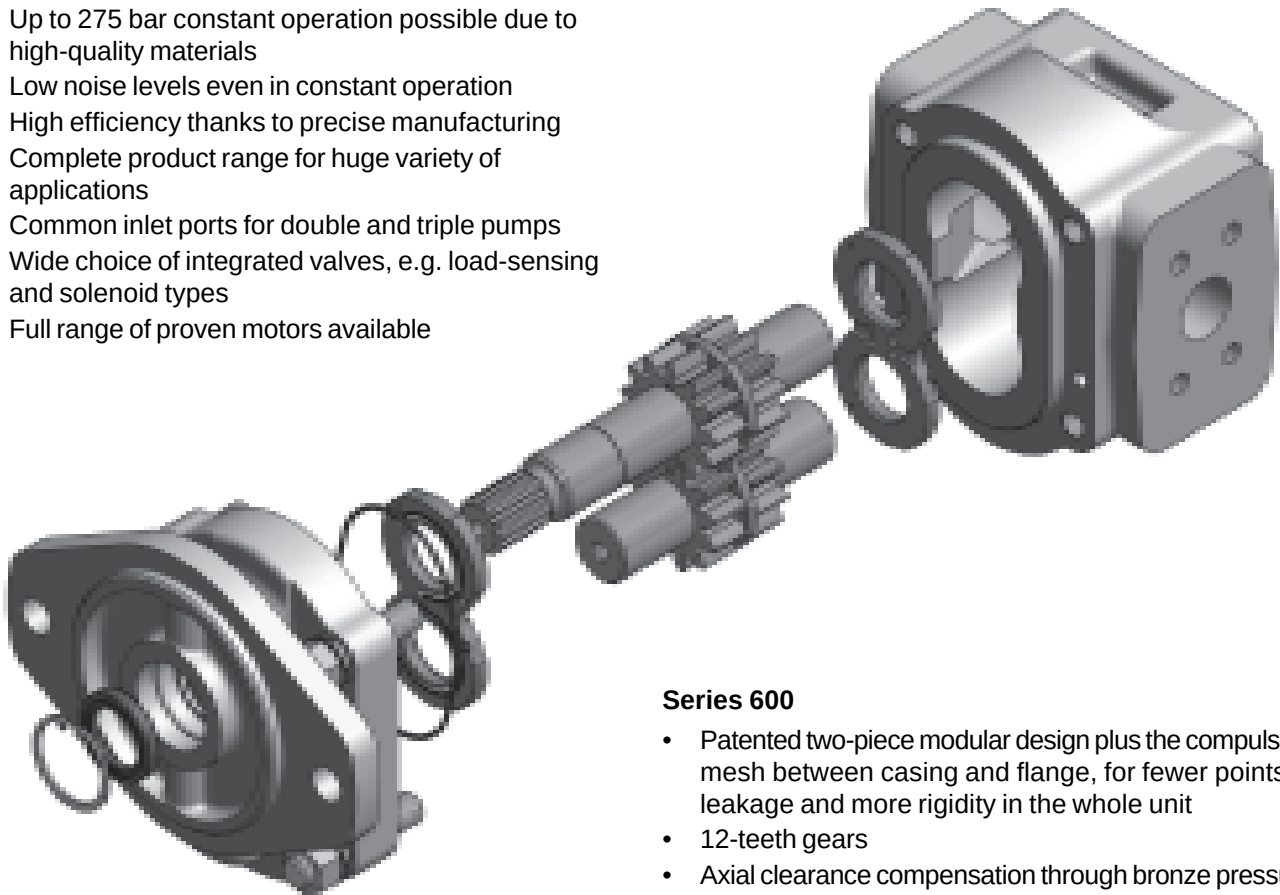
Quality pays

Aluminium or cast-iron bodied 'split-gear' gear pumps are designed for high pressure and speed ratings together with high efficiency and optimised noise levels.

The flow pulsation is considerably decreased by phased dual element gear sets, resulting in models with clearly lower noise levels. Common inlet available for multiple section units.

Series 500

- Up to 275 bar constant operation possible due to high-quality materials
- Low noise levels even in constant operation
- High efficiency thanks to precise manufacturing
- Complete product range for huge variety of applications
- Common inlet ports for double and triple pumps
- Wide choice of integrated valves, e.g. load-sensing and solenoid types
- Full range of proven motors available

**Series 600**

- Patented two-piece modular design plus the compulsory mesh between casing and flange, for fewer points of leakage and more rigidity in the whole unit
- 12-teeth gears
- Axial clearance compensation through bronze pressure plates for high all-over efficiency
- Double or triple pumps possible
- Stackable with other products
- Common inlet ports for double and triple pumps available
- Constant pressure up to 310 bar admissible
- Wide range of integrated valves, e.g. relief valves, priority flow dividers, unloader valves
- Load-sensing and solenoid valves available
- Full range of robust motors available for high-demand applications

Shaft loads PGP/PGM500

Code	Description	Type	Torque rating [Nm]			
			PGP/PGM502	PGP/PGM505	PGP/PGM511	PGP/PGM517
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	—	—	—
V2	5 x 4.5 short 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	—
F1	9T, B17x14.23L, DIN 5482	splined	—	—	101	—
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	—
S4	Ø16.65, 12.0L, 4.0 key, M12x1.5	taper 1:8	—	—	198	—
D1	13T, 16/32DP, 41.2L, SAE "B"	splined	—	—	—	345
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			20	36	110	228

Shaft loads PGP/PGM600

Code	Description	Type	Torque rating 620 [Nm]	Torque rating 640 [Nm]
C1	11T, 16/32 DP, 38.2L, SAE 19-4	splined	144	—
D1	13T, 16/32 DP, 41.2L, SAE "B"	splined	272	328
E1	15T, 16/32 DP, 46.0L, SAE "B-B"	splined	—	503
E4	14T, 12/24 DP, 5.6L, SAE "C"	splined	—	960
T1	Ø21.59, 11.2L, 4.0key, M14x1.5	tapered 1:8	218	—
N1	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 -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

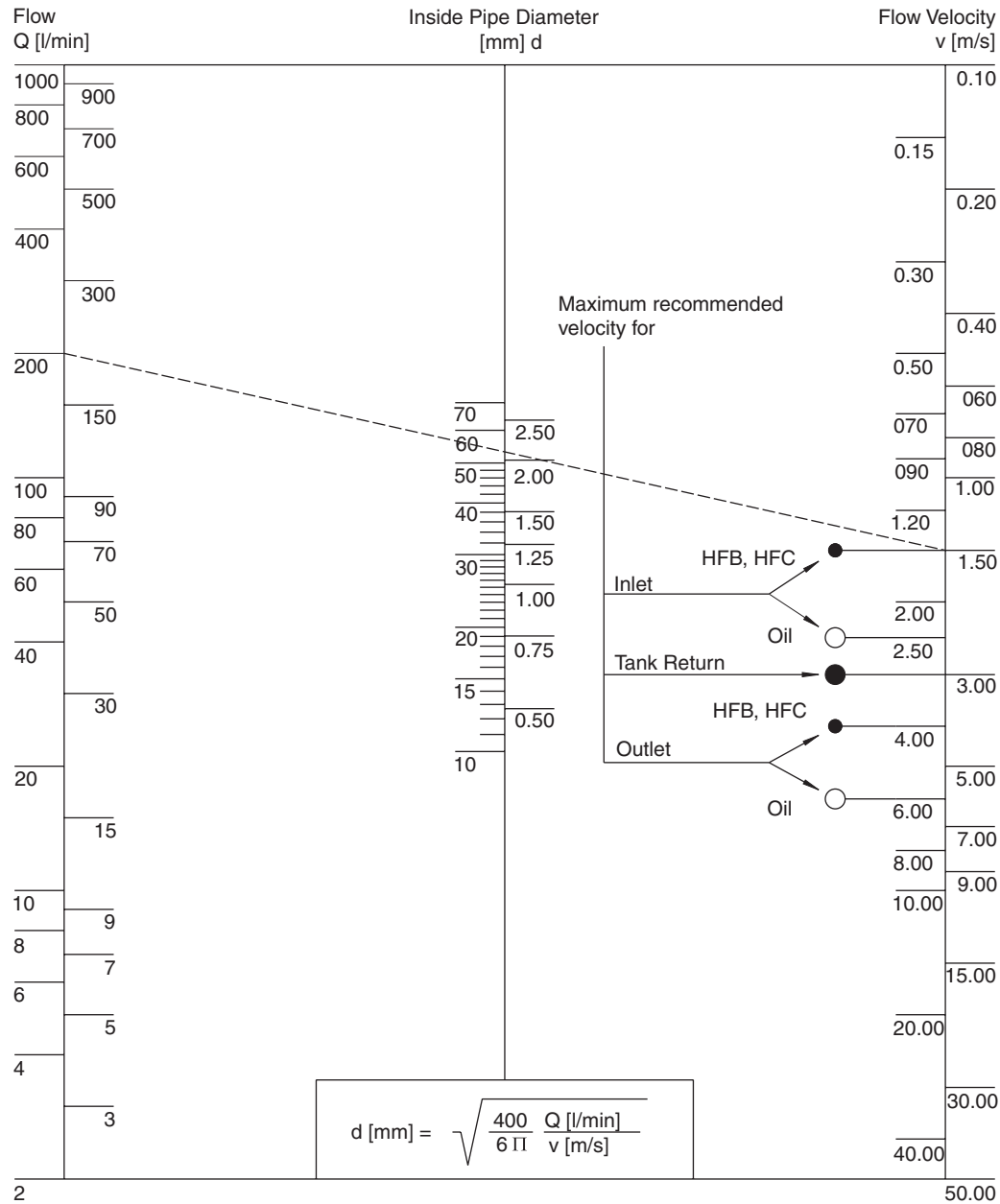
Flanges for suction and discharge ports

Please refer to Parker leaflet 4039-1/UK.

Reading
Direction

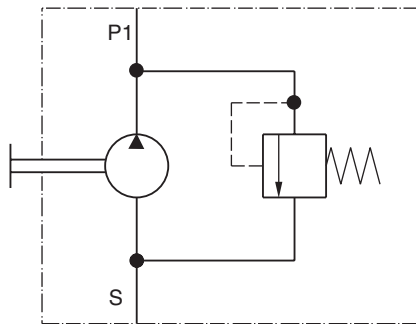
First pump	Second pump					
	PGP 502	PGP 505	PGP 511	PGP 517	PGP 620	PGP 640
PGP 502	X					
PGP 505		X				
PGP 511	X		X			
PGP 517	X	X	X	X		
PGP 620		X	X		X	
PGP 640			X		X	X

Nomograph for Pipe Velocity

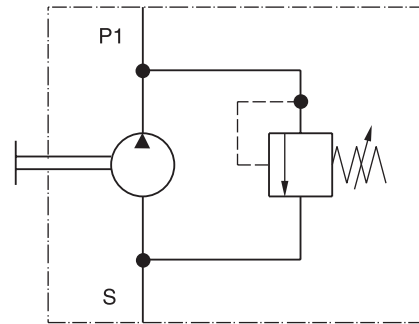


Valve type	PGP					
	502	505	511	517	620	640
Pressure Relief Valve	X	X	X	X	X	X
Load Sensing Pressure Relief Valve			X	X	X	X
Solenoid Unloading Pressure Relief Valve			X	X	X	X
Pressure Unloading Relief Valve (Port Mounted)			X	X	X	X
Solenoid Unloading Relief Valve (Port Mounted)			X	X	X	X
Priority Flow Divider			X	X	X	X
Priority Flow Divider (Port Mounted)			X	X	X	X
Load Sensing Priority Valve			X	X	X	X
Load Sensing Priority Valve (Port Mounted)			X	X	X	X
Two - Stage Pump		X	X	X	X	X
Single Accumulator Charge Valve			X		X	X
Dual Accumulator Charge Valve			X		X	X
Steering and Accumulator Charge Valve (STAC)					X	X
Composite Priority and Accumulator Charge Valve					X	X
Combined Valve for Boosted Brakes and Power Steering			X			

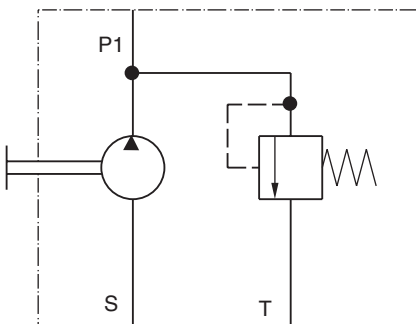
Pressure Relief Valve



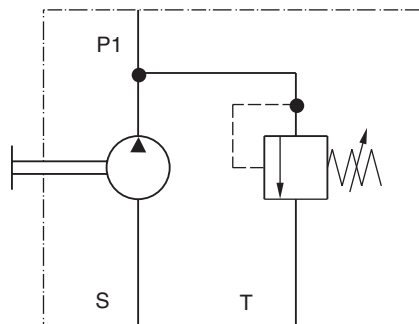
non adjustable, internal vent



adjustable, internal vent



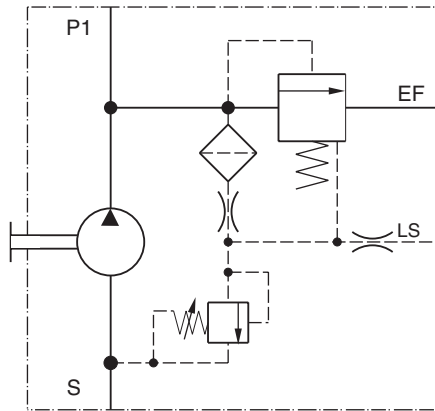
non adjustable, external tank port



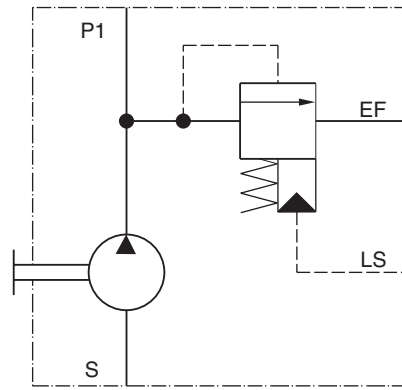
adjustable, external tank port

Variations: For PGP 502, PGP 505, PGP 511,
PGP 517 and PGP 620, PGP 640
Non adjustable, internal vent
Non adjustable, external tank port
Adjustable, internal vent
Adjustable, external tank port

Load Sensing Pressure Relief Valve



Detailed Symbol



Simplified Symbol

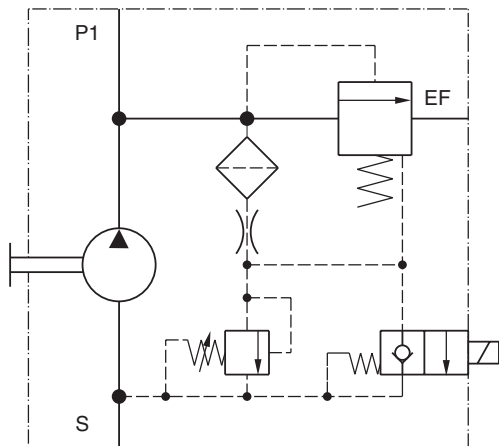
Variations:	For PGP 511	
	Integral with pump	70 l/min
	With solenoid unloading	
	For PGP 517 and PGP 620/640	
	Integral with pump,	100 l/min
	With solenoid unloading	
Press. Range:	Stand-by pressure setting	5 bar
	Max. setting	250 bar
Max. Flow:	For PGP 511	70 l/min
	For PGP 517 and PGP 620/640	100 l/min

Comments:

Load sensing feature allows gear pump and integral valve to be used with load sensing directional valves. The load sense feature also allows remote adjustment of the pump pressure up to the limited set with the internal pilot relief. Conversation to the pilot operated relief is achieved by plugging the LS port. The pump body requires an outlet port.

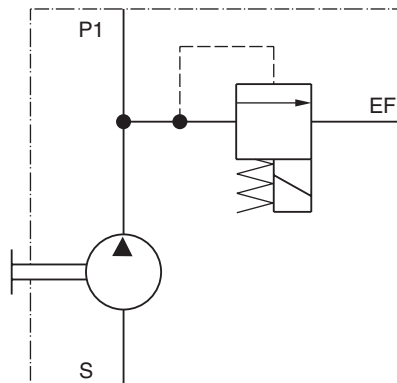
This pump and valve assembly can also be used with a small, external direct acting relief valve for remote pressure control of the pump. Applications include man lifts, constant tension winches, road pavers, traction control skid steer loaders, 0.5 to 2 yd. Wheel loaders, and rough terrain lift trucks.

Solenoid Unloading Pressure Relief Valve



Detailed symbols

Above: normally closed (N/C)
normally opened (N/O)



Simplified Symbol

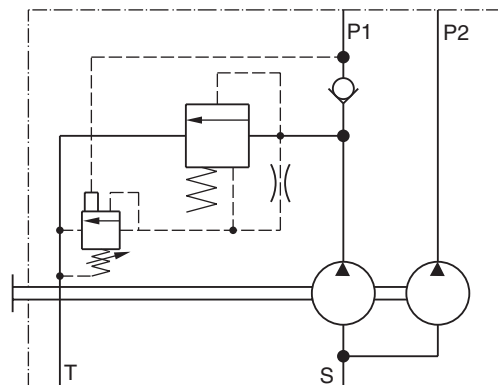
Variations:	For PGP 511, PGP 517 and PGP 620 / 640	
	Specify voltage and whether N/O or NC	
Press. Range:	Stand-by pressure setting	5 bar
	Max. setting	250 bar
Max. Flow:	For PGP511	70 l/min
	For PGP517 and PGP620/640	100 l/min

Comments:

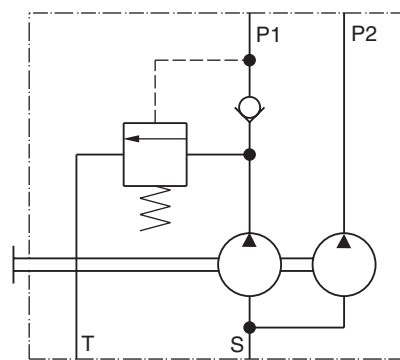
This valve utilizes the same casting, main spool, and pilot relief as the Load Sensing Pressure Relief Valve. A small solenoid operated cartridge valve vents the internal pilot flow to pump inlet to unload the main spool.

The outlet port is in the pump body and the EF is connected to the reservoir via heat exchanger and/or return line filter.

Unloading relief valve, pressure operated



Detailed Symbol



Simplified Symbol

Variations: For PGP 511¹⁾, PGP 517
and PGP 620 / 640
Port mounted, integral with pump

¹⁾Limit. to larger displacem. for this series

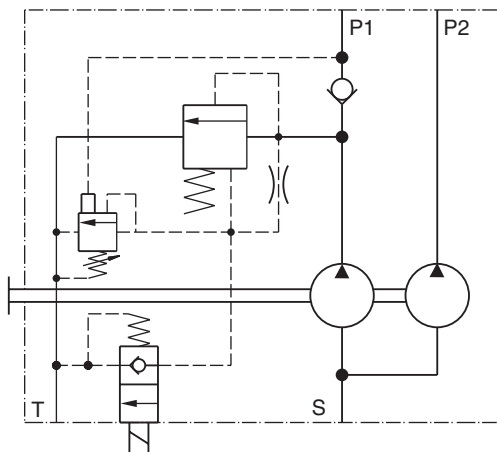
Press. Range: Stand-by pressure setting 5 bar
Max. setting 250 bar
Min setting 55 bar

Max. Flow: 80 l/min

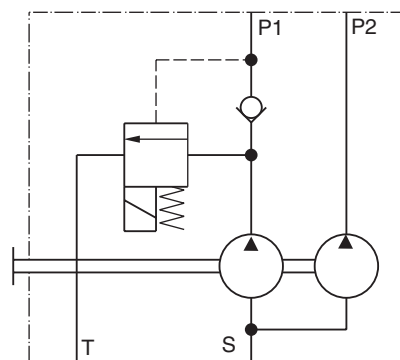
Comments:

This valve permits pressure unloading of the first section in a tandem. The valve may also be remote mounted for use with tandem or dual pumps. The flow from port P1 is typically combined with the flow from port P2. Often used on construction machinery, such as backhoe loaders, wheel loaders and cranes, to provide high flow (from both sections of the tandem) at low or medium pressures and high pressure with reduced flow (from the rear section only). This allows maximum productivity of the machine in accord with the power available to the pump.

Unloading Relief Valve, Solenoid Operated



Detailed Symbol



Simplified Symbol

Variations: PGP 511¹⁾, PGP 517
and PGP 620 / 640
Port mounted, integral with pump

¹⁾Limit. to larger displacem. for this series

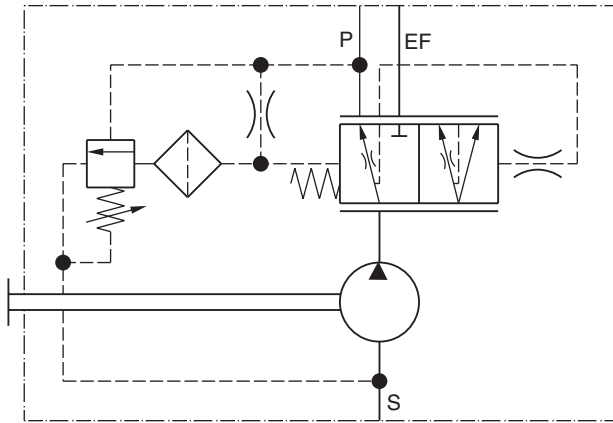
Press. Range: Stand-by pressure setting 5 bar
Max. setting 250 bar
Min setting 55 bar

Max. Flow: 80 l/min

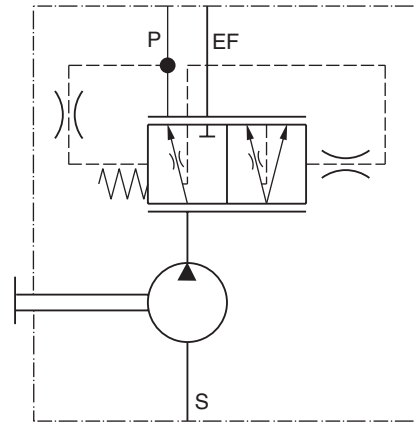
Comments:

This valve permits pressure or solenoid unloading of the first section in a tandem. The valve may also be remote mounted for use with tandem or dual pumps. The flow from port P1 is typically combined with the flow from port P2. Often used on construction machinery, such as backhoe loaders, wheel loaders and cranes, to provide high flow (from both sections of the tandem) at low or medium pressures and high pressure with reduced flow (from the rear section only). This allows maximum productivity of the machine in accord with the power available to the pump.

Priority Flow Divider



With Pilot Priority Relief Valve



Without Priority Relief Valve

Variations:**Rear Mounted Versions:**

For PGP 511, PGP 517 and PGP 620 / 640

Without priority relief; With full flow
priority relief (not shown)

With pilot priority relief valve

Port Mounted Version:

For

PGP 511, PGP 517, PGP 620 / 640

Without priority relief

Press. Range: Priority Port Min. setting 35 bar
 Priority Port Max. setting 210 bar
 Extended Flow Max. equal to max.
 rating of pump

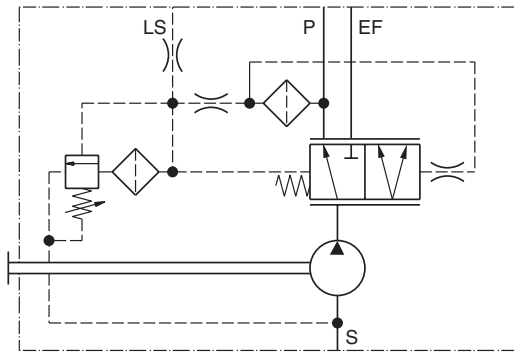
Max. Flow: Valve for PGP 511 & Port Mounted Version
 Priority Flow Max. 32 l/min
 Extended Flow Max. 70 l/min
 Max. input flow 70 l/min
 Valve for PGP 517 and PGP 620 / 640
 Priority Flow Max. 45 l/min
 Extended Flow Max. 100 l/min
 Max. input flow 100 l/min

Comments:

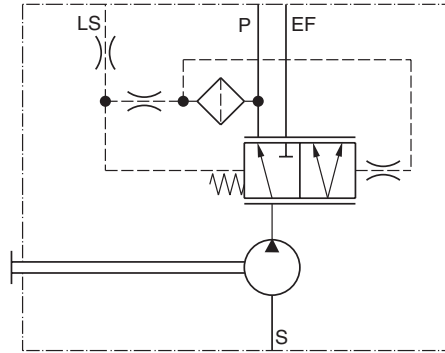
The Priority Flow Divider provides a constant and specified flow for power steering or other priority functions. The balance of the flow produced by the pump is available from the EF port for additional functions such as open center directional control valves, fan drives, etc.



PGP 620 + Valve

Load Sense Priority Valve

With Priority Relief Valve and for Dynamic LS Signal



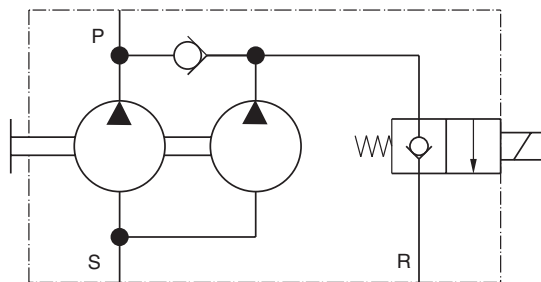
Without Priority Relief Valve and for Dynamic LS Signal

- Variations:**
- Rear Mounted Versions:**
 For PGP511, PGP517 and PGP620 / 640
 Without relief, static LS signal;
 With pilot relief, dynamic LS signal;
 Without relief, dynamic LS signal;
 With pilot relief, dynamic LS signal
- Port Mounted Version:**
 For PGP511, PGP517, PGP620 / 640
 Without relief, static LS signal;
 Without relief, dynamic LS signal

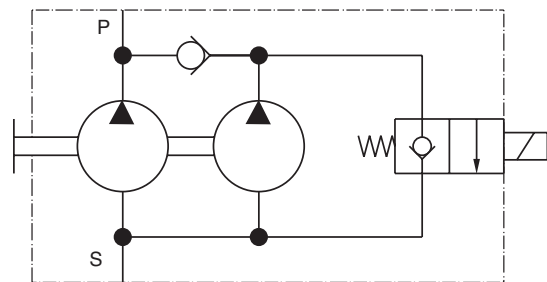
- Press. Range:** Priority Port Min. setting 35 bar
 Priority Port Max. setting 210 bar
 Extended Flow Max. equal to max. rating of pump
- Max. Flow:** Valve for PGP511 & Port Mounted Version
 Priority Flow Max. 32 l/min
 Extended Flow Max. 70 l/min
 Max. input flow 70 l/min
 Valve for PGP517 and PGP620 / 640
 Priority Flow Max. 45 l/min
 Extended Flow Max. 100 l/min
 Max. input flow 100 l/min

Comments:

The Load Sensing 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.

Two-Stage Pump

With External Tank Port (recommended)



With Internal Vent to Pump Inlet

- Variations:** For PGP505, PGP511, PGP517 and PGP620
 PGP 640
 With internal vent to inlet; external tank port
- Note:** Specify solenoid voltage

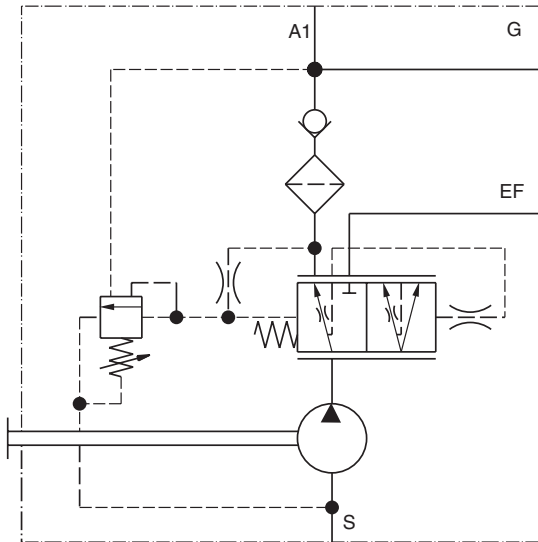
- Press. Range:** To application requirements
- Rated Flow:** A variety of solenoid valves are available.
 Selection of valve size and flow rate is in accord with application requirements.

Comments:

The Parker Two-Stage or High-Low pump is a tandem with equal or dissimilar displacements and a two position / two way valve in the rear cover to allow unloading of the rear pump. This pump is applied when the prime mover (engine or electric motor) has limited power. When high pressure is required, the rear section is unloaded to the pump inlet or the tank. When high flow is required at low or medium pressure, the flow of both sections is combined at the outlet port P. In both cases, the displacements and pressures are selected to be within the power limits of the prime mover.

Note: When the internal vent to the inlet is selected, caution is suggested to prevent operating in the unloading condition for extended periods. The heat generated in doing so may lower the fluid viscosity below minimums required for the pump possibly damaging the pump.

Single Accumulator Charge Valve

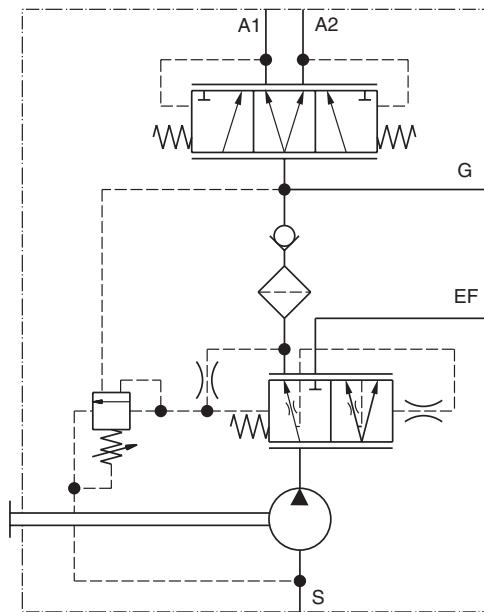


Variations:	For PGP 511	
	Integral with pump	70 l/min
	For PGP 620 / 640	
	Integral with pump	100 l/min
	Press. Range: A1, G Ports Min. setting	35 bar
	A1, G Ports Max. setting	210 bar
	Extended Flow Max. equal to	
	max. rating of pump	
Max. Flow:	Valve for PGP 511	
	Charge Flow Max.	32 l/min
	Extended Flow Max.	70 l/min
	Max. Input Flow	70 l/min
	Valve for PGP 620 / 640	
	Charge Flow Max.	45 l/min
	Extended Flow Max.	100 l/min
	Max. Input Flow	100 l/min

Comments:

The Single Accumulator Charge Valve (SACV) provides priority flow to charge an accumulator for vehicle brakes or any application requiring stored hydraulic energy. The SACV has an integral differential pilot relief valve to provide a wide variety of cut-in/cut-out pressure ratios. Typical ratios are 80%, 70%, 60% and 50%. Custom ratios are available for OEM applications. A variety of port locations and sizes are available. The balance of the pump flow at the EF port is available for an open circuit directional control valve, fan drive or other ancillary functions.

Dual Accumulator Charge Valve



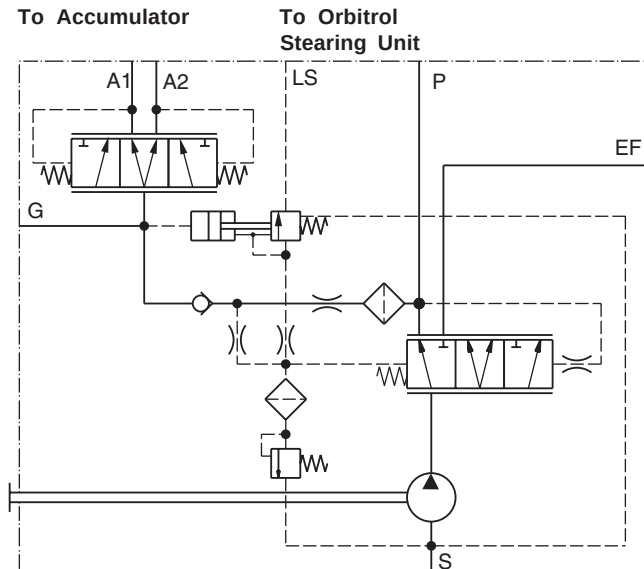
Variations:	For PGP 511	
	Integral with pump	70 l/min
	For PGP 620	
	Integral with pump	100 l/min
	Press. Range: A1, A2, G Ports Min. setting	35 bar
	A1, A2 G Ports Max. setting	210 bar
	Extended Flow Max. equal to	
	max. rating of pump	
Max. Flow:	Valve for PGP 511	
	Charge Flow Max.	32 l/min
	Extended Flow Max.	70 l/min
	Max. Input Flow	70 l/min
	Valve for PGP 620 / 640	
	Charge Flow Max.	45 l/min
	Extended Flow Max.	100 l/min
	Max. Input Flow	100 l/min

Comments:

The Dual Accumulator Charge Valve provides priority flow to charge two accumulators for dual circuit vehicle brakes or any application requiring stored hydraulic energy. The Dual Accumulator Charge Valve has an integral differential pilot relief valve to provide a wide variety of cut-in/cut-out pressure ratios. Typical ratios are 80%, 70%, 60% and 50%. Custom ratios are available for OEM applications.

An inverse shuttle spool isolates the two circuits so that pressure and oil volume is maintained in one circuit should the other experience a break in the hydraulic line.

A variety of port locations and sizes is available.

Steering & Accumulator Charge (STAC) Valve

Variations: Integral with PGP 620 / 640 pump
Single or dual accumulator charge circuit
(Dual circuit schematic shown)

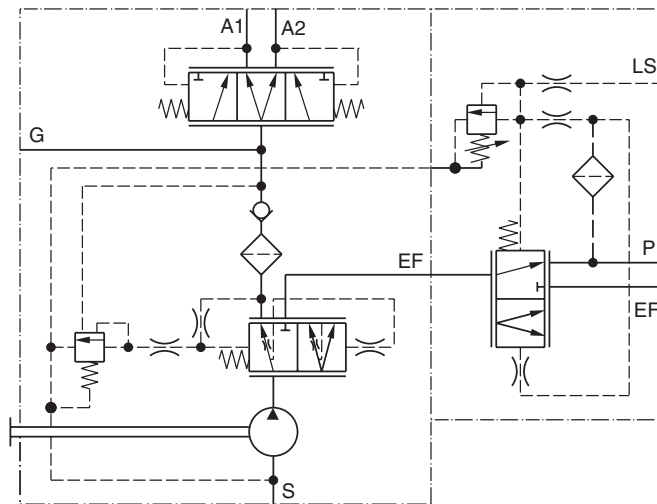
Press. Range: A1, A2, Port Min. setting 35 bar
A1, A2, Port Max. setting 210 bar
Priority Port Max. setting 210 bar
Extended Flow Max. equal to max. rating of pump
Steering stand-by pressure up to 20 bar

Rated Flows: Total Charge Flow up to 60 l/min depending on stand-by pressure
Priority Port 45 l/min
Extended Flow Max. 100 l/min
Max. Input Flow 100 l/min

Comments:

The combined LS Priority Valve and Accumulator Charge Valve provides equal priority flow to load sense power steering and to charge one or more accumulators for hydraulic vehicle brakes. Excess pump flow is available from the EF port for the implement hydraulics, fan drives or other services. The accumulator charge function has an differential pilot relief valve to provide a wide variety of cut-in/cut-out pressure ratios. Typical ratios are 80%, 70%, 60% and 50%. Custom ratios are available for OEM applications.

Steering relief pressure (at P port) must be equal to or greater than maximum charge cut-out pressure. Valve is available with inverse shuttle for dual circuit braking systems (above schematic) or without inverse shuttle for single braking systems.

Composite Load Sense Priority and Accumulator Charge Valve

Variations: Integral with PGP 620 / 640 pump
Single accumulator charge valve + Load sensing priority valve
Dual accumulator charge valve + Load sensing priority valve (schematic shown)
Single accumulator charge valve + Priority flow divider
Dual accumulator charge valve + Priority flow divider

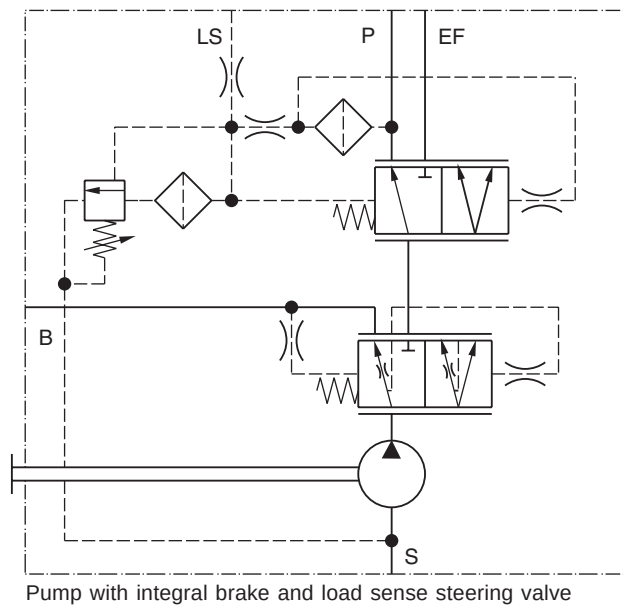
Press. Range: A1, A2, G Port Min. setting 35 bar
A1, A2, G Port Max. setting 210 bar
Priority Port Max. setting 210 bar
Extended Flow Max. equal to max. rating of pump

Rated Flow: Charge Max. 45 l/min
Extended Flow Max. 100 l/min
Max. Input Flow 100 l/min

Comments:

The Composite Load Sense Priority and Accumulator Charge Valve provides first priority flow to charge one or two accumulators for vehicle brakes and second priority to power steering. The balance of the pump flow at the EF port is available for an open circuit directional control valve. The accumulator charge valve has an integral differential pilot relief valve to provide a wide variety of cut-in/cut-out pressure ratios. Typical ratios are 80%, 70%, 60% and 50%. Custom ratios are available for OEM applications. The combination is possible with Single and Dual Accumulator Charge Valves or Priority Flow Dividers. The Composite Valve is also available for remote mounting.

Combined Priority Valve for Boosted Brakes and Power Steering



Variations: Integral with PGP 511 pump
Priority for boosted brake +
Load sensing priority valve for steering
(schematic shown)
Priority for boosted brake +
Priority flow divider for steering

Press. Range: Priority Port Min. setting 35 bar
Priority Port Max. setting 175 bar
Extended Flow Max. equal to
max. rating of pump
B port Max. setting 175 bar

Rated Flow: Priority Flow Max. 32 l/min
Extended Flow Max. 70 l/min
B Port Flow Max. 10 l/min
Max. Input Flow 70 l/min

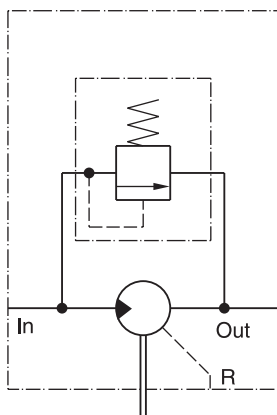
Comments:

The brake port provides a constant and specified flow for hydraulically boosted power brakes. The power brakes have first priority. The second priority from the P port provides priority flow on demand for load sensing power steering. 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. When the power steering is idle, full pump flow, less the brake flow, is available for these functions.

The combined brake and LS steering valve is also available with priority flow dividers (PFD) for open center steering systems.

Valve type	PGM				
	505	511	517	620	640
Single Pressure Relief Valve	X	X			
Single Pressure Relief Valve with Anti-Cavitation		X	X	X	X
Cross Port Pressure Relief Valve		X			
Cross Port Pressure Relief Valve with Anti-Cavitation		X		X	X
Solenoid Unloading Pressure Relief Valve for Motors		X		X	X
Brake Valve		X			
Check Valve and Restrictor		X		X	X

Single Pressure Relief Valve



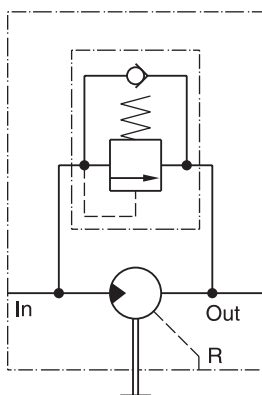
Variations: Integral with PGM 505 and PGM 511
With internal or external drain
Adjustable and non adjustable

Press. Range: Min. setting 25 bar
Max. setting 250 bar

Comments:

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

Single Pressure Relief Valve with Anti-Cavitation



Variations: For PGM 511
Non adjustable, with reverse flow check
With internal or external drain
For PGM 517
Adjustable, with reverse flow check
With internal or external drain
For PGM 620 / 640
Adjustable with shims, with reverse flow check
With internal or external drain

Press. Range: Min. setting 25 bar
Max. setting 250 bar

Applications: Compressor drives, fan drives, mower blade drives and water pump drives

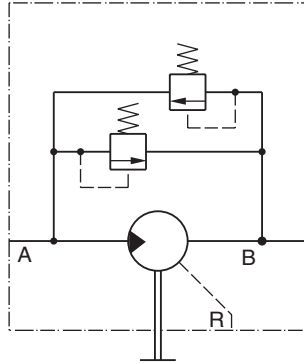
Comments:

Integral relief to protect motor. Motors fitted with this relief valve may be applied in series with the 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 check 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.

Cross Port Pressure Relief Valve

**Comments:**

Integral cross port pressure 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 pressure is possible by adding or removing shims. Side ports are standard in order to minimize overall length.

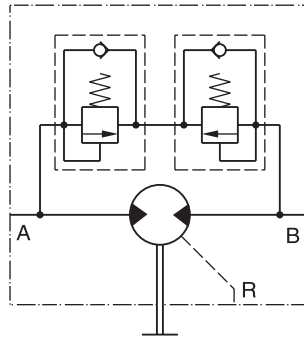
Variations: For PGM 511
Adjustable with shims
With internal or external drain

Press. Range: Max. setting 250 bar

Max. Flow: 30 l/min

Applications: Mower reel drives and all low-medium power reversible drives

Cross Port Pressure Relief Valve with Anti-Cavitation

**Comments:**

Motors fitted with this relief valve may be applied in series or in a hydrostatic transmission with the 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. Available with side, rear, or combination of side and rear ports.

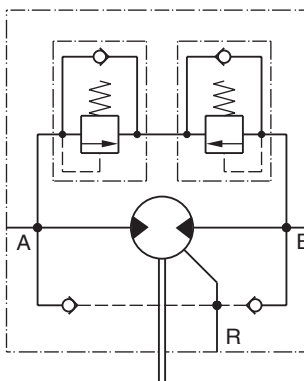
Variations: For PGM 350, PGM 365, PGM 511 and PGM 620
Non adjustable, with reverse flow check
With internal or external drain

Press. Range: Min setting 25 bar

Max. setting 250 bar

Applications: Mower blade drives, water pump drives and reversible hydrostatic transmissions

Cross Port Pressure Relief Valve with Anti-Cavitation

**Comments:**

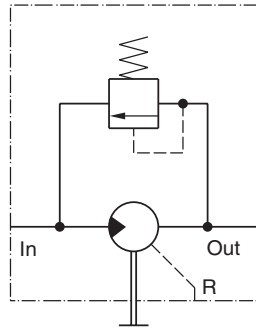
Motor with cross-port relief valve and anti-cavitation check valves in case drain passages. Motors with this configuration are suitable for open-circuit applications with closed center valves and hydrostatic transmissions. When the motor and load are stopped with the relief valve, the anti-cavitation checks allow internal leakage to be returned to the inlet side of the motor. For winches, make up flow at low pressure is introduced at the case.

Variations: For PGM 511 and PGM 620
Non adjustable, with reverse flow check
With internal or external drain

Press. Range: Min setting 25 bar

Max. setting 250 bar

Applications: Mower blade drives, water pump drives, reversible hydrostatic transmissions, vibration drives on vibratory rollers and winches

Brake Valve

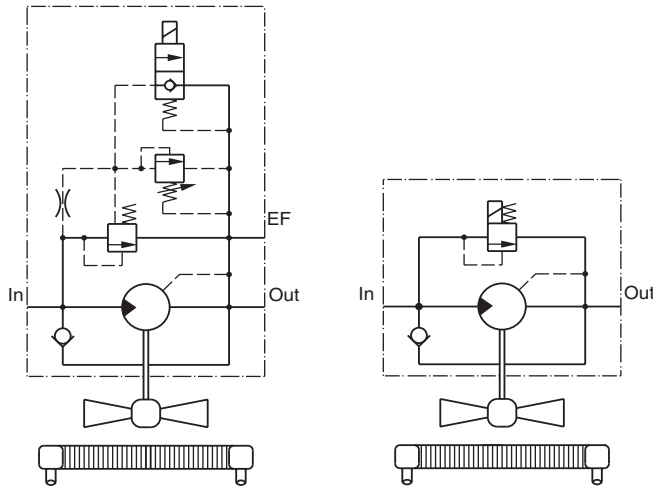
Variations: For PGM 511
Adjustable with shims
With internal or external drain

Press. Range: Max. setting 250 bar
Max. Flow: 30 l/min

Applications: Mower blade drives, winch drives, and blower drives

Comments:

Brake valves are available with the Parker motors to provide controlled braking of the motor and load. The pressure setting of the valve and the stored energy in the load will jointly determine the time to stop the motor. Brake valves must be used with appropriate directional control valves, usually valves with closed center rather than motor spools.

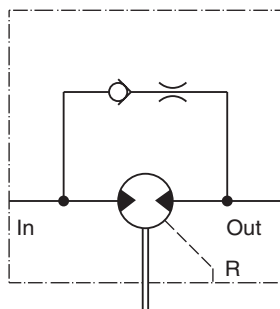
Solenoid Unloading Pressure Relief Valve for Motors

Variations: For PGM 511 and PGM 620
With internal return for single motor operation
With tank port for series motor operation
Specify solenoid voltage and whether N/O or N/C

Press. Range: Stand-by pressure differential 5 bar
Max. setting 250 bar
Max. Flow: For PGM 511 70 l/min
For PGM 620 100 l/min

Comments:

This valve is similar to the solenoid unloading relief valve used on PGP 511, PGP 517 and PGP 620. A small solenoid operated cartridge valve vents the internal pilot to the motor outlet to unload the main spool. The outlet port is connected to tank via filter and heat exchanger (if installed). The motor control can be set to provide low speed operation rather than coming to a full stop. This allows a quiet start for the fan as it will start from approximately 100 rpm. The solenoid in the valve can be supplied for normally open or normally closed operation. The anti-cavitation check valve allows motor spool-down, when engine is shut down with the fan running.

Check Valve and Restrictor

Variations: For PGM 511 and PGM 620
Metered flow from motor outlet to inlet

Press. Range: Max. setting 250 bar
Max. Flow: 30 l/min

Applications: Mower blade drives, winch drives, and blower drives

Comments:

The Check Valve and Restrictor is used to control pressure spikes between motors in series circuit. 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 check valve reduces the risk of damaging the motor or blowing a hydraulic line. The restrictor valve permits operation in reverse with reduced efficiency for cleaning debris or backlapping of the cutters.

Series 300 Single Unit

PG P	350	A	1	78	EG	AB	25 - 07
PGP	Gear Design / Type		PARKER Gear Pump				
350	Series						
A	Unit		Single Unit				
1	Rotation Direction		Pump, Clockwise w/o O.B. bearing				
78	Shaft End Cover		Mounting Flange SAE 4 bolt"C"				
EG	Port End Cover		Side Ports Inlet - 2" SAE Split Flange Outlet - 1" SAE Split Flange				
AB	Gear Housing		Pump Housing				
25	Gear Width		2 1/2" / 104.5 cm ³ /rev., max. 175 bar				
07	Shaft Type		SAE "C" Spline 14T, 12/24 DP				

Series PGP 517 Single Unit

PG P	517	A	0230	A	D1	H3	N	L3	L2	B1	B1
PGP	Gear Design / Type		PARKER Gear Pump								
517	Series										
A	Unit		Single Unit								
0230	Displacement		23.0 cm ³ /rev.								
A	Rotation Direction		Counter Clockwise								
D1	Shaft		SAE „B“ Spline, 13T, 16/32 DP								
H3	Flange		Mounting Flange SAE 2 bolt „B“								
N	Shaft Seal		Shaft Seal NBR								
L3	Side Suction Port		Ø 27 Diamond Flange								
L2	Side Pressure Port		Ø 19 Diamond Flange								
B1	Rear Suction Port		No Port								
B1	Rear Suction Port		No Port								

Series PGP 620 Single Unit

PG P	620	A	0330	C	D1	H3	N	D6	D5	B1	B1
------	-----	---	------	---	----	----	---	----	----	----	----

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

Series PGP 511 Tandem Unit

PG P	511	B	0100	A	C1	H2	N	J7	H3	S - 511	A	0110	X	J7	H3	B1	B1
------	-----	---	------	---	----	----	---	----	----	---------	---	------	---	----	----	----	----

PGP	Gear Design / Type	PARKER Gear Pump
511	Series First Section	
B	Unit	Multiple Unit
0100	Displacement	10.0 cm ³ /rev
A	Rotation Direction	Counter Clockwise
C1	Drive shaft	SAE 19-4 Spline 11T, 16/32 DP
H2	Flange	Mounting Flange SAE 2 bolt „A“
N	Shaft Seal	Shaft Seal NBR
J7	Side Suction Port	Ø - 20 mm European Flange
H3	Side Pressure Port	M 18x1.5 Metric Thread w. O-Ring
S	Section Connection	Separate Inlets
511	Series Second Section	
A	Unit	Single Unit
0110	Displacement	11.0 cm ³ /rev
X	Shaft Seal	No Seal
J7	Side Suction Port	Ø - 20 mm European Flange
H3	Side Pressure Port	M 18x1.5 Metric Thread w. O-Ring
B1	Rear Suction Port	No Port
B1	Rear Suction Port	No Port

