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

OIL SOLUTIONS

PO Box 38
Strathfieldsaye, VIC, 3551
1800 OIL SOL
1800 645 765
sales@oilsolutions.com.au
www.oilsolutions.com.au
"For All Your Hydraulic Needs"

PGP020™ Series

Pumps and Motors

Table of Contents

PGP020

Big Performance In A Small Package

Parker Hannifin's PGP020 gear pumps and motors are an ideal power for the truck industry. With the ½" gears, it measures only 6" from mounting flange to the port end cover and weighs only 25 lbs.

The PGP020 can produce flows up to 29 gpm @ 2400 rpm up to 3000 psi; output to 39 gpm @ 2400 rpm up to 2500 psi. Motors and pumps can be bi-rotational.

A variety of drive shafts and mounting styles are offered to meet your needs. Standard features include rigid, one-piece drive shaft and gears and pressure-balanced thrust plated, which assure top efficiency. A rugged, high-strength, cast iron body provides durability.

Multiple Units

PGP020 pumps and motors can be assembled in tandem to provide additional pump flow or more motor torque from on the drive shaft. Each gear section is connected to the drive shaft by a connecting shaft. The strength of the shafts (their PL factor) determines the maximum gear width the pump or motor can turn at a given pressure.

To determine the unit's PL, multiply the operating pressure (P) by the total gear width (L). Example: Assume a PGP020 pump will be operating at 3000 psi and have a 1½" gear housing. Multiply the total gear width of 1½" by the operating pressure.

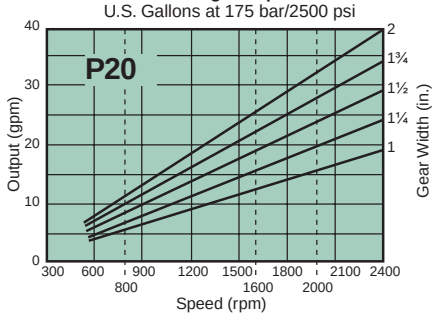
(1.5" gear width X 3000 psi) = 4500

This pump needs a drive shaft with a PL factor of 4500 or more to operate successfully. The PL factor for each drive shaft is given on pages 10 and 11.

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

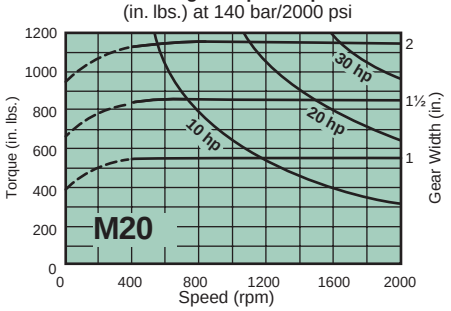
Performance Data

Pump Performance
Average Output
U.S. Gallons at 175 bar/2500 psi



Pump Speed	Gear Width-Output (GPM) 1"	1¼"	1½"	1¾"	2"
900	6.5	8.0	10.0	12.0	13.5
1200	9.0	11.5	14.0	16.0	18.5
1500	11.5	14.5	17.5	20.5	23.5
2100	16.5	21.0	25.0	29.5	34.0

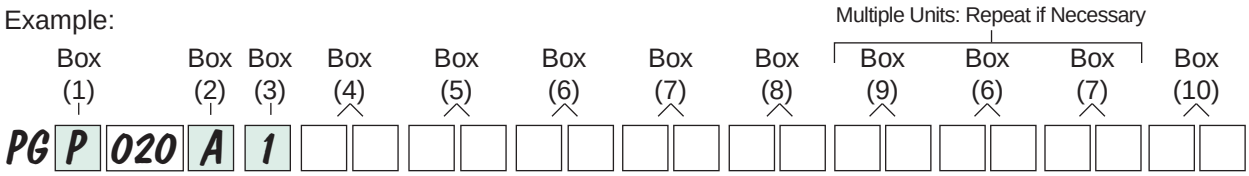
Motor Performance
Average Torque Output
(in. lbs.) at 140 bar/2000 psi



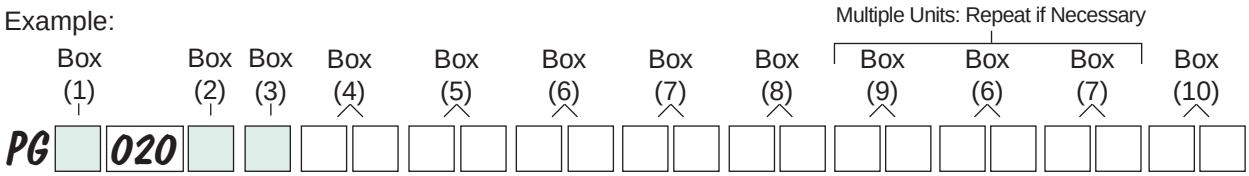
Motor Speed	Gear Width 1" Torque in lbs.	GPM	1½" Torque in lbs.	GPM	2" Torque in lbs.	GPM
800	550	9.0	870	13.0	1150	17.0
1200	550	13.0	870	18.0	1150	23.5
1600	550	16.0	860	23.0	1140	30.5
2000	550	19.5	850	28.0	1125	37.0

PGP020™ How to Specify Code (Boxes 1-3)

Example:



Example:



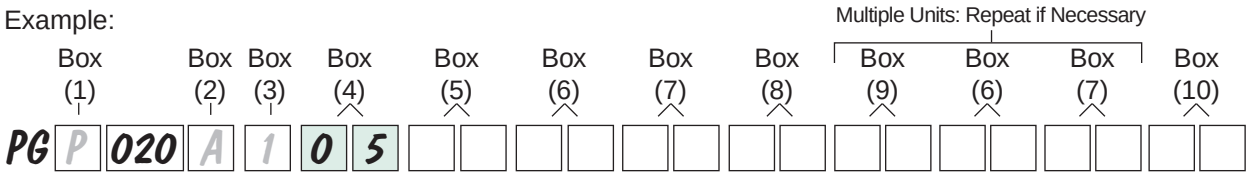
Box 1 Description	
P	Pump
M	Motor

Box 2 Unit	
A	Single
B	Tandem

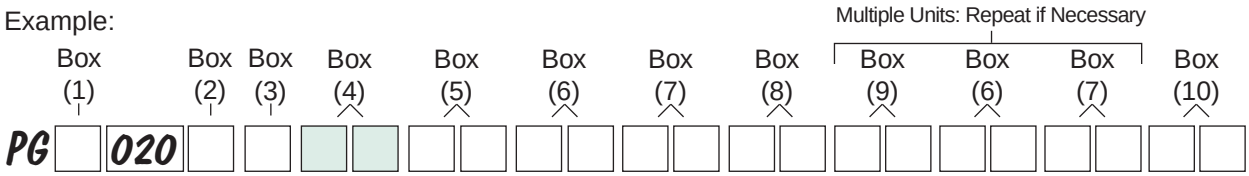
Box 3 Shaft End Cover	
ORDER CODE	**ROTATION – OUTBEARING – DRAIN PORT**
1	Clockwise (CW) rotation
2	Counter clockwise rotation (CCW); no outboard bearing
3	Double rotation; no outboard bearing
4	CW rotation with outboard bearing
5	CCW rotation with outboard bearing
6	Double rotation with outboard bearing
8	Double rotation with outboard bearing (motor) ¼" NPT drain
9	Double rotation ; no outboard bearing (motor) ¼" NPT drain

PGP020™ How to Specify (Box 4)

Example:



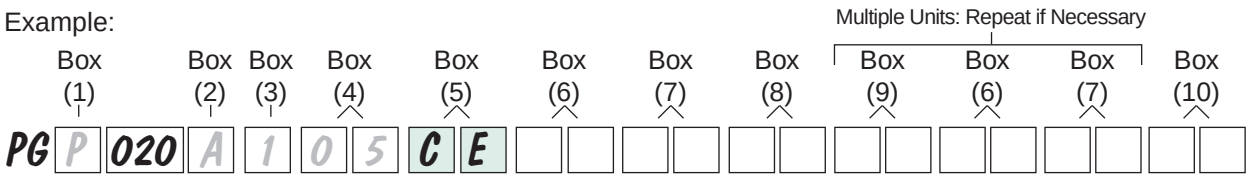
Example:



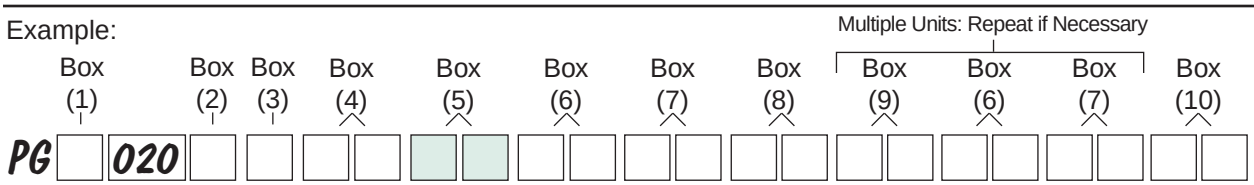
Box 4 Shaft End Cover Codes		Box 4 Shaft End Cover Codes	
ORDER CODE	PICTURE / MOUNTING FLANGE TYPE	ORDER CODE	PICTURE / MOUNTING FLANGE TYPE
05	6 BOLT FLANGE – 3.25 DIA. BOLT CIRCLE	46	SAE 2/4 BOLT "B" ANSI 101 – 2/4
10	2 BOLT PAD MOUNT	94	SAE 2 BOLT "A" ANSI 82-2
27	4 BOLT CLOVERLEAF	96	SAE 2 BOLT "B" ANSI 101-2 TYPE II
42	SAE 4 BOLT "B" ANSI 101-4	97	SAE 2 BOLT "B" ANSI 101-2

PGP020™ How to Specify (Box 5)

Example:



Example:



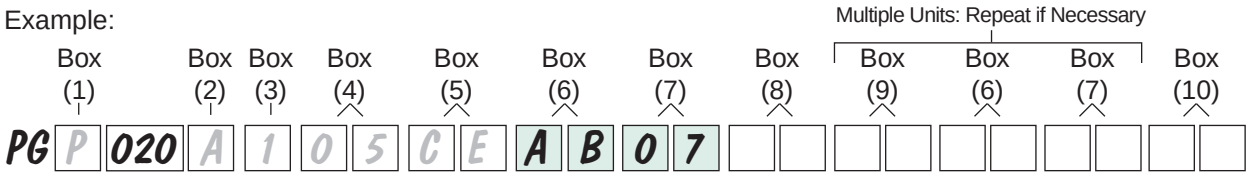
Box 5 Port End Cover Codes						Box 5 Port End Cover Codes					
Order Codes				O.D.T. Porting		Order Codes				N.P.T. Porting	
Single Units		Tandem Units		Port Size		Single Units		Tandem Units		Port Size	
W/O ST	W/ST	W/O ST	W/ST	LEFT	RIGHT	W/O ST	W/ST	W/O ST	W/ST	LEFT	RIGHT
CE	CY	CI	CY	¾	none	BE	BY	BI	BY	no port	no port
DE	DY	DI	DY	none	¾	KE	KY	KI	KY	¾	none
FE	FY	FI	FY	¾	¾	LE	LY	LI	LY	none	¾
GE	GY	GI	GY	1	¾	ME	MY	MI	MY	¾	¾
HE	HY	HI	HY	¾	1	QU	QQ	QD	QQ	1	1
JE	JY	JI	JY	1	1	AI		AI		¾	1
MA	YO	MU	YO	1	none	EI		EI		1	¾
RA	RO	SU	RO	none	1						

NOTE: W/O ST columns denote units without support studs, and W/ST columns denote units with support studs.

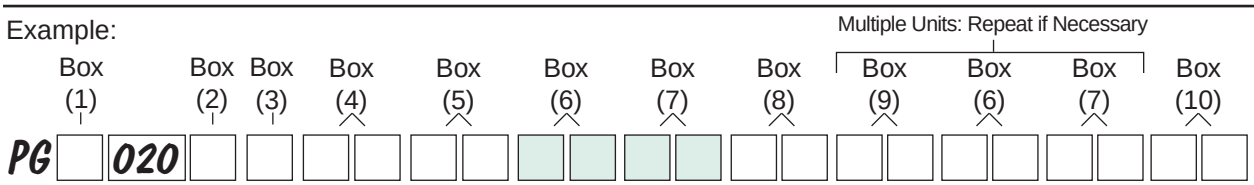
PGP020™ How to Specify N.P.T. Ports (Boxes 6 & 7)

(Only When Ordering N.P.T. Ports, See Pages 5-6 for O.D Tube Porting and Page 7 for Split Flange Porting)

Example:



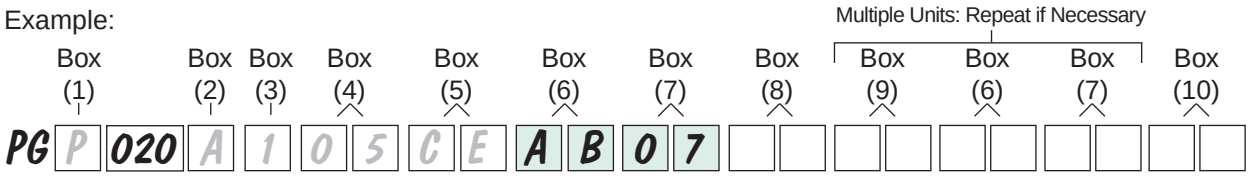
Example:



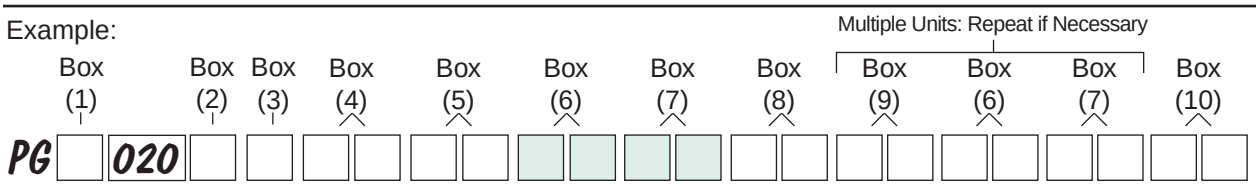
Box 6 Gear Housing - N.P.T. Ports ≤ 3000 psi			Box 7 Gear Housing - N.P.T. Ports ≤ 3000 psi						
ORDER CODE	N.P.T. PORTING PORT SIZE LEFT	RIGHT	GEAR WIDTH AVAILABILITY 05	07	10	12	15	17	20
AB	none	none	X	X	X	X	X	X	X
IL	½	none	X	X	X	-	-	-	-
IM	none	½	X	X	X	-	-	-	-
IR	½	½	X	X	-	-	-	-	-
IC	¾	none	-	X	X	X	X	X	X
ID	none	¾	-	X	X	X	X	X	X
IF	¾	¾	-	X	X	X	X	X	X
IG	¾	1	-	-	X	X	X	X	X
IH	¾	1 ¼	-	-	-	-	X	X	-
IJ	1	¾	-	-	X	X	X	X	X
IK	1 ¼	¾	-	-	-	-	X	X	-
YC	1	none	-	-	X	X	X	X	X
YD	none	1	-	-	X	X	X	X	X
YF	1	1	-	-	X	X	X	X	X
YG	1	1 ¼	-	-	-	X	X	X	X
YH	1	1 ½	-	-	-	-	-	-	-
YJ	1 ¼	1	-	-	-	-	X	X	X
YK	1 ½	1	-	-	-	-	-	-	-
IA	1 ¼	none	-	-	-	-	X	X	X
IB	none	1¼	-	-	-	-	X	X	X
YL	1 ¼	1 ¼	-	-	-	-	X	X	X

PGP020™ How to Specify O.D. Tubes (Boxes 6 & 7)

Example:



Example:

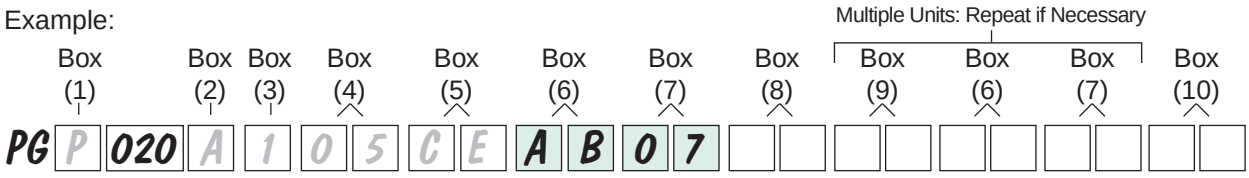


Box 6 Gear Housing - O.D. Tube Ports ≤2500 psi			Box 7 Gear Housing - O.D. Tube Ports ≤2500 psi						
ORDER CODE	O.D. TUBE PORTING PORT SIZE LEFT	RIGHT	GEAR WIDTH AVAILABILITY 05	07	10	12	15	17	20
AB	none	none	X	X	X	X	X	X	X
EC	¾	none	-	X	X	X	X	X	X
ED	none	¾	-	X	X	X	X	X	X
EF	¾	¾	-	X	X	X	X	X	X
EG	¾	1	-	-	X	X	X	X	X
EH	¾	1 ¼*	-	-	-	X*	X	X	X
IN	¾	1 ½	-	-	-	-	-	X	X
EJ	1	¾	-	-	X	X	X	X	X
EK	1 ¼*	¾	-	-	-	X*	X	X	X
IP	1 ½	¾	-	-	-	-	-	X	X
EZ	7/8	none	-	-	-	X	-	-	-
EL	7/8	1	-	-	X	-	-	-	-
EM	1	7/8	-	-	X	-	-	-	-
AC	1	none	-	-	X	X	X	X	X
AD	none	1	-	-	X	X	X	X	X
AF	1	1	-	-	-	X*	X	X	X
AG	1	1 ¼*	-	-	-	X*	X	X	X
AH	1	1 ½	-	-	-	-	-	X	X
AJ	1 ¼*	1	-	-	-	X*	X	X	X
AK	1 ½	1	-	-	-	-	-	X	X
AA	1 ¼*	none	-	-	-	X*	X	X	X
AO	none	1 ¼*	-	-	-	X*	X	X	X
AL	1 ¼	1 ¼	-	-	-	-	X	X	X
AM	1 ¼	1 ½	-	-	-	-	-	X	X
AP	1 ½	1 ¼	-	-	-	-	-	X	X
AE	1 ½	none	-	-	-	-	-	X	X
AU	none	1 ½	-	-	-	-	-	X	X

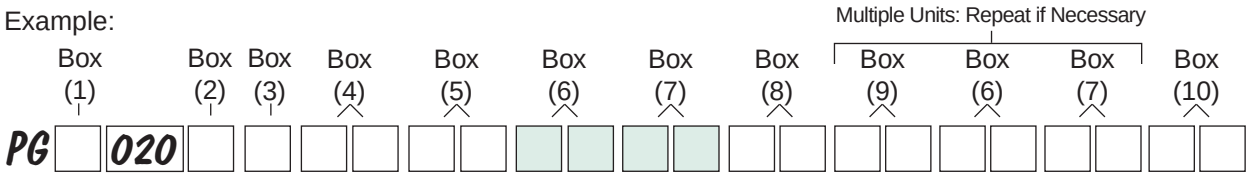
* Ports designated by an asterisk * are for use as the low-pressure inlet port only.

PGP020™ How to Specify O.D. Tubes (Boxes 6 & 7)

Example:



Example:

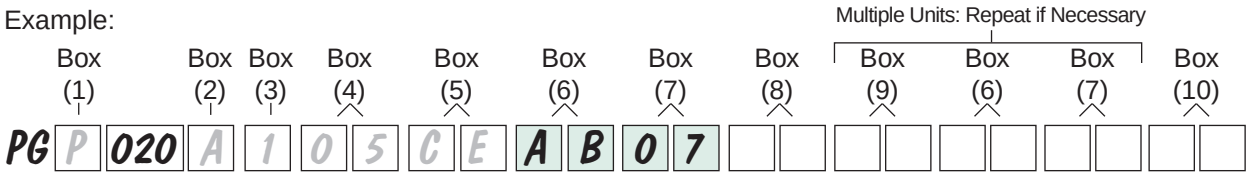


Box 6 Gear Housing - O.D. Tube Ports ≤3000 psi			Box 7 Gear Housing - O.D. Tube Ports ≤3000 psi						
ORDER CODE	O.D. TUBE PORTING PORT SIZE LEFT	RIGHT	GEAR WIDTH AVAILABILITY 05	07	10	12	15	17	20
AB	none	none	X	X	X	X	X	X	X
EC	¾	none	-	X	X	X	X	X	X
ED	none	¾	-	X	X	X	X	X	X
EF	¾	¾	-	X	X	X	X	X	X
EG	¾	1*	-	-	X*	X	X	X	X
EH	¾	1 ¼*	-	-	-	-	X*	X	X
IN	¾	1 ½*	-	-	-	-	-	X*	X
EJ	1*	¾	-	-	X*	X	X	X	X
EK	1 ¼*	¾	-	-	-	-	X*	X	X
IP	1 ½*	¾	-	-	-	-	-	X*	X
EZ	7/8	none	-	-	-	X	-	-	-
EL	7/8	1*	-	-	X*	-	-	-	-
EM	1*	7/8	-	-	X*	-	-	-	-
AC	1*	none	-	-	X*	X	X	X	X
AD	none	1*	-	-	X*	X	X	X	X
AF	1	1	-	-	-	X*	X	X	X
AG	1	1 ¼*	-	-	-	X*	X*	X	X
AH	1	1 ½*	-	-	-	-	-	X*	X
AJ	1 ¼*	1	-	-	-	X*	X*	X	X
AK	1 ½ *	1	-	-	-	-	-	X*	X
AA	1 ¼ *	none	-	-	-	X*	X*	X	X
AO	none	1 ¼*	-	-	-	X*	X*	X	X
AL	1 ¼	1 ¼	-	-	-	-	-	X	X
AM	1 ¼	1 ½*	-	-	-	-	-	X*	X
AP	1 ½*	1 ¼	-	-	-	-	-	X*	X
AE	1 ½*	none	-	-	-	-	-	X*	X
AU	none	1 ½*	-	-	-	-	-	X*	X

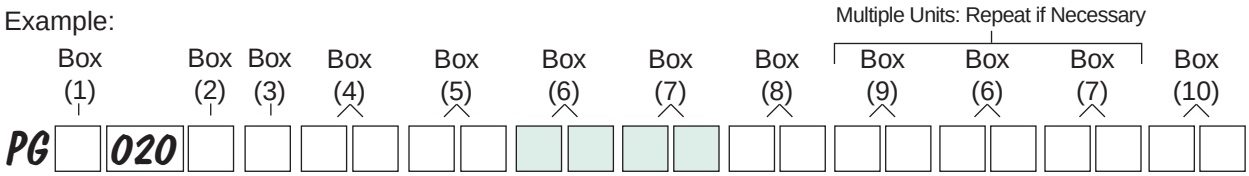
* Ports designated by an asterisk * are for use as the low-pressure inlet port only.

PGP020™ How to Specify Split Flange Porting (Boxes 6 & 7)

Example:



Example:



Box 6 Gear Housing - Split Flange Porting ≤3000 psi			Box 7 Gear Housing - Split Flange Porting ≤3000 psi						
ORDER CODE	SPLIT FLANGE PORTING PORT SIZE LEFT	RIGHT	GEAR WIDTH AVAILABILITY 05	07	10	12	15	17	20
AB	none	none	X	X	X	X	X	X	X
UC	¾	none	-	X	X	X	X	X	X
UD	none	¾	-	X	X	X	X	X	X
UF	¾	¾	-	X	X	X	X	X	-
UG	¾	1	-	-	X	X	X	X	X
UH	¾	1 ¼	-	-	-	X	X	X	X
UJ	1	¾	-	-	X	X	X	X	X
UK	1 ¼	¾	-	-	-	X	X	X	X
OC	1	none	-	-	-	X	X	X	X
OD	none	1	-	-	-	X	X	X	X
OF	1	1	-	-	X	X	X	X	X
OG	1	1 ¼	-	-	-	X	X	X	X
OH	1	1 ½	-	-	-	-	-	X	X
OJ	1 ¼	1	-	-	-	X	X	X	X
OK	1 ½	1	-	-	-	-	-	X	X
OA	1 ¼	none	-	-	-	X	X	X	X
OB	none	1 ¼	-	-	-	X	X	X	X
OL	1 ¼	1 ¼	-	-	-	-	X	X	X
OM	1 ¼	1 ½	-	-	-	-	-	X	X
OP	1 ½	1 ¼	-	-	-	-	-	X	X
OE	1 ½	none	-	-	-	-	-	X	X
OU	none	1 ½	-	-	-	-	-	X	X

PGP020™ How to Specify (Box 8)

Example:

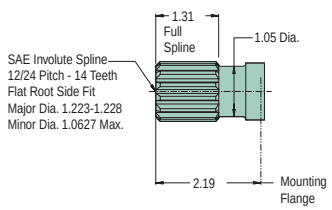
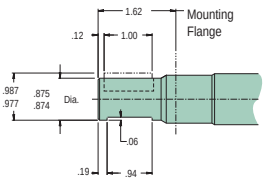
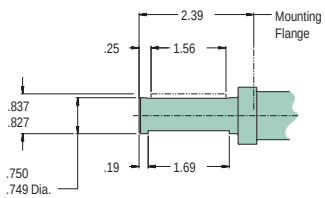
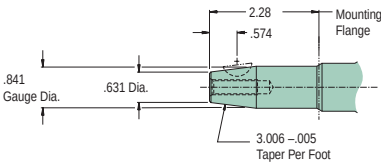
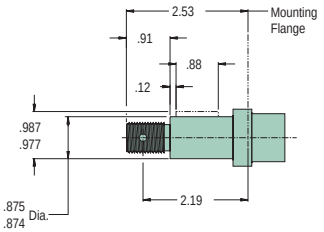
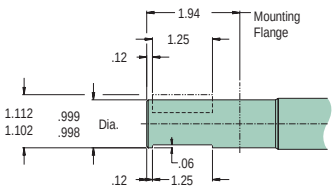
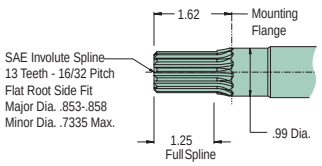
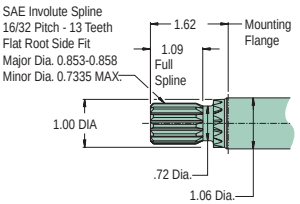
Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG	P 020	A	1	0	5	C	E	A	B	0	7	0	7								

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG	020																				

Box 8 Drive Shafts		Box 8 Drive Shafts	
ORDER CODE	PICTURE / MOUNTING FLANGE TYPE	ORDER CODE	PICTURE / MOUNTING FLANGE TYPE
07	PL=5850  S.A.E. “C” SPLINE/ANSI 32-4 (2 PIECE SHAFT,CONTINENTAL)	**30**	PL=4925  S.A.E. “B” KEYED ANSI 22-1
12	PL=4150  .750 DIA. KEYED SHAFT (.19 WIDE KEY) (2 PIECE SHAFT,CONTINENTAL)	**32**	PL=4630  CLUTCH PUMP SHAFT
15	PL=4925  S.A.E. “B” THREADED + KEY ANSI 22-2 (2 PIECE SHAFT,CONTINENTAL)	**43**	PL=7850  S.A.E. “B-B” KEYED ANSI 25-1 MODIFIED
25	PL=8580  S.A.E. “B” SPINE ANSI 22-4	**65**	PL=6035  S.A.E. “B” SPLINE ANSI 22-4 TYPE II

CONTINUED ON NEXT PAGE

PGP020™ How to Specify (Box 8)

Example:

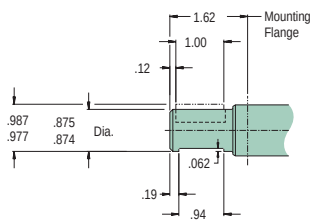
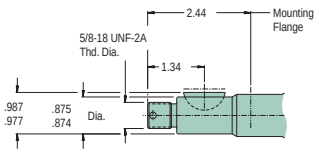
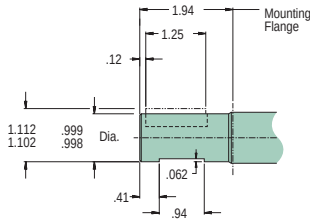
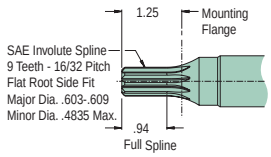
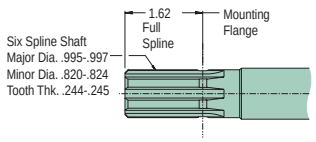
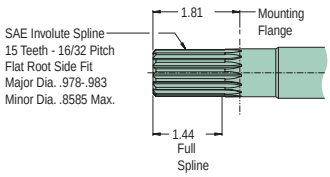
Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG	P 020	A	1	0	5	C	E	A	B	0	7	0	7								

Multiple Units: Repeat if Necessary

Example:

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG	020																				

Multiple Units: Repeat if Necessary

Box 8 Drive Shafts		Box 8 Drive Shafts	
ORDER CODE	**PICTURE / MOUNTING FLANGE TYPE**	**ORDER CODE**	**PICTURE / MOUNTING FLANGE TYPE**
66	**PL=4925**  S.A.E. “B” KEYED ANSI 22-1 TYPE II	**90**	**PL=4925**  S.A.E. “B” THREADED + KEY ANSI 22-2 MODIFIED
67	**PL=7850**  S.A.E. “B” KEYED ANSI 22-1 TYPE II	**95**	**PL=2850**  S.A.E. “A” SPLINE ANSI 16-4
68	**PL=12000**  1.00 DIA. 6 TOOTH SPLINE SHAFT	**98**	**PL=13180**  S.A.E. “B-B” SPLINE ANSI 25-4

PGP020™ How to Specify (Box 9)

Example:

Multiple Units: Repeat if Necessary

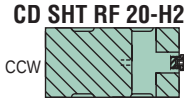
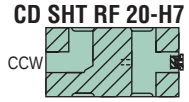
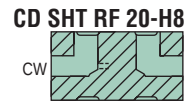
	Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG	P	020	A	1	05	CE	AB	07	07	CV	AB	07		

Example:

Multiple Units: Repeat if Necessary

	Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG		020												

Box 9 Bearing Carrier Codes- Flow Dividers

ROTATION FLOWPATH CW-Clockwise CCW-Cnt. Clockwise	N.P.T. PORTING PORT SIZE			SPLIT FLANGE PORTING PORT SIZE			O.D.T. PORTING PORT SIZE		
	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT
CD SHT RF 20-H1  CW	C	none	none	LB	1	none	CB	1	none
	TB	1	none	-	-	-	DB	1 ¼	none
	VB	1 ¼	none	-	-	-	FB	1 ½	none
CD SHT RF 20-H2  CCW	D	none	none	BL	none	1	BC	none	1
	BT	none	1	-	-	-	BD	none	1 ¼
	BV	none	1 ¼	-	-	-	BF	none	1 ½
CD SHT RF 20-H4  CW	TX	1	¾	LR	1	¾	CJ	1	¾
	VX	1 ¼	¾	BR	none	¾	DJ	1 ¼	¾
	VZ	1 ¼	1	-	-	-	DK	1 ¼	1
	-	-	-	-	-	-	FJ	1 ½	¾
	-	-	-	-	-	-	FK	1 ½	1
CD SHT RF 20-H5  CCW	JT	¾	1	XL	¾	1	RC	¾	1
	JV	¾	1 ¼	-	-	-	RD	¾	1 ¼
	KV	1	1 ¼	-	-	-	RF	¾	1 ½
	-	-	-	-	-	-	SD	1	1 ¼
	-	-	-	-	-	-	SF	1	1 ½
CD SHT RF 20-H6  CW	TJ	1	¾	LX	1	CR	1	¾	
	VJ	1 ¼	¾	-	-	DR	1 ¼	¾	
	VK	1 ¼	1	-	-	-	DS	1 ¼	1
	-	-	-	-	-	-	FR	1 ½	¾
	-	-	-	-	-	-	FS	1 ½	1
CD SHT RF 20-H7  CCW	XT	¾	1	RB	¾	none	JC	¾	1
	XV	¾	1 ¼	RL	¾	1	JD	¾	1 ¼
	ZV	1	1 ¼	-	-	-	JP	¾	none
	-	-	-	-	-	-	JF	¾	1 ½
	-	-	-	-	-	-	KD	1	1 ¼
	-	-	-	-	-	-	KF	1	1 ½
CD SHT RF 20-H8  CW	ZX	1	¾	SR	1	¾	KJ	1	¾

PGP020™ How to Specify (Box 9) (Continued)

Example:

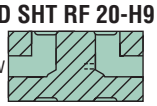
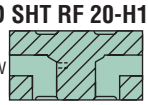
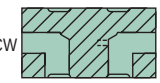
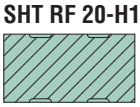
Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG P	020	A	1	0 5	C E	A B	0 7	0 7	C V	A B	0 7

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG	020										

Box 9 Bearing Carrier Codes- Flow Dividers									
ROTATION FLOWPATH CW-Clockwise CCW-Cnt. Clockwise	N.P.T. PORTING PORT SIZE			SPLIT FLG. PORTING PORT SIZE			O.D.T. PORTING PORT SIZE		
	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT
CD SHT RF 20-H9 	XZ	¾	1	RS	¾	1	JK	¾	1
CD SHT RF 20-H10 	ZS	1	¾	RZ	1	¾	KX	1	¾
CD SHT RF 20-H11 	SZ	¾	1	ZR	¾	1	XK	¾	1
Bearing Carrier Codes- Motors									
CD SHT RF 20-H16 	B	-	-	B	-	-	B	-	-
CD SHT RF 20-H21 	M	1	none	J	1	none	F	1	none
	N	1 ¼	none	-	-	-	G	1 ¼	none
	E	none	none	-	-	-	H	1 ½	none
CD SHT RF 20-H24 	BX	none	¾	GR	none	¾	GJ	none	¾
	GX	1	¾	HR	1	¾	HJ	1	¾
	HZ	1 ¼	¾	MT	none	1	MJ	1 ¼	¾
	LZ	1 ¼	1	-	-	-	RJ	1 ½	¾
	KZ	none	1	-	-	-	PK	1 ¼	1
	-	-	-	-	-	-	RK	1 ½	1
	-	-	-	-	-	-	BK	none	1

PGP020™ How to Specify (Box 9) (Continued)
(See below for How to Specify Box 10)

Example:

	Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Multiple Units: Repeat if Necessary Box (9)	Box (6)	Box (7)	Box (10)
	PG	P 020	A	1	0 5	C E	A B	0 7	0 7	C V	A B	0 7 - 1

Example:

	Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Multiple Units: Repeat if Necessary Box (9)	Box (6)	Box (7)	Box (10)
	PG	020										

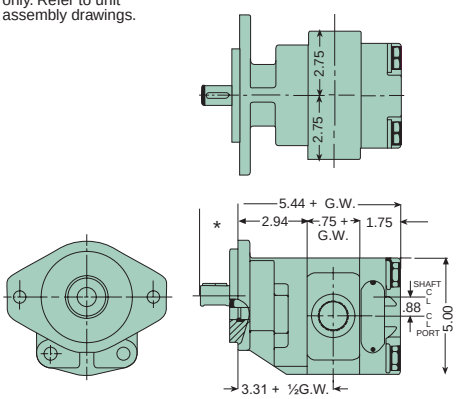
Box 9 Bearing Carrier Codes- Flow Dividers

ROTATION FLOWPATH CW-Clockwise CCW-Cnt. Clockwise	N.P.T. PORTING CODE	N.P.T. PORTING PORT SIZE LEFT	N.P.T. PORTING PORT SIZE RIGHT	SPLIT FLG. PORTING CODE	SPLIT FLG. PORTING PORT SIZE LEFT	SPLIT FLG. PORTING PORT SIZE RIGHT	O.D.T. PORTING CODE	O.D.T. PORTING PORT SIZE LEFT	O.D.T. PORTING PORT SIZE RIGHT
CD SHT RF 20-H26 CW	CV	none	¾	FD	none	¾	JH	none	¾
	GV	1	¾	GD	1	¾	PH	1	¾
	MV	1 ¼	¾	JG	none	1	RH	1 ¼	¾
	TK	1 ¼	1	-	-	-	WH	1 ½	¾
	NK	none	1	-	-	-	QC	1 ¼	1
	-	-	-	-	-	-	VC	1 ½	1
	-	-	-	-	-	-	PC	none	1
CD SHT RF 20-H28 CW	VG	1	¾	WL	1	¾	MC	1	¾
CD SHT RF 20-H29 CW	WG	1	¾	ZL	1	¾	SC	1	¾

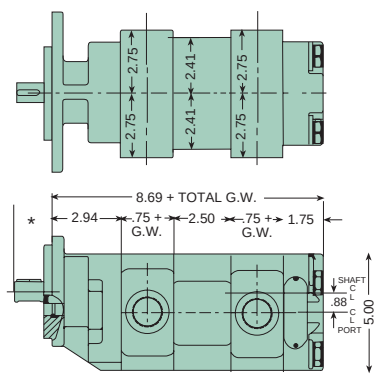
Dimensional Data (inches)

Reference dimensions only. Refer to unit assembly drawings.

Single Units



Multiple Units



* THIS DIMENSION WILL VARY WITH TYPE OF DRIVESHAFT

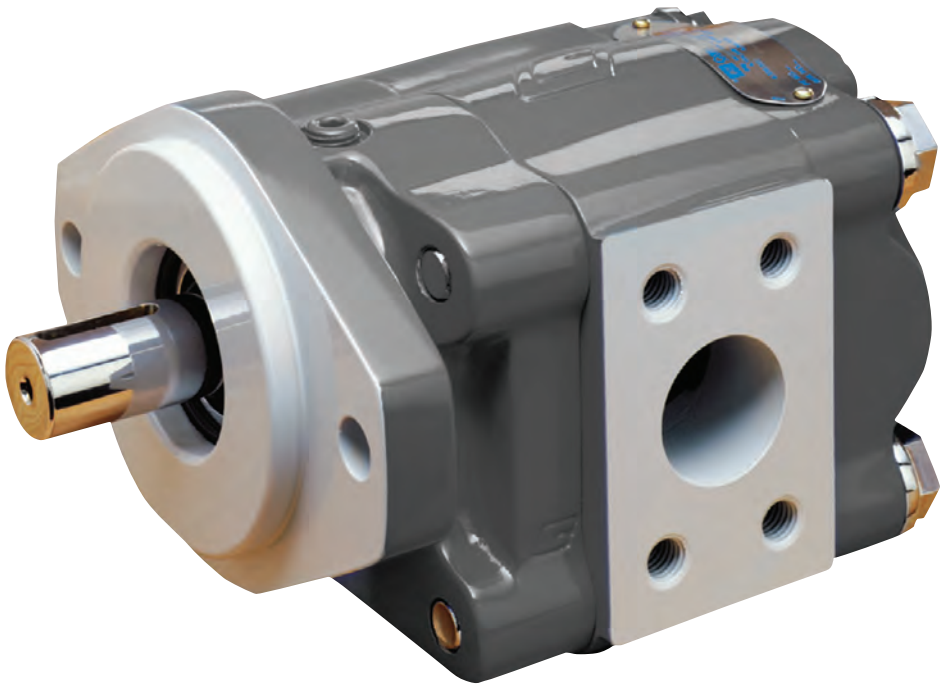
PGP020™ How to Specify (Box 10) *(See above for example)*

Box 10 Connecting Shaft

For connecting tandem units.

-1 Connecting Shaft - Multiple Units
PL=5850

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



PGP030/031™ Series
PGP050/051™ Series
PGP075/076™ Series

Single and Multiple Pumps and Motors

Index

Pump/Valve Products

PGP030/031

- Flows to 41 GPM
- Pressures to 3000 psi
- Speeds to 2400 rpm
- Priority valves
- Two-speed valves
- Piggybacks
- Winch motors
- Flow dividers

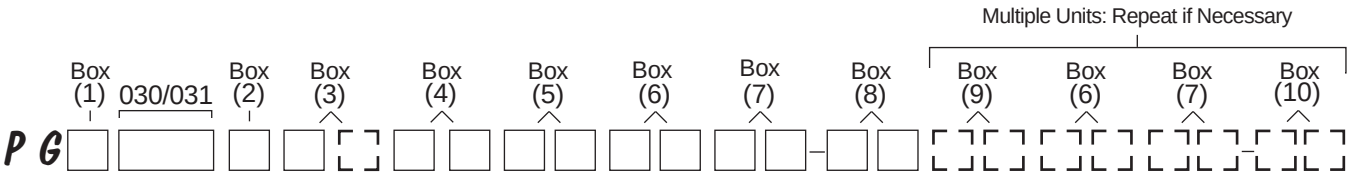
PGP050/051

- Flows to 66 GPM
- Pressures to 3000 psi
- Speeds to 2400 rpm
- Priority valves
- Two-speed valves
- Unloader valve
- Winch motors
- Flow dividers
- Piggybacks

PGP075/076

- Flows to 128 GPM
- Pressures to 3000 psi
- Speeds to 2400 rpm
- Two-speed valves
- Piggybacks
- Winch motors
- Flow dividers

030/031 Ordering Information



Box 1 Pump/Motor

P	Pump
M	Motor

Box 2 Unit

A	Single Unit
B	Tandem Unit
C	Single or Tandem w. two-piece shaft (O.B. bearing required)

Box 3 Shaft End Cover

1	Pump, cw w/o O.B. bearing
2	Pump, ccw w/o O.B. bearing
3	Pump, bi-rotational w/o O.B. bearing (030 series only)
4	Pump, cw with O.B. bearing
5	Pump, ccw with O.B. bearing
6	Pump, bi-rotational with O.B. bearing (030 series only)
8	Motor, bi-rot. with O.B. bearing + ¼" NPT drain
9	Motor, bi-rot. w/o O.B. bearing + ¼" NPT drain
18	Motor, bi-rot. with O.B. bearing + ¼" BSPP drain
19	Motor, bi-rot. w/o O.B. bearing + ¼" BSPP drain

Box 4 Shaft End Cover *(type 1 unless noted)*

00	Pad mount
05	6 bolt flange - 3.25" dia. bolt circle: Pilot Dia. 2 5/8"
42	SAE 4 bolt "B" ANSI 101-4: Pilot Dia. 4"
78	SAE 4 bolt "C" ANSI 127-4: Pilot Dia. 5"
91	030-030, 031-031, & 050-030, 051-031
	for piggyback: Pilot Dia. 4"
92	075-030, 076-031 for piggyback: Pilot Dia. 5"
94	SAE 2 bolt "A" ANSI 82-2: Pilot Dia. 3¼"
96*	SAE 2 bolt "B" ANSI 101-2, **type 2**: Pilot Dia. 4"
*(not available with O.B. bearing)	
97	SAE 2 bolt "B" ANSI 101-2: Pilot Dia. 4"

Box 5 Port End Cover (Rear Ported)

Left	Right	Single	Tandem	Extended Studs
Unported				
-	-	**BE**	**BI**	**BY**
NPT Porting (030 series only)				
¾"	-	**KE**	**KI**	**KY**
-	¾"	**LE**	**LI**	**LY**
¾"	¾"	**ME**	**MI**	**MY**
NPT Porting (030 series only) - Modified Casting*				
1"	1"	**QU**	**QU**	**-**

For All Units
To determine direction of shaft rotation, view the unit with the shaft pointing toward you, and the idler (driven) gear beneath the shaft. With clockwise rotation, flow will be left to right. The pump inlet port will be on the left, outlet on the right. The flow is in the opposite direction with counter-clockwise rotation. Inverting the pump will reverse the inlet and outlet ports but not the direction of rotation.

Box 5 Port End Cover (Rear Ported) *continued*

Left	Right	Single	Tandem	Extended Studs
O.D.T. Porting				
¾"	-	**CE**	**CI**	**CY**
-	¾"	**DE**	**DI**	**DY**
¾"	¾"	**FE**	**FI**	**FY**
1"	¾"	**GE**	**GI**	**GY**
¾"	1"	**HE**	**HI**	**HY**
O.D.Tube Porting (30 series only)				
1"	1"	**JE**	**JI**	**JY**
O.D.Tube Porting - Modified Casting*				
¾"	-	**CA**	**CU**	**CO**
-	¾"	**DA**	**DU**	**DO**
¾"	¾"	**JA**	**JU**	**BO**
1"	¾"	**KA**	**KU**	**-**
¾"	1"	**LA**	**LU**	**-**
1"	-	**MA**	**MU**	**YO**
-	1"	**RA**	**SU**	**RO**
1"	1"	**ZA**	**ZU**	**ZO**
1 ¼"	1"	**GU**	**GU**	**-**
1"	1 ¼"	**HU**	**HU**	**-**
BSPP Porting				
¾"	-	**WE**	**WI**	**WY**
-	¾"	**XE**	**XI**	**XY**
¾"	¾"	**ZE**	**ZI**	**ZY**
Metric Straight Thread				
¾"	-	**NE**	**NI**	**NY**
-	¾"	**PE**	**PI**	**PY**
¾"	¾"	**QE**	**QI**	**QY**
1"	¾"	**RE**	**RI**	**RY**
¾"	1"	**SE**	**SI**	**SY**

Port End Cover (5) (Side Ported)

Left	Right	Single	Tandem	Extended Studs
O.D.Tube Porting - Modified Casting*				
1 ¼"	1"	**TU**	**TU**	**-**
1"	1 ¼"	**XU**	**XU**	**-**

	CW	CCW	Double
Piggyback Port End - Pump Only			
Type 030-030, 031-031 (double 030-030 only)	**KO**	**LO**	**MO**

***** *Modified PEC casting is for higher pressure/larger port applications.*

030/031 Ordering Information

Box 6 Gear Housing

				030 Series						031 Series				
Housing Code				07	10	12	15	17	20	10	12	15	17	20
Displacement (C.I.R.)				1.48	1.97	2.46	2.96	3.45	3.94	1.97	2.46	2.96	3.45	3.94
Maximum (PSI)				2500	2500	2500	2500	2250	2250	3000	3000	3000	2500	2500
IN	**OUT**	**CW**	**CCW**											
													No Porting	
-	-	**AB**	**AB**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
													NPT Porting	
½"	-	**IL**	**IM**	**X**	**X**									
-	½"	**IM**	**IL**	**X**	**X**									
½"	½"	**IR**	**IR**	**X**										
¾"	-	**IC**	**ID**		**X**	**X**	**X**	**X**	**X**					
-	¾"	**ID**	**IC**		**X**	**X**	**X**	**X**	**X**					
¾"	¾"	**IF**	**IF**		**X**	**X**	**X**	**X**	**X**					
1"*	¾"	**IJ**	**IG**		**X***	**X**	**X**	**X**						
1 ¼"*	¾"	**IK**	**IH**				**X***	**X**						
1"*	-	**YC**	**YD**		**X***	**X**	**X**	**X**						
-	1"	**YD**	**YC**			**X**	**X**	**X**						
1"	1"	**YF**	**YF**			**X**	**X**	**X**	**X**					
1 ¼"*	1"	**YJ**	**YG**				**X***	**X**	**X**					
1 ¼"*	-	**IA**	**IB**				**X***	**X**	**X**					
-	1 ¼"	**IB**	**IA**					**X**	**X**					
1 ¼"	1 ¼"	**YL**	**YL**					**X**	**X**					
1 ½"*	-	**YA**	**YB**						**X***					
1 ½"*	1 ¼"	**YP**	**YM**						**X***					
													OD Tube Porting	
¾"*	-	**EC**	**ED**		**2000**	**X**	**X**	**X**		**X***	**X**	**X**	**X**	**X**
-	¾"	**ED**	**EC**		**2000**	**X**	**X**	**X**			**X**	**X**	**X**	**X**
¾"	¾"	**EF**	**EF**		**2000**	**X**	**X**	**X**	**X**		**X**	**X**	**X**	**X**
1"*	¾"	**EJ**	**EG**		**2000***	**X***	**X**	**X**	**X**		**X***	**X***		
1 ¼"*	¾"	**EK**	**EH**				**X***	**X***				**X***	**X***	
1 ½"*	¾"	**IP**	**IN**					**X***	**X***				**X***	
7/8"	-	**EZ**	-			**X**								
-	7/8"	**-**	**EZ**			**X**								
1"*	7/8"	**EM**	**EL**			**X***								
1"*	-	**AC**	**AD**		**X***	**2000**	**X**	**X**	**X**	**X***	**X***	**2500**	**X**	**X**
-	1"	**AD**	**AC**			**2000**	**X**	**X**	**X**			**2500**	**X**	**X**
1"	1"	**AF**	**AF**				**X**	**X**	**X**			**2500**	**X**	**X**
1 ¼"*	1"	**AJ**	**AG**				**X***	**X***	**X**			**2500***	**X***	**X***
1 ½"*	1"	**AK**	**AH**					**X***	**X***				**X***	**X***
1 ¼"*	-	**AA**	**AO**				**X***	**2000**				**X***	**X***	
-	1 ¼"	**AO**	**AA**					**2000**						
1 ¼"	1 ¼"	**AL**	**AL**					**2000**	**X**					**X**
1 ½"*	1 ¼"	**AP**	**AM**					**2000***	**X***					**X***
1 ½"*	-	**AE**	**AU**					**X***	**2000**					**X***
-	1 ½"	**AU**	**AE**						**2000**					

*** This porting is acceptable for low pressure inlet port only.**

NOTES
1. Shaded cells are acceptable for motor codes.
2. NPT ports are not recommended for use at pressures in excess of 1500 PSI.
3. "X" Means both codes are available.
4. "2000" or "2500" indicates maximum pressure rating on port.

Box 6 Gear Housing *continued*

				030 Series					031 Series				
Housing Code				07	10	12	15	17	20	10	12	15	17	20
Displacement (C.I.R.)				1.48	1.97	2.46	2.96	3.45	3.94	1.97	2.46	2.96	3.45	3.94
Maximum (PSI)				2500	2500	2500	2500	2250	2250	3000	3000	3000	2500	2500
IN	**OUT**	**CW**	**CCW**											
												Split Flange Porting		
¾"	-	**UC**	**UD**		**X**	**X**	**X**	**X**		**X**	**X**	**X**	**X**	
-	¾"	**UD**	**UC**		**X**	**X**	**X**	**X**		**X**	**X**	**X**	**X**	
¾"	¾"	**UF**	**UF**	**X**	**X**		**X**			**X**	**X**	**X**		
1"*	¾"	**UJ**	**UG**		**X**	**X**	**X**	**X**	**X**	**X***	**X**			
1 ¼"*	¾"	**UK**	**UH**			**X**	**X**	**X**	**X**		**X***	**X***		
1"*	-	**OC**	**OD**			**X**	**X**	**X**	**X**	**2500**	**X**	**X**		
-	1"	**OD**	**OC**			**X**	**X**	**X**	**X**	**2500**	**X**	**X**		
1"	1"	**OF**	**OF**		**X**	**X**	**X**	**X**	**X**	**2500**	**X**	**X**	**X**	**X**
1 ¼"*	1"	**OJ**	**OG**			**X***	**X**	**X**	**X**		**X***	**X***	**X**	**X**
1 ½"*	1"	**OK**	**OH**					**X***	**X**				**X***	**X***
1 ¼"*	-	**OA**	**OB**			**2000**	**X**	**X**	**X**		**X***	**2500**		
-	1 ¼"	**OB**	**OA**			**2000**	**X**	**X**	**X**			**2500**		
1 ¼"	1 ¼"	**OL**	**OL**				**X**	**X**	**X**				**X**	**X**
1 ½"*	1 ¼"	**OP**	**OM**					**X***	**X**				**X***	**X***
1 ½"*	-	**OE**	**OU**					**2000**	**X**				**X***	**X**
-	1 ½"	**OU**	**OE**					**2000**	**X**					**X**
												BSPP Porting		
¾"*	-	**YN**	**YQ**	**X***	**X**	**X**	**X**	**X**	**X**	**2500**	**X**	**X**		**X**
-	¾"	**YQ**	**YN**		**X**	**X**	**X**	**X**	**X**	**2500**	**X**	**X**		**X**
¾"	¾"	**YS**	**YS**		**X**	**X**		**X**	**X**	**2500**	**X**	**X**		**X**
1"*	¾"	**YV**	**YT**		**X***	**X***	**X**	**X**		**2500***	**X***	**X***	**X**	**X**
1 ¼"*	¾"	**YW**	**YU**					**X***	**X***			**X***	**X***	
1"*	-	**SL**	**RQ**			**2000**	**X**	**X**	**X**	**X**		**2500**	**X**	
-	1"	**RQ**	**SL**			**2000**	**X**	**X**	**X**			**2500**	**X**	
1"	1"	**MP**	**MP**			**2000**	**X**	**X**					**X**	**X**
1 ¼"*	1"	**IX**	**VY**				**X***	**X***	**X***			**2500***	**X***	
1 ¼"*	-	**NJ**	**UI**					**2000**	**X***					**X***
-	1 ¼"	**UI**	**NJ**					**2000**	**X***					
1 ¼"	1 ¼"	**PF**	**PF**						**2000**					
1 ½"*	1"	**VI**	**HW**										**X***	**X***
										Metric Straight Thread Porting				
¾"*	-	**EN**	**TQ**		**X**	**X**	**X**			**2500**	**X**			
-	¾"	**TQ**	**EN**		**X**	**X**	**X**			**2500**	**X**			
¾"	¾"	**ES**	**ES**		**X**	**X**				**2500**	**X**			
1"*	¾"	**EV**	**ET**		**X***	**X***	**X**	**X**			**X***	**X***		
1 ¼"*	¾"	**EW**	**EU**									**X***		
1"*	-	**NL**	**ER**		**X***		**X**	**X**	**X**			**2500**		
-	1"	**ER**	**NL**				**X**	**X**	**X**			**2500**		
1"	1"	**CM**	**CM**			**2000**	**X**					**2500**		
1 ¼"*	1"	**EX**	**VE**				**X***	**X***	**X***			**2500***		
1 ½"*	1"	**VA**	**HA**				**X***	**X***	**X***				**X***	**X***
1 ¼"	1 ¼"	**PA**	**PA**					**2000**	**X**					
1 ½"	1 ¼"	**SA**	**QA**						**X***					

* This porting is acceptable for low pressure inlet port only.

NOTES

1. Shaded cells are acceptable for motor codes.
2. "X" Means both codes are available.
3. "2000" or "2500" indicates maximum pressure rating on port.

030/031 Ordering Information

Box 6 Gear Housing *continued*

				030 Series					031 Series				
Housing Code				07	10	12	15	17	20	10	12	15	17	20
Displacement (C.I.R.)				1.48	1.97	2.46	2.96	3.45	3.94	1.97	2.46	2.96	3.45	3.94
Maximum (PSI)				2500	2500	2500	2500	2250	2250	3000	3000	3000	2500	2500
IN	**OUT**	**CW**	**CCW**											
										Metric Split Flange Porting				
¾"	-	**VN**	**VQ**		**X**	**X**	**X**	**X**	**X**	**X**	**X**			**X**
-	¾"	**VQ**	**VN**		**X**	**X**	**X**	**X**	**X**	**X**	**X**			**X**
¾"	¾"	**VS**	**VS**		**X**	**X**				**X**				
1"*	¾"	**RV**	**VT**		**X**	**X**	**X**	**X**		**X***	**X**			
1 ¼"*	¾"	**RW**	**RU**			**X***		**X**			**X***	**X***		
1"*	-	**UL**	**UR**		**X**	**X**	**X**	**X**	**X**	**2500**	**X**	**X**		
-	1"	**UR**	**UL**		**X**	**X**	**X**	**X**	**X**	**2500**	**X**	**X**		
1"	1"	**UM**	**UM**			**X**	**X**	**X**			**X**	**X**	**X**	**X**
1 ¼"*	1"	**UX**	**VU**			**X***	**X**	**X**	**X**		**X***	**X***	**X**	**X**
1 ½"*	1"	**VO**	**HO**					**X***	**X**				**X***	**X***
1 ¼"*	-	**NO**	**UO**				**X**		**X**		**X***	**2500**		
-	1 ¼"	**UO**	**NO**				**X**		**X**		**X***	**2500**		
1 ¼"	1 ¼"	**PO**	**PO**				**X**	**X**	**X**				**X**	**X**
1 ½"*	1 ¼"	**SO**	**QO**					**X***	**X**				**X***	**X***
1 ½"*	-	**UY**	**TO**				**X***	**2000**					**X***	**X**
-	1 ½"	**TO**	**UY**					**2000**						**X**

* This porting is acceptable for low pressure inlet port only.

NOTES
1. Shaded cells are acceptable for motor codes.
2. "X" Means both codes are available.
3. "2000" or "2500" indicates maximum pressure rating on port.

Box 7 Gear Width

030 Series

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
05	½"	0.99	16.1	2500 psi (172 bar)
07	¾"	1.48	24.2	2500 psi (172 bar)
10	1"	1.97	32.3	2500 psi (172 bar)
12	1 ¼"	2.46	40.4	2500 psi (172 bar)
15	1 ½"	2.96	48.4	2500 psi (172 bar)
17	1 ¾"	3.45	56.5	2250 psi (155 bar)
20	2"	3.94	64.6	2250 psi (155 bar)

031 Series

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
05	½"	0.99	16.1	3000 psi (207 bar)
07	¾"	1.48	24.2	3000 psi (207 bar)
10	1"	1.97	32.3	3000 psi (207 bar)
12	1 ¼"	2.46	40.4	3000 psi (207 bar)
15	1 ½"	2.96	48.4	3000 psi (207 bar)
17	1 ¾"	3.45	56.5	2500 psi (172 bar)
20	2"	3.94	64.6	2500 psi (172 bar)

030/031 Ordering Information

Box 8 Shaft Type *(type 1 unless noted)*

For single, tandem, or two-piece shaft unless noted.

07	SAE “C” 14 tooth spline 1.25” dia., ANSI 32-4 (two piece only)
12	Keyed shaft .75 dia., .19”X.19”X1.56” key (two piece only)
14	030-030, 031-031 piggyback shaft
22	050-030, 051-031 piggyback shaft
23	075-030, 076-031 piggyback shaft
25	SAE “B” 13 tooth spline .88” dia., ANSI 22-4
30	SAE “B” keyed .88” dia., ¼”X3/8” X 1” key, ANSI 22-1
32	Clutch pump shaft, tapered & keyed, 1:4 taper (single & two piece), #6 woodruff key
43	SAE “B-B” keyed 1.00” dia. ¼”X3/8”X1 ¼” key, ANSI 25-1 modified length
65	SAE “B” 13 tooth spline .875” dia., ANSI 22-4, **type 2** (single & tandem)
66	SAE “B” keyed .88” dia, ¼”X3/8”X1” key, **type 2** (single & tandem)
67	SAE “B-B” keyed 1.00” dia., ¼”X3/8”X1 ¼” key, ANSI 25-1 modified length, **type 2** (single & tandem)
68	6 tooth spline 1.00” dia.
90	SAE “B” keyed w/ 5/8”-18 thread, .875” dia, ANSI 22-2 modified length (single & tandem)
95	SAE “A” 9 tooth spline, .62” dia. ANSI 16-4 (single only)
98	SAE “B-B” 15 tooth spline, 1.00” dia., ANSI 25-4 (single & tandem)

Box 9 Bearing Carriers Pump Only

Orientation
Rear Section

Front Section

Common Inlet Passage

IN	OUT	CW	CCW
			
-	-	**C**	**D**
* -	-	**A**	**U**

** 031 Series only. Used when only one adjacent gear housing has an inlet port.*

NPT Porting (030 Series only)

			
1”	-	**TB**	**BT**
1 ¼”	-	**VB**	**BV**
			
1”	¾”	**TX**	**XT**
1 ¼”	¾”	**VX**	**XV**
1 ¼”	1”	**VZ**	**ZV**
			
1”	¾”	**TJ**	**JT**
1 ¼”	¾”	**VJ**	**JV**
1 ¼”	1”	**VK**	**KV**
1 ½”	1”	**KW**	**-**
			
1”	¾”	**ZX**	**XZ**
			
1”	¾”	**ZS**	**SZ**

ODT Porting  

1”	-	**CB**	**BC**
1 ¼”	-	**DB**	**BD**
1 ½”	-	**FB**	**BF**
			
* -	¾”	-	**JP**
1”	¾”	**CJ**	**JC**
1 ¼”	¾”	**DJ**	**JD**
1 ½”	¾”	**FJ**	**JF**
1 ¼”	1”	**DK**	**KD**
1 ½”	1”	**FK**	**KF**

** 030 Series only.*

			
1”	¾”	**CR**	**RC**
1 ¼”	¾”	**DR**	**RD**
* 1 ½”	¾”	**FR**	**RF**
1 ¼”	1”	**DS**	**SD**
1 ½”	1”	**FS**	**SF**

** 030 Series only.*

			
1”	¾”	**KJ**	**JK**
			
1”	¾”	**KX**	**XK**

Split Flange Porting

IN	OUT	CW	CCW
			
1”	-	**LB**	**BL**
1 ¼”	-	**MB**	**BM**
1 ½”	-	**NB**	**BN**
			
-	¾”	**BR**	**RB**
1”	¾”	**LR**	**RL**
1 ¼”	¾”	**MR**	**RM**
1 ½”	¾”	**NR**	**RN**
1 ¼”	1”	**MS**	**SM**
1 ½”	1”	**NS**	**SN**
			
1”	¾”	**LX**	**XL**
1 ¼”	¾”	**MX**	**XM**
* 1 ½”	¾”	**NX**	**XN**
1 ¼”	1”	**MZ**	**ZM**
1 ½”	1”	**NZ**	**ZN**

** 030 Series only.*

			
1”	¾”	**SR**	**RS**
			
1”	¾”	**RZ**	**ZR**

BSPP Porting

			
1”	-	**CX**	**XC**
1 ¼”	-	**DX**	**XD**
1 ½”	-	**FX**	**XF**
			
* -	¾”	-	**TL**
1”	¾”	**CT**	**TC**
1 ¼”	¾”	**DT**	**TD**
1 ½”	¾”	**FT**	**TF**
1 ¼”	1”	**DV**	**VD**
1 ½”	1”	**FV**	**VF**

** 031 Series only.*

1”	¾”	**GM**	**MG**
1 ¼”	¾”	**HM**	**MH**
1 ½”	¾”	**WM**	**MW**
1 ¼”	1”	**HN**	**NH**
1 ½”	1”	**WN**	**NW**
			
1”	¾”	**PN**	**NP**
1”	¾”	**SX**	**XS**

030/031 Ordering Information

Box 9 Bearing Carriers (Pump Only) - *continued*

Metric Split Flange Porting

IN	OUT	CW	CCW
1"	-	CH	HC
1 ¼"	-	DH	HD
1 ½"	-	FH	HF
-	¾"	PW	WP
1"	¾"	CW	WC
1 ¼"	¾"	DW	WD
1 ½"	¾"	FW	WF
1 ¼"	1"	DC	CD
1 ½"	1"	FC	CF
1"	¾"	GQ	QG
1 ¼"	¾"	HQ	QH
1 ½"	¾"	WQ	QW
1 ¼"	1"	HS	SH
1 ½"	1"	WS	SW
1"	¾"	ST	TS
1"	¾"	PX	XP

Metric Straight Thread Porting

IN	OUT	CW	CCW
1"	-	CL	LC
1 ¼"	-	DL	LD
1 ½"	-	FL	LF
1"	¾"	CZ	ZC
1 ¼"	¾"	DZ	ZD
1 ½"	¾"	FZ	ZF
1 ¼"	1"	DN	ND
1 ½"	1"	FN	NF
1"	¾"	GT	TG
1 ¼"	¾"	HT	TH
1 ¼"	1"	HV	VH
1 ½"	1"	WV	VW
1"	¾"	KL	LK
1"	¾"	PV	VP

Box 9 Bearing Carriers (Motor Only)

No Ports

IN	OUT	DUAL
-	-	B

NPT Porting (030 Series only)

1"	1"	TT
1 ¼"	1 ¼"	VV

ODT Porting

1"	1"	CC
1 ¼"	1 ¼"	BB
1 ½"	1 ½"	FF

Split Flange Porting

1"	1"	LL
1 ¼"	1 ¼"	MM
1 ½"	1 ½"	NN

BSPP Porting

1"	1"	EE
1 ¼"	1 ¼"	GG

Metric Split Flange Porting

IN	OUT	DUAL
1"	1"	RR
1 ¼"	1 ¼"	SS

Metric Straight Thread Porting

1"	1"	KK
1 ¼"	1 ¼"	JJ

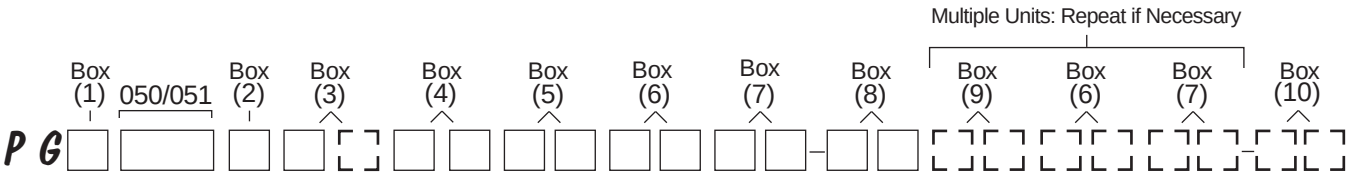
Box 10 Connecting Shaft

For connecting tandem units.

1	Connecting Shaft - Multiple Units
14	Piggyback Pump Connecting Shaft 030 to 030, 031 to 031
22	Piggyback Pump Connecting Shaft 050 to 030, 051 to 031
23	Piggyback Pump Connecting Shaft 075 to 030, 076 to 031

NOTE
Split flange thread depths may be more shallow than S.A.E. standard. Contact Product Support Department for actual dimensions.

050/051 Ordering Information



Box 1 Pump/Motor

P	Pump
M	Motor

Box 2 Unit

A	Single Unit
B	Tandem Unit
C	Single or Tandem w. two-piece shaft (O.B. bearing required)

Box 3 Shaft End Cover

1	Pump, cw w/o O.B. bearing
2	Pump, ccw w/o O.B. bearing
3	Pump, bi-rotational w/o O.B. bearing (050 series only)
4	Pump, cw with O.B. bearing
5	Pump, ccw with O.B. bearing
6	Pump, bi-rotational with O.B. bearing (050 series only)
8	Motor, bi-rot. with O.B. bearing + ¼" NPT drain
9	Motor, bi-rot. w/o O.B. bearing + ¼" NPT drain
18	Motor, bi-rot. with O.B. bearing + ¼" BSPP drain
19	Motor, bi-rot. w/o O.B. bearing + ¼" BSPP drain

Box 4 Shaft End Cover *(type 1 unless noted)*

00	4 bolt pad mount
42	SAE 4 bolt "B" ANSI 101-4: Pilot dia. 4"
78	SAE 4 bolt "C" ANSI 127-4: Pilot dia. 5"
91	050-050, 051-051 for piggyback: Pilot dia. 4"
92	075-050, 076-051 for piggyback: Pilot dia. 5"
96	SAE 2 bolt "B" ANSI 101-2, **type 2**: Pilot dia. 4"
97	SAE 2 bolt "B" ANSI 101-2: Pilot dia. 4"
98	SAE 2 bolt "C" ANSI 127-2: Pilot dia. 5"
99	SAE 2 bolt "C" ANSI 127-2, **type 2**: Pilot dia. 5"

Box 5 Port End Cover (Rear Ported)

Left	Right	Single	Tandem	Extended Studs
Unported				
-	-	**BE**	**BI**	**BY**
NPT Porting (050 series only)				
¾"	-	**KE**	**KI**	**KY**
-	¾"	**LE**	**LI**	**LY**
¾"	¾"	**ME**	**MI**	**MY**
O.D.T. Porting				
¾"	-	**CE**	**CI**	**CY**
-	¾"	**DE**	**DI**	**DY**
¾"	¾"	**FE**	**FI**	**FY**

Box 5 Port End Cover *continued*

Left	Right	Single	Tandem	Extended Studs
BSPP Porting				
¾"	-	**WE**	**WI**	**WY**
-	¾"	**XE**	**XI**	**XY**
¾"	¾"	**ZE**	**ZI**	**ZY**
Metric Straight Thread				
¾"	-	**NE**	**NI**	**NY**
-	¾"	**PE**	**PI**	**PY**
¾"	¾"	**QE**	**QI**	**QY**

Note

¾" PEC ports are rated to 2500 PSI max.

	CW	CCW	Double
Piggyback Port End - Pump Only			
Type 050-050, 051-051 & 050-030, 051-031	**KO**	**LO**	**MO**

Optional:

- Port end cover with integral R/V
- Larger rear ports
  1 ¼ x 1 S.F. or ODT
- Larger side ports
  1 ¼ S.F. or ODT inlet
  1" ODT outlet
- Larger rear ports, but requires special gear housing and cap screws
  1 ½ x 1 ½ NPT up to 1500 PSI

Contact Product Support Development for additional information.

FOR ALL UNITS

To determine direction of shaft rotation, view the unit with the shaft pointing toward you, and the idler (driven) gear beneath the shaft. With clockwise rotation, flow will be left to right. The inlet pump port will be on the left, outlet on the right. The flow is in the opposite direction with counter-clockwise rotation. Inverting the pump will reverse the inlet and outlet ports but not the direction of rotation.

050/051 Ordering Information

Box 6 Gear Housing

			050 Series								051 Series						
Housing Code			07	10	12	15	17	20	22	25	10	12	15	17	20	22	25
Displacement (C.I.R.)			1.91	2.55	3.19	3.83	4.46	5.10	5.74	6.38	2.55	3.19	3.83	4.46	5.10	5.74	6.38
Maximum (PSI)			2500	2500	2500	2500	2000	2000	2000	2000	3000	3000	3000	3000	2500	2500	2500
IN	**OUT**	**CW CCW**															
															No Porting		
-	-	**AB AB**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
															NPT Porting		
¾"	-	**IC ID**		**X**	**X**	**X**	**X**										
-	¾"	**ID IC**		**X**	**X**	**X**	**X**										
¾"	¾"	**IF IF**		**X**	**X**	**X**	**X**	**X**									
1"*	¾"	**IJ IG**		**X***	**X**	**X**	**X**	**X**									
1 ¼"	¾"	**IK IH**				**X**											
1"	-	**YC YD**			**X**	**X**	**X**	**X**	**X**								
-	1"	**YD YC**			**X**	**X**	**X**	**X**	**X**								
1"	1"	**YF YF**			**X**	**X**	**X**	**X**	**X**	**X**							
1 ¼"*	1"	**YJ YG**				**X***	**X**	**X**	**X**	**X**							
1 ¼"*	-	**IA IB**				**X***	**X***	**X**	**X**	**X**							
-	1 ¼"	**IB IA**						**X**	**X**	**X**							
1 ¼"	1 ¼"	**YL YL**					**X**	**X**	**X**	**X**							
1 ½"	1"	**YK YH**								**X**							
1 ½"*	1 ¼"	**YP YM**						**X***	**X**	**X**							
1 ½"*	1 ½"	**YR YR**								**X**							
															OD Tube Porting		
¾"*	-	**EC ED**		**2000**	**2000**	**X**	**X**	**X**			**X***	**X***		**X**			
-	¾"	**ED EC**		**2000**	**2000**	**X**	**X**	**X**						**X**			
¾"	¾"	**EF EF**		**2000**	**2000**	**X**	**X**	**X**					**2500**	**X**			
1"*	¾"	**EJ EG**		**2000***	**2000***	**X***	**X***	**X**						**X***			
1 ¼"*	¾"	**EK EH**				**X***	**X***						**2500***	**X**			
1"*	-	**AC AD**		**X***	**X***	**2000**	**X**	**X**	**X**	**X**	**X***	**X***	**X***	**X***	**X**		
-	1"	**AD AC**				**2000**	**X**	**X**	**X**	**X**					**X**		
1"	1"	**AF AF**				**2000**	**X**	**X**		**X**					**X**	**X**	**X**
1 ¼"*	1"	**AJ AG**				**2000***	**X***	**X***	**X**	**X**					**X***		
1 ½"*	1"	**AK AH**					**X***	**X***	**X***						**X***		**X**
1 ¼"*	-	**AA AO**				**X***	**X***	**X***	**X**	**X**			**X***	**X***		**X**	**X**
-	1 ¼"	**AO AA**							**X**	**X**						**X**	**X**
1 ¼"	1 ¼"	**AL AL**						**X**	**X**	**X**						**X**	**X**
1 ½"*	1 ¼"	**AP AM**						**X***	**X***	**X**						**X**	**X**
1 ½"*	-	**AE AU**						**X***	**X***						**X***	**X**	**X**
-	1 ½"	**AU AE**						**X***	**X**								**X**
1 ½"	1 ½"	**AR AR**								**X**							**X**

*** This porting is acceptable for low pressure inlet port only.**

NOTES
1. NPT ports are not recommended for use at pressures in excess of 1500 PSI.
2. Shaded cells are acceptable for motor codes.
3. "X" Means both codes are available.
4. "2000" or "2500" indicates maximum pressure rating on port.

Box 6 Gear Housing *continued*

				050 Series							051 Series						
Housing Code				10	12	15	17	20	22	25	10	12	15	17	20	22	25
Displacement (C.I.R.)				2.55	3.19	3.83	4.46	5.10	5.74	6.38	2.55	3.19	3.83	4.46	5.10	5.74	6.38
Maximum (PSI)				2500	2500	2500	2000	2000	2000	2000	3000	3000	3000	3000	2500	2500	2500
IN	**OUT**	**CW**	**CCW**												***Split Flange Porting***		
¾"	-	**UC**	**UD**	**X**	**X**	**X**	**X**				**2500**	**X**					
-	¾"	**UD**	**UC**	**X**	**X**	**X**	**X**				**2500**	**X**					
¾"	¾"	**UF**	**UF**					**X**		**X**	**2500**	**X**	**X**				
1"*	¾"	**UJ**	**UG**	**X***	**X***	**X**	**X**	**X**			**2500***	**X***	**X***				
1 ¼"*	¾"	**UK**	**UH**									**X***	**X***	**X***			
1"*	-	**OC**	**OD**	**2000**	**X***	**X**	**X**	**X**	**X**	**X**		**X***	**2500**	**X**	**X**		
-	1"	**OD**	**OC**	**2000**	**2000**	**X**	**X**	**X**	**X**	**X**			**2500**	**X**	**X**		
1"	1"	**OF**	**OF**		**2000**	**X**	**X**	**X**	**X**	**X**			**2500**	**X**	**X**	**X**	**X**
1 ¼"*	1"	**OJ**	**OG**		**2000***	**X***	**X***	**X**	**X**	**X**			**2500***	**X***	**X***		
1 ½"*	1"	**OK**	**OH**			**X***	**X***	**X***	**X**	**X**			**2500***	**X***	**X***	**X**	**X**
1 ¼"*	-	**OA**	**OB**		**X***	**X***	**X***	**X**	**X**	**X**		**X***	**X***				
-	1 ¼"	**OA**	**OB**					**X**	**X**	**X**							
1 ¼"	1 ¼"	**OL**	**OL**			**2000**	**X**	**X**	**X**	**X**					**X**	**X**	**X**
1 ½"*	1 ¼"	**OP**	**OM**			**2000***	**X***	**X***	**X**	**X**					**X***	**X**	**X**
1 ½"*	-	**OE**	**OU**			**X***	**X***	**X**		**X**			**X***	**X***	**X***		
-	1 ½"	**OU**	**OE**					**X**		**X**							
1 ½"	1 ½"	**OR**	**OR**					**X**	**X**	**X**						**X**	**X**
2"*	-	**XB**	**ZB**												**X***		
2"*	1"	**UQ**	**UB**					**X***	**X***	**X***							
2"*	1 ¼"	**OQ**	**ON**					**X***	**X***	**X***					**X***	**X***	**X***
2"*	1 ½"	**OV**	**OS**					**X***	**X***	**X***						**X***	**X***
2"	2"	**OX**	**OX**							**X***							
															BSPP Porting		
¾"*	-	**YN**	**YQ**	**X***	**X**	**X**	**X**				**X***	**2500**	**2500**	**X**	**X**		
-	¾"	**YQ**	**YN**		**X**	**X**	**X**					**2500**	**2500**	**X**	**X**		
¾"	¾"	**YS**	**YS**	**2000**	**X**	**X**				**X**		**2500**	**2500**		**X**		
1"*	¾"	**YV**	**YT**	**2000***	**X***	**X***	**X***	**X**				**2500***	**2500***	**X***	**X***		
1 ¼"*	¾"	**YW**	**YU**			**X***											
1"*	-	**SL**	**RQ**		**X***	**X***	**X***	**X**	**X**	**X**	**X***	**X***	**X***	**X***	**X***	**X**	**X**
-	1"	**RQ**	**SL**					**X**	**X**	**X**					**2500**	**X**	**X**
1"	1"	**MP**	**MP**			**2000**	**X**	**X**		**X**					**2500**		**X**
1 ¼"*	1"	**IX**	**VY**			**2000***	**X***	**X***	**X**	**X**					**2500***	**X**	**X**
1 ½"*	1"	**VI**	**HW**							**X**					**X***		**X***
1 ¼"*	-	**NJ**	**UI**				**X***		**X**	**X**						**X**	**X**
-	1 ¼"	**UI**	**NJ**						**X**	**X**						**X**	**X**
1 ¼"	1 ¼"	**PF**	**PF**						**X**	**X**						**X**	**X**
1 ½"*	1 ¼"	**IS**	**IQ**							**X**							**X***
														Metric Straight Thread			
¾"*	-	**EN**	**TQ**	**X***	**X**	**X**	**X**				**X***	**X***	**X***	**X**			
-	¾"	**TQ**	**EN**		**X**	**X**	**X**					**2500**	**2500**	**X**			
¾"	¾"	**ES**	**ES**	**2000**	**X**							**2500**					
1"*	¾"	**EV**	**ET**	**2000***	**X***	**X***	**X**	**X**				**2500***	**2500***	**X***	**X***		
1"*	-	**NL**	**ER**			**X***	**X**	**X**	**X**				**X***	**X***	**X***	**X**	
-	1"	**ER**	**NL**				**X**	**X**	**X**								
1"	1"	**CM**	**CM**			**2000**	**X**	**X**						**2500**			
1 ¼"*	-		**UA**					**X***	**X**	**X**					**X***	**X**	**X**
1 ¼"*	1"	**EX**	**VE**			**2000***	**X***	**X***	**X**	**X**				**2500***	**X***	**X**	**X**
1 ¼"	1 ¼"	**PA**	**PA**					**X***	**X**	**X**						**X**	**X**
1 ½"*	1 ¼"	**SA**	**QA**					**X***	**X***	**X**						**X***	**X***

*** This porting is acceptable for low pressure inlet port only.**

NOTES

1. Shaded cells are acceptable for motor codes.
2. "X" Means both codes are available.
3. "2000" or "2500" indicates maximum pressure rating on port.

050/051 Ordering Information

Box 6 Gear Housing *continued*

				050 Series							051 Series						
Housing Code				10	12	15	17	20	22	25	10	12	15	17	20	22	25
Displacement (C.I.R.)				2.55	3.19	3.83	4.46	5.10	5.74	6.38	2.55	3.19	3.83	4.46	5.10	5.74	6.38
Maximum (PSI)				2500	2500	2500	2000	2000	2000	2000	3000	3000	3000	3000	2500	2500	2500
IN	**OUT**	**CW**	**CCW**												***Metric Split Flange Porting***		
¾"*	-	**VN**	**VQ**	**X**	**X**	**X**	**X**				**X***						
-	¾"	**VQ**	**VN**	**X**	**X**	**X**	**X**										
1"*	¾"	**RV**	**VT**	**X***	**X***	**X**	**X**	**X**			**2500***	**X***					
1 ¼"*	¾"	**RW**	**RU**									**X***	**X***				
1"*	-	**UL**	**UR**		**X***	**X**	**X**	**X**	**X**			**X***	**X***	**X**	**X**		
-	1"	**UR**	**UL**			**X**	**X**	**X**	**X**					**X**	**X**		
1"	1"	**UM**	**UM**		**2000**	**X**	**X**	**X**	**X**				**2500**	**X**	**X**	**X**	
1 ¼"*	1"	**UX**	**VU**		**2000***	**X***	**X***	**X**	**X**	**X**			**2500***	**X***	**X***		
1 ½"*	1"	**VO**	**HO**			**X***	**X***	**X***					**2500***	**X***	**X***	**X**	
1 ¼"*	-	**NO**	**UO**				**X***	**X**	**X**	**X**		**X***	**X***				
-	1 ¼"	**UO**	**NO**					**X**	**X**	**X**							
1 ¼"	1 ¼"	**PO**	**PO**			**2000**	**X**	**X**	**X**	**X**					**X**	**X**	**X**
1 ½"*	1 ¼"	**SO**	**QO**			**2000***	**X***	**X***	**X**	**X**					**X***	**X**	**X**
1 ½"*	-	**UY**	**TO**			**X***	**X***		**X**					**X***	**X***		
-	1 ½"	**TO**	**UY**						**X**								
1 ½"	1 ½"	**SV**	**SV**					**X**	**X**	**X**						**X**	**X**
2"*	1 ¼"	**JM**	**JR**					**X***	**X***	**X***					**X***	**X***	**X***
2"*	1 ½"	**JQ**	**JN**					**X***	**X***	**X***						**X***	**X***

*** This porting is acceptable for low pressure inlet port only.**

NOTES
1. Shaded cells are acceptable for motor codes.
2. "X" Means both codes are available.
3. "2000" or "2500" indicates maximum pressure rating on port.

Box 7 Gear Width

050 Series

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
05	½"	1.28	20.9	2500 psi (172 bar)
07	¾"	1.91	31.3	2500 psi (172 bar)
10	1"	2.55	41.8	2500 psi (172 bar)
12	1 ¼"	3.19	52.2	2500 psi (172 bar)
15	1 ½"	3.83	62.7	2500 psi (172 bar)
17	1 ¾"	4.46	73.1	2000 psi (138 bar)
20	2"	5.10	83.6	2000 psi (138 bar)
22	2 ¼"	5.74	94.0	2000 psi (138 bar)
25	2 ½"	6.38	104.5	2000 psi (138 bar)

051 Series

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
05	½"	1.28	20.9	3000 psi (207 bar)
07	¾"	1.91	31.3	3000 psi (207 bar)
10	1"	2.55	41.8	3000 psi (207 bar)
12	1 ¼"	3.19	52.2	3000 psi (207 bar)
15	1 ½"	3.83	62.7	3000 psi (207 bar)
17	1 ¾"	4.46	73.1	3000 psi (207 bar)
20	2"	5.10	83.6	2500 psi (172 bar)
22	2 ¼"	5.74	94.0	2500 psi (172 bar)
25	2 ½"	6.38	104.5	2500 psi (172 bar)

Box 8 Shaft Type *(type 1 unless noted)*

For single, tandem, or two-piece shaft unless noted.

07	SAE "C" 14 tooth spline 1.25" dia., ANSI 32-4
11	SAE "C" keyed 1.25" dia., 5/16"X15/32"X1 ½" key, ANSI 32-1
22	050-050, 051-051 piggyback shaft
23	075-050, 076-051 piggyback shaft
25	SAE "B" 13 tooth spline .88" dia., ANSI 22-4
43	SAE "B-B" keyed 1.00" dia. ¼"X3/8"X1 ¼" key, ANSI 25-1
53	SAE "C" 14 tooth spline 1.25" dia., ANSI-32-4, **type 2** (single & tandem)
65	SAE "B" 13 tooth spline .88" dia., ANSI 22-4, **type 2** (single & tandem)
67	SAE "B-B" keyed 1.00 dia., ¼"X3/8"X1 ¼" key, ANSI 25-1, **type 2** (single & tandem)
73	SAE "C" keyed 1.25" dia., 5/16" x 15/32" x 2 ¼" key, extended length (two-piece only)
98	SAE "B-B" 15 tooth spline, 1.00" dia., ANSI 25-4 (single & tandem)

050/051 Ordering Information

Box 9 Bearing Carriers Pump Only

Common Inlet Passage

IN	OUT	CW	CCW
		C	D
-	-	A	U
* -	-		

** 051 Series only. Used when only one adjacent gear housing has an inlet port.*

NPT Porting (050 Series only)

1”	-	TB	BT
1 ¼”	-	VB	BV
1 ½”	-	WB	BW
1”	¾”	TX	XT
1 ¼”	¾”	VX	XV
1 ½”	¾”	WX	XW
1 ¼”	1”	VZ	ZV
1 ½”	1”	WZ	ZW
1”	¾”	TJ	JT
1 ¼”	¾”	VJ	JV
1 ¼”	1”	VK	KV
1 ½”	1”	WK	KW
1”	¾”	ZX	XZ

ODT Porting

1”	-	CB	BC
1 ¼”	-	DB	BD
1 ½”	-	FB	BF
-	¾”	PJ	*JP
1”	¾”	CJ	JC
1 ¼”	¾”	DJ	JD
1 ½”	¾”	FJ	JF
1 ¼”	1”	DK	KD
1 ½”	1”	FK	KF

* 051 Series only.

1”	¾”	CR	RC
1 ¼”	¾”	DR	RD
* 1 ½”	¾”	FR	RF
1 ¼”	1”	DS	SD
1 ½”	1”	FS	SF
-	1”	HZ	*ZH

* 051 Series only.

1”	¾”	KJ	JK

Split Flange Porting

IN	OUT	CW	CCW
1”	-	LB	BL
1 ¼”	-	MB	BM
1 ½”	-	NB	BN
-	¾”	BR	RB
1”	¾”	LR	RL
1 ¼”	¾”	MR	RM
1 ½”	¾”	NR	RN
1 ¼”	1”	MS	SM
1 ½”	1”	NS	SN
1”	¾”	LX	XL
1 ¼”	¾”	MX	XM
1 ¼”	1”	MZ	ZM
1 ½”	1”	NZ	ZN
1”	¾”	SR	RS

BSPP Porting

1”	-	CX	XC	
1 ¼”	-	DX	XD	
1 ½”	-	FX	XF	
*	-	¾”	-	TL
1”	¾”	CT	TC	
1 ¼”	¾”	DT	TD	
1 ½”	¾”	FT	TF	
1 ¼”	1”	DV	VD	
1 ½”	1”	FV	VF	

* 050 Series only.

1”	¾”	GM	MG
1 ¼”	¾”	HM	MH
1 ½”	¾”	WM	MW
1 ¼”	1”	HN	NH
1 ½”	1”	WN	NW
1”	¾”	PN	NP

NOTE
Split flange thread depths may be more shallow than S.A.E. standard. Contact Product Support Department for actual dimensions.

Bearing Carriers (9) Pump Only - *continued*

Metric Split Flange Porting

IN	OUT	CW	CCW
1”	-	CH	HC
1 ¼”	-	DH	HD
1 ½”	-	FH	HF
-	¾”	PW	WP
1”	¾”	CW	WC
1 ¼”	¾”	DW	WD
1 ½”	¾”	FW	WF
1 ¼”	1”	DC	CD
1 ½”	1”	FC	CF
1”	¾”	GQ	QG
1 ¼”	¾”	HQ	QH
1 ½”	¾”	WQ	QW
1 ¼”	1”	HS	SH
1 ½”	1”	WS	SW
1”	¾”	ST	TS

Metric Straight Thread Porting

IN	OUT	CW	CCW
1”	-	CL	LC
1 ¼”	-	DL	LD
1 ½”	-	FL	LF
1”	¾”	CZ	ZC
1 ¼”	¾”	DZ	ZD
1 ½”	¾”	FZ	ZF
1 ¼”	1”	DN	ND
1 ½”	1”	FN	NF
1”	¾”	GT	TG
1 ¼”	¾”	HT	TH
1 ½”	¾”	WT	TW
1 ¼”	1”	HV	VH
1 ½”	1”	WV	VW
1”	¾”	KL	LK

Box 9 Bearing Carriers (Motor Only)

No Ports

IN	OUT	DUAL
		B
-	-	

NPT Porting (030 Series only)

1”	1”	TT
1 ¼”	1 ¼”	VV
1 ½”	1 ½”	WW

ODT Porting

1”	1”	CC
1 ¼”	1 ¼”	BB
1 ½”	1 ½”	FF

Split Flange Porting

1”	1”	LL
1 ¼”	1 ¼”	MM
1 ½”	1 ½”	NN

BSPP Porting

IN	OUT	DUAL
1”	1”	EE
1 ¼”	1 ¼”	GG

Metric Split Flange Porting

1”	1”	RR
1 ¼”	1 ¼”	SS

Metric Straight Thread Porting

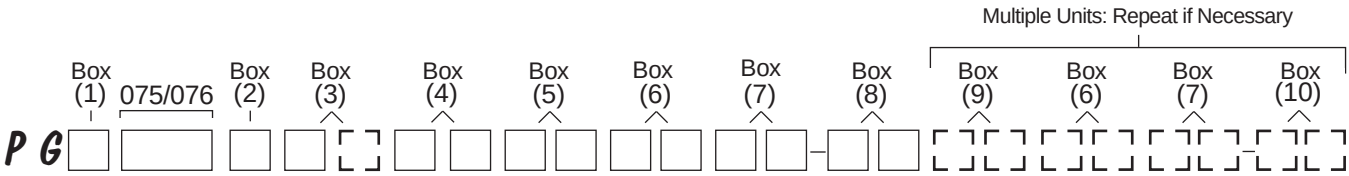
1”	1”	KK
1 ¼”	1 ¼”	JJ

Box 10 Connecting Shaft

For connecting tandem units.

1	Connecting Shaft - Multiple Units
22	Piggyback Pump Connecting Shaft for 050 to 050, 051 to 051
23	Piggyback Pump Connecting Shaft for 075 to 050, 076 to 051

075/076 Ordering Information



Box 1 Pump/Motor

P	Pump
M	Motor

Box 2 Unit

A	Single Unit
B	Tandem Unit
C	Single or Tandem w/ two-piece shaft (O.B. bearing required)

Box 3 Shaft End Cover

1	Pump, cw w/o O.B. bearing
2	Pump, ccw w/o O.B. bearing
3	Pump, bi-rotational w/o O.B. bearing (075 series only)
4	Pump, cw with O.B. bearing
5	Pump, ccw with O.B. bearing
6	Pump, bi-rotational w/ O.B. bearing (075 series only)
8	Motor, bi-rot. with O.B. bearing + ¼" NPT drain
9	Motor, bi-rot. w/o O.B. bearing + ¼" NPT drain
18	Motor, bi-rot. with O.B. bearing + ¼" BSPP drain
19	Motor, bi-rot. w/o O.B. bearing + ¼" BSPP drain

Box 4 Shaft End Cover *(type 1 only)*

42	SAE 4 bolt "B" ANSI 101-4: Port dia. 4"
78	SAE 4 bolt "C" ANSI 127-4: Port dia. 5"
80	SAE 4 bolt "D" ANSI 152-4: Port dia. 6"
98	SAE 2 bolt "C" ANSI 127-2: Port dia. 5"

(Rear Ported)

Unported					
-	-	**BE**	**BI**		**BY**
O.D.T. Porting					
1"	1"	**JE**	**JI**		**JY**
Metric Straight Thread					
1"	1"	**TE**	**TI**		**TY**

	CW	**CCW**	**Double**
Piggyback Port End - Pump Only			
Type 075-050, 076-051 & 075-030, 076-031	**KO**	**LO**	**MO**

For All Units

To determine direction of shaft rotation, view the unit with the shaft pointing toward you, and the idler (driven) gear beneath the shaft. With clockwise rotation, flow will be left to right. The inlet pump port will be on the left, outlet on the right. The flow is in the opposite direction with counter-clockwise rotation. Inverting the pump will reverse the inlet and outlet ports but not the direction of rotation.

075/076 Ordering Information

Gear Housing (6)

				075 Series								075/076 Series		076 Series					
Housing Code				07	10	12	15	17	20	22	25	27	30	10	12	15	17	20	22	25
Displacement (C.I.R.)				3.07	4.1	5.12	6.15	7.17	8.2	9.22	10.25	11.275	12.3	4.1	5.12	6.15	7.17	8.2	9.22	10.25
Maximum (PSI)				2500	2500	2500	2500	2500	2500	2250	2250	2000	2000	3000	3000	3000	3000	2500	2500	2500
IN	**OUT**	**CW**	**CCW**																***No Porting***	
-	-	**AB**	**AB**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	
																			NPT Porting	
¾"	-	**IC**	**ID**	**X**	**X**	**X**	**X**													
-	¾"	**ID**	**IC**	**X**	**X**	**X**	**X**													
1"	¾"	**IJ**	**IG**		**X**	**X**	**X**													
1"	-	**YC**	**YD**			**X**	**X**		**X**											
-	1"	**YD**	**YC**			**X**	**X**		**X**											
1"	1"	**YF**	**YF**		**X**	**X**														
1 ¼"	1"	**YJ**	**YG**			**X**	**X**													
1 ¼"	1 ¼"	**YL**	**YL**			**X**	**X**	**X**												
																			OD Tube Porting	
¾"	-	**EC**	**ED**	**X**	**X**	**X**	**X**													
1"*	¾"	**EJ**	**EG**	**X***		**X**	**X**							**2500***						
1 ¼"*	¾"	**EK**	**EH**		**X***										**X***					
1"*	-	**AC**	**AD**			**X**	**X**								**2500**	**X**				
-	1"	**AD**	**AC**			**X**	**X**								**2500**	**X**				
1"	1"	**AF**	**AF**		**2000**	**X**	**X**	**X**	**X**						**2500**	**X**				
1 ¼"*	1"	**AJ**	**AG**		**2000***	**X***									**2500***	**X***				
1 ½"*	1"	**AK**	**AH**				**X***									**X***				
1 ¼"	1 ¼"	**AL**	**AL**				**2000**	**2000**	**2000**	**X**	**X**		**X/-**							
1 ½"*	1 ¼"	**AP**	**AM**				**2000***	**2000***												
1 ½"	1 ½"	**AR**	**AR**							**X**	**X**									
																			Split Flange Porting	
¾"	-	**UC**	**UD**	**X**	**X**	**X**	**X**													
-	¾"	**UD**	**UC**	**X**	**X**	**X**	**X**													
1"	¾"	**UJ**	**UG**	**X**	**X**	**X**	**X**	**X**	**X**					**X**						
1"	-	**OC**	**OD**		**X**	**X**	**X**	**X**	**X**											
-	1"	**OD**	**OC**		**X**	**X**	**X**	**X**	**X**											
1"	1"	**OF**	**OF**		**X**	**X**	**X**	**X**	**X**		**X**	**X/-**	**X/-**	**X**	**X**	**X**	**X**	**X**		
1 ¼"*	1"	**OJ**	**OG**		**2000***	**X**	**X**	**X**	**X**	**X**	**X**		**-/X**	**X***	**X***					
1 ½"*	1"	**OK**	**OH**			**X***	**X***	**X***	**X**	**X**					**X***	**X***	**X***			
1 ¼"	-	**OA**	**OB**			**X**	**X**	**X**	**X**	**X**	**X**									
-	1 ¼"	**OB**	**OA**			**X**	**X**	**X**	**X**	**X**	**X**									
1 ¼"	1 ¼"	**OL**	**OL**		**2000**	**X**	**X**	**X**	**X**	**X**	**X**	**X/X**	**X/X**		**2500**	**X**	**X**	**X**	**X**	
1 ½"*	1 ¼"	**OP**	**OM**			**X***	**X***	**X***	**X**	**X**	**X**	**X**	**X**		**2500***	**X***	**X***	**X**		
1 ½"	-	**OE**	**OU**						**X**	**X**	**X**	**X**	**X**					**X**		
-	1 ½"	**OU**	**OE**						**X**	**X**	**X**	**X**	**X**					**X**		
1 ½"	1 ½"	**OR**	**OR**				**2000**	**2000**	**X**	**X**	**X**	**X/X**	**X**					**X**	**X**	
2"*	1"	**UQ**	**-**						**X***											
2"*	1 ¼"	**OQ**	**ON**					**X***	**X***	**X***	**X***	**X/X**	**X/X**				**X***	**X***	**X***	
2"*	1 ½"	**OV**	**OS**					**2000***	**X***	**X***	**X***	**X/X**	**X/X**					**X***	**X***	
2"	2"	**OX**	**OX**								**X**	**X/X**	**X/X**							
2 ½"*	1 ¼"	**US**	**UN**								**X***									
2 ½"*	1 ½"	**OW**	**OT**								**X***	**X*/X***	**X*/X***						**X***	
2 ½"*	2"	**OZ**	**OY**										**X*/-**							

*** This porting is acceptable for low pressure inlet port only.**

NOTES
1. NPT ports are not recommended for use at pressures in excess of 1500 PSI.
2. Shaded cells are acceptable for motor codes.
3. "X" Means both codes are available.
4. "2000" or "2500" indicates maximum pressure rating on port.

075/076 Ordering Information

Gear Housing (6) *continued*

				075 Series								075/076 Series		076 Series					
Housing Code				07	10	12	15	17	20	22	25	27	30	10	12	15	17	20	22	25
Displacement (C.I.R.)				3.07	4.1	5.12	6.15	7.17	8.2	9.22	10.25	11.275	12.3	4.1	5.12	6.15	7.17	8.2	9.22	10.25
Maximum (PSI)				2500	2500	2500	2500	2500	2500	2250	2250	2000	2000	3000	3000	3000	3000	2500	2500	2500
IN	**OUT**	**CW**	**CCW**																	***BSPP Porting***
¾"	-	**YN**	**YQ**	**X**	**X**	**X**	**X**		**X**					**X**	**X**	**X**				
-	¾"	**YQ**	**YN**	**X**	**X**	**X**	**X**		**X**					**X**	**X**	**X**				
¾"	¾"	**YS**	**YS**											**X**						
1"*	¾"	**YV**	**YT**	**X***	**X***	**X**	**X**		**X**					**X***	**X***	**X**		**X**		
1"*	-	**SL**	**RQ**			**X**	**X**	**X**	**X**		**X**			**X***	**X***	**X**			**X**	
-	1"	**RQ**	**SL**			**X**	**X**	**X**	**X**		**X**					**X**			**X**	
1"	1"	**MP**	**MP**		**2000**	**X**	**X**								**2500**	**X**	**X**			
1 ¼"*	1"	**IX**	**VY**		**2000***	**X***	**X***		**X**	**X**			**X/-**		**2500***	**X***		**X***		
1 ¼"*	-	**NJ**	**UI**			**X***													**X**	
-	1 ¼"	**UI**	**NJ**																**X**	
1 ¼"	1 ¼"	**PF**	**PF**				**2000**	**2000**	**X**		**X**		**-/X**					**X**	**X**	
1 ½"*	1"	**VI**	**HW**				**X***	**X***	**X***							**X***				
1 ½"*	1 ¼"	**IS**	**IQ**				**2000***	**2000***	**X***									**X***		
																				Metric Straight Thread
¾"	-	**EN**	**TQ**	**X**	**X**	**X**	**X**							**X**	**X**	**X**				
-	¾"	**TQ**	**EN**	**X**	**X**	**X**	**X**							**X**	**X**	**X**				
1"*	¾"	**EV**	**ET**	**X***		**X**	**X**								**X***	**X**				
1"*	-	**NL**	**ER**												**X***	**X**				
-	1"	**ER**	**NL**			**X**	**X**								**2500**	**X**				
1"	1"	**CM**	**CM**		**2000**	**X**	**X**								**2500**	**X**				
																				Metric Split Flange Porting
¾"	-	**VN**	**VQ**	**X**	**X**	**X**	**X**													
-	¾"	**VQ**	**VN**	**X**	**X**	**X**	**X**													
1"	¾"	**RV**	**VT**	**X**	**X**	**X**	**X**	**X**	**X**					**X**						
1"	-	**UL**	**UR**		**X**	**X**	**X**	**X**	**X**											
-	1"	**UR**	**UL**		**X**	**X**	**X**	**X**	**X**											
1"	1"	**UM**	**UM**		**X**	**X**	**X**	**X**	**X**					**X**	**X**	**X**	**X**			
1 ¼"*	1"	**UX**	**VU**		**X***	**X**	**X**	**X**	**X**	**X**	**X**			**X***	**X***					
1 ½"*	1"	**VO**	**HO**			**X***	**X***								**X***	**X***				
1 ¼"	-	**NO**	**UO**			**X**	**X**	**X**	**X**	**X**	**X**									
-	1 ¼"	**UO**	**NO**			**X**	**X**	**X**	**X**	**X**	**X**									
1 ¼"	1 ¼"	**PO**	**PO**			**X**	**X**	**X**	**X**	**X**	**X**	**X/X**	**X/X**		**2500**	**X**	**X**	**X**	**X**	
1 ½"*	1 ¼"	**SO**	**QO**				**X***	**X***	**X**	**X**	**X**	**X**	**X**		**2500***	**X***	**X***			
1 ½"*	-	**UY**	**TO**						**X**	**X**	**X**	**X**	**X**				**X***	**X**		
-	1 ½"	**TO**	**UY**						**X**	**X**	**X**	**X**	**X**					**X**		
1 ½"	1 ½"	**SV**	**SV**					**2000**	**X**	**X**	**X**	**X/X***	**X/X***					**X**	**X**	
2"*	1 ¼"	**JM**	**JR**					**X***	**X***	**X***	**X***	**-/X***	**-/X***				**X***	**X***	**X***	
2"*	1 ½"	**JQ**	**JN**					**2000***	**X***	**X***	**X***	**X/X**	**X/X**					**X***	**X***	
2"	2"	**JS**	**JS**									**-/X**	**X/X**							
2 ½"*	1 ½"	**LJ**	**JX**									**X*/X***	**X*/X***						**X***	

*** This porting is acceptable for low pressure inlet port only.**

NOTES
1. Shaded cells are acceptable for motor codes.
2. "X" Means both codes are available.
3. "2000" or "2500" indicates maximum pressure rating on port.

075/076 Ordering Information

Box 7 Gear Width

075 Series

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
07	¾"	3.08	50.4	2500 psi (172 bar)
10	1"	4.10	67.2	2500 psi (172 bar)
12	1 ¼"	5.13	84.0	2500 psi (172 bar)
15	1 ½"	6.15	100.8	2500 psi (172 bar)
17	1 ¾"	7.18	117.6	2500 psi (172 bar)
20	2"	8.20	134.4	2500 psi (172 bar)
22	2 ¼"	9.23	151.2	2250 psi (155 bar)
25	2 ½"	10.25	168.0	2250 psi (155 bar)
27	2 ¾"	11.28	184.8	2000 psi (138 bar)
30	3"	12.30	201.6	2000 psi (138 bar)

076 Series

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
07	¾"	3.08	50.4	3000 psi (207 bar)
10	1"	4.10	67.2	3000 psi (207 bar)
12	1 ¼"	5.13	84.0	3000 psi (207 bar)
15	1 ½"	6.15	100.8	3000 psi (207 bar)
17	1 ¾"	7.18	117.6	3000 psi (207 bar)
20	2"	8.20	134.4	2500 psi (172 bar)
22	2 ¼"	9.23	151.2	2500 psi (172 bar)
25	2 ½"	10.25	168.0	2500 psi (172 bar)
27	2 ¾"	11.28	184.8	2000 psi (138 bar)
30	3"	12.30	201.6	2000 psi (138 bar)

Box 8 Shaft Type

For single, tandem, or two-piece shaft unless noted.

07	SAE "C" 14 tooth spline 1.25" dia., ANSI 32-4
11	SAE "C" keyed 1.25" dia., 5/16"X15/32"X1 ½" key, ANSI 32-1

Box 9 Bearing Carriers (Pump Only)

Common Inlet Passage

	-	-	**C**	**D**
*	-	-	**A**	**U**

* 076 Series only. Used when only one adjacent gear housing has an inlet port.

Box 9 Bearing Carriers (Motor Only)

No Ports

IN	OUT	DUAL
-	-	**B**

ODT Porting

1"	1"	**CC**
1 ¼"	1 ¼"	**BB**

Split Flange Porting

*	1"	1"	**LL**
	1 ¼"	1 ¼"	**MM**
	1 ½"	1 ½"	**NN**

* 076 Series only.

BSPP Porting

1"	1"	**EE**
1 ¼"	1 ¼"	**GG**
1 ½"	1 ½"	**HH**

Metric Split Flange Porting

IN	OUT	DUAL
1"	1"	**RR**
1 ¼"	1 ¼"	**SS**
1 ½"	1 ½"	**XX**

Metric Straight Thread Porting

1"	1"	**KK**
1 ¼"	1 ¼"	**JJ**
1 ½"	1 ½"	**ZZ**

Box 10 Connecting Shaft

For connecting tandem units.

1	Connecting Shaft - Multiple Units
23	Piggyback Pump Connecting Shaft for 075 to 075

NOTE
Split flange thread depths may be more shallow than S.A.E. standard. Contact Product Support Department for actual dimensions.

Notes

Average Output Flow - Pumps

Performance Data

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 the oil reservoir temperature at 120°F and viscosity 150 SSU at 100°F. Requests for more specific data should be directed to our Product Support Department through our sales representatives.

PGP030/031

Flow data at 2500 PSI (172 bar) unless noted.

Speed RPM	Gear Width Output *(gpm/lpm)*				
	1"	1 ¼"	1 ½"	1 ¾"	2"
900	**6.5**	**8**	**10**	**12**	**13.5**
	24.5	30	38	45.5	51
1200	**9**	**11.5**	**14**	**16**	**18.5**
	34	43.5	53	60.5	70
1500	**11.5**	**14.5**	**17.5**	**20.5**	**23.5**
	43.5	55	66	77.5	89
1800	**14**	**18**	**21.5**	**25**	**29**
	53	68	81.5	94.5	110
2100	**16.5**	**21**	**25**	**29.5**	**34**
	62.5	79.5	94.5	112	129
2400	**19**	**24**	**29**	**34**	**39**
	72	91	110	129	148

PGP050/051

Flow data at 2500 PSI (172 bar) unless noted.

Speed RPM	Gear Width Output *(gpm/lpm)*						
	1"	1 ¼"	1 ½"	1 ¾"	2"	2 ¼"	2 ½"
900	**8.5**	**10.5**	**13**	**15**	**17.5**	**20**	**22**
	32	39.5	49	57	66	75.5	83.5
1200	**12**	**15**	**18**	**21**	**24**	**27**	**30**
	45.5	57	68	79.5	91	102	114
1500	**15**	**19**	**23**	**27**	**31**	**35**	**39**
	57	72	87	102	117	132	148
1800	**18**	**23**	**27.5**	**32.5**	**37.5**	**42**	**47**
	68	87	104	123	142	159	178
2100	**21.5**	**27**	**32.5**	**38.5**	**44**	**49.5**	**55**
	81.5	102	123	146	167	187	208
2400	**25**	**31**	**37**	**44**	**51**	**57**	**63.5**
	94.5	117	140	167	193	216	240

PGP075/076

Flow data at 2500 PSI (172 bar) unless noted.

Speed RPM	Gear Width Output *(gpm/lpm)*								
	1"	1 ¼"	1 ½"	1 ¾"	2"	2 ¼"	2 ½"	2 ¾"*	3"*
900	**11.5**	**15.5**	**19.5**	**23**	**27**	**30.5**	**34.5**	**38**	**42**
	43.5	58.5	74	87	102	115.5	130.5	144	159
1200	**17**	**22**	**27**	**32**	**37.5**	**42**	**48**	**52.5**	**58**
	64.5	83.5	102	121	142	159	182	199	220
1500	**22**	**29**	**35.5**	**41.5**	**48**	**54.5**	**61**	**67**	**74**
	83.5	110	134	157	182	206	231	254	280
1800	**27.5**	**35.5**	**43.5**	**51**	**59**	**66**	**74**	**81.5**	**90**
	104	134	165	193	223	250	280	308	341
2100	**33**	**42**	**51.5**	**60**	**69.5**	**78**	**87**	**96.5**	**106**
	125	159	195	227	263	295	329	365	401
2400	**38**	**49**	**59.5**	**70**	**80**	**90**	**101**	**111**	**122**
	144	185	225	265	303	341	382	420	462

*Flow data at 2000 PSI (138 bar) rated pressure.

Average Input Power - Pumps

PL FACTOR

Each section of a multiple pump or motor 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 or from the unit is limited by the physical strength of the shaft. This limit is defined as a "PL" factor; "P" being the operating pressure and "L" the summation of gear widths.

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.

PGP030/031

Input power at 2500 PSI (172 bar) unless noted.

Speed RPM	Gear Width Inches (HP/kW)				
	1"	1 ¼"	1 ½"	1 ¾"	2"
900	**14**	**17**	**20**	**23**	**25**
	11	13	15	17	19
1200	**19**	**22**	**26**	**30**	**33**
	14	17	20	22	25
1500	**23**	**28**	**33**	**37**	**42**
	17	21	24	27	31
1800	**27**	**33**	**39**	**44**	**50**
	20	25	29	33	37
2100	**32**	**38**	**45**	**51**	**58**
	24	29	34	38	43
2400	**36**	**44**	**51**	**58**	**66**
	26	33	38	43	49

PGP050/051

Input power at 2500 PSI (172 bar) unless noted.

Speed RPM	Gear Width Inches (HP/kW)						
	1"	1 ¼"	1 ½"	1 ¾"	2"	2 ¼"	2 ½"
900	**19**	**22**	**26**	**30**	**34**	**38**	**42**
	14	17	20	23	26	29	32
1200	**25**	**30**	**34**	**40**	**45**	**51**	**56**
	18	22	26	30	34	38	42
1500	**31**	**37**	**43**	**50**	**56**	**63**	**69**
	23	27	32	37	42	47	51
1800	**36**	**44**	**51**	**59**	**67**	**75**	**82**
	27	33	38	44	50	56	61
2100	**42**	**51**	**60**	**69**	**78**	**87**	**96**
	31	38	44	51	58	65	72
2400	**47**	**57**	**68**	**79**	**89**	**99**	**110**
	35	43	51	59	66	74	82

PGP075/076

Input power at 2500 PSI (172 bar) unless noted.

Speed RPM	Gear Width Inches (HP/kW)								
	1"	1 ¼"	1 ½"	1 ¾"	2"	2 ¼"	2 ½"	2 ¾"*	3"*
900	**26**	**32**	**39**	**45**	**51**	**58**	**64**	**57**	**62**
	19	24	29	34	38	43	48	42	46
1200	**35**	**43**	**52**	**60**	**69**	**78**	**86**	**76**	**83**
	26	32	39	45	51	58	64	57	62
1500	**44**	**55**	**65**	**76**	**87**	**98**	**109**	**96**	**105**
	33	41	49	57	65	73	81	72	78
1800	**53**	**66**	**79**	**93**	**106**	**119**	**132**	**116**	**127**
	39	49	59	69	79	89	99	87	95
2100	**62**	**77**	**93**	**108**	**124**	**139**	**154**	**136**	**148**
	46	58	69	81	92	104	115	101	111
2400	**71**	**88**	**106**	**124**	**141**	**159**	**176**	**155**	**169**
	53	66	79	92	105	118	132	116	126

*Input power at 2000 PSI (138 bar).

Pressure X Total Gear Width = PL

PL MUST NOT EXCEED NUMBER SHOWN FOR APPROPRIATE SHAFT.

PL Chart		
Shaft Style	**Integral Shaft & Gear**	**Two Piece Style**
030/031		
SAE "A" Spline	2,600	2,600
SAE "B" Spline	7,900	5,850
SAE "B" Key	4,850	4,850
SAE "BB" Spline	12,150	--
SAE "BB" Key	7,250	5,850
SAE "C" Spline	--	5,850
Connecting Shaft	--	5,850
050/051		
SAE "B" Spline	6,100	6,100
SAE "B-B" Spline	9,400	--
SAE "B-B" Key	5,600	5,600
SAE "C" Spline	12,900	8,500
SAE "C" Key	10,900	8,500
Connecting Shaft	--	8,500
075/076		
SAE "C" Single	8,000	8,000
SAE "C" Tandem	12,500	--
SAE "C" Key	7,500	7,500
Connecting Shaft	--	10,000

Average Performance Data - Motors

PGM030

Motor performance data at 2000 PSI (138 bar).

Speed RPM	1" Gear			1 ½" Gear			2" Gear		
	Output		Input	Output		Input	Output		Input
	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow
800	**550**	**7**	**9**	**870**	**11**	**13**	**1150**	**14.5**	**17**
	62	5	34	98.5	8	49	130	11	64.5
1200	**550**	**10.5**	**13**	**870**	**16.5**	**18**	**1150**	**22**	**23.5**
	62	8	49	98.5	12.5	68	130	16.5	89
1600	**550**	**14**	**16**	**860**	**22**	**23**	**1140**	**29**	**30.5**
	62	10.5	60.5	97	16.5	87	129	21.5	115
2000	**550**	**17.5**	**19.5**	**850**	**27**	**28**	**1125**	**36**	**37**
	62	13	74	96	20	106	127	27	140

U.S./*Metric* Torque: **In.-lbs.** / Nm Flow: **GPM** / LPM Power: **HP** / kW

PGM050

Motor performance data at 2000 PSI (138 bar).

Speed RPM	1" Gear			1 ½" Gear			2" Gear			2½" Gear		
	Output		Input	Output		Input	Output		Input	Output		Input
	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow
800	**670**	**8.5**	**10.5**	**1070**	**13.5**	**15.5**	**1450**	**18**	**21**	**1850**	**23.5**	**26**
	75.5	6.5	39.5	121	10	58.5	164	13.5	79.5	209	17.5	98.5
1200	**680**	**13**	**15.5**	**1075**	**20.5**	**22.5**	**1450**	**27.5**	**30.5**	**1840**	**35**	**37.5**
	77	9.5	58.5	121.5	15	85	164	20.5	115	208	26	142
1600	**670**	**17**	**20**	**1045**	**26.5**	**30**	**1440**	**36.5**	**40**	**1750**	**44.5**	**49.5**
	75.5	12.5	75.5	118	20	114	162.5	27	151	197.5	33	187
2000	**660**	**21**	**25**	**1030**	**32.5**	**37**	**1415**	**44.5**	**49**	**1720**	**54.5**	**61.5**
	74.5	15.5	94.5	116.5	24	140	160	33	185	194.5	40.5	233

U.S./*Metric* Torque: **In.-lbs.** / Nm Flow: **GPM** / LPM Power: **HP** / kW

PGM075

Motor performance data at 2000 PSI (138 bar).

Speed RPM	1" Gear			1 ½" Gear			2" Gear			2½" Gear			3" Gear		
	Output		Input	Output		Input	Output		Input	Output		Input	Output		Input
	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow
800	**1050**	**13.5**	**20.5**	**1650**	**21**	**28**	**2200**	**28**	**35.5**	**2875**	**36.5**	**43**	**3625**	**46**	**50.5**
	118.5	10	77.5	186.5	15.5	106	248.5	21	134	325	27	163	409.5	34.5	191
1200	**1025**	**19.5**	**27.5**	**1600**	**30.5**	**38**	**2200**	**42**	**49.5**	**2850**	**54**	**60.5**	**3575**	**68**	**72**
	116	14.5	104	181	22.5	144	248.5	31.5	187	322	40.5	229	404	50.5	273
1600	**1000**	**25.5**	**34**	**1575**	**40**	**49**	**2175**	**55**	**64**	**2800**	**71**	**78.5**	**3500**	**89**	**93**
	113	19	129	178	30	185	245.5	41	242	316.5	53	297	395.5	66.5	352
2000	**950**	**30**	**41.5**	**1550**	**49**	**59**	**2175**	**67.5**	**78**	**2750**	**87**	**96.5**	**3425**	**109**	**114**
	107.5	22.5	157	175	36.5	223	245.5	50.5	295	310.5	65	365	387	81.5	431

U.S./*Metric* Torque: **In.-lbs.** / Nm Flow: **GPM** / LPM Power: **HP** / kW

Average Performance Data - Motors

PGM031

Motor performance data at 2500 PSI (172 bar).

Speed	1" Gear			1 ½" Gear			2" Gear		
	Output		Input	Output		Input	Output		Input
RPM	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow
800	**675**	**8.5**	**9**	**1035**	**13**	**13**	**1385**	**17.5**	**17**
	76.5	6.5	34	117	9.5	49	156.5	13	64.5
1200	**685**	**13**	**13**	**1055**	**20**	**18**	**1410**	**27**	**23.5**
	77.5	9.5	49	119	15	68	159.5	20	89
1600	**680**	**17.5**	**16**	**1030**	**26**	**23**	**1390**	**35**	**30.5**
	77	13	60.5	116.5	19.5	87	157	26	115
2000	**660**	**21**	**19.5**	**1010**	**32**	**28**	**1370**	**43.5**	**37**
	74.5	15.5	74	114	24	106	155	32.5	140

U.S./*Metric* Torque: **In.-lbs.** / Nm Flow: **GPM** / LPM Power: **HP** / kW

PGM051

Motor performance data at 2500 PSI (172 bar).

Speed	1" Gear			1 ½" Gear			2" Gear			2½" Gear		
	Output		Input	Output		Input	Output		Input	Output		Input
RPM	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow
800	**825**	**10.5**	**10.5**	**1310**	**16.5**	**15.5**	**1810**	**23**	**21**	**2330**	**29.5**	**26**
	93	8	39.5	148	12.5	58.5	204.5	17	79.5	263.5	22	98.5
1200	**850**	**16**	**15.5**	**1340**	**25.5**	**22.5**	**1830**	**35**	**30.5**	**2340**	**44.5**	**37.5**
	96	12	58.5	151.5	19	85	207	26	115	264.5	33	142
1600	**830**	**21**	**20**	**1330**	**34**	**30**	**1805**	**46**	**40**	**2300**	**58.5**	**49.5**
	94	15.5	75.5	150.5	25.5	114	204	34.5	151	260	43.5	187
2000	**800**	**25.5**	**25**	**1290**	**41**	**37**	**1770**	**56**	**49**	**2250**	**71.5**	**61.5**
	90.5	19	94.5	146	30.5	140	200	42	185	254	53.5	233

U.S./*Metric* Torque: **In.-lbs.** / Nm Flow: **GPM** / LPM Power: **HP** / kW

PGM076

Motor performance data at 2500 PSI (172 bar) unless noted.

Speed	1" Gear			1 ½" Gear			2" Gear			2½" Gear			3" Gear*		
	Output		Input	Output		Input	Output		Input	Output		Input	Output		Input
RPM	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow	Torque	Power	Flow
800	**1410**	**18**	**20.5**	**2140**	**27**	**28**	**2875**	**36.5**	**35.5**	**3650**	**46.5**	**43**	**3625**	**46**	**50.5**
	159.5	13.5	77.5	242	20	106	325	27	134	412.5	34.6	163	409.5	34.5	191
1200	**1400**	**26.5**	**27.5**	**2140**	**41**	**38**	**2870**	**54.5**	**49.5**	**3650**	**69.5**	**60.5**	**3575**	**68**	**72**
	158	20	104	242	30.5	144	324.5	40.5	187	412.5	52	229	404	50.5	273
1600	**1375**	**35**	**34**	**2110**	**53.5**	**49**	**2830**	**72**	**64**	**3600**	**91.5**	**78.5**	**3500**	**89**	**93**
	155.5	26	129	238.5	40	185	319.5	53.5	242	406.5	68	297	395.5	66.5	352
2000	**1350**	**43**	**41.5**	**2090**	**66.5**	**59**	**2800**	**89**	**78**	**3500**	**111**	**96.5**	**3425**	**109**	**114**
	152.5	32	157	236	49.5	223	316.5	66.5	295	395.5	83	365	387	81.5	431

*Motor performance data at 2000 PSI (138 bar).

U.S./*Metric* Torque: **In.-lbs.** / Nm Flow: **GPM** / LPM Power: **HP** / kW

Dimensional Data

Pumps and Motors (see drawings on page 23)

Model		A[1]	Bs[2][3]	Bm[3][4]	C[5][6]	D[5][7]	E[3]	F[2]	G	H	I	J	K	L[3][8]	M[4]
030/031	**in.**	**1.62**	**5.44**	**8.69**	**5.44**	**5.88**	**2.94**	**0.75**	**1.75**	**2.50**	**0.88**	**2.69**	**5.38**	**3.31**	**3.25**
	mm.	41.3	138.1	220.7	138.1	149.2	74.6	19.1	44.5	63.5	22.2	68.3	136.5	84.1	82.6
050/051	**in.**	**2.19**	**5.88**	**9.50**	**5.44**	**5.88**	**3.38**	**0.75**	**1.75**	**2.88**	**1.00**	**3.00**	**6.00**	**3.75**	**3.62**
	mm.	55.6	149.2	241.3	138.1	149.2	85.7	19.1	44.5	73.0	25.4	76.2	152.4	95.3	92.1
075/076	**in.**	**2.19**	**6.75**	**10.75**	**7.75**	**7.94**	**3.75**	**1.00**	**2.00**	**3.00**	**1.25**	**3.94**	**7.88**	**4.75**	**4.00**
	mm.	55.6	171.5	273.1	196.9	201.6	95.3	25.4	50.8	76.2	31.8	100.0	200.0	120.7	101.6

***U.S.**/Metric*

NOTES

1. Dimension will vary with shaft type
2. Dimension + gear width
3. Dimension is for Type 1 SEC. For Type 2: subtract 1.12" (28.4 mm) for 030/031: subtract 1.00" (25.4 mm) for 050/051.
4. Dimension + total gear width
5. Dimension will vary with port type. Subtract 0.25" (6.4 mm) for S.F. ports.
6. For 2.25" and 2.50" gear width in 050/051 series, dimention is 6.75" (171.5 mm).
7. Dimension is for wide B-C. Narrow B-C dimensions: 5.00" (127 mm) for 030/031 and 050/051; 7.19" (182.6 mm) for 075/076.
8. Dimension + ½ front section gear width

Approximate Weight: Pumps and Motors

Single Unit

Model	Unit Weight	1"	1 ¼"	1 ½"	1 ¾"	2"	2 ¼"	2 ½"	2 ¾"	3"
030/031	**Pounds**	**33**	**34**	**35**	**36**	**37**	**-**	**-**	**-**	**-**
	KG	15	15.5	16	16.5	17	-	-	-	-
050/051	**Pounds**	**37**	**38.5**	**40**	**41.5**	**43**	**48.5**	**50**	**-**	**-**
	KG	17	17.5	18	19	19.5	22	22.5	-	-
075/076	**Pounds**	**72**	**75**	**77**	**80**	**82**	**85**	**87**	**90**	**92**
	KG	33	34	35	36	37	39	40	41	42

Approximate Weight: Pumps and Motors

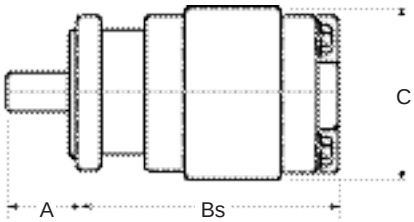
Multiple Unit*

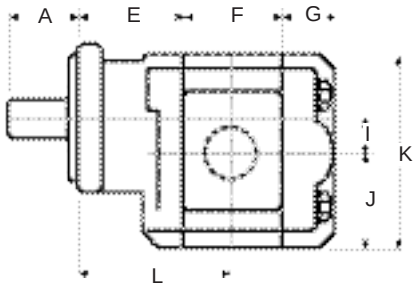
Model	Add per gear section	1"	1 ¼"	1 ½"	1 ¾"	2"	2 ¼"	2 ½"	2 ¾"	3"
030/031	**Pounds**	**27**	**28**	**29**	**31**	**32**	**-**	**-**	**-**	**-**
	KG	12	12.5	13	14	14.5	-	-	-	-
050/051	**Pounds**	**31**	**32.5**	**34**	**35.5**	**37**	**42.5**	**44**	**-**	**-**
	KG	14	15	15.5	16	17	19	20	-	-
075/076	**Pounds**	**59**	**62**	**64**	**67**	**69**	**72**	**74**	**77**	**79**
	KG	27	28	29	31	32	33	34	35	36

*Determine the approximate weight from Single Unit chart and add weight of each additional assembly from this chart.

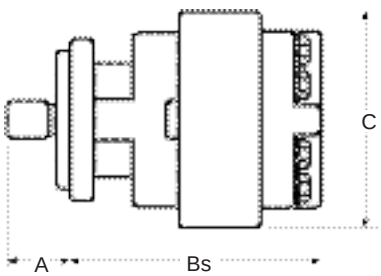
Dimensional Data

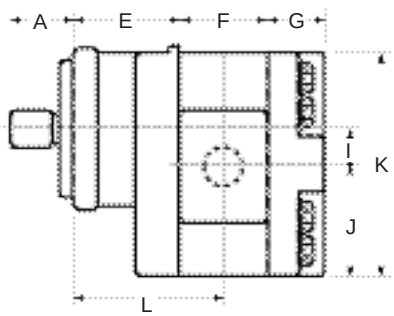
Single Unit - 030/031/050/051



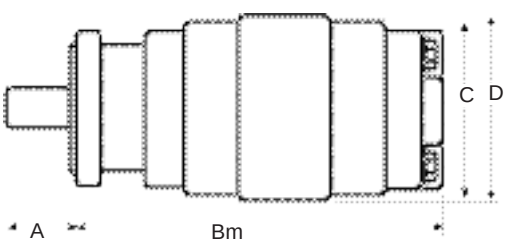


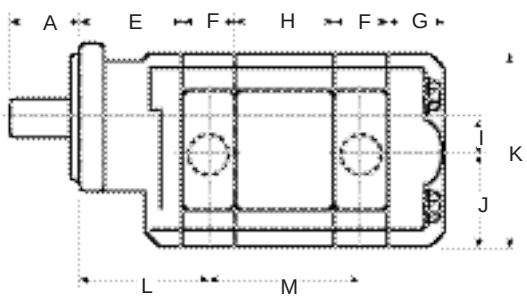
Single Unit - 075/076



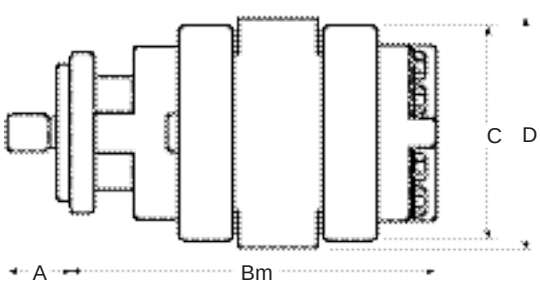


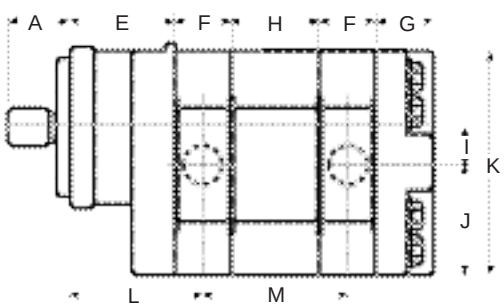
Multiple Unit - 030/031/050/051





Multiple Unit - 075/076

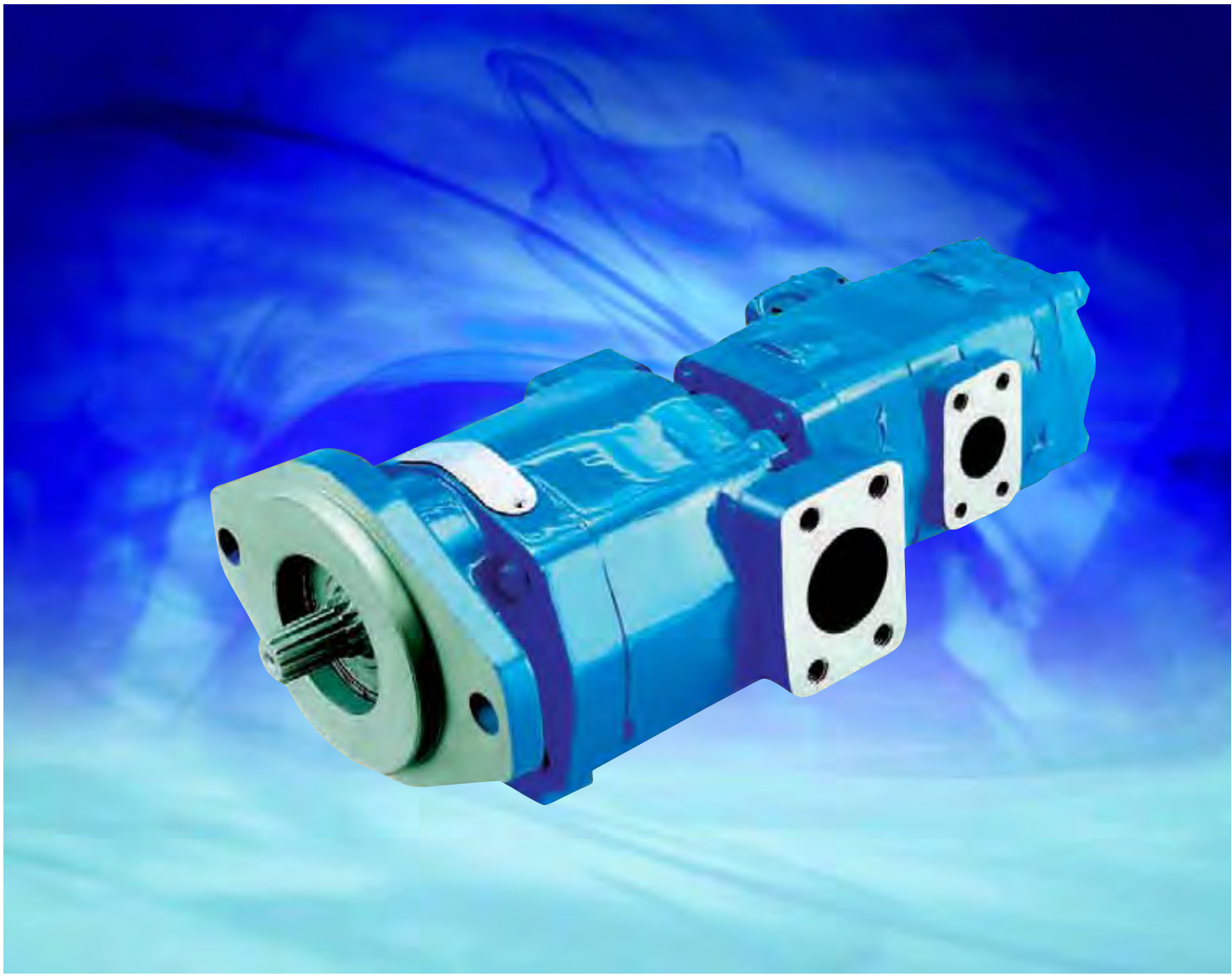




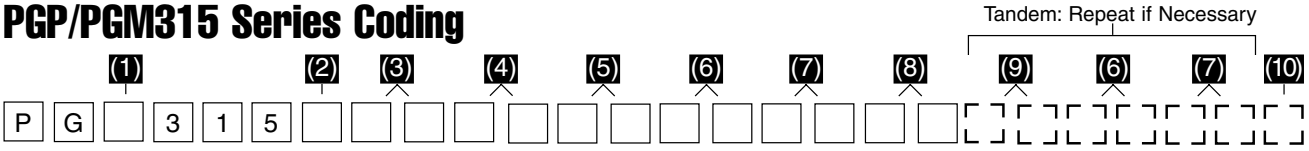
PGP/PGM300 Series

Cast Iron Bushing Design

Catalog HY09-0300/US



PGP/PGM315 Series Coding



Pump/Motor (1)

P	Pump (PE for fluorocarbon seals)
M	Motor (no tandem motors available)

Unit (2)

A	Single Unit
B	Tandem Unit (flush studs)
L	Unit with Extended Studs

Shaft End Cover (3)

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, bi-rot w/o O.B. bearing + 1/4" ODT drain

Shaft End Cover (4)

89	SAE 2 bolt for clutch
93	SAE “A" 2 bolt
95	Pad Mount for Clutch
96	SAE “B" 2 bolt

Gear Housing (6)

AB	Pump
EB	Motor

Port End Cover (5)

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
SAE Split Flange (pump)			
1"	3/4"	**EJ**	**JE**
1"	1/2"	**EK**	**KE**
3/4"	3/4"	**EL**	**LE**
3/4"	1/2"	**EM**	**ME**
1"	-	**OE**	**EO**
3/4"	-	**OF**	**FO**
-	3/4"	**OJ**	**JO**
-	1/2"	**OL**	**LO**
SAE Split Flange (motor)			
1"	1"	**DR**-Double	
3/4"	3/4"	**DS**-Double	
Unported (pump)			
BI	Unported		
OD Tube Porting (pump)			
1-1/4"	1"	**FB**	**BF**
1-1/4"	7/8"	**FC**	**CF**
1-1/4"	3/4"	**FG**	**GF**
1-1/4"	5/8"	**FJ**	**JF**
1"	1"	**FL**	**LF**
1"	7/8"	**FV**	**VF**
1"	3/4"	**FW**	**WF**
1"	5/8"	**FX**	**XF**
7/8"	7/8"	**FY**	**YF**
7/8"	3/4"	**FZ**	**ZF**
7/8"	5/8"	**BC**	**CB**
7/8"	1/2"	**BG**	**GB**
3/4"	3/4"	**BJ**	**JB**
3/4"	5/8"	**BL**	**LB**
3/4"	1/2"	**BN**	**NB**
1 1/4"	-	**BV**	**VB**
1"	-	**BW**	**WB**
7/8"	-	**BX**	**XB**
3/4"	-	**BY**	**YB**
-	1"	**BZ**	**ZB**
-	7/8"	**PD**	**DP**
-	3/4"	**PE**	**EP**
-	5/8"	**PM**	**MP**
-	1/2"	**PN**	**NP**

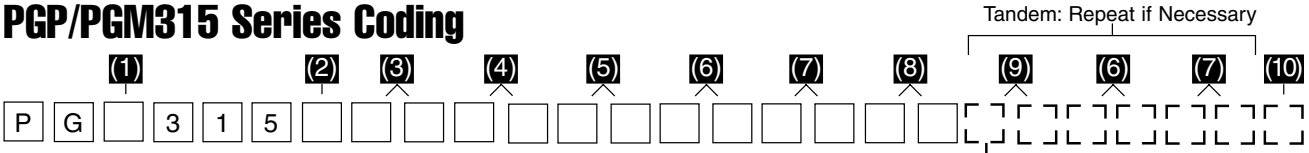
(Side Ported) (cont.)

IN	OUT	CW	CCW
•	•	•	•
OD Tube Porting (motor)			
1"	1"	**VN**-Double	
3/4"	3/4"	**VR**-Double	
1/2"	1/2"	**VQ**-Double	

(Rear Ported)

IN	OUT	CW	CCW
•	•	•	•
OD Tube Porting (pump)			
1-1/4"	1"	**UC**	**CU**
1-1/4"	7/8"	**UF**	**FU**
1-1/4"	3/4"	**UN**	**NU**
1"	1"	**UD**	**DU**
1"	7/8"	**UP**	**PU**
1"	3/4"	**UQ**	**QU**
1"	5/8"	**UR**	**RU**
7/8"	7/8"	**LN**	**NL**
7/8"	3/4"	**LP**	**PL**
7/8"	5/8"	**LQ**	**QL**
3/4"	3/4"	**LR**	**RL**
3/4"	5/8"	**LS**	**SL**
3/4"	1/2"	**LT**	**TL**
OD Tube Porting (motor)			
1"	1"	**RN**-Double	
3/4"	3/4"	**RQ**-Double	
1/2"	1/2"	**RS**-Double	

PGP/PGM315 Series Coding



Gear Width (7)

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
05	1/2"	.62	10.2	3500psi (241 bar)
07	3/4"	.93	15.2	3500psi (241 bar)
10	1"	1.24	20.3	3500psi (241 bar)
12	1-1/4"	1.55	25.4	3500psi (241 bar)
15	1-1/2"	1.86	30.5	3300psi (228 bar)
17	1-3/4"	2.17	35.6	2900psi (200 bar)
20	2"	2.48	40.6	2500psi (172 bar)

Shaft Type (8)

(For Single or Tandem Units -unless noted)

97 SAE “A"Keyed
96 SAE “A" Splined
66 SAE “B" Keyed
65 SAE “B" Splined
56 Clutch Pump Tapered, 5/16 - 24 thd. (internal), #6 Woodruff Keyed (single unit only); 1:4 taper

Bearing Carriers (9)

(Dual Outlet - Pump Only)

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

IN •	OUT •		CW •	CCW •
SAE Split Flange				
1-1/4"	3/4"	3/4"	**CA**	**AC**
1-1/4"	3/4"	1/2"	**DA**	**AD**
1-1/4"	1/2"	1/2"	**EA**	**AE**
1"	3/4"	3/4"	**FA**	**AF**
1"	3/4"	1/2"	**GA**	**AG**
1"	1/2"	1/2"	**HA**	**AH**
OD Tube Porting				
1-1/2"	1"	1"	**JG**	**GJ**
1-1/2"	1"	7/8"	**KG**	**GK**
1-1/2"	7/8"	7/8"	**LG**	**GL**
1-1/2"	1"	3/4"	**MG**	**GM**
1-1/2"	3/4"	3/4"	**NG**	**GN**
1-1/4"	1"	1"	**PG**	**GP**
1-1/4"	1"	7/8"	**QG**	**GQ**
1-1/4"	7/8"	7/8"	**RG**	**GR**
1-1/4"	1"	3/4"	**SG**	**GS**
1-1/4"	3/4"	3/4"	**TG**	**GT**
1-1/4"	3/4"	5/8"	**UG**	**GU**
1-1/4"	3/4"	1/2"	**VG**	**GV**
1-1/4"	5/8"	5/8"	**WG**	**GW**
1-1/4"	1/2"	1/2"	**XG**	**GX**
1"	1"	1"	**YG**	**GY**
1"	1"	7/8"	**ZG**	**GZ**
1"	7/8"	7/8"	**RC**	**CR**
1"	1"	3/4"	**SC**	**CS**
1"	3/4"	3/4"	**TC**	**CT**
1"	3/4"	5/8"	**VC**	**CV**
1"	3/4"	1/2"	**WC**	**CW**
1"	5/8"	5/8"	**XC**	**CX**
1"	1/2"	1/2"	**YC**	**CY**

(Single Outlet - Pump Only)

Outlet for front section.

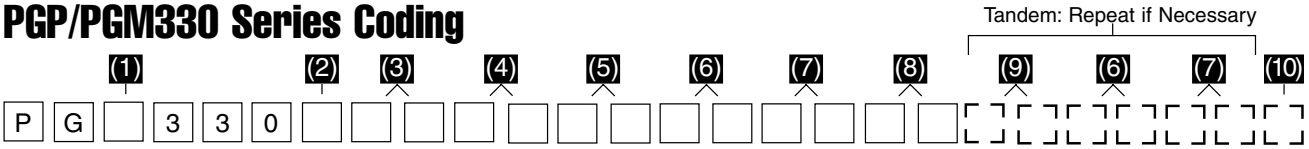
IN •	OUT •	CW •	CCW •
SAE Split Flange			
1-1/4"	1-1/4"	**CJ**	**JC**
1-1/4"	1"	**CL**	**LC**
1-1/4"	3/4"	**CM**	**MC**
1-1/4"	1/2"	**HB**	**BH**
1"	1"	**HC**	**CH**
1"	3/4"	**HF**	**FH**
1"	1/2"	**HL**	**LH**
3/4"	3/4"	**HM**	**MH**
3/4"	1/2"	**HN**	**NH**
OD Tube Porting			
1-1/2"	1-1/2"	**KB**	**BK**
1-1/2"	1-1/4"	**KC**	**CK**
1-1/2"	1"	**KF**	**FK**
1-1/2"	7/8"	**KL**	**LK**
1-1/2"	3/4"	**KM**	**MK**
1-1/4"	1-1/4"	**KN**	**NK**
1-1/4"	1"	**KO**	**OK**
1-1/4"	7/8"	**KP**	**PK**
1-1/4"	3/4"	**KQ**	**QK**
1-1/4"	5/8"	**MB**	**BM**
1-1/4"	1/2"	**ML**	**LM**
1"	1"	**MN**	**NM**
1"	7/8"	**MQ**	**QM**
1"	3/4"	**MR**	**RM**
1"	5/8"	**MS**	**SM**
1"	1/2"	**MT**	**TM**
3/4"	3/4"	**MU**	**UM**
3/4"	5/8"	**MV**	**VM**
3/4"	1/2"	**MW**	**WM**
Common Inlet Passage			
No Ports		**C**	**D**

Connecting Shaft (10)

For connecting tandem units.

1 Connecting Shaft

PGP/PGM330 Series Coding



Pump/Motor (1)

P	Pump
M	Motor

Unit (2)

A	Single Unit
B	Tandem Unit (flush studs)
C	Single or Tandem with two-piece shaft (O.B. bearing required)
L	Unit with Extended Studs

Shaft End Cover (3)

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, bi-rot w/ O.B. bearing + 1/4" ODT drain
9	Motor, bi-rot w/o O.B. bearing + 1/4" ODT drain

Shaft End Cover (4)

42	SAE “B" 4 bolt
78	SAE “C" 4 bolt
97	SAE “B" 2 bolt

Port End Cover (5)

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
SAE Split Flange (pump)			
1-1/2"	1-1/4"	**EJ**	**JE**
1-1/2"	1"	**EK**	**KE**
1-1/4"	1-1/4"	**EL**	**LE**
1-1/4"	1"	**EM**	**ME**
1"	1"	**EN**	**NE**
1-1/2"	-	**OF**	**FO**
1-1/4"	-	**OG**	**GO**
1"	-	**OJ**	**JO**
-	1-1/4"	**OM**	**MO**
-	1"	**ON**	**NO**
SAE Split Flange (motor)			
1-1/4"	1-1/4"	**CS**-Double	
1"	1"	**CT**-Double	
3/4"	3/4"	**CV**-Double	
OD Tube Porting (pump)			
1-1/4"	1"	**FJ**	**JF**
1"	1"	**FL**	**LF**
1-1/4"	-	**BG**	**GB**
1"	-	**BJ**	**JB**
-	1"	**BN**	**NB**
OD Tube Porting (motor)			
1 1/4"	1 1/4"	**VC**-Double	
1"	1"	**VN**-Double	
3/4"	3/4"	**VR**-Double	

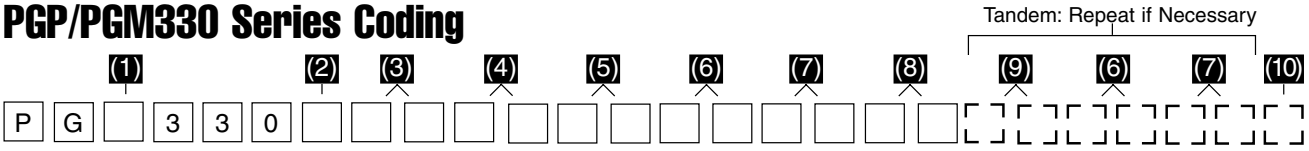
(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
Unported (pump)			
BI	Unported		
Unported (motor)			
BA	Unported		

Gear Housing (6)

AB	Pump
EB	Motor

PGP/PGM330 Series Coding



Gear Width (7)

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
05	1/2"	.99	16.1	3500psi (241 bar)
07	3/4"	1.48	24.2	3500psi (241 bar)
10	1"	1.97	32.3	3500psi (241 bar)
12	1-1/4"	2.46	40.4	3500psi (241 bar)
15	1-1/2"	2.96	48.4	3500psi (241 bar)
17	1-3/4"	3.45	56.5	3250psi (224 bar)
20	2"	3.94	64.6	3000psi (207 bar)

Shaft Type (8)

(For Single or Tandem Units -unless noted)

7 SAE "C" Spline (two-piece only)
25 SAE "B" Spline
30 SAE "B" Keyed
98 SAE "BB" Splined
43 SAE "BB" Keyed

Bearing Carriers (9)

(Dual Outlet - Pump Only)

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

IN •	OUT •		CW •	CCW •
SAE Split Flange				
2"	1-1/4"	1-1/4"	**AM**	**MA**
2"	1-1/4"	1"	**AN**	**NA**
2"	1"	1"	**AP**	**PA**
1-1/2"	1-1/4"	1-1/4"	**AT**	**TA**
1-1/2"	1-1/4"	1"	**AU**	**UA**
1-1/2"	1"	1"	**AV**	**VA**
1-1/4"	1-1/4"	1-1/4"	**AW**	**WA**
1-1/4"	1-1/4"	1"	**AX**	**XA**
*1-1/4"	1"	1"	**AY**	**YA**
1"	1"	1"	**AZ**	**ZA**
OD Tube Porting				
1-1/2"	1"	1"	**GV**	**VG**
1-1/4"	1"	1"	**GY**	**YG**
1"	1"	1"	**GZ**	**ZG**

(Single Outlet - Pump Only)

Outlet for front section.

IN •	OUT •		CW •	CCW •
SAE Split Flange				
2"	1-1/2"		**HB**	**BH**
2"	1-1/4"		**HC**	**CH**
2"	1"		**HF**	**FH**
1-1/2"	1-1/2"		**HL**	**LH**
1-1/2"	1-1/4"		**HM**	**MH**
1-1/2"	1"		**HN**	**NH**
1-1/4"	1-1/4"		**HO**	**OH**
1-1/4"	1"		**HP**	**PH**
1"	1"		**HQ**	**QH**
1-1/4"	1"		**RS**	**SR**
OD Tube Porting				
1 1/2"	1 1/4"	-	**KM**	**MK**
1 1/2"	1"	-	**KN**	**NK**
1 1/4"	1 1/4"	-	**KO**	**OK**
1 1/4"	1"	-	**KP**	**PK**
1"	1"	-	**KQ**	**QK**

(Combined Outlet)

Outlet for front section.

IN •	OUT •	CW •	CCW •
SAE Split Flange (pump)			
2"	1-1/2"	**UN**	**NU**
2"	1-1/4"	**UO**	**OU**
1-1/2"	1-1/2"	**UP**	**PU**
1-1/2"	1-1/4"	**UQ**	**QU**
1-1/4"	1-1/4"	**UR**	**RU**
SAE Split Flange (motor)			
1-1/2"	1-1/2"	**BB**-Double	
1-1/4"	1-1/4"	**CC**-Double	
1"	1"	**EE**-Double	
3/4"	3/4"	**FF**-Double	
OD Tube Porting (pump)			
1-1/2"	1-1/4"	**PQ**	**QP**
1-1/4"	1-1/4"	**PR**	**RP**
OD Tube Porting (motor)			
1-1/4"	1-1/4"	**NN**-Double	
1"	1"	**QQ**-Double	
3/4"	3/4"	**RR**-Double	
Common Inlet Passage (pump)			
No Ports		**C**	**D**

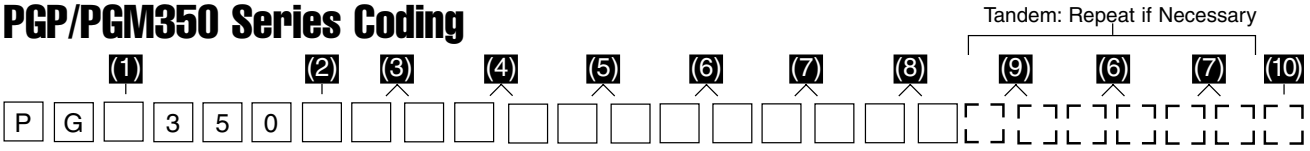
***** Outlet port for rear section.

Connecting Shaft (10)

For connecting tandem units.

1 Connecting Shaft

PGP/PGM350 Series Coding



Pump/Motor (1)

P	Pump
M	Motor

Unit (2)

A	Single Unit
B	Tandem Unit (flush studs)
C	Single or Tandem with two-piece shaft (O.B. bearing required)
L	Unit with Extended Studs

Shaft End Cover (3)

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, bi-rot w/ O.B. bearing + 1/4" ODT drain
9	Motor, bi-rot w/o O.B. bearing + 1/4" ODT drain

Shaft End Cover (4)

42	SAE “B" 4 bolt
46	SAE “B" 2/4 bolt
78	SAE “C" 4 bolt
97	SAE “B" 2 bolt
98	SAE “C" 2 bolt

Port End Cover (5)

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
SAE Split Flange (pump)			
2"	1-1/2"	**EC**	**CE**
2"	1-1/4"	**EF**	**FE**
2"	1"	**EG**	**GE**
1-1/2"	1-1/2"	**EH**	**HE**
1-1/2"	1-1/4"	**EJ**	**JE**
1-1/2"	1"	**EK**	**KE**
1-1/4"	1-1/4"	**EL**	**LE**
1-1/4"	1"	**EM**	**ME**
1"	1"	**EN**	**NE**
2"	-	**OE**	**EO**
1-1/2"	-	**OF**	**FO**
1-1/4"	-	**OG**	**GO**
1"	-	**OJ**	**JO**
-	1-1/2"	**OL**	**LO**
-	1-1/4"	**OM**	**MO**
-	1"	**ON**	**NO**
SAE Split Flange (motor)			
1-1/2"	1-1/2"	**CR**-Double	
1-1/4"	1-1/4"	**CS**-Double	
1"	1"	**CT**-Double	
3/4"	3/4"	**CV**-Double	

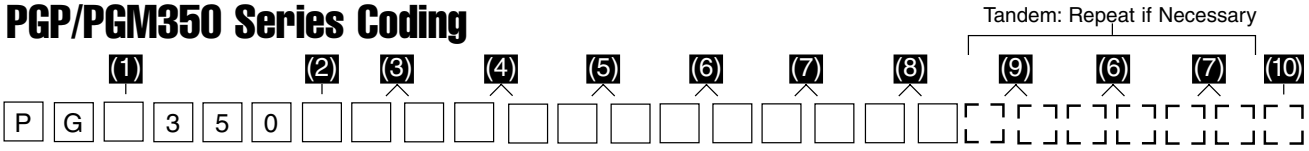
(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
OD Tube Porting (pump)			
1-1/2"	1-1/4"	**FB**	**BF**
1-1/2"	1"	**FC**	**CF**
1-1/4"	1-1/4"	**FG**	**GF**
1-1/4"	1"	**FJ**	**JF**
1"	1"	**FL**	**LF**
1-1/2"	-	**BC**	**CB**
1-1/4"	-	**BG**	**GB**
1"	-	**BJ**	**JB**
-	1-1/4"	**BL**	**LB**
-	1"	**BN**	**NB**
OD Tube Porting (motor)			
1-1/4"	1-1/4"	**VC**-Double	
1"	1"	**VN**-Double	
3/4"	3/4"	**VR**-Double	
Unported (pump)			
Unported		**BI**	**IB**
Unported (motor)			
BA Unported			

Gear Housing (6)

AB	Pump
EB	Motor

PGP/PGM350 Series Coding



Gear Width (7)

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
05	1/2"	1.28	20.9	3500psi (241 bar)
07	3/4"	1.91	31.3	3500psi (241 bar)
10	1"	2.55	41.8	3500psi (241 bar)
12	1-1/4"	3.19	52.2	3500psi (241 bar)
15	1-1/2"	3.83	62.7	3500psi (241 bar)
17	1-3/4"	4.46	73.1	3250psi (224 bar)
20	2"	5.10	83.6	3000psi (207 bar)
22	2-1/4"	5.74	94.0	2750psi (190 bar)
25	2-1/2"	6.38	104.5	2500psi (172 bar)

Shaft Type (8)

(For Single, Tandem or Two-piece Shaft -unless noted)

7	SAE "C" Spline
11	SAE "C" Keyed
25	SAE "B" Spline
43	SAE "BB" Keyed
98	SAE "BB" Splined (tandem only)

Bearing Carriers (9)

(Dual Outlet - Pump Only)

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

IN •	OUT •		CW •	CCW •
SAE Split Flange				
2-1/2"	1-1/4"	1-1/4"	**AF**	**FA**
2-1/2"	1-1/4"	1"	**AG**	**GA**
2-1/2"	1"	1"	**AH**	**HA**
2"	1-1/4"	1-1/4"	**AM**	**MA**
2"	1-1/4"	1"	**AN**	**NA**
2"	1"	1"	**AP**	**PA**
1-1/2"	1-1/4"	1-1/4"	**AT**	**TA**
1-1/2"	1-1/4"	1"	**AU**	**UA**
1-1/2"	1"	1"	**AV**	**VA**
1-1/4"	1-1/4"	1-1/4"	**AW**	**WA**
1-1/4"	1-1/4"	1"	**AX**	**XA**
1-1/4"	1"	1"	**AY**	**YA**
1"	1"	1"	**AZ**	**ZA**
OD Tube Porting				
2"	1-1/4"	1-1/4"	**GM**	**MG**
2"	1-1/4"	1"	**GN**	**NG**
2"	1"	1"	**GP**	**PG**
1-1/2"	1-1/4"	1-1/4"	**GT**	**TG**
1-1/2"	1-1/4"	1"	**GU**	**UG**
1-1/2"	1"	1"	**GV**	**VG**
1-1/4"	1-1/4"	1-1/4"	**GW**	**WG**
1-1/4"	1-1/4"	1"	**GX**	**XG**
1-1/4"	1"	1"	**GY**	**YG**
1"	1"	1"	**GZ**	**ZG**

(Single Outlet - Pump Only)

Outlet for front section.

IN •	OUT •	CW •	CCW •
SAE Split Flange			
2"	1-1/2"	**HB**	**BH**
2"	1-1/4"	**HC**	**CH**
2"	1"	**HF**	**FH**
1-1/2"	1-1/2"	**HL**	**LH**
1-1/2"	1-1/4"	**HM**	**MH**
1-1/2"	1"	**HN**	**NH**
1-1/4"	1-1/4"	**HO**	**OH**
1-1/4"	1"	**HP**	**PH**
* 1"	1"	**HQ**	**QH**
1-1/4"	1"	**RS**	**SR**
OD Tube Porting			
2"	1-1/2"	**KB**	**BK**
2"	1-1/4"	**KC**	**CK**
2"	1"	**KF**	**FK**
1-1/2"	1-1/2"	**KL**	**LK**
1-1/2"	1-1/4"	**KM**	**MK**
1-1/2"	1"	**KN**	**NK**
1-1/4"	1-1/4"	**KO**	**OK**
1-1/4"	1"	**KP**	**PK**
1"	1"	**KQ**	**QK**

Combined Outlet)

Outlet for front section.

IN •	OUT •	CW •	CCW •
SAE Split Flange (pump)			
2"	1-1/2"	**UN**	**NU**
2"	1-1/4"	**UO**	**OU**
1-1/2"	1-1/2"	**UP**	**PU**
1-1/2"	1-1/4"	**UQ**	**QU**
1-1/4"	1-1/4"	**UR**	**RU**
SAE Split Flange (motor)			
2"	2"	**AA**-Double	
1-1/2"	1-1/2"	**BB**-Double	
1-1/4"	1-1/4"	**CC**-Double	
1"	1"	**EE**-Double	
3/4"	3/4"	**FF**-Double	
OD Tube Porting (pump)			
2"	1-1/2"	**PE**	**EP**
2"	1-1/4"	**PM**	**MP**
1-1/2"	1-1/2"	**PN**	**NP**
1-1/2"	1-1/4"	**PQ**	**QP**
1-1/4"	1-1/4"	**PR**	**RP**
OD Tube Porting (motor)			
1-1/2"	1-1/2"	**MM**-Double	
1-1/4"	1-1/4"	**NN**-Double	
1"	1"	**QQ**-Double	
3/4"	3/4"	**RR**-Double	
Common Inlet Passage			
No Ports		**C**	**D**

***** Outlet port for rear section.

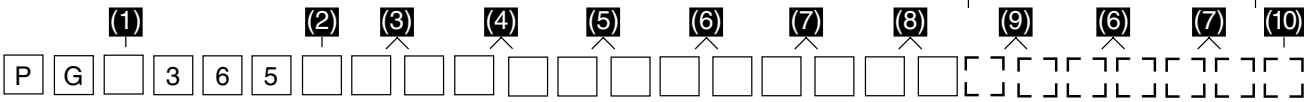
Connecting Shaft (10)

For connecting tandem units.

1	Connecting Shaft

PGP/PGM365 Series Coding

Tandem: Repeat if Necessary



Pump/Motor (1)

P	Pump
M	Motor

Unit (2)

A	Single Unit
B	Tandem Unit (flush studs)
C	Single or Tandem with two-piece shaft (O.B. bearing required)
L	Unit with Extended Studs

Shaft End Cover (3)

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, bi-rot w/ O.B. bearing + 1/4" ODT drain
9	Motor, bi-rot w/o O.B. bearing + 1/4" ODT drain

Shaft End Cover (4)

42	SAE “B" 4 bolt
78	SAE “C" 4 bolt
97	SAE “B" 2 bolt
98	SAE “C" 2 bolt

Port End Cover (5)

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
SAE Split Flange (pump)			
2"	1-1/2"	**EC**	**CE**
2"	1-1/4"	**EF**	**FE**
2"	1"	**EG**	**GE**
1-1/2"	1-1/2"	**EH**	**HE**
1-1/2"	1-1/4"	**EJ**	**JE**
1-1/2"	1"	**EK**	**KE**
1-1/4"	1-1/4"	**EL**	**LE**
1-1/4"	1"	**EM**	**ME**
1"	1"	**EN**	**NE**
2"	-	**OE**	**EO**
1-1/2"	-	**OF**	**FO**
1-1/4"	-	**OG**	**GO**
1"	-	**OJ**	**JO**
-	1-1/2"	**OL**	**LO**
-	1-1/4"	**OM**	**MO**
-	1"	**ON**	**NO**
SAE Split Flange (motor)			
1-1/2"	1-1/2"	**CR**-Double	
1-1/4"	1-1/4"	**CS**-Double	
1"	1"	**CT**-Double	
3/4"	3/4"	**CV**-Double	

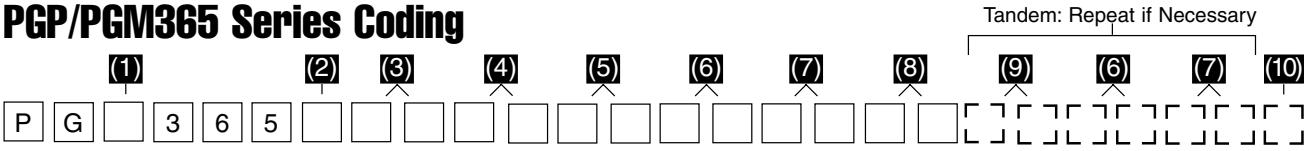
(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
OD Tube Porting (pump)			
1-1/2"	1-1/4"	**FB**	**BF**
1-1/2"	1"	**FC**	**CF**
1-1/4"	1-1/4"	**FG**	**GF**
1-1/4"	1"	**FJ**	**JF**
1"	1"	**FL**	**LF**
1-1/2"	-	**BC**	**CB**
1-1/4"	-	**BG**	**GB**
1"	-	**BJ**	**JB**
-	1-1/4"	**BL**	**LB**
-	1"	**BN**	**NB**
OD Tube Porting (motor)			
1-1/4"	1-1/4"	**VC**-Double	
1"	1"	**VN**-Double	
3/4"	3/4"	**VR**-Double	
Unported (pump)			
Unported		**BI**	**IB**
Unported (motor)			
BA Unported			

Gear Housing (6)

AB	Pump
EB	Motor

PGP/PGM365 Series Coding



Gear Width (7)

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
07	3/4"	2.70	44.3	3500psi (241 bar)
10	1"	3.60	59.0	3500psi (241 bar)
12	1-1/4"	4.50	73.8	3500psi (241 bar)
15	1-1/2"	5.40	88.5	3500psi (241 bar)
17	1-3/4"	6.30	103.3	3500psi (241 bar)
20	2"	7.20	118.0	3500psi (241 bar)
22	2-1/4"	8.10	132.8	3250psi (224 bar)
25	2-1/2"	9.00	147.5	3000psi (207 bar)

Shaft Type (8)

7 SAE "C" Spline
11 SAE "C" Keyed
25 SAE "B" Spline (single only)

Bearing Carriers (9)

(Dual Outlet - Pump Only)

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

IN •	OUT •		CW •	CCW •
SAE Split Flange				
2-1/2"	1-1/2"	1-1/2"	**AC**	**CA**
2-1/2"	1-1/2"	1-1/4"	**AD**	**DA**
2-1/2"	1-1/2"	1"	**AE**	**EA**
2-1/2"	1-1/4"	1-1/4"	**AF**	**FA**
2-1/2"	1-1/4"	1"	**AG**	**GA**
2-1/2"	1"	1"	**AH**	**HA**
2"	1-1/2"	1-1/2"	**AJ**	**JA**
2"	1-1/2"	1-1/4"	**AK**	**KA**
2"	1-1/2"	1"	**AL**	**LA**
2"	1-1/4"	1-1/4"	**AM**	**MA**
2"	1-1/4"	1"	**AN**	**NA**
2"	1"	1"	**AP**	**PA**
1-1/2"	1-1/2"	1-1/2"	**AQ**	**QA**
1-1/2"	1-1/2"	1-1/4"	**AR**	**RA**
1-1/2"	1-1/2"	1"	**AS**	**SA**
1-1/2"	1-1/4"	1-1/4"	**AT**	**TA**
1-1/2"	1-1/4"	1"	**AU**	**UA**
1-1/2"	1"	1"	**AV**	**VA**
1-1/4"	1-1/4"	1-1/4"	**AW**	**WA**
1-1/4"	1-1/4"	1"	**AX**	**XA**
1-1/4"	1"	1"	**AY**	**YA**
1"	1"	1"	**AZ**	**ZA**
OD Tube Porting				
2"	1-1/2"	1 1/2"	**GJ**	**JG**
2"	1-1/2"	1 1/4"	**GK**	**KG**
2"	1-1/2"	1"	**GL**	**LG**
2"	1-1/4"	1 1/4"	**GM**	**MG**
2"	1-1/4"	1"	**GN**	**NG**
2"	1"	1"	**GP**	**PG**
1-1/2"	1-1/2"	1 1/2"	**GQ**	**QG**
1-1/2"	1-1/2"	1 1/4"	**GR**	**RG**
1-1/2"	1-1/2"	1"	**GS**	**SG**
1-1/2"	1-1/4"	1 1/4"	**GT**	**TG**
1-1/2"	1-1/4"	1"	**GU**	**UG**
1-1/2"	1"	1"	**GV**	**VG**
1-1/4"	1-1/4"	1 1/4"	**GW**	**WG**
1-1/4"	1-1/4"	1"	**GX**	**XG**
1-1/4"	1"	1"	**GY**	**YG**
1"	1"	1"	**GZ**	**ZG**

(Single Outlet - Pump Only)

Outlet for front section.

IN •	OUT •	CW •	CCW •
SAE Split Flange			
2-1/2"	1-1/2"	**CJ**	**JC**
2-1/2"	1-1/4"	**CL**	**LC**
2-1/2"	1"	**CM**	**MC**
2"	1-1/2"	**HB**	**BH**
2"	1-1/4"	**HC**	**CH**
2"	1"	**HF**	**FH**
1-1/2"	1-1/2"	**HL**	**LH**
1-1/2"	1-1/4"	**HM**	**MH**
1-1/2"	1"	**HN**	**NH**
1-1/4"	1-1/4"	**HO**	**OH**
1-1/4"	1"	**HP**	**PH**
1"	1"	**HQ**	**QH**
2-1/2"	1-1/2"	**NR**	**RN**
1-1/4"	1"	**RS**	**SR**
OD Tube Porting			
2"	1-1/2"	**KB**	**BK**
2"	1-1/4"	**KC**	**CK**
2"	1"	**KF**	**FK**
1-1/2"	1-1/2"	**KL**	**LK**
1-1/2"	1-1/4"	**KM**	**MK**
1-1/2"	1"	**KN**	**NK**
1-1/4"	1-1/4"	**KO**	**OK**
1-1/4"	1"	**KP**	**PK**
1"	1"	**KQ**	**QK**

(Combined Outlet)

Outlet for front section.

IN •	OUT •	CW •	CCW •
SAE Split Flange (pump)			
2-1/2"	1-1/2"	**UC**	**CU**
2-1/2"	1-1/4"	**UF**	**FU**
2"	1-1/2"	**UN**	**NU**
2"	1-1/4"	**UO**	**OU**
1-1/2"	1-1/2"	**UP**	**PU**
1-1/2"	1-1/4"	**UQ**	**QU**
1-1/4"	1-1/4"	**UR**	**RU**
SAE Split Flange (motor)			
2"	2"	**AA**-Double	
1-1/2"	1-1/2"	**BB**-Double	
1-1/4"	1-1/4"	**CC**-Double	
1"	1"	**EE**-Double	
3/4"	3/4"	**FF**-Double	
OD Tube Porting (pump)			
2"	1-1/2"	**PE**	**EP**
2"	1-1/4"	**PM**	**MP**
1-1/2"	1-1/2"	**PN**	**NP**
1-1/2"	1-1/4"	**PQ**	**QP**
1-1/4"	1-1/4"	**PR**	**RP**
OD Tube Porting (motor)			
1-1/2"	1-1/2"	**MM**-Double	
1-1/4"	1-1/4"	**NN**-Double	
1"	1"	**QQ**-Double	
3/4"	3/4"	**RR**-Double	

***** Outlet port for rear section.

Connecting Shaft (10)

For connecting tandem units.
1 Connecting Shaft

PL Factor

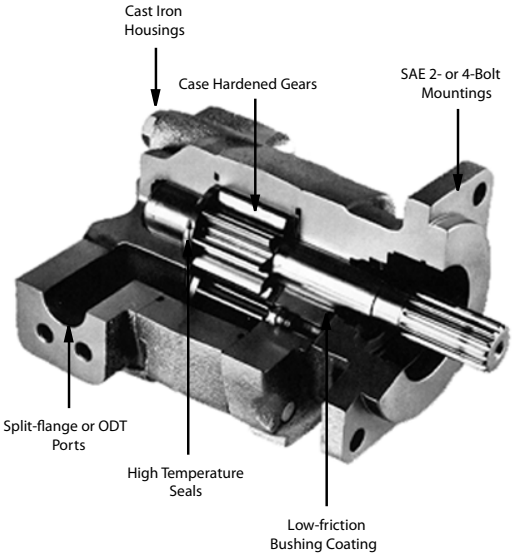
Each section of a multiple pump or motor should be regarded as a single unit with corresponding delivery and power input requirements. Since the entire input horsepower is fed through a common drive shaft, the power delivered to or from the unit is limited by the physical strength of the shaft. This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

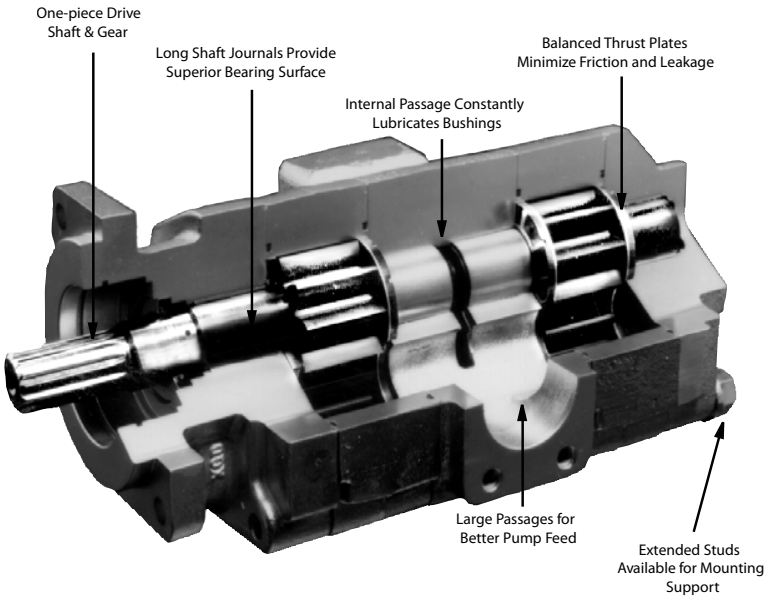
In multiple units the "PL" must be calculated for the first connecting shaft as well as the drive shaft. Each style or type of shaft has a unique "PL" factor as noted in the table to the right.

Pressure X Total Gear Width = PL

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

PL Chart		
Shaft Style	Integral Shaft & Gear	Two-Piece Style
PGP/PGM315		
SAE "A" Spline *(up to 1.25" GW)*	4,450	--
SAE "A" Key	3,600	--
SAE "B" Spline	13,400	--
SAE "B" Key	9,900	--
Connecting Shaft	--	5,550
PGP/PGM **330**		
SAE "B" Spline	8,450	6,250
SAE "B" Key	6,250	6,250
SAE "B-B" Spline	13,000	6,250
SAE "B-B" Key	9,300	6,250
SAE "C" Spline	--	6,250
SAE "C" Key	--	6,250
Connecting Shaft	--	6,250
PGP/PGM **350**		
SAE "B" Spline	6,450	6,450
SAE "B" Key	4,750	4,750
SAE "B-B" Spline	9,900	9,000
SAE "B-B" Key	7,100	7,100
SAE "C" Spline	19,100	9,000
SAE "C" Key	13,900	9,000
Connecting Shaft	--	9,000
PGP/PGM **365**		
SAE "B" Spline	5,050	5,050
SAE "B" Key	3,700	3,700
SAE "B-B" Spline	7,750	5,350
SAE "B-B" Key	5,550	5,550
SAE "C" Spline	14,900	11,950
SAE "C" Key	10,800	10,800
Connecting Shaft	--	11,950





PGP/PGM300 Series
PGP/PGM400 Series

Cast Iron Bushing Design

The Parker Hannifin Gear Pump Division Assures:

- Consistent quality
- Technical innovation
- Premier customer service

Worldwide Sales and Service

Parker operates sales and service centers in major industrial areas worldwide. Call 1-800-C-PARKER for more information, or for a synopsis of the Gear Pump Division, contact a Parker representative.

The Gear Pump Division's ability to engineer specialty products for unique applications has kept us at the forefront of technology, and ensured our position as the industry leader. Our success has come from providing a quality product with excellent sales and service support.

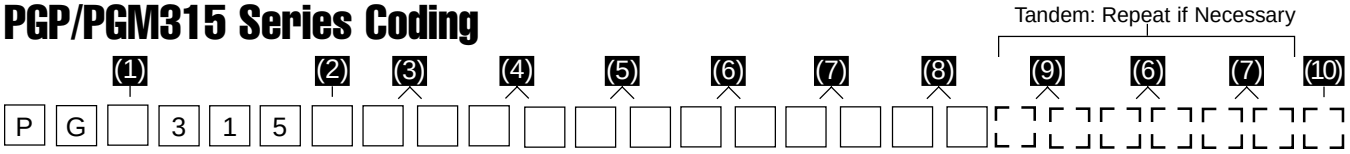
We manufacture hydraulic components for a wide range of industries including:

- Material Handling
- Construction
- Turf Care
- Forestry
- Agriculture
- Industrial

PGP/PGM300 Series

PGP/PGM400 Series

PGP/PGM315 Series Coding



Pump/Motor (1)

P	Pump (PE for fluorocarbon seals)
M	Motor (no tandem motors available)

Unit (2)

A	Single Unit
B	Tandem Unit (flush studs)
L	Unit with Extended Studs

Shaft End Cover (3)

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, bi-rot w/o O.B. bearing + 1/4" ODT drain

Shaft End Cover (4)

89	SAE 2 bolt for clutch
90	4 bolt 72x100mm 80mm pilot
93	SAE "A" 2 bolt
95	Pad Mount for Clutch
96	SAE "B" 2 bolt

Gear Housing (6)

AB	Pump
EB	Motor

Port End Cover (5)

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
SAE Split Flange (pump)			
1"	3/4"	**EJ**	**JE**
1"	1/2"	**EK**	**KE**
3/4"	3/4"	**EL**	**LE**
3/4"	1/2"	**EM**	**ME**
1"	-	**OE**	**EO**
3/4"	-	**OF**	**FO**
-	3/4"	**OJ**	**JO**
-	1/2"	**OL**	**LO**
SAE Split Flange (motor)			
1"	1"	**DR**-Double	
3/4"	3/4"	**DS**-Double	
National Pipe Thread (pump)			
1-1/4"	1"	**AJ**	**JA**
1-1/4"	3/4"	**AK**	**KA**
1"	1"	**AL**	**LA**
1"	3/4"	**AM**	**MA**
3/4"	3/4"	**AR**	**RA**
National Pipe Thread (motor)			
1"	1"	**DM**-Double	
3/4"	3/4"	**DN**-Double	
1/2"	1/2"	**DQ**-Double	
Unported (pump)			
BI	Unported		
OD Tube Porting (pump)			
1-1/4"	1"	**FB**	**BF**
1-1/4"	7/8"	**FC**	**CF**
1-1/4"	3/4"	**FG**	**GF**
1-1/4"	5/8"	**FJ**	**JF**
1"	1"	**FL**	**LF**
1"	7/8"	**FV**	**VF**
1"	3/4"	**FW**	**WF**
1"	5/8"	**FX**	**XF**
7/8"	7/8"	**FY**	**YF**
7/8"	3/4"	**FZ**	**ZF**
7/8"	5/8"	**BC**	**CB**
7/8"	1/2"	**BG**	**GB**
3/4"	3/4"	**BJ**	**JB**
3/4"	5/8"	**BL**	**LB**
3/4"	1/2"	**BN**	**NB**
1 1/4"	-	**BV**	**VB**
1"	-	**BW**	**WB**
7/8"	-	**BX**	**XB**
3/4"	-	**BY**	**YB**
-	1"	**BZ**	**ZB**
-	7/8"	**PD**	**DP**
-	3/4"	**PE**	**EP**
-	5/8"	**PM**	**MP**
-	1/2"	**PN**	**NP**

(Side Ported) (cont.)

IN	OUT	CW	CCW
•	•	•	•
OD Tube Porting (motor)			
1"	1"	**VN**-Double	
3/4"	3/4"	**VR**-Double	
1/2"	1/2"	**VQ**-Double	
BSPP Porting (pump)			
1-1/4"	1"	**FN**	**NF**
1-1/4"	7/8"	**FP**	**PF**
1-1/4"	3/4"	**FR**	**RF**
1"	1"	**FS**	**SF**
1"	7/8"	**FT**	**TF**
1"	3/4"	**BP**	**PB**
7/8"	7/8"	**BQ**	**QB**
7/8"	3/4"	**BR**	**RB**
7/8"	1/2"	**BT**	**TB**
3/4"	3/4"	**BU**	**UB**
3/4"	1/2"	**PQ**	**QP**
1-1/4"	-	**PR**	**RP**
1"	-	**PS**	**SP**
7/8"	-	**PT**	**TP**
3/4"	-	**PV**	**VP**
-	1"	**PW**	**WP**
-	7/8"	**PX**	**XP**
-	3/4"	**PY**	**YP**
-	1/2"	**PZ**	**ZP**
BSPP Porting (motor)			
1"	1"	**VY**-Double	
3/4"	3/4"	**VZ**-Double	
1/2"	1/2"	**VV**-Double	
Metric Split Flange (pump)			
1"	3/4"	**EV**	**VE**
1"	1/2"	**EW**	**WE**
3/4"	3/4"	**EX**	**XE**
3/4"	1/2"	**EY**	**YE**
1"	0"	**OP**	**PO**
3/4"	0"	**OR**	**RO**
0"	3/4"	**OT**	**TO**
0"	1/2"	**OV**	**VO**
Metric Split Flange (motor)			
1"	1"	**DV**-Double	
3/4"	3/4"	**DW**-Double	

(Rear Ported)

IN	OUT	CW	CCW
•	•	•	•
OD Tube Porting (pump)			
1-1/4"	1"	**UC**	**CU**
1-1/4"	7/8"	**UF**	**FU**
1-1/4"	3/4"	**UN**	**NU**
1"	1"	**UD**	**DU**
1"	7/8"	**UP**	**PU**
1"	3/4"	**UQ**	**QU**
1"	5/8"	**UR**	**RU**
7/8"	7/8"	**LN**	**NL**
7/8"	3/4"	**LP**	**PL**
7/8"	5/8"	**LQ**	**QL**
3/4"	3/4"	**LR**	**RL**
3/4"	5/8"	**LS**	**SL**
3/4"	1/2"	**LT**	**TL**
OD Tube Porting (motor)			
1"	1"	**RN**-Double	
3/4"	3/4"	**RQ**-Double	
1/2"	1/2"	**RS**-Double	
BSPP Porting (pump)			
1-1/4"	1"	**US**	**SU**
1-1/4"	7/8"	**UT**	**TU**
1-1/4"	3/4"	**UV**	**VU**
1"	1"	**UW**	**WU**
1"	7/8"	**UX**	**XU**
1"	3/4"	**UY**	**YU**
7/8"	7/8"	**LU**	**UL**
7/8"	3/4"	**LV**	**VL**
3/4	3/4	**LX**	**XL**
3/4	1/2"	**LZ**	**ZL**
BSPP Porting (motor)			
1"	1"	**RT**-Double	
3/4"	3/4"	**RV**-Double	
1/2"	1/2"	**RW**-Double	
National Pipe Thread (motor)			
1"	1"	**RX**-Double	
3/4"	3/4"	**RY**-Double	
1/2"	1/2"	**RZ**-Double	

Gear Width (7)

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
03	3/8"	.47	7.6	3500psi (241 bar)
05	1/2"	.62	10.2	3500psi (241 bar)
06	5/8"	.78	12.7	3500psi (241 bar)
07	3/4"	.93	15.2	3500psi (241 bar)
08	7/8"	1.09	17.8	3500psi (241 bar)
10	1"	1.24	20.3	3500psi (241 bar)
11	1-1/8"	1.40	22.9	3500psi (241 bar)
12	1-1/4"	1.55	25.4	3500psi (241 bar)
13	1-3/8"	1.71	27.9	3500psi (241 bar)
15	1-1/2"	1.86	30.5	3300psi (228 bar)
16	1-5/8"	2.02	33.0	3100psi (214 bar)
17	1-3/4"	2.17	35.6	2900psi (200 bar)
18	1-7/8"	2.33	38.1	2700psi (186 bar)
20	2"	2.48	40.6	2500psi (172 bar)

Shaft Type (8)

(For Single or Tandem Units -unless noted)

97 SAE “A"Keyed
96 SAE “A" Splined
66 SAE “B" Keyed
65 SAE “B" Splined
60 Tapered, M12 x 1.5 thd. 3x5 mm Keyed; 1:5 taper (90 SEC Only)
56 Clutch Pump Tapered, 5/16 - 24 thd. (internal), #6 Woodruff Keyed (single unit only); 1:4 taper

Bearing Carriers (9)

(Dual Outlet - Pump Only)

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

IN •		OUT •		CW •	CCW •
SAE Split Flange					
1-1/4"	3/4"	3/4"		**CA**	**AC**
1-1/4"	3/4"	1/2"		**DA**	**AD**
1-1/4"	1/2"	1/2"		**EA**	**AE**
1"	3/4"	3/4"		**FA**	**AF**
1"	3/4"	1/2"		**GA**	**AG**
1"	1/2"	1/2"		**HA**	**AH**
OD Tube Porting					
1-1/2"	1"	1"		**JG**	**GJ**
1-1/2"	1"	7/8"		**KG**	**GK**
1-1/2"	7/8"	7/8"		**LG**	**GL**
1-1/2"	1"	3/4"		**MG**	**GM**
1-1/2"	3/4"	3/4"		**NG**	**GN**
1-1/4"	1"	1"		**PG**	**GP**
1-1/4"	1"	7/8"		**QG**	**GQ**
1-1/4"	7/8"	7/8"		**RG**	**GR**
1-1/4"	1"	3/4"		**SG**	**GS**
1-1/4"	3/4"	3/4"		**TG**	**GT**
1-1/4"	3/4"	5/8"		**UG**	**GU**
1-1/4"	3/4"	1/2"		**VG**	**GV**
1-1/4"	5/8"	5/8"		**WG**	**GW**
1-1/4"	1/2"	1/2"		**XG**	**GX**
1"	1"	1"		**YG**	**GY**
1"	1"	7/8"		**ZG**	**GZ**
1"	7/8"	7/8"		**RC**	**CR**
1"	1"	3/4"		**SC**	**CS**
1"	3/4"	3/4"		**TC**	**CT**
1"	3/4"	5/8"		**VC**	**CV**
1"	3/4"	1/2"		**WC**	**CW**
1"	5/8"	5/8"		**XC**	**CX**
1"	1/2"	1/2"		**YC**	**CY**

(Dual Outlet - Pump Only)

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

IN •		OUT •		CW •	CCW •
Metric Split Flange					
1-1/4"	3/4"	3/4"		**BD**	**DB**
1-1/4"	3/4"	1/2"		**CD**	**DC**
1-1/4"	1/2"	1/2"		**ED**	**DE**
1"	3/4"	3/4"		**FD**	**DF**
1"	3/4"	1/2"		**GD**	**DG**
1"	1/2"	1/2"		**HD**	**DH**
BSPP Porting					
1-1/2"	1"	1"		**HJ**	**JH**
1-1/2"	1"	7/8"		**KJ**	**JK**
1-1/2"	7/8"	7/8"		**LJ**	**JL**
1-1/2"	1"	3/4"		**MJ**	**JM**
1-1/2"	3/4"	3/4"		**NJ**	**JN**
1-1/4"	1"	1"		**PJ**	**JP**
1 1/4"	1"	7/8"		**QJ**	**JQ**
1-1/4"	7/8"	7/8"		**RJ**	**JR**
1-1/4"	1"	3/4"		**SJ**	**JS**
1-1/4"	3/4"	3/4"		**TJ**	**JT**
1-1/4"	3/4"	1/2"		**UJ**	**JU**
1-1/4"	1/2"	1/2"		**VJ**	**JV**
1"	1"	1"		**WJ**	**JW**
1"	1"	7/8"		**XJ**	**JX**
1"	7/8"	7/8"		**YJ**	**JY**
1"	1"	3/4"		**ZJ**	**JZ**
1"	3/4"	3/4"		**JD**	**DJ**
1"	3/4"	1/2"		**KD**	**DK**
1"	1/2"	1/2"		**LD**	**DL**

(Single Outlet - Pump Only)

Outlet for front section.

IN •	OUT •	CW •	CCW •
SAE Split Flange			
1-1/4"	1-1/4"	**CJ**	**JC**
1-1/4"	1"	**CL**	**LC**
1-1/4"	3/4"	**CM**	**MC**
1-1/4"	1/2"	**HB**	**BH**
1"	1"	**HC**	**CH**
1"	3/4"	**HF**	**FH**
1"	1/2"	**HL**	**LH**
3/4"	3/4"	**HM**	**MH**
3/4"	1/2"	**HN**	**NH**
OD Tube Porting			
1-1/2"	1-1/2"	**KB**	**BK**
1-1/2"	1-1/4"	**KC**	**CK**
1-1/2"	1"	**KF**	**FK**
1-1/2"	7/8"	**KL**	**LK**
1-1/2"	3/4"	**KM**	**MK**
1-1/4"	1-1/4"	**KN**	**NK**
1-1/4"	1"	**KO**	**OK**
1-1/4"	7/8"	**KP**	**PK**
1-1/4"	3/4"	**KQ**	**QK**
1-1/4"	5/8"	**MB**	**BM**
1-1/4"	1/2"	**ML**	**LM**
1"	1"	**MN**	**NM**
1"	7/8"	**MQ**	**QM**
1"	3/4"	**MR**	**RM**
1"	5/8"	**MS**	**SM**
1"	1/2"	**MT**	**TM**
3/4"	3/4"	**MU**	**UM**
3/4"	5/8"	**MV**	**VM**
3/4"	1/2"	**MW**	**WM**

(Single Outlet - Pump Only)

Outlet for front section.

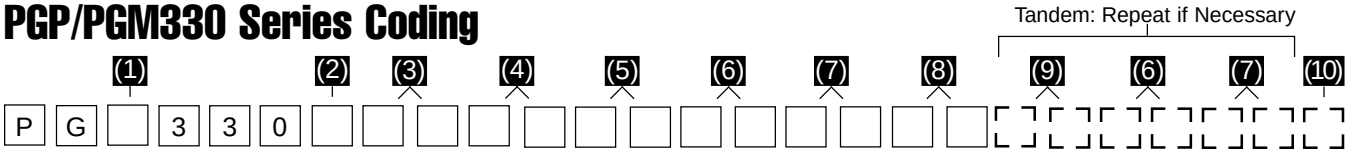
IN •	OUT •	CW •	CCW •
Metric Split Flange			
1-1/4"	1-1/4"	**CN**	**NC**
1-1/4"	1"	**CP**	**PC**
1-1/4"	3/4"	**CQ**	**QC**
1-1/4"	1/2"	**HR**	**RH**
1"	1"	**HS**	**SH**
1"	3/4"	**HT**	**TH**
1"	1/2"	**HU**	**UH**
3/4"	3/4"	**HV**	**VH**
3/4"	1/2"	**HW**	**WH**
BSPP Porting			
1-1/2"	1-1/2"	**KR**	**RK**
1-1/2"	1-1/4"	**KS**	**SK**
1-1/2"	1"	**KT**	**TK**
1 1/2"	7/8"	**KU**	**UK**
1-1/2"	3/4"	**KV**	**VK**
1-1/4"	1-1/4"	**KW**	**WK**
1-1/4"	1"	**KX**	**XK**
1-1/4"	7/8"	**KY**	**YK**
1-1/4"	3/4"	**KZ**	**ZK**
1-1/4"	1/2"	**HO**	**OH**
1"	1"	**HP**	**PH**
1"	7/8"	**HQ**	**QH**
1"	3/4"	**HX**	**XH**
1"	1/2"	**HY**	**YH**
3/4"	3/4"	**HZ**	**ZH**
3/4"	1/2"	**MX**	**XM**
Common Inlet Passage			
No Ports		**C**	**D**

Connecting Shaft (10)

For connecting tandem units.

1 Connecting Shaft

PGP/PGM330 Series Coding



Pump/Motor (1)

P	Pump
M	Motor

Unit (2)

A	Single Unit
B	Tandem Unit (flush studs)
C	Single or Tandem with two-piece shaft (O.B. bearing required)
L	Unit with Extended Studs

Shaft End Cover (3)

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, bi-rot w/ O.B. bearing + 1/4" ODT drain
9	Motor, bi-rot w/o O.B. bearing + 1/4" ODT drain
18	Motor, bi-rot w/ O.B. bearing + 1/4" BSPP drain (78 only)
19	Motor, bi-rot w/o O.B. bearing + 1/4" BSPP drain (42 & 78 only)

Shaft End Cover (4)

42	SAE “B" 4 bolt
78	SAE “C" 4 bolt
97	SAE “B" 2 bolt

Port End Cover (5)

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
SAE Split Flange (pump)			
1-1/2"	1-1/4"	**EJ**	**JE**
1-1/2"	1"	**EK**	**KE**
1-1/4"	1-1/4"	**EL**	**LE**
1-1/4"	1"	**EM**	**ME**
1"	1"	**EN**	**NE**
1-1/2"	-	**OF**	**FO**
1-1/4"	-	**OG**	**GO**
1"	-	**OJ**	**JO**
-	1-1/4"	**OM**	**MO**
-	1"	**ON**	**NO**
SAE Split Flange (motor)			
1-1/4"	1-1/4"	**CS**-Double	
1"	1"	**CT**-Double	
3/4"	3/4"	**CV**-Double	
OD Tube Porting (pump)			
1-1/4"	1"	**FJ**	**JF**
1"	1"	**FL**	**LF**
1-1/4"	-	**BG**	**GB**
1"	-	**BJ**	**JB**
-	1"	**BN**	**NB**
OD Tube Porting (motor)			
1 1/4"	1 1/4"	**VC**-Double	
1"	1"	**VN**-Double	
3/4"	3/4"	**VR**-Double	
Metric Split Flange (pump)			
1-1/2"	1-1/4"	**EV**	**VE**
1-1/2"	1"	**EW**	**WE**
1-1/4"	1-1/4"	**EX**	**XE**
1 1/4"	1"	**EY**	**YE**
1"	1"	**EZ**	**ZE**
1-1/2"	-	**OR**	**RO**
1 -1/4"	-	**OS**	**SO**
1"	-	**OT**	**TO**
-	1-1/4"	**OW**	**WO**
-	1"	**OX**	**XO**

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
Unported (pump)			
BI	Unported		
Unported (motor)			
BA	Unported		
Metric Split Flange (motor)			
1-1/4"	1-1/4"	**CX**-Double	
1"	1"	**CY**-Double	
3/4"	3/4"	**CZ**-Double	
Metric Straight Thread (motor)			
1-1/4"	1-1/4"	**VS**-Double	
1"	1"	**VT**-Double	
3/4"	3/4"	**VW**-Double	
BSPP Porting (pump)			
1-1/4"	1"	**FS**	**SF**
1"	1"	**FT**	**TF**
1-1/4"	-	**BQ**	**QB**
1"	-	**BR**	**RB**
-	1"	**BU**	**UB**
BSPP Porting (motor)			
1-1/4"	1-1/4"	**VX**-Double	
1"	1"	**VY**-Double	
3/4"	3/4"	**VZ**-Double	

Gear Housing (6)

AB	Pump
EB	Motor

Gear Width (7)

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
05	1/2"	.99	16.1	3500psi (241 bar)
07	3/4"	1.48	24.2	3500psi (241 bar)
10	1"	1.97	32.3	3500psi (241 bar)
12	1-1/4"	2.46	40.4	3500psi (241 bar)
15	1-1/2"	2.96	48.4	3500psi (241 bar)
17	1-3/4"	3.45	56.5	3250psi (224 bar)
20	2"	3.94	64.6	3000psi (207 bar)

Shaft Type (8)

(For Single or Tandem Units -unless noted)

7 SAE "C" Spline (two-piece only)
25 SAE "B" Spline
30 SAE "B" Keyed
98 SAE "BB" Splined
43 SAE "BB" Keyed

Bearing Carriers (9)

(Dual Outlet - Pump Only)

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

IN •		OUT •		CW •	CCW •
SAE Split Flange					
2"	1-1/4"	1-1/4"		**AM**	**MA**
2"	1-1/4"	1"		**AN**	**NA**
2"	1"	1"		**AP**	**PA**
1-1/2"	1-1/4"	1-1/4"		**AT**	**TA**
1-1/2"	1-1/4"	1"		**AU**	**UA**
1-1/2"	1"	1"		**AV**	**VA**
1-1/4"	1-1/4"	1-1/4"		**AW**	**WA**
1-1/4"	1-1/4"	1"		**AX**	**XA**
*1-1/4"	1"	1"		**AY**	**YA**
1"	1"	1"		**AZ**	**ZA**
Metric Split Flange					
2"	1-1/4"	1-1/4"		**DM**	**MD**
2"	1-1/4"	1"		**DN**	**ND**
2"	1"	1"		**DP**	**PD**
1-1/2"	1-1/4"	1-1/4"		**DT**	**TD**
1-1/2"	1-1/4"	1"		**DU**	**UD**
1-1/2"	1"	1"		**DV**	**VD**
1-1/4"	1-1/4"	1-1/4"		**DW**	**WD**
1-1/4"	1-1/4"	1"		**DX**	**XD**
1"	1"	1"		**DZ**	**ZD**
OD Tube Porting					
1-1/2"	1"	1"		**GV**	**VG**
1-1/4"	1"	1"		**GY**	**YG**
1"	1"	1"		**GZ**	**ZG**

(Single Outlet - Pump Only)

Outlet for front section.

IN •	OUT •		CW •	CCW •
SAE Split Flange				
2"	1-1/2"		**HB**	**BH**
2"	1-1/4"		**HC**	**CH**
2"	1"		**HF**	**FH**
1-1/2"	1-1/2"		**HL**	**LH**
1-1/2"	1-1/4"		**HM**	**MH**
1-1/2"	1"		**HN**	**NH**
1-1/4"	1-1/4"		**HO**	**OH**
1-1/4"	1"		**HP**	**PH**
1"	1"		**HQ**	**QH**
1-1/4"	1"		**RS**	**SR**
OD Tube Porting				
1 1/2"	1 1/4"	-	**KM**	**MK**
1 1/2"	1"	-	**KN**	**NK**
1 1/4"	1 1/4"	-	**KO**	**OK**
1 1/4"	1"	-	**KP**	**PK**
1"	1"	-	**KQ**	**QK**
Metric Split Flange				
2"	1-1/2"		**HR**	**RH**
2"	1-1/4"		**HS**	**SH**
2"	1"		**HT**	**TH**
1-1/2"	1-1/2"		**HU**	**UH**
1-1/2"	1-1/4"		**HV**	**VH**
1-1/2"	1"		**HW**	**WH**
1-1/4"	1-1/4"		**HX**	**XH**
1-1/4"	1"		**HY**	**YH**
1"	1"		**HZ**	**ZH**

(Combined Outlet)

Outlet for front section.

IN •	OUT •		CW •	CCW •
SAE Split Flange (pump)				
2"	1-1/2"		**UN**	**NU**
2"	1-1/4"		**UO**	**OU**
1-1/2"	1-1/2"		**UP**	**PU**
1-1/2"	1-1/4"		**UQ**	**QU**
1-1/4"	1-1/4"		**UR**	**RU**
SAE Split Flange (motor)				
1-1/2"	1-1/2"	**BB**-Double		
1-1/4"	1-1/4"	**CC**-Double		
1"	1"	**EE**-Double		
3/4"	3/4"	**FF**-Double		
OD Tube Porting (pump)				
1-1/2"	1-1/4"		**PQ**	**QP**
1-1/4"	1-1/4"		**PR**	**RP**
OD Tube Porting (motor)				
1-1/4"	1-1/4"	**NN**-Double		
1"	1"	**QQ**-Double		
3/4"	3/4"	**RR**-Double		
Common Inlet Passage (pump)				
No Ports			**C**	**D**

(Combined Outlet)

Outlet for front section.

IN •	OUT •		CW •	CCW •
Metric Split Flange (motor)				
1-1/2"	1-1/2"	**HH**-Double		
1-1/4"	1-1/4"	**JJ**-Double		
1"	1"	**KK**-Double		
3/4"	3/4"	**LL**-Double		
BSPP Porting (motor)				
1-1/4"	1-1/4"	**XX**-Double		
1"	1"	**YY**-Double		
3/4"	3/4"	**ZZ**-Double		
Metric Straight Thread (motor)				
1-1/4"	1-1/4"	**TT**-Double		
1"	1"	**UU**-Double		
3/4"	3/4"	**VV**-Double		

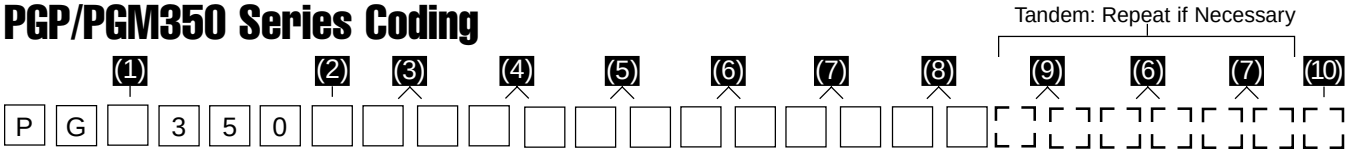
***** Outlet port for rear section.

Connecting Shaft (10)

For connecting tandem units.

1 Connecting Shaft

PGP/PGM350 Series Coding



Pump/Motor (1)

P	Pump
M	Motor

Unit (2)

A	Single Unit
B	Tandem Unit (flush studs)
C	Single or Tandem with two-piece shaft (O.B. bearing required)
L	Unit with Extended Studs

Shaft End Cover (3)

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, bi-rot w/ O.B. bearing + 1/4" ODT drain
9	Motor, bi-rot w/o O.B. bearing + 1/4" ODT drain
18	Motor, bi-rot w/ O.B. bearing + 1/4" BSPP drain (78 only)
19	Motor, bi-rot w/o O.B. bearing + 1/4" BSPP drain (42 & 78 only)

Shaft End Cover (4)

42	SAE “B" 4 bolt
46	SAE “B" 2/4 bolt
62	“ZF" 4 bolt (462 only) - 80 mm pilot, 80x80 mm
78	SAE “C" 4 bolt
97	SAE “B" 2 bolt
98	SAE “C" 2 bolt

Port End Cover (5)

(Side Ported) IN	OUT	CW	CCW	(Side Ported) IN	OUT	CW	CCW
•	•	•	•	•	•	•	•
SAE Split Flange (pump)				***Metric Split Flange (pump)***			
2"	1-1/2"	**EC**	**CE**	2"	1-1/2"	**ER**	**RE**
2"	1-1/4"	**EF**	**FE**	2"	1-1/4"	**ES**	**SE**
2"	1"	**EG**	**GE**	2"	1"	**ET**	**TE**
1-1/2"	1-1/2"	**EH**	**HE**	1-1/2"	1-1/2"	**EU**	**UE**
1-1/2"	1-1/4"	**EJ**	**JE**	1-1/2"	1-1/4"	**EV**	**VE**
1-1/2"	1"	**EK**	**KE**	1-1/2"	1"	**EW**	**WE**
1-1/4"	1-1/4"	**EL**	**LE**	1-1/4"	1-1/4"	**EX**	**XE**
1-1/4"	1"	**EM**	**ME**	1-1/4"	1"	**EY**	**YE**
1"	1"	**EN**	**NE**	1"	1"	**EZ**	**ZE**
2"	-	**OE**	**EO**	2"	-	**OP**	**PO**
1-1/2"	-	**OF**	**FO**	1-1/2"	-	**OR**	**RO**
1-1/4"	-	**OG**	**GO**	1-1/4"	-	**OS**	**SO**
1"	-	**OJ**	**JO**	1"	-	**OT**	**TO**
-	1-1/2"	**OL**	**LO**	-	1-1/2"	**OV**	**VO**
-	1-1/4"	**OM**	**MO**	-	1-1/4"	**OW**	**WO**
-	1"	**ON**	**NO**	-	1"	**OX**	**XO**
SAE Split Flange (motor)				***Metric Split Flange (motor)***			
1-1/2"	1-1/2"	**CR**-Double		1-1/2"	1-1/2"	**CW**-Double	
1-1/4"	1-1/4"	**CS**-Double		1-1/4"	1-1/4"	**CX**-Double	
1"	1"	**CT**-Double		1"	1"	**CY**-Double	
3/4"	3/4"	**CV**-Double		3/4"	3/4"	**CZ**-Double	
OD Tube Porting (pump)				***Metric Straight Thread (motor)***			
1-1/2"	1-1/4"	**FB**	**BF**	1-1/4"	1-1/4"	**VS**-Double	
1-1/2"	1"	**FC**	**CF**	1"	1"	**VT**-Double	
1-1/4"	1-1/4"	**FG**	**GF**	3/4"	3/4"	**VW**-Double	
1-1/4"	1"	**FJ**	**JF**				
1"	1"	**FL**	**LF**	***BSPP Porting (pump)***			
1-1/2"	-	**BC**	**CB**	1-1/2"	1-1/4"	**FN**	**NF**
1-1/4"	-	**BG**	**GB**	1-1/2"	1"	**FP**	**PF**
1"	-	**BJ**	**JB**	1-1/4"	1-1/4"	**FR**	**RF**
-	1-1/4"	**BL**	**LB**	1-1/4"	1"	**FS**	**SF**
-	1"	**BN**	**NB**	1"	1"	**FT**	**TF**
				1-1/2"	-	**BP**	**PB**
OD Tube Porting (motor)				1-1/4"	-	**BQ**	**QB**
1-1/4"	1-1/4"	**VC**-Double		1"	-	**BR**	**RB**
1"	1"	**VN**-Double		-	1-1/4"	**BT**	**TB**
3/4"	3/4"	**VR**-Double		-	1"	**BU**	**UB**
Unported (pump)				***BSPP Porting (motor)***			
Unported		**BI**	**IB**	1-1/4"	1-1/4"	**VX**-Double	
				1"	1"	**VY**-Double	
Unported (motor)				3/4"	3/4"	**VZ**-Double	
BA Unported							

Gear Housing (6)

AB	Pump
EB	Motor

Gear Width (7)

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
05	1/2"	1.28	20.9	3500psi (241 bar)
07	3/4"	1.91	31.3	3500psi (241 bar)
10	1"	2.55	41.8	3500psi (241 bar)
12	1-1/4"	3.19	52.2	3500psi (241 bar)
15	1-1/2"	3.83	62.7	3500psi (241 bar)
17	1-3/4"	4.46	73.1	3250psi (224 bar)
20	2"	5.10	83.6	3000psi (207 bar)
22	2-1/4"	5.74	94.0	2750psi (190 bar)
25	2-1/2"	6.38	104.5	2500psi (172 bar)

Shaft Type (8)

(For Single, Tandem or Two-piece Shaft -unless noted)

6 88X32X36 DIN 5462 Spline (two-piece only)
7 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)

Bearing Carriers (9)

(Dual Outlet - Pump Only)

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

IN •	OUT •		CW •	CCW •
SAE Split Flange				
2-1/2"	1-1/4"	1-1/4"	**AF**	**FA**
2-1/2"	1-1/4"	1"	**AG**	**GA**
2-1/2"	1"	1"	**AH**	**HA**
2"	1-1/4"	1-1/4"	**AM**	**MA**
2"	1-1/4"	1"	**AN**	**NA**
2"	1"	1"	**AP**	**PA**
1-1/2"	1-1/4"	1-1/4"	**AT**	**TA**
1-1/2"	1-1/4"	1"	**AU**	**UA**
1-1/2"	1"	1"	**AV**	**VA**
1-1/4"	1-1/4"	1-1/4"	**AW**	**WA**
1-1/4"	1-1/4"	1"	**AX**	**XA**
1-1/4"	1"	1"	**AY**	**YA**
1"	1"	1"	**AZ**	**ZA**
Metric Split Flange				
2"	1-1/4"	1-1/4"	**DM**	**MD**
2"	1-1/4"	1"	**DN**	**ND**
2"	1"	1"	**DP**	**PD**
1-1/2"	1-1/4"	1-1/4"	**DT**	**TD**
1-1/2"	1-1/4"	1"	**DU**	**UD**
1-1/2"	1"	1"	**DV**	**VD**
1-1/4"	1-1/4"	1-1/4"	**DW**	**WD**
1-1/4"	1-1/4"	1"	**DX**	**XD**
1-1/4"	1"	1"	**DY**	**YD**
1"	1"	1"	**DZ**	**ZD**
OD Tube Porting				
2"	1-1/4"	1-1/4"	**GM**	**MG**
2"	1-1/4"	1"	**GN**	**NG**
2"	1"	1"	**GP**	**PG**
1-1/2"	1-1/4"	1-1/4"	**GT**	**TG**
1-1/2"	1-1/4"	1"	**GU**	**UG**
1-1/2"	1"	1"	**GV**	**VG**
1-1/4"	1-1/4"	1-1/4"	**GW**	**WG**
1-1/4"	1-1/4"	1"	**GX**	**XG**
1-1/4"	1"	1"	**GY**	**YG**
1"	1"	1"	**GZ**	**ZG**

(Single Outlet - Pump Only)

Outlet for front section.

IN •	OUT •	CW •	CCW •
SAE Split Flange			
2"	1-1/2"	**HB**	**BH**
2"	1-1/4"	**HC**	**CH**
2"	1"	**HF**	**FH**
1-1/2"	1-1/2"	**HL**	**LH**
1-1/2"	1-1/4"	**HM**	**MH**
1-1/2"	1"	**HN**	**NH**
1-1/4"	1-1/4"	**HO**	**OH**
1-1/4"	1"	**HP**	**PH**
* 1"	1"	**HQ**	**QH**
1-1/4"	1"	**RS**	**SR**
OD Tube Porting			
2"	1-1/2"	**KB**	**BK**
2"	1-1/4"	**KC**	**CK**
2"	1"	**KF**	**FK**
1-1/2"	1-1/2"	**KL**	**LK**
1-1/2"	1-1/4"	**KM**	**MK**
1-1/2"	1"	**KN**	**NK**
1-1/4"	1-1/4"	**KO**	**OK**
1-1/4"	1"	**KP**	**PK**
1"	1"	**KQ**	**QK**
BSPP Porting			
2"	1-1/2"	**KR**	**RK**
2"	1-1/4"	**KS**	**SK**
2"	1"	**KT**	**TK**
1-1/2"	1-1/2"	**KU**	**UK**
1-1/2"	1-1/4"	**KV**	**VK**
1-1/2"	1"	**KW**	**WK**
1-1/4"	1-1/4"	**KX**	**XK**
1-1/4"	1"	**KY**	**YK**
1"	1"	**KZ**	**ZK**

(Combined Outlet)

Outlet for front section.

IN •	OUT •	CW •	CCW •
SAE Split Flange (pump)			
2"	1-1/2"	**UN**	**NU**
2"	1-1/4"	**UO**	**OU**
1-1/2"	1-1/2"	**UP**	**PU**
1-1/2"	1-1/4"	**UQ**	**QU**
1-1/4"	1-1/4"	**UR**	**RU**
SAE Split Flange (motor)			
2"	2"	**AA**-Double	
1-1/2"	1-1/2"	**BB**-Double	
1-1/4"	1-1/4"	**CC**-Double	
1"	1"	**EE**-Double	
3/4"	3/4"	**FF**-Double	
OD Tube Porting (pump)			
2"	1-1/2"	**PE**	**EP**
2"	1-1/4"	**PM**	**MP**
1-1/2"	1-1/2"	**PN**	**NP**
1-1/2"	1-1/4"	**PQ**	**QP**
1-1/4"	1-1/4"	**PR**	**RP**
OD Tube Porting (motor)			
1-1/2"	1-1/2"	**MM**-Double	
1-1/4"	1-1/4"	**NN**-Double	
1"	1"	**QQ**-Double	
3/4"	3/4"	**RR**-Double	
Common Inlet Passage			
No Ports		**C**	**D**
Metric Split Flange (motor)			
2"	2"	**GG**-Double	
1-1/2"	1-1/2"	**HH**-Double	
1-1/4"	1-1/4"	**JJ**-Double	
1"	1"	**KK**-Double	
3/4"	3/4"	**LL**-Double	

(Combined Outlet)

Outlet for front section.

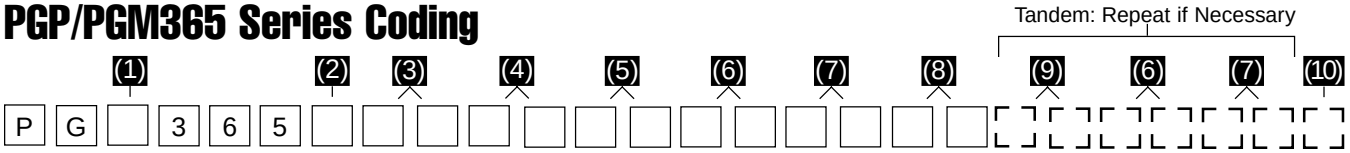
IN •	OUT •	CW •	CCW •
BSPP Porting (motor)			
1-1/2"	1-1/2"	**WW**-Double	
1-1/4"	1-1/4"	**XX**-Double	
1"	1"	**YY**-Double	
3/4"	3/4"	**ZZ**-Double	
Metric Straight Thread (motor)			
1-1/2"	1-1/2"	**SS**-Double	
1-1/4"	1-1/4"	**TT**-Double	
1"	1"	**UU**-Double	
3/4"	3/4"	**VV**-Double	

***** Outlet port for rear section.

Connecting Shaft (10)

For connecting tandem units.
1 Connecting Shaft

PGP/PGM365 Series Coding



Pump/Motor (1)

P	Pump
M	Motor

Unit (2)

A	Single Unit
B	Tandem Unit (flush studs)
C	Single or Tandem with two-piece shaft (O.B. bearing required)
L	Unit with Extended Studs

Shaft End Cover (3)

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, bi-rot w/ O.B. bearing + 1/4" ODT drain
9	Motor, bi-rot w/o O.B. bearing + 1/4" ODT drain

Shaft End Cover (4)

42	SAE “B" 4 bolt
78	SAE “C" 4 bolt
97	SAE “B" 2 bolt
98	SAE “C" 2 bolt

Port End Cover (5)

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
SAE Split Flange (pump)			
2"	1-1/2"	**EC**	**CE**
2"	1-1/4"	**EF**	**FE**
2"	1"	**EG**	**GE**
1-1/2"	1-1/2"	**EH**	**HE**
1-1/2"	1-1/4"	**EJ**	**JE**
1-1/2"	1"	**EK**	**KE**
1-1/4"	1-1/4"	**EL**	**LE**
1-1/4"	1"	**EM**	**ME**
1"	1"	**EN**	**NE**
2"	-	**OE**	**EO**
1-1/2"	-	**OF**	**FO**
1-1/4"	-	**OG**	**GO**
1"	-	**OJ**	**JO**
-	1-1/2"	**OL**	**LO**
-	1-1/4"	**OM**	**MO**
-	1"	**ON**	**NO**
SAE Split Flange (motor)			
1-1/2"	1-1/2"	**CR**-Double	
1-1/4"	1-1/4"	**CS**-Double	
1"	1"	**CT**-Double	
3/4"	3/4"	**CV**-Double	
OD Tube Porting (pump)			
1-1/2"	1-1/4"	**FB**	**BF**
1-1/2"	1"	**FC**	**CF**
1-1/4"	1-1/4"	**FG**	**GF**
1-1/4"	1"	**FJ**	**JF**
1"	1"	**FL**	**LF**
1-1/2"	-	**BC**	**CB**
1-1/4"	-	**BG**	**GB**
1"	-	**BJ**	**JB**
-	1-1/4"	**BL**	**LB**
-	1"	**BN**	**NB**

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
OD Tube Porting (motor)			
1-1/4"	1-1/4"	**VC**-Double	
1"	1"	**VN**-Double	
3/4"	3/4"	**VR**-Double	
Unported (pump)			
Unported		**BI**	**IB**
Unported (motor)			
BA Unported			
Metric Split Flange (pump)			
2"	1-1/2"	**ER**	**RE**
2"	1-1/4"	**ES**	**SE**
2"	1"	**ET**	**TE**
1-1/2"	1-1/2"	**EU**	**UE**
1-1/2"	1-1/4"	**EV**	**VE**
1-1/2"	1"	**EW**	**WE**
1-1/4"	1-1/4"	**EX**	**XE**
1-1/4"	1"	**EY**	**YE**
1"	1"	**EZ**	**ZE**
2"	-	**OP**	**PO**
1-1/2"	-	**OR**	**RO**
1-1/4"	-	**OS**	**SO**
1"	-	**OT**	**TO**
-	1-1/2"	**OV**	**VO**
-	1-1/4"	**OW**	**WO**
-	1"	**OX**	**XO**
Metric Split Flange (motor)			
1-1/2"	1-1/2"	**CW**-Double	
1-1/4"	1-1/4"	**CX**-Double	
1"	1"	**CY**-Double	
3/4"	3/4"	**CZ**-Double	

(Side Ported)

IN	OUT	CW	CCW
•	•	•	•
Metric Straight Thread (motor)			
1-1/4"	1-1/4"	**VS**-Double	
1"	1"	**VT**-Double	
3/4"	3/4"	**VW**-Double	
BSPP Porting (pump)			
1-1/2"	1-1/4"	**FN**	**NF**
1-1/2"	1"	**FP**	**PF**
1-1/4"	1-1/4"	**FR**	**RF**
1-1/4"	1"	**FS**	**SF**
1"	1"	**FT**	**TF**
1-1/2"	-	**BP**	**PB**
1-1/4"	-	**BQ**	**QB**
1"	-	**BR**	**RB**
-	1-1/4"	**BT**	**TB**
-	1"	**BU**	**UB**
BSPP Porting (motor)			
1-1/4"	1-1/4"	**VX**-Double	
1"	1"	**VY**-Double	
3/4"	3/4"	**VZ**-Double	

Gear Housing (6)

AB	Pump
EB	Motor

Gear Width (7)

	Gear Width	in.³/rev.	cm³/rev.	Max Pressure
07	3/4"	2.70	44.3	3500psi (241 bar)
10	1"	3.60	59.0	3500psi (241 bar)
12	1-1/4"	4.50	73.8	3500psi (241 bar)
15	1-1/2"	5.40	88.5	3500psi (241 bar)
17	1-3/4"	6.30	103.3	3500psi (241 bar)
20	2"	7.20	118.0	3500psi (241 bar)
22	2-1/4"	8.10	132.8	3250psi (224 bar)
25	2-1/2"	9.00	147.5	3000psi (207 bar)

Shaft Type (8)

(For Single, Tandem or Two-piece Units -unless noted)

7	SAE “C" Spline (single and tandem only)
11	SAE “C" Keyed
25	SAE “B" Spline (single only)

Bearing Carriers (9)

(Dual Outlet - Pump Only)

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

IN •	OUT •		CW •	CCW •
SAE Split Flange				
2-1/2"	1-1/2"	1-1/2"	**AC**	**CA**
2-1/2"	1-1/2"	1-1/4"	**AD**	**DA**
2-1/2"	1-1/2"	1"	**AE**	**EA**
2-1/2"	1-1/4"	1-1/4"	**AF**	**FA**
2-1/2"	1-1/4"	1"	**AG**	**GA**
2-1/2"	1"	1"	**AH**	**HA**
2"	1-1/2"	1-1/2"	**AJ**	**JA**
2"	1-1/2"	1-1/4"	**AK**	**KA**
2"	1-1/2"	1"	**AL**	**LA**
2"	1-1/4"	1-1/4"	**AM**	**MA**
2"	1-1/4"	1"	**AN**	**NA**
2"	1"	1"	**AP**	**PA**
1-1/2"	1-1/2"	1-1/2"	**AQ**	**QA**
1-1/2"	1-1/2"	1-1/4"	**AR**	**RA**
1-1/2"	1-1/2"	1"	**AS**	**SA**
1-1/2"	1-1/4"	1-1/4"	**AT**	**TA**
1-1/2"	1-1/4"	1"	**AU**	**UA**
1-1/2"	1"	1"	**AV**	**VA**
1-1/4"	1-1/4"	1-1/4"	**AW**	**WA**
1-1/4"	1-1/4"	1"	**AX**	**XA**
1-1/4"	1"	1"	**AY**	**YA**
1"	1"	1"	**AZ**	**ZA**
OD Tube Porting				
2"	1-1/2"	1 1/2"	**GJ**	**JG**
2"	1-1/2"	1 1/4"	**GK**	**KG**
2"	1-1/2"	1"	**GL**	**LG**
2"	1-1/4"	1 1/4"	**GM**	**MG**
2"	1-1/4"	1"	**GN**	**NG**
2"	1"	1"	**GP**	**PG**
1-1/2"	1-1/2"	1 1/2"	**GQ**	**QG**
1-1/2"	1-1/2"	1 1/4"	**GR**	**RG**
1-1/2"	1-1/2"	1"	**GS**	**SG**
1-1/2"	1-1/4"	1 1/4"	**GT**	**TG**
1-1/2"	1-1/4"	1"	**GU**	**UG**
1-1/2"	1"	1"	**GV**	**VG**
1-1/4"	1-1/4"	1 1/4"	**GW**	**WG**
1-1/4"	1-1/4"	1"	**GX**	**XG**
1-1/4"	1"	1"	**GY**	**YG**
1"	1"	1"	**GZ**	**ZG**

(Dual Outlet - Pump Only)

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

IN •	OUT •		CW •	CCW •
Metric Split Flange				
2-1/2"	1-1/2"	1-1/2"	**DB**	**BD**
2-1/2"	1-1/2"	1-1/4"	**DC**	**CD**
2-1/2"	1-1/2"	1"	**DE**	**ED**
2-1/2"	1-1/4"	1-1/4"	**DF**	**FD**
2-1/2"	1-1/4"	1"	**DG**	**GD**
2-1/2"	1"	1"	**DH**	**HD**
2"	1-1/2"	1-1/2"	**DJ**	**JD**
2"	1-1/2"	1-1/4"	**DK**	**KD**
2"	1-1/2"	1"	**DL**	**LD**
2"	1-1/4"	1-1/4"	**DM**	**MD**
2"	1-1/4"	1"	**DN**	**ND**
2"	1"	1"	**DP**	**PD**
1-1/2"	1-1/2"	1-1/2"	**DQ**	**QD**
1-1/2"	1-1/2"	1-1/4"	**DR**	**RD**
1-1/2"	1-1/2"	1"	**DS**	**SD**
1-1/2"	1-1/4"	1-1/4"	**DT**	**TD**
1-1/2"	1-1/4"	1"	**DU**	**UD**
1-1/2"	1"	1"	**DV**	**VD**
1-1/4"	1-1/4"	1-1/4"	**DW**	**WD**
1-1/4"	1-1/4"	1"	**DX**	**XD**
1-1/4"	1"	1"	**DY**	**YD**
1"	1"	1"	**DZ**	**ZD**
BSPP Porting				
2"	1-1/2"	1-1/2"	**JH**	**HJ**
2"	1-1/2"	1-1/4"	**JK**	**KJ**
2"	1-1/2"	1"	**JL**	**LJ**
2"	1-1/4"	1-1/4"	**JM**	**MJ**
2"	1-1/4"	1"	**JN**	**NJ**
2"	1"	1"	**JP**	**PJ**
1 1/2"	1-1/2"	1-1/2"	**JQ**	**QJ**
1 1/2"	1-1/2"	1-1/4"	**JR**	**RJ**
1 1/2"	1-1/2"	1"	**JS**	**SJ**
1 1/2"	1-1/4"	1-1/4"	**JT**	**TJ**
1 1/2"	1-1/4"	1"	**JU**	**UJ**
1 1/2"	1"	1"	**JV**	**VJ**
1 1/4"	1-1/4"	1-1/4"	**JW**	**WJ**
1 1/4"	1-1/4"	1"	**JX**	**XJ**
1 1/4"	1"	1"	**JY**	**YJ**
1"	1"	1"	**JZ**	**ZJ**

(Single Outlet - Pump Only)

Outlet for front section.

IN •	OUT •	CW •	CCW •
Metric Split Flange			
2-1/2"	1-1/2"	**CN**	**NC**
2-1/2"	1-1/4"	**CP**	**PC**
2-1/2"	1"	**CQ**	**QC**
2"	1-1/2"	**HR**	**RH**
2"	1-1/4"	**HS**	**SH**
2"	1"	**HT**	**TH**
1-1/2"	1-1/2"	**HU**	**UH**
1-1/2"	1-1/4"	**HV**	**VH**
1-1/2"	1"	**HW**	**WH**
1-1/4"	- 1/4"	**HX**	**XH**
1-1/4"	1"	**HY**	**YH**
1"	1"	**HZ**	**ZH**
SAE Split Flange			
2-1/2"	1-1/2"	**CJ**	**JC**
2-1/2"	1-1/4"	**CL**	**LC**
2-1/2"	1"	**CM**	**MC**
2"	1-1/2"	**HB**	**BH**
2"	1-1/4"	**HC**	**CH**
SAE Split Flange (continued)			
2"	1"	**HF**	**FH**
1-1/2"	1-1/2"	**HL**	**LH**
1-1/2"	1-1/4"	**HM**	**MH**
1-1/2"	1"	**HN**	**NH**
1-1/4"	1-1/4"	**HO**	**OH**
1-1/4"	1"	**HP**	**PH**
1"	1"	**HQ**	**QH**
2-1/2"	1-1/2"	**NR**	**RN**
1-1/4"	1"	**RS**	**SR**
OD Tube Porting			
2"	1-1/2"	**KB**	**BK**
2"	1-1/4"	**KC**	**CK**
2"	1"	**KF**	**FK**
1-1/2"	1-1/2"	**KL**	**LK**
1-1/2"	1-1/4"	**KM**	**MK**
1-1/2"	1"	**KN**	**NK**
1-1/4"	1-1/4"	**KO**	**OK**
1-1/4"	1"	**KP**	**PK**
1"	1"	**KQ**	**QK**

(Combined Outlet)

Outlet for front section.

IN •	OUT •	CW •	CCW •
SAE Split Flange (pump)			
2-1/2"	1-1/2"	**UC**	**CU**
2-1/2"	1-1/4"	**UF**	**FU**
2"	1-1/2"	**UN**	**NU**
2"	1-1/4"	**UO**	**OU**
1-1/2"	1-1/2"	**UP**	**PU**
1-1/2"	1-1/4"	**UQ**	**QU**
1-1/4"	1-1/4"	**UR**	**RU**

SAE Split Flange (motor)		
2"	2"	**AA**-Double
1-1/2"	1-1/2"	**BB**-Double
1-1/4"	1-1/4"	**CC**-Double
1"	1"	**EE**-Double
3/4"	3/4"	**FF**-Double
OD Tube Porting (pump)		
2"	1-1/2"	**PE** **EP**
2"	1-1/4"	**PM** **MP**
1-1/2"	1-1/2"	**PN** **NP**
1-1/2"	1-1/4"	**PQ** **QP**
1-1/4"	1-1/4"	**PR** **RP**
OD Tube Porting (motor)		
1-1/2"	1-1/2"	**MM**-Double
1-1/4"	1-1/4"	**NN**-Double
1"	1"	**QQ**-Double
3/4"	3/4"	**RR**-Double
Metric Split Flange (motor)		
2"	2"	**GG**-Double
1-1/2"	1-1/2"	**HH**-Double
1-1/4"	1-1/4"	**JJ**-Double
1"	1"	**KK**-Double
3/4"	3/4"	**LL**-Double
BSPP Porting (motor)		
1-1/2"	1-1/2"	**WW**-Double
1-1/4"	1-1/4"	**XX**-Double
1"	1"	**YY**-Double
3/4"	3/4"	**ZZ**-Double
Metric Straight Thread (motor)		
1-1/2"	1-1/2"	**SS**-Double
1-1/4"	1-1/4"	**TT**-Double
1"	1"	**UU**-Double
3/4"	3/4"	**VV**-Double

Common Inlet Passage

No Ports **C** **D**

***** Outlet port for rear section.

Connecting Shaft (10)

For connecting tandem units.

1 Connecting Shaft

General Information

PGP/PGM300 Series Pumps & Motors

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

The PGP/PGM300 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.

The PGP300 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 size to use a common inlet in tandem configuration. The thru-drive feature allows an independent piston or gear pump to be mounted to a rear SAE drive pad. 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.

Model P = Pump M = Motor Options D = Stealth	Gear Width	Theoretical Displacement in^3/r - cm^3/r		Mineral Oil Maximum Pressure Continuous psi - bar		 Intermittent psi - bar	
PGP315 **PGM315**		.620	10.2	3500	245	4000	275
		.775	12.7	3500	245	4000	275
		.930	15.2	3500	245	4000	275
		1.09	17.8	3500	245	4000	275
		1.24	20.3	3500	245	4000	275
		1.40	22.9	3500	245	4000	275
		1.55	25.9	3500	245	3850	265
		1.71	27.9	3500	245	3700	255
		1.86	30.5	3300	225	3500	245
		2.02	33.0	3100	215	3350	230
		2.17	35.6	2900	200	3100	215
		2.33	38.1	2700	190	2950	205
		2.48	40.6	2500	175	2750	190
PGP330 **PGM330**	0.5	.985	16.1	3500	245	4000	275
	0.75	1.47	24.2	3500	245	4000	275
	1.0	1.97	32.3	3500	245	4000	275
	1.25	2.46	40.4	3500	245	4000	275
	1.5	2.95	48.4	3500	245	3850	265
	1.75	3.44	56.5	3250	225	3500	245
	2.0	3.94	64.6	3000	210	3300	225
PGP350 **PGM350**		1.28	20.9	3500	245	4000	275
		1.91	31.3	3500	245	4000	275
		2.55	41.8	3500	245	4000	275
		3.19	52.2	3500	245	4000	275
		3.82	62.7	3500	245	3850	265
		4.46	73.1	3250	225	3500	245
		5.10	83.6	3000	210	3300	225
		5.73	94.0	2750	190	3000	210
	2.5	6.38	104.5	2500	175	2750	190
PGP365 **PGM365**	0.75	2.70	44.3	3500	245	4000	275
	1.0	3.60	59.0	3500	245	4000	275
	1.25	4.50	73.8	3500	245	4000	275
	1.5	5.40	88.5	3500	245	4000	275
	1.75	6.30	103.3	3500	245	4000	275
	2.0	7.20	118.0	3500	245	3850	265
	2.25	8.10	132.8	3250	225	3500	245
	2.5	9.00	147.5	3000	210	3300	225

PL Factor

Each section of a multiple pump or motor 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 or from the unit is limited by the physical strength of the shaft. This limit is defined as a “PL" factor; “P" being the operating pressure and “L" the summation of gear widths.

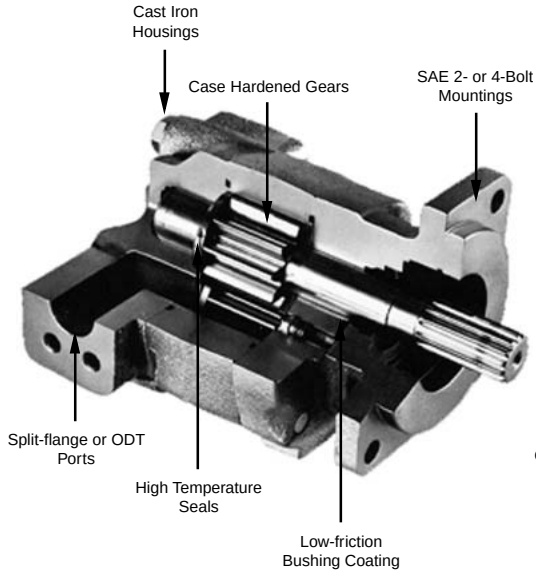
In multiple units the “PL" must be calculated for the first connecting shaft as well as the drive shaft. Each style or type of shaft has a unique “PL" factor as noted in the table to the right.

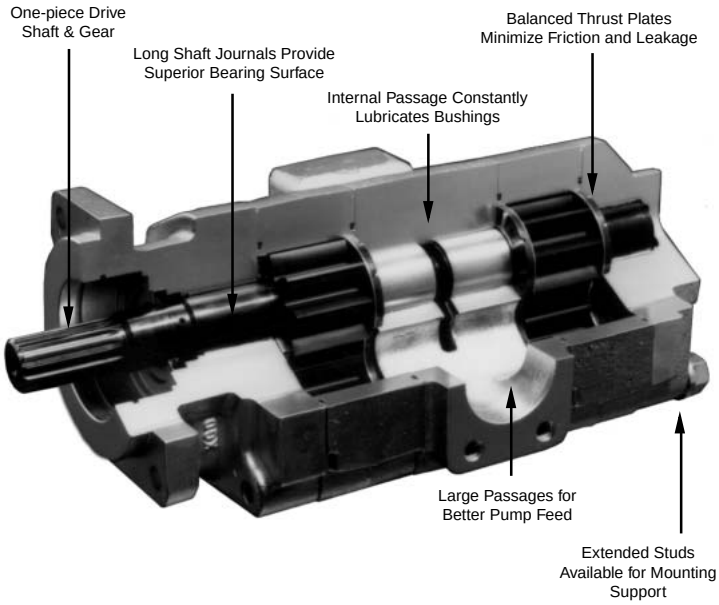
Pressure X Total Gear Width = PL

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

PL Chart

Shaft Style	Integral Shaft & Gear	Two-Piece Style
PGP/PGM315		
SAE “A" Spline *(up to 1.25" GW)*	4,450	--
SAE “A" Key	3,600	--
SAE “B" Spline	13,400	--
SAE “B" Key	9,900	--
Connecting Shaft	--	5,550
PGP/PGM330		
SAE “B" Spline	8,450	6,250
SAE “B" Key	6,250	6,250
SAE “B-B" Spline	13,000	6,250
SAE “B-B" Key	9,300	6,250
SAE “C" Spline	--	6,250
SAE “C" Key	--	6,250
Connecting Shaft	--	6,250
PGP/PGM350		
SAE “B" Spline	6,450	6,450
SAE “B" Key	4,750	4,750
SAE “B-B" Spline	9,900	9,000
SAE “B-B" Key	7,100	7,100
SAE “C" Spline	19,100	9,000
SAE “C" Key	13,900	9,000
Connecting Shaft	--	9,000
PGP/PGM365		
SAE “B" Spline	5,050	5,050
SAE “B" Key	3,700	3,700
SAE “B-B" Spline	7,750	5,350
SAE “B-B" Key	5,550	5,550
SAE “C" Spline	14,900	11,950
SAE “C" Key	10,800	10,800
Connecting Shaft	--	11,950





General Data

Pump Type
Heavy duty, cast iron, external gear pump

Mounting
SAE standard flanges, ZF, others

Porting
SAE split flanges and other types of threaded ports (see table page 7)

Shaft Style
SAE splined, keyed, and others (see table page 7)

Drive
Clockwise, counterclockwise, double. Direct drive with flexible coupling is recommended. Pumps subject to radial loads must be specified with an outboard bearing. Axial loading is not allowed.

Speed
From 400 to 3000 rpm.

Theoretical Displacements
(See table page 4)

Maximum radial loads with outboard bearing

PGP/PGM315 (only SEC - 90)	720 lb.
PGP/PGM330	785 lb.
PGP/PGM350	1125 lb.
PGP/PGM365	1460 lb.

Pump Inlet Pressure
30 psia (15psig) maximum pressure/5 in. Hg maximum vacuum at operating temperature

Outlet Pressure
(See table page 4)

Hydraulic Fluids
Mineral oil, fire resistant fluids:
- water-oil emulsions 60/40, HFB
- water-glycol, HFC
- phosphate-esters, HFD (FPM seals required)

Fluid temperature
Mineral oil with standard seals:
0° to 180° F (-20° C to +80° C)
Fire resistant fluids HFB, HFC
0° to 150° F (-20° C to +65° C)

Fluid velocity
From 7.5 to 1600 cSt (50 to 7500 sus)
Recommended 15 to 75 cSt

Filtration
ISO 4406 code:
- 19/16 at 2000 psi/ 140 bar
- 17/14 at 3000 psi/ 210 bar
- 15/12 at 4000 psi/ 275 bar

Flow Viscosity
Mineral oil and HFD:
- Inlet up to 8 fps/ 2.5 m/s
- Outlet up to 18 fps/ 6,0 m/s
  Fire resistant fluids HFB, HFC
- Inlet up to 5 fps/ 1.5 m/s
- Outlet up to 13 fps/ 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 will intermix even with separate reservoirs: PGP/PGM330/315, PGP/PGM350/315, PGP/PGM365/330, PGP/PGM365/330/315

Add-a-pump assemblies
Similar to piggyback, but fluids are not intermixed.
PGP330/Al (Al: aluminum pumps)
PGP350/Al, PGP350/315, PGP350/330, PGP350/350, PGP365/Al, PGP365/315, PGP365/330, PGP365/350

Pumps With Priority Outlet Load Sensing Availability
Available for models PGP315, PGP330, PGP350
- For operation outside given parameters, please consult the representative in your area.
- The smallest gear width of each model is not recommended for single units at the maximum rated pressure
- Theoretical displacement is equal to the theoretical flow at 1000 rpm.

Porting

SAE Flanged Ports Metric Thread (SSM)

Port Size inch	Port Size mm	A mm	B mm	C mm	D mm
0.50	12.7	17.5	38.1	M 8x1.25	23.9
0.75	19.1	22.2	47.6	M 10x1.50	22.4
1.00	25.4	26.2	52.2	M 10x1.50	22.4
1.25	31.8	30.2	58.7	M 10x1.50	28.4
1.50	36.1	35.7	69.9	M 12x1.75	26.9
2.00	50.8	42.9	77.8	M 12x1.75	26.9
2.50	63.5	50.8	88.9	M 12x1.75	30.2

SAE Flanged Ports UNC Thread (SSS)

Port Size inch	Port Size mm	A mm	B mm	C mm	D mm
0.50	12.7	17.5	38.1	5/16"-18	23.9
0.75	19.1	22.2	47.6	3/8"-16	22.4
1.00	25.4	26.2	52.2	3/8"-16	22.4
1.25	31.8	30.2	58.7	7/16"-14	28.4
1.50	36.1	35.7	69.9	1/2"-13	26.9
2.00	50.8	42.9	77.8	1/2"-13	26.9
2.50	63.5	50.8	88.9	1/2"-13	30.2

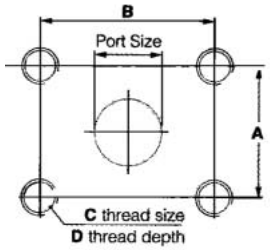
British Standard Pipe Parallel (BSPP)

BSPP	A mm	B mm	C mm	D mm
0.50"-14	19.00	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 UNF	B mm	C mm	D mm	E 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	3.30
1-1/4"	1-5/8"-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

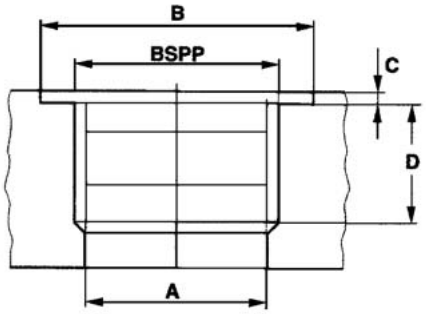
SAE Flange



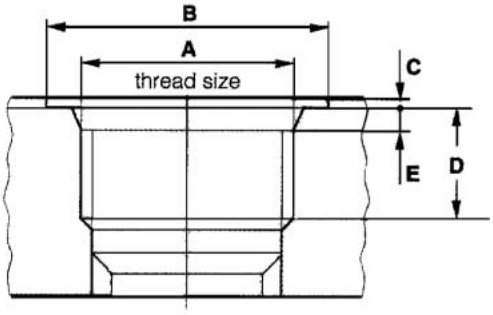
Drive Shaft
Maximum Input Torque

Shaft Style	• integral: 1 • 2 pieces: 2		315 lb-ft Nm	330 lb-ft Nm	350 lb-ft Nm	365 lb-ft Nm
SAE A	splined - 9 teeth	1	80 109	-	-	-
		2	-	-	-	-
	5/8" keyed	1	62 84	-	-	-
		2	-	-	-	-
SAE B	splined - 13 teeth	1	242 328	242 328	242 328	242 328
		2	-	159 215	242 328	242 328
	7/8" keyed	1	167 226	167 226	167 226	167 226
		2	-	159 215	167 226	167 226
SAE BB	splined - 15 teeth	1	-	371 503	371 503	371 503
		2	-	159 215	300 407	371 503
	1" keyed	1	-	250 339	250 339	250 339
		2	-	159 215	250 339	250 339
SAE C	splined - 14 teeth	1	-	-	708 960	708 960
		2	-	159 215	300 407	533 723
	1.25" keyed	1	-	-	500 678	500 678
		2	-	159 215	300 407	500 678
			-	-		-
DIN 5462 B8 x 32 x 36		2	-	159 215	300 407	-
DIN 254 taper 1:5		1	55 74	-		-
Connecting Shaft			90 122	159 215	300 407	533 723

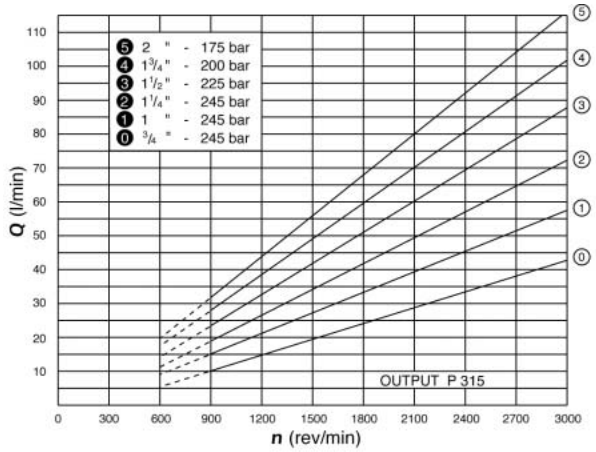
British Standards

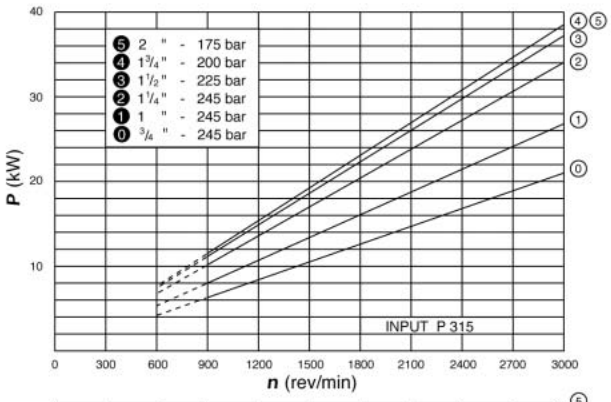


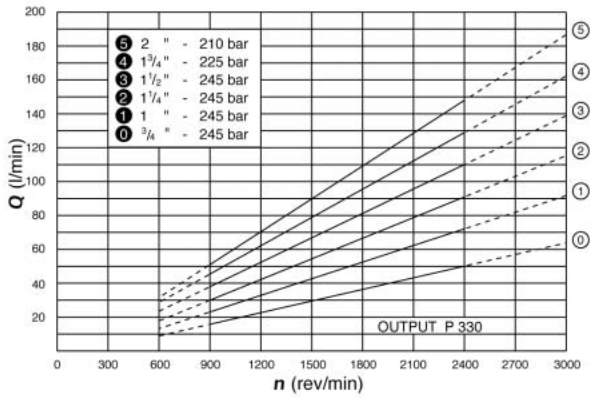
SAE Straight

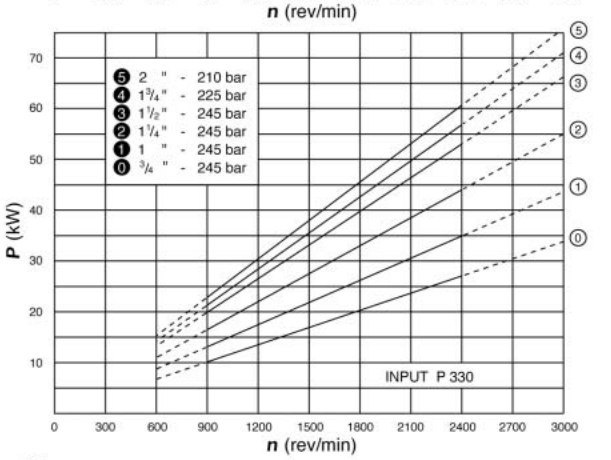


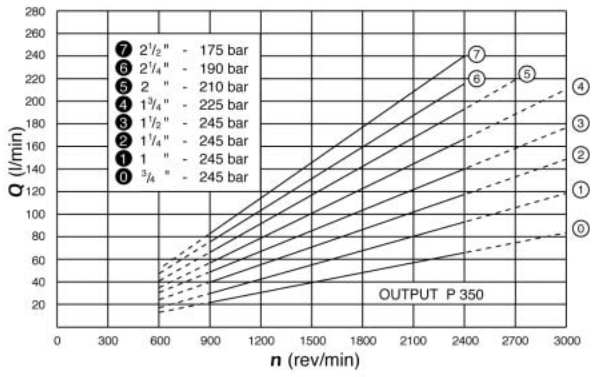
PGP/PGM315, PGP/PGM330, PGP/PGM350, PGP/PGM365 Performance Curves

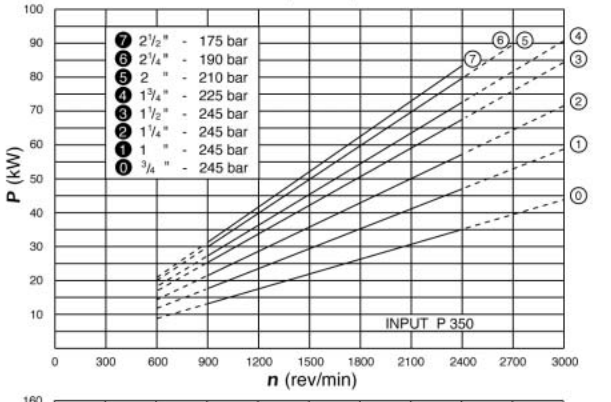


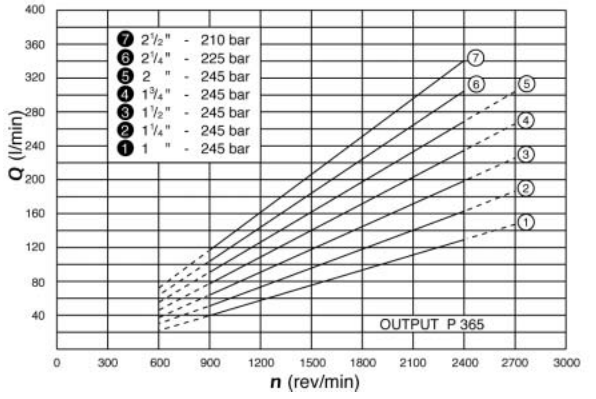


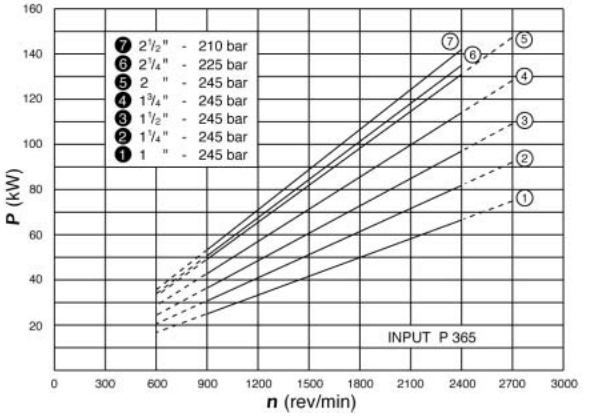








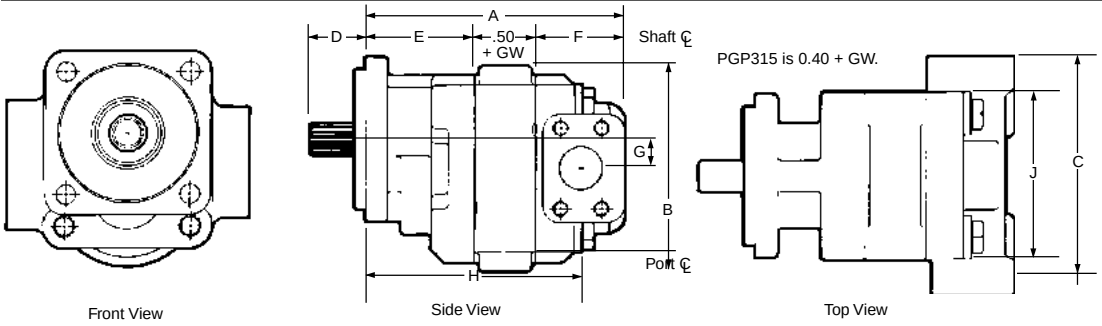




Dimensional Data

Single Pumps & Motors

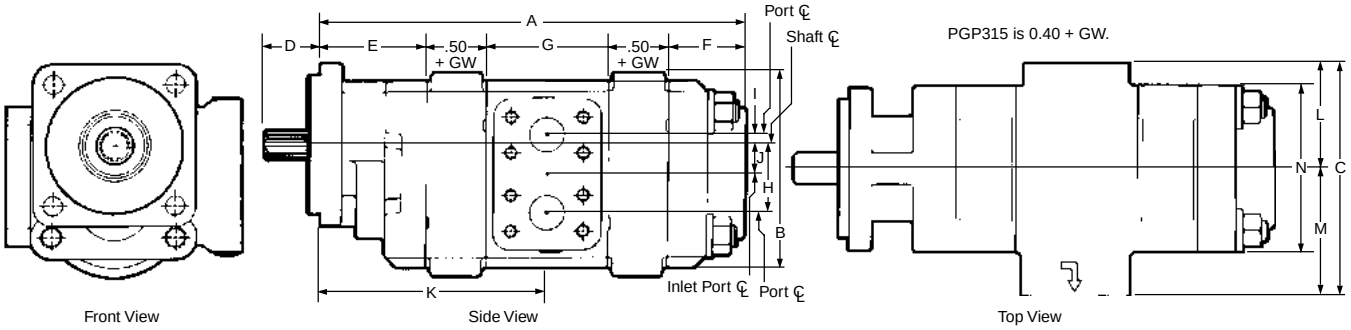
Model	Dimensions Inches/mm									
	A	B	C**	D*	E	F	G	H	J(P)	J(M)
PGP/PGM315	4.27+GW	4.75	4.25	1.62	1.88	2.00	.75	3.27+GW	4.0	4.19
	108.5+GW	120.7	108.0	41.1	47.8	50.8	19.1	83.1+GW	101.6	106.4
PGP/PGM330	6.19+GW	5.88	6.88	1.62	3.12	2.56	.88	4.94+GW	4.81	5.00
	157.2+GW	149.4	174.8	41.1	79.2	65.0	22.2	125.5+GW	122.2	127.0
PGP/PGM350	7.06+GW	6.00	7.12	2.19	3.50	3.06	1.00	5.56+GW	5.75	5.75
	179.3+GW	152.4	108.8	55.6	88.9	77.7	25.4	141.2+GW	146.1	146.1
PGP/PGM365	7.31+GW	7.25	7.38	2.19	3.75	3.06	1.12	5.81+GW	6.25	6.25
	185.7+GW	184.2	187.5	55.6	95.3	77.7	28.6	147.6+GW	158.8	158.8



Front View | Side View | Top View

Tandem Pumps & Motors

Model	Dimensions Inches/mm														
	A	B	C**	D*	E	F	G	H	I	J	K	L**	M**	N(P)	N(M)
PGP/PGM 315	7.05+T.GW	4.75	5.00	1.62	1.88	1.75	2.62	1.84	.34	.75	3.59+GW	2.25	2.75	4.0	4.19
	179.1+T.GW	120.7	127.0	41.1	47.8	44.5	66.5	46.7	8.6	19.1	91.2+GW	57.2	69.9	101.6	106.4
PGP/PGM 330	9.88+T.GW	5.88	6.78	1.62	3.12	2.25	3.50	2.38	.62	.88	5.38+GW	3.09	3.69	4.81	5.00
	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
PGP/PGM 350	10.25+T.GW	6.00	7.69	2.19	3.50	2.25	3.50	2.50	.50	1.00	5.75+GW	3.56	4.12	5.75	5.75
	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
PGP/PGM 365	11.38+T.GW	7.25	8.38	2.19	3.75	2.62	4.00	2.88	.62	1.12	6.25+GW	3.69	4.69	6.25	6.25
	289.1+T.GW	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



Front View | Side View | Top View

* This dimension will vary with type of drive shaft. ** This dimension will vary with type of ports. T=Total.

Weights

The following are the approximate weights of a single 1" gear section in each frame size:

PGP/PGM315 ... 18 lbs. PGP/PGM330 ..... 36 lbs.
PGP/PGM350 ... 51 lbs. PGP/PGM365 ..... 56 lbs.

For each additional 1/4" of gear width add:

PGP/PGM315 ..... 1 lb. PGP/PGM330 ... 1- 1/4 lbs.
PGP/PGM350 ... 1-1/2 lbs. PGP/PGM365 ..... 2-1/2 lbs.

To find the approximate weight of a multiple section assembly, add the weight of each section as a single. For the PGP/PGM330 frame size subtract 10% from this figure.

PGP315 Pump Performance Data

speed rpm	output flow input power	Gear Widths 1/2"	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"
900	GPM	2.0	3.2	4.4	5.5	6.7	7.9	9.0
	LPM	8	12	17	21	26	30	34
	HP	5	8	11	13	15	15	15
	kW	4	6	8	10	11	11	11
1200	GPM	2.8	4.4	6.0	7.6	9.2	10.7	12.2
	LPM	11	17	23	29	35	40	46
	HP	7	11	14	18	20	21	20
	kW	5	8	11	13	15	15	15
1500	GPM	3.6	5.6	7.7	9.6	11.6	13.5	15.4
	LPM	14	21	29	36	44	51	58
	HP	9	13	18	22	25	26	25
	kW	7	10	13	16	19	19	19
1800	GPM	4.4	6.8	9.3	11.6	14.0	16.3	18.6
	LPM	17	26	35	44	53	62	70
	HP	11	16	21	27	30	31	30
	kW	8	12	16	20	22	23	23
2100	GPM	5.2	8.1	10.9	13.6	16.4	19.1	21.8
	LPM	20	30	41	51	62	72	83
	HP	12	19	25	31	35	36	35
	kW	9	14	18	23	26	27	26
2400	GPM	6.0	9.3	12.5	15.6	18.8	21.9	25.1
	LPM	23	35	47	59	71	83	95
	HP	14	21	28	35	40	41	40
	kW	11	16	21	26	30	31	30
3000	GPM	7.7	11.7	15.7	19.6	23.7	27.6	31.5
	LPM	29	44	59	74	90	104	119
	HP	18	27	35	44	50	51	51
	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 the oil reservoir temperature at 120°F and viscosity 150 SUS at 100°F.

Note: Pump output flow is at the maximum rated pressure (see page 15).

PGM315 Motor Performance Data

Speed RPM	Output Torque	Gear Widths 1" 3500 psi A	B	1-1/4" 3500 psi A	B	1-1/2" 3300 psi A	B	1-3/4" 2900 psi A	B	2" 2500 psi A	B
900	in/lbs	7.1	665	8.3	830	9.6	940	10.9	965	12.2	950
	Nm	27	75.1	32	93.8	37	106.2	41	109.0	46	107.3
1200	in/lbs	8.8	665	10.5	830	12.2	940	13.8	965	15.5	950
	Nm	33	75.1	40	93.8	46	106.2	52	109.0	59	107.3
1500	in/lbs	10.6	660	12.6	825	14.7	935	16.7	955	18.8	945
	Nm	40	74.6	48	93.2	56	105.6	63	107.9	71	106.8
1800	in/lbs	12.3	655	14.7	820	17.2	930	19.6	950	22.1	940
	Nm	46	74.0	56	92.6	65	105.1	74	107.3	84	106.2
2100	in/lbs	14.0	655	16.8	820	19.7	930	22.5	950	25.4	940
	Nm	53	74.0	64	92.6	75	105.1	85	107.3	96	106.2
2400	in/lbs	15.7	640	18.9	800	22.2	910	25.4	930	28.8	920
	Nm	59	72.3	72	90.4	84	102.8	96	105.1	109	103.9
3000	in/lbs	19.0	640	23.0	800	27.2	905	31.2	925	35.3	915
	Nm	72	72.3	87	90.4	103	102.3	118	104.5	134	103.4

A: Input Flow GPM/LPM; B: Output Torque IN/LBS/Nm

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

PGP330 Pump Performance Data

speed rpm	output flow / input power	Gear Widths						
		1/2"	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"
900	GPM	3.2	5.1	7.0	8.8	10.6	12.4	14.3
	LPM	12	19	26	33	40	47	54
	HP	9	13	17	21	26	28	29
	kW	6	10	13	16	19	21	22
1200	GPM	4.5	7.0	9.5	12.0	14.5	16.9	19.4
	LPM	17	26	36	45	55	64	73
	HP	11	17	23	28	34	37	39
	kW	8	13	17	21	25	28	29
1500	GPM	5.8	8.9	12.1	15.2	18.3	21.4	24.5
	LPM	22	34	46	57	69	81	93
	HP	14	21	28	35	43	46	49
	kW	11	16	21	26	32	34	36
1800	GPM	7.1	10.8	14.7	18.4	22.1	25.9	29.6
	LPM	27	41	55	70	84	98	112
	HP	17	26	34	43	51	55	58
	kW	13	19	25	32	38	41	44
2100	GPM	8.4	12.7	17.2	21.6	26.0	30.3	34.7
	LPM	32	48	65	82	98	115	131
	HP	20	30	40	50	60	65	68
	kW	15	22	30	37	44	48	51
2400	GPM	9.6	14.7	19.8	24.8	29.8	34.8	39.8
	LPM	36	55	75	94	113	132	151
	HP	23	34	45	57	68	74	78
	kW	17	25	34	42	51	55	58
3000	GPM	12.2	18.5	24.9	31.2	37.5	43.8	50.1
	LPM	46	70	94	118	142	166	190
	HP	28	43	57	71	85	92	97
	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 the oil reservoir temperature at 120°F and viscosity 150 SUS at 100°F.

Note: Pump output flow is at the maximum rated pressure (see page 16).

PGM330 Motor Performance Data

Speed RPM	Output Torque	Gear Widths									
		1" 3500 psi		1-1/4" 3500 psi		1-1/2" 3500 psi		1-3/4" 3250 psi		2" 3000 psi	
		A	B	A	B	A	B	A	B	A	B
900	in/lbs	10.1	1010	12.3	1270	14.5	1530	16.7	1665	19.0	1770
	Nm	38	114.1	47	143.5	55	172.9	63	188.1	72	200.0
1200	in/lbs	12.8	1005	15.7	1265	18.6	1525	21.4	1660	24.3	1760
	Nm	49	113.6	59	142.9	70	172.3	81	187.6	92	198.9
1500	in/lbs	15.6	1000	19.1	1255	22.6	1515	26.1	1650	29.6	1750
	Nm	59	113.0	72	141.8	85	171.2	99	186.4	112	197.7
1800	in/lbs	18.4	995	22.5	1250	26.6	1505	30.8	1640	34.9	1740
	Nm	69	112.4	85	141.2	101	170.0	116	185.3	132	196.6
2100	in/lbs	21.1	990	25.9	1240	30.7	1495	35.4	1625	40.2	1720
	Nm	80	111.9	98	140.1	116	168.9	134	183.6	152	194.3
2400	in/lbs	23.9	985	29.3	1235	34.7	1480	40.1	1605	45.5	1695
	Nm	90	111.3	111	139.5	131	167.2	152	181.3	172	191.5
3000	in/lbs	29.2	980	35.9	1230	42.6	1475	49.3	1595	56.0	1685
	Nm	110	110.7	136	139.0	161	166.7	186	180.2	212	190.4

A: Input Flow GPM/LPM; B: Output Torque IN-LBS/Nm

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

PGP350 Pump Performance Data

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	GPM	4.0	6.4	8.8	11.2	13.7	16.1	18.6	21.0	23.4
	LPM	15	24	33	42	52	61	70	79	89
	HP	11	17	22	28	33	36	38	39	40
	kW	8	12	17	21	25	27	28	29	30
1200	GPM	5.6	8.8	12.1	15.4	18.7	21.9	25.2	28.4	31.7
	LPM	21	33	46	58	71	83	95	108	120
	HP	15	22	30	37	44	48	51	52	53
	kW	11	17	22	28	33	36	38	39	39
1500	GPM	7.3	11.3	15.5	19.5	23.6	27.7	31.8	35.9	40.0
	LPM	28	43	59	74	89	105	120	136	151
	HP	18	28	37	46	55	60	63	65	66
	kW	14	21	28	34	41	45	47	49	49
1800	GPM	8.9	13.8	18.8	23.6	28.6	33.5	38.4	43.3	48.3
	LPM	34	52	71	89	108	127	145	164	183
	HP	22	33	44	55	67	72	76	78	79
	kW	17	25	33	41	50	54	57	58	59
2100	GPM	10.6	16.3	22.1	27.8	33.6	39.3	45.1	50.8	56.6
	LPM	40	62	84	105	127	149	171	192	214
	HP	26	39	52	65	78	84	89	91	92
	kW	19	29	39	48	58	63	66	68	69
2400	GPM	12.2	18.8	25.4	31.9	38.5	45.1	51.7	58.2	64.8
	LPM	46	71	96	121	146	171	196	220	245
	HP	30	44	59	74	89	96	101	105	106
	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 the oil reservoir temperature at 120°F and viscosity 150 SUS at 100°F.

Note: Pump output flow is at the maximum rated pressure (see page 18).

PGM350 Motor Performance Data

Speed RPM	Input Torque	Gear Widths													
		1" 3500 psi		1-1/4" 3500 psi		1-1/2" 3500 psi		1-3/4" 3250 psi		2" 3000 psi		2-1/4" 2750 psi		2-1/2" 2500 psi	
		A	B	A	B	A	B	A	B	A	B	A	B	A	B
900	in/lbs	13.4	1320	16.0	1670	18.6	2025	21.2	2225	23.8	2350	26.4	2425	28.9	2450
	Nm	51	149.1	61	188.7	70	228.8	80	251.4	90	265.5	100	274.0	110	276.8
1200	in/lbs	16.9	1315	20.4	1660	23.8	2015	27.2	2215	30.6	2340	34.0	2410	37.4	2435
	Nm	64	148.6	77	187.6	90	227.7	103	250.3	116	264.4	129	272.3	142	275.1
1500	in/lbs	20.5	1300	24.7	1640	28.9	1990	33.2	2195	37.4	2315	41.7	2385	45.9	2410
	Nm	77	146.9	93	185.3	110	224.8	126	248.0	142	261.6	158	269.5	174	272.3
1800	in/lbs	24.0	1295	29.0	1635	34.1	1980	39.2	2180	44.2	2300	49.3	2375	54.4	2395
	Nm	91	146.3	110	184.7	129	223.7	148	246.3	167	259.9	187	268.3	206	270.6
2100	in/lbs	27.5	1285	33.4	1620	39.3	1965	45.2	2165	51.1	2285	57.0	2355	62.9	2380
	Nm	104	145.2	126	183.0	149	222.0	171	244.6	193	258.2	216	266.1	238	268.9
2400	in/lbs	31.0	1265	37.7	1600	44.4	1940	51.2	2135	57.9	2255	64.6	2325	71.3	2350
	Nm	117	142.9	143	180.8	168	219.2	194	241.2	219	254.8	245	262.7	270	265.5

A: Input Flow GPM/LPM; B: Output Torque IN/LBS/Nm

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

PGP365 Pump Performance Data

speed rpm	output input	Gear Widths 3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"	2-1/4"	2-1/2"
900	GPM	8.0	11.5	14.9	18.4	21.8	25.4	28.8	32.3
	LPM	30	44	57	70	83	96	109	122
	HP	24	31	39	47	55	63	66	67
	kW	18	23	29	35	41	47	49	50
1200	GPM	11.5	16.2	20.8	25.5	30.0	34.7	39.3	44.0
	LPM	44	61	79	96	114	131	149	166
	HP	31	42	52	63	73	84	88	90
	kW	23	31	39	47	55	63	65	67
1500	GPM	15.0	20.9	26.6	32.5	38.2	44.1	49.8	55.6
	LPM	57	79	101	123	145	167	188	211
	HP	39	52	66	79	92	105	110	112
	kW	29	39	49	59	68	78	82	84
1800	GPM	18.5	25.6	32.5	39.5	46.4	53.4	60.3	67.3
	LPM	70	97	123	149	176	202	228	255
	HP	47	63	79	94	110	126	131	135
	kW	35	47	59	70	82	94	98	101
2100	GPM	22.0	30.2	38.3	46.5	54.6	62.8	70.8	79.0
	LPM	83	114	145	176	207	238	268	299
	HP	55	73	92	110	128	147	153	157
	kW	41	55	68	82	96	110	114	117
2400	GPM	25.6	34.9	44.2	53.5	62.8	72.1	81.4	90.7
	LPM	97	132	167	203	238	273	308	343
	HP	63	84	105	126	147	168	175	180
	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 the oil reservoir temperature at 120°F and viscosity 150 SUS at 100°F.

Note: Pump output flow is at the maximum rated pressure (see page 20).

PGM365 Motor Performance Data

Speed RPM	Input Torque	Gear Widths 1" 3500 psi A	B	1-1/4" 3500 psi A	B	1-1/2" 3500 psi A	B	1-3/4" 3500 psi A	B	2" 3500 psi A	B	2-1/4" 3250 psi A	B	2-1/2" 3000 psi A	B
900	in/lbs	18.4	1865	22.0	2355	25.6	2860	29.2	3370	32.9	3850	36.5	4020	40.1	4125
	Nm	70	210.7	83	266.1	97	323.1	111	380.8	124	435.0	138	454.2	152	466.1
1200	in/lbs	23.3	1845	28.1	2330	32.9	2830	37.6	3335	42.4	3810	47.2	3980	52.0	4080
	Nm	88	208.5	106	263.3	124	319.7	142	376.8	160	430.5	179	449.7	197	461.0
1500	in/lbs	28.2	1815	34.1	2295	40.1	2780	46.0	3280	52.0	3750	57.9	3915	63.8	4020
	Nm	107	205.1	129	259.3	152	314.1	174	370.6	197	423.7	219	442.3	242	454.2
1800	in/lbs	33.1	1805	40.2	2280	47.3	2765	54.4	3265	61.5	3730	68.6	3895	75.7	3995
	Nm	125	203.9	152	257.6	179	312.4	206	368.9	233	421.4	260	440.1	287	451.4
2100	in/lbs	37.9	1755	46.2	2220	54.4	2690	62.8	3160	71.1	3610	79.3	3770	87.6	3865
	Nm	144	198.3	175	250.8	206	303.9	238	357.0	269	407.9	300	426.0	332	436.7
2400	in/lbs	42.8	1705	52.3	2155	61.7	2615	71.2	3055	80.6	3490	90.1	3645	99.5	3740
	Nm	162	192.6	198	243.5	234	295.5	269	345.2	305	394.3	341	411.8	377	422.6

A: Input Flow GPM/LPM; B: Output Torque IN/LBS/Nm

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

PGP400 Series Pumps

The PGP400 series of high pressure, fixed displacement gear pumps are available in single and multiple assemblies. These units are rated for service up to 4500 psi. They're available in three models offering you a displacement range from 1.5 to 5.5 CIR.

These units are cast from high-strength iron which provides the structural integrity needed at high pressures. Gear widths have been selected to keep shaft deflections and bearing loads within acceptable design limits. Body seals have been strengthened and the fastener pre-load increased to assure reliability under high pressure conditions.

A wide variety of SAE B and C mounting flanges and drive shaft configurations are available. Porting is through SAE split flange or "O" ring fitting. Special hardened steel alloy gears with integral drive shaft run between pressure-balanced, bronze wear plates to make these rugged pumps highly efficient. Long shaft journals provide superior bearing surfaces and add to long service life.

Pumps can be assembled for rotation in either direction.

Displacement per inch of gear

PGP430	1.97 CIR
PGP450	2.55 CIR
PGP465	3.60 CIR

Performance Data

The performance data shown on the adjacent page 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 at 4500 psi with the oil reservoir temperature at 180° F and viscosity of 150 SUS @ 100.

Oil Recommendations

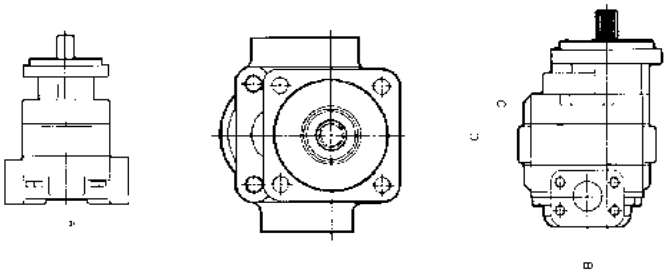
The pumps work well on most good hydraulic oils as well as synthetic and fire resistant fluids. Please check with our Product Support Department before using any fire resistant or non-petroleum based fluid. Some of these products require special seals.

Viscosity – 50 SUS min. @ operating temperature
7500 SUS max. @ starting temperature
Viscosity index – 90 minimum
Analine point – 175 minimum
Additives – Foam depressant
Rust inhibitors
Maximum recommended system operating temperature with standard buna-N seals is 180° F or 83° C.

Dimensional Data

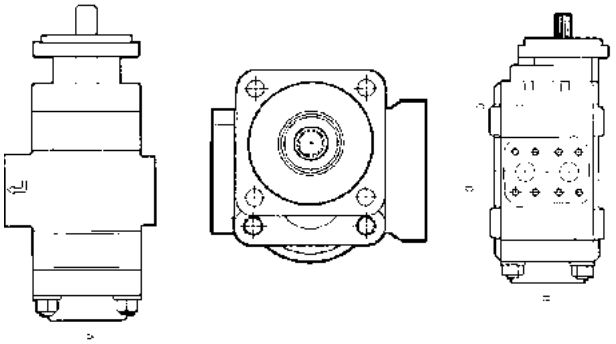
Single Units

Model	A	B	C	D	
PGP 430	6.88	5.88	4.94 + GW	6.19 + GW	Inches
	174.7	149.3	125.5 + GW	157.2 + GW	MM
PGP 450	7.12	6.00	5.56 + GW	7.06 + GW	Inches
	108.8	152.4	141.2 + GW	179.3 + GW	MM
PGP 465	7.38	7.25	5.81 + GW	7.31 + GW	Inches
	187.4	184.1	147.6 + GW	185.7 + GW	MM

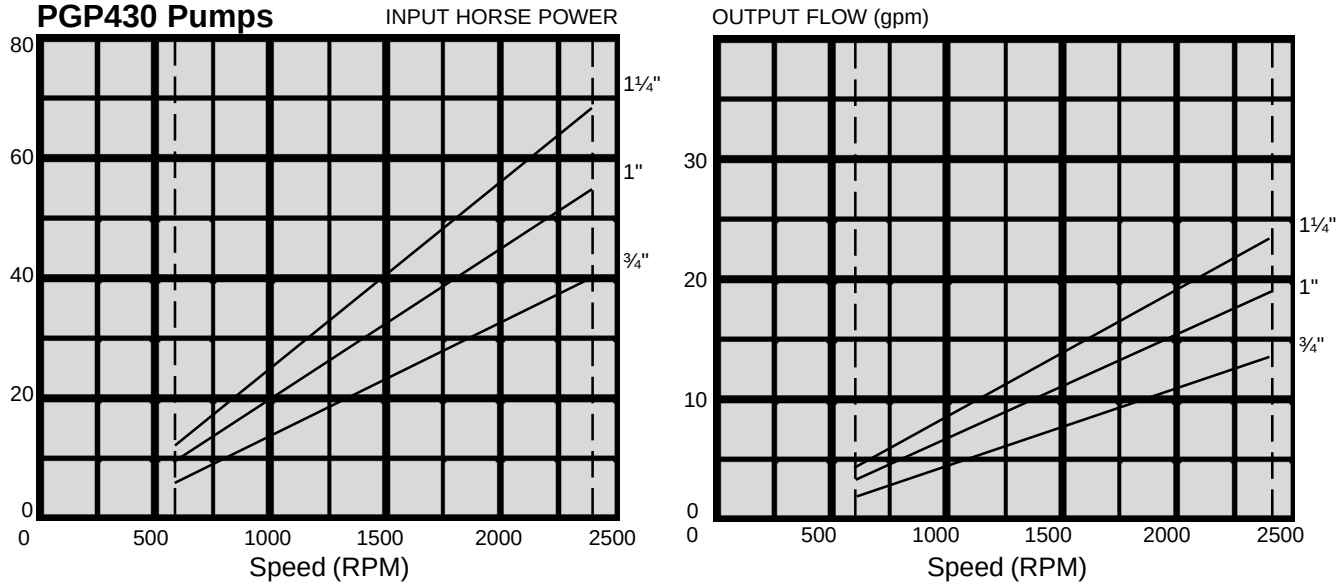


Multiple Units

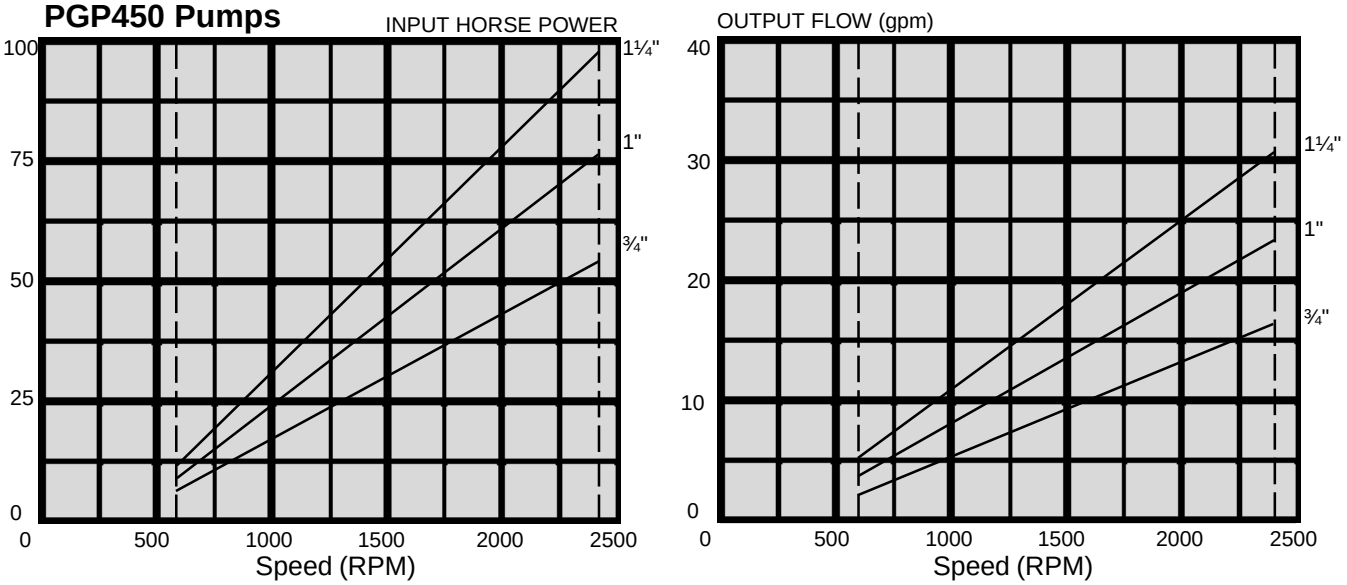
Model	A	B	C	D	
PGP 430	6.78	5.88	5.38 + GW	9.88 + GW	Inches
	172.2	149.3	136.7 + GW	250.9 + GW	MM
PGP 450	7.68	6.00	5.75 + GW	10.25 + GW	Inches
	195.1	152.4	146.8 + GW	254.6 + GW	MM
PGP 465	8.38	7.25	6.25 + GW	11.38 + GW	Inches
	212.8	184.1	158.7 + GW	289.0 + GW	MM



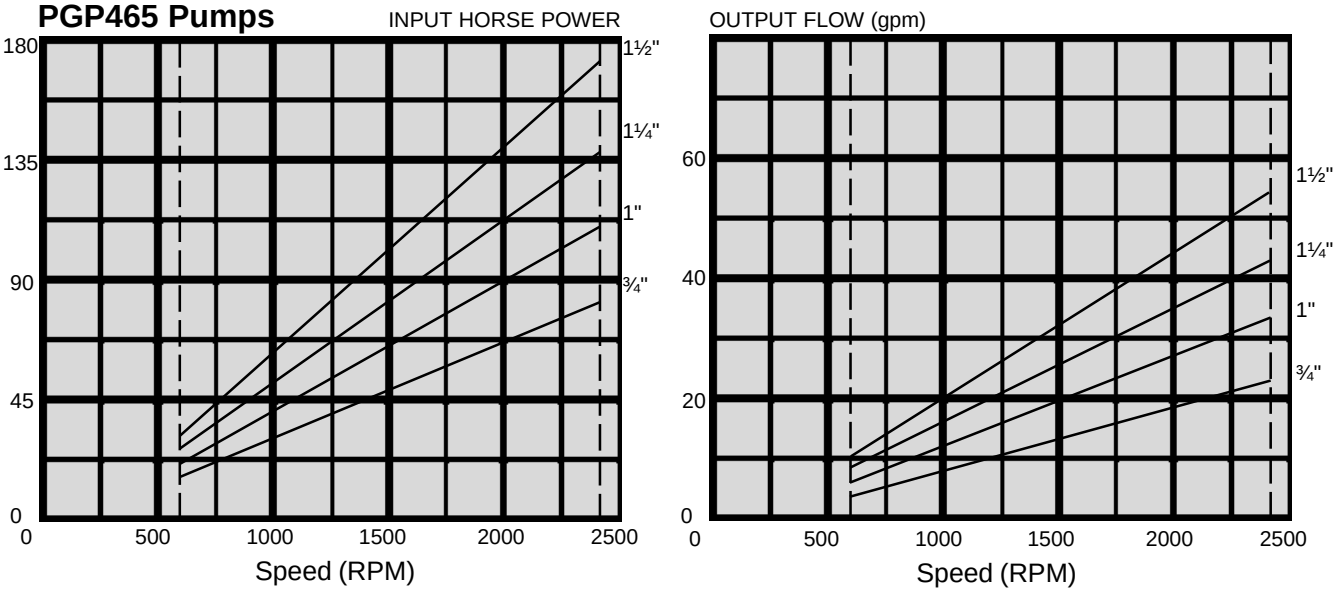
PGP430 Pumps



PGP450 Pumps



PGP465 Pumps



Special Assemblies for Gear Pumps and Motors

Contact Product Support for more information.

We became the market leading manufacturer of hydraulic gear pumps for mobile equipment by anticipating customer needs and developing engineered solutions to meet them. While we offer a broad range of standard gear pumps and motors for most applications, we recognize that standard equipment may not always be the best solution. We are always ready and able to discuss special applications and provide practical, cost-effective, well-engineered solutions to your special hydraulic system needs. Here are a few examples of our engineering and manufacturing skills.

PGP/PGM315 Series - Special Assemblies

- PGP/PGM315 gears with various drive shafts
- PGP315 port end cover with built-in relief valve Tandem use only - no inlet port available
- PGP315 port end cover with side ports up to 1-1/2" S.F. inlet
- PGP315 port end cover with integral priority valve Built-in relief valve on primary circuit
- Clutch pump mount model available

PGP/PGM330 Series - Special Assemblies

- PGP330 dual outlet pump bearing carrier that will accept a 2-1/2" S.F. inlet port
- PGP/PGM330 gears with optional number of gear teeth (10 tooth gears are standard; 13 tooth gears are optional)
- PGP/PGM330 gears with various drive shafts and gear widths
- PGP330/PGP315 piggyback
- PGP330 port end cover with side ports up to 2" S.F. inlet
- Narrow PGP330 dual rotation port end cover that accepts side and/or rear ports
- Narrow PGP330 port end cover that accepts side and/or rear ports
- PGP330 port end cover that accepts rear threaded ports
- PGP330 port end cover with integral priority valve No relief valve on primary circuit
- PGP330 pad mount shaft end cover with two drive shafts
- PGP330 SAE "B" 2 bolt short shaft end cover
- FD330 flow divider assemblies

PGP/PGM350 Series - Special Assemblies

- PGP/PGM350 gears with optional number of gear teeth (10 tooth gears are standard; 13 tooth gears are optional)
- PGP/PGM350 gears with various drive shafts and gear widths
- PGP350/PGP315 piggyback
- PGP350 add-a-pump port end cover with the ability to mount any pump that has an SAE "A" or "B" 2 bolt mounting flange and SAE "A" or "B" splined drive shaft
- PGP350 port end cover that is shorter and narrower than standard P350 PEC. Accepts 1-1/2" diameter beaded inlet tube
- PGP/PGM350 SAE "C" 4 bolt, ductile iron shaft end cover
- PGP/PGM350 SAE "B" 2 bolt short shaft end cover
- FD350 flow divider assemblies
- Double tapered bearing
- Pad mount

PGP/PGM365 Series - Special Assemblies

- P365 bearing carriers with special porting arrangements accept 3" S.F. inlet ports
- PGP/PGM365 gears with various drive shafts and gear widths
- PGP365/PGP330 piggyback
- PGP365 add-a-pump port end cover with the ability to mount any pump that has an SAE "A" or "B" 2 bolt mounting flange and SAE "A" or "B" splined drive shaft
- PGM365 SAE "C" 4 bolt, compacted graphite shaft end cover
- FD365 flow divider assemblies

PGP315 Tandem Pump with Integral Port End Priority Valve

By incorporating the priority flow valve and relief valve in the port end housing, this design puts the added flow of a tandem to good use without requiring excessive mounting space for a bolt-on valve. The integral priority flow valve provides primary and secondary flow ports. Flow in excess of that required by the priority circuit may be routed to a power beyond function. These units may be used to provide power steering or braking requirements.

Load-sense Unloaders

These valves may be bolted to any standard pump outlet or used in-line between the pump and a load-sense control valve. Two sizes handle flows from 0-30 gpm and 30-60 gpm at pressures to 3500 psi. The unloader effectively modulates pump output relative to function pressure and flow requirements.

Charge/Lube Pump

The design of this unit takes advantage of relatively low pressure operating requirements (450 psi.) to reduce the number of cast iron components required for its two pump sections from five pieces to three. Relief valves for both sections are built into the pump body. The common journal carrier, one-piece steel drive shaft, and powdered metal driven gears contribute to the overall compactness of the design while providing charge and transmission lubrication flows.

Through Shaft Pump

An innovative design, this piggyback unit is driven by a common shaft that is actually the drive shaft of the machine to which it supplies two separate flows. The through shaft eliminates the need for a PTO, reduces the number of component parts and contributes to a lighter more compact machine design.

Pump with Shaft End Cover Ports

This unusually-shaped shaft end housing allows it to fit tight mounting spaces while maintaining smooth hydraulic line functions. The housing features integral port lobes that allow straight hydraulic line connections without line kinks or space robbing line loops. Overall length of the pump is reduced by eliminating typical gear housing ports.

Add-A-Pump

This special port end housing for 350 and 365 pumps allows a separate pump to be mounted to the rear of the unit as needed for optional machine functions or to provide flow from a separate reservoir. With bearing, lip seal and drain already in place, this special port end housing can accommodate any add-on pump with SAE A or B two-bolt mounting pattern and splined drive shaft.

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

PGP/PGM 500 Series

Gear Pumps and Motors In Single And Multiple Configurations

Table of Contents

Pump/Motor Products

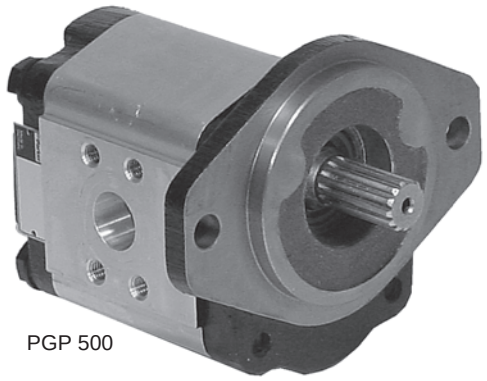
PGP/PGM 505
- Flows to 8 gpm
- Continuous pressures to 4000 psi
- Speeds to 4000 rpm
- Wide variety of integral valve options
- Single and bi-rotational motors

PGP/PGM 511
- Flows to 19 gpm
- Continuous pressures to 3625 psi
- Speeds to 4000 rpm
- Wide variety of integral valve options
- Single and bi-rotational motors

PGP/PGM 500 Series

- **High Performance**
- **High Efficiency**
- **High Pressure Operation**

PGP/PGM 500 series gear pumps/motors are an advanced performance version of the international "bushing block" style pumps. PGP/PGM 500 series pumps/motors offer superior performance, high efficiency and low noise operation at high operating pressures. They are produced in three frame sizes (PGP/PGM 505, PGP/PGM 511) with displacements ranging from 2 to 52 cm^3 (.12 to 3.17 in^3/rev). A wide variety of standard options are available to meet specific application requirements worldwide.


PGP 500

Advantages

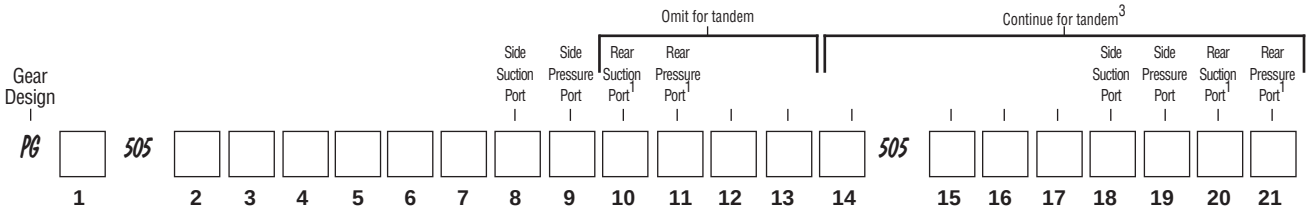
- **Up to 275 bar (4000 psi) continuous operation**
  High strength materials and large journal diameters provide low bearing loads for high pressure operation.
- **Low noise**
  PGP/PGM 505 - 13 tooth gear profile,
  PGP/PGM 511 – 12 tooth gear profile and optimized flow metering provide reduced pressure pulsation and exceptionally quiet operation.
- **High efficiency**
  Pressure balanced bearing blocks assure maximum efficiency under all operating conditions.
- **Application flexibility**
  International mounts and connections, integrated valve capabilities and common inlet multiple pump configurations provide unmatched design and application versatility.

Characteristics

Product Features	Description
Pump Type	Heavy-duty, aluminum, external gear
Mounting	SAE, rectangular, thru-bolt, and application specific
Ports	SAE/metric split flange, metric and others
Shaft Style	SAE splined, keyed, tapered, tang and specials.
Speed	500 - 4000 rpm, see tables on pages 6, 14 and 21.
Theoretical Displ.	See tables on pages 6, 14 and 18.
Drive	Drive direct with flexible coupling is recommended.
Axial / Radial Load	Units subject to axial or radial loads should be specified with an outboard bearing. Please contact Product Support for assistance.
Inlet Pressure	Operating range - 0.8 to 2 bar abs (12-29 psia).Minimum inlet pressure -0.25 bar abs (-3.6 psia). Short time w/o load. Max. pressure not to exceed 20 psig.
Outlet Pressure	See tables on pages 6, 14 and18.
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 (5 to 176° F). Max. permissible operating pressure dependent on fluid temperature. Temperature for cold start -20 to -15°C (-4 to 5° F) at speed ≤ 1500 rpm.

Product Features	Description
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 centistokes at operating pressure ≤10 bar (145 psi) and speed ≤1500 rpm.
Range of Ambient Temperature	-40°C to +70°C (-40°F to 158°F)
Filtration	According to ISO 4406 Cl. 16/13
Flow Velocity	See table on page 19.
Direction of Rotation (looking at the driveshaft)	Clockwise, counter-clockwise or birotational. Note: Drive pump or motor 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 tables on pages 9 and 17 in this catalog. - 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 port can be in either section.

PGP/PGM 505 How to Specify



1 Pump/Motor

P	***Pump***
M	***Motor***

2,15 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	—	Motor w/check valve and restrictor

3,16 Displacement

0020	***2.0 ccm (0.12 cir)***
0030	***3.0 ccm (0.18 cir)***
0040	***4.0 ccm (0.24 cir)***
0050	***5.0 ccm (0.31 cir)***
0060	***6.0 ccm (0.37 cir)***
0070	7.0 ccm (0.43 cir)
0080	8.0 ccm (0.49 cir)
0100	10.0 ccm (0.61 cir)
0110	11.0 ccm (0.67 cir)
0120	12.0 ccm (0.73 cir)

4 Rotation

C	***Clockwise***
A	***Counter clockwise***
B	***Bi-directional motors only***

Please note the bold, italicized items reflect Parker preferred product options.

5 Shaft

A1	9T, 16/32 Pitch, 32L, SAE "A" spline
A2	***9T, 20/40 Pitch, 27L, SAE "AA" spline***
J1	***Ø12.7, 3.2 Key, no thread, 38L, parallel***
K1	Ø15.88, 4.0 Key, no thread, 32L, SAE "A", parallel

6 Shaft End Covers

A1	50.8x50.8 - Ø45.25 4bolt square flange
H1	***82.5 - Ø50.8 SAE "A-A" 2bolt flange***
H2	106.4 - Ø82.55 SAE "A" 2bolt flange

7,17 Shaft Seal

X	No seal
N	***NBR***
V	FPM, FKM

NOTES:

1 Only coded for the last section.

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.

4. Dimensions are in millimeters except where noted.

5. Distributor unit contains shaft with add on capability for multiples.

8,9,10,11,18,19,20,21 Port Options

B1	No ports
D2	***9/16" - 18 UNF thread***
D3	***3/4" - 16 UNF thread***
D4	7/8" - 14 UNF thread
D5*	1 1/16" - 12UN thread
*Not usable for rear ports	

12 Motor Drain Option[2]

B1	No drain
A	***7/16"-20 UNF thread***
C	9/16"-18 UNF thread

13 Drain Position[2]

2	Drain on bottom
3	Drain on top
4	***Rear drain***

14 Section Connection

S	Separate inlets
C	Common inlets

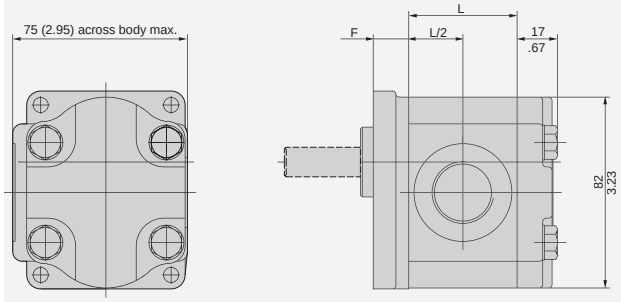
PGP/PGM 505 Specifications

Description	Code	*0020*	*0030*	*0040*	*0050*	0060	0070	0080	0090	0100	0110	0120
Displacements	cm^3/rev in^3/rev	***2*** ***0.12***	***3*** ***0.18***	***4*** ***0.24***	***5*** ***0.31***	6 0.37	7 0.43	8 0.49	9 0.55	10 0.61	11 0.67	12 0.73
Continuous Pressure	bar psi	***275*** ***3988***	***275*** ***3988***	***275*** ***3988***	***275*** ***3988***	275 3988	275 3988	275 3988	250 3625	250 3625	250 3625	220 3190
Intermittent Pressure	bar psi	***300*** ***4350***	***300*** ***4350***	***300*** ***4350***	***300*** ***4350***	300 4350	300 4350	300 4350	275 3988	275 3988	275 3988	220 3190
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	***4000***	***4000***	***4000***	***4000***	3600	3300	3000	2900	2800	2400	2400
Pump Input Power @ Max. Pressure and 1500 rpm	kW HP	***2*** ***2.68***	***2.3*** ***3.08***	***3*** ***4.02***	***3.8*** ***5.10***	4.5 6.03	5.3 7.11	6 8.05	6.5 8.72	6.9 9.25	7.6 10.19	8.4 11.26
Dimension "L"	mm in	***38.4*** ***1.51***	***41.1*** ***1.62***	***43.8*** ***1.72***	***46.5*** ***1.83***	49.1 1.93	51.8 2.04	54.5 2.15	57 2.24	59.8 2.35	62.5 2.46	65.2 2.57
Approximate Weight [1]	kg LB	***1.72*** ***3.80***	***2.22*** ***4.91***	***2.27*** ***5.02***	***2.32*** ***5.13***	2.38 5.26	2.43 5.37	2.48 5.48	2.53 5.59	2.58 5.70	2.63 5.81	2.68 5.92

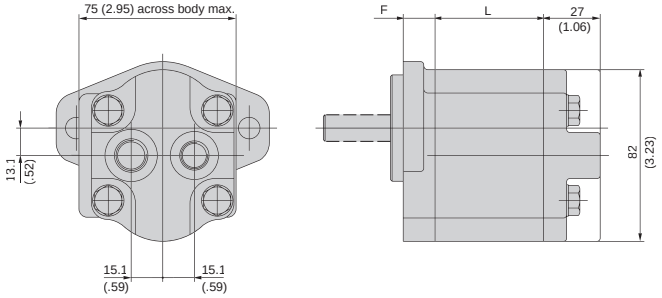
[1] Single pump with Shaft End Cover D3 and non ported Port End Cover.

PGP/PGM 505 Dimensions

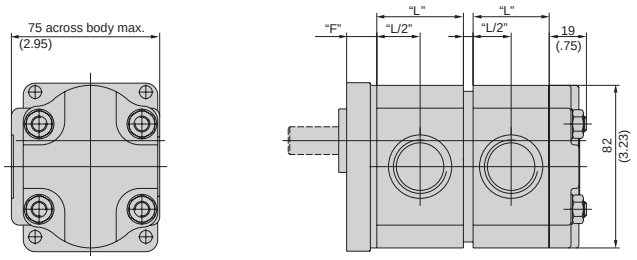
Single Unit PGP/PGM 505



Single Unit PGP/PGM 505 with rear ports



Tandem Unit PGP/PGM 505



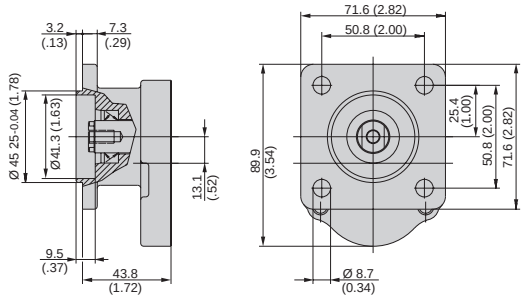
NOTE:
Dimension "F" see shaft end covers on page 7
Dimension "L" see table above

Notes: 1. Dimensions are in millimeters (inches).
2. Dimensions are nominal except where noted.
3. Subscript and/or superscript numbers are tolerances.

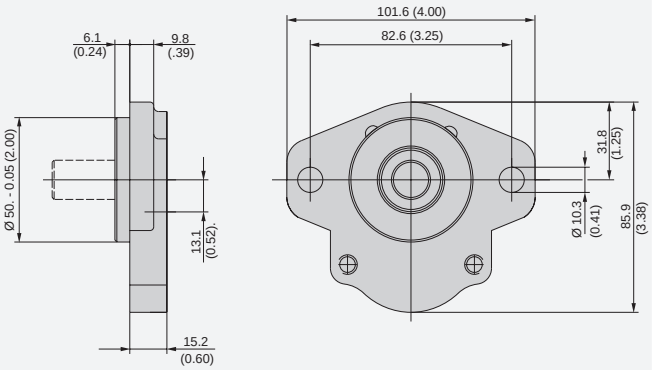
Please note the bold, italicized items reflect Parker preferred product options.

PGP/PGM 505 Shaft End Covers

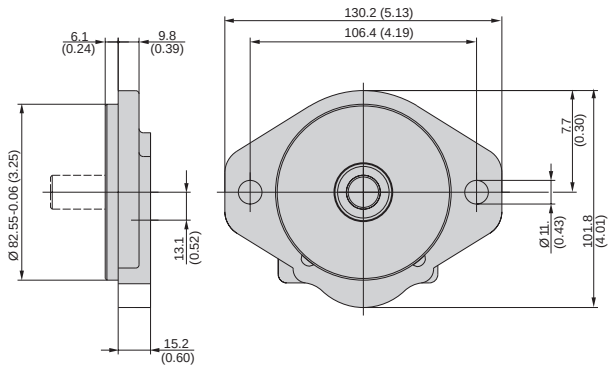
Code A1



Code H1



Code H2

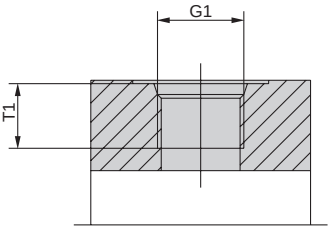


Notes: 1. Dimensions are in millimeters (inches).
2. Dimensions are nominal except where noted.
3. Subscript and/or superscript numbers are tolerances.

Please note the bold, italicized items reflect Parker preferred product options.

PGP/PGM 505 Porting

Code D2, D3, D4, D5
SAE straight thread
See table below for specific port dimensions.

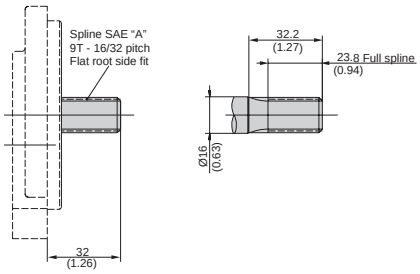


PGP/PGM 505

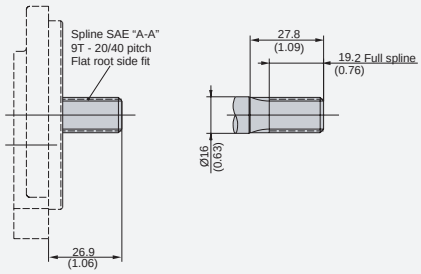
Code	G1	T1
Thread	Thread	Dimensions
D2	***9/16"-18 UNF***	***12.7***
D3	***3/4"-16 UNF***	***14.3***
D4	7/8"-14 UNF	16.7
D5	1 1/16"-12 UN	19.0

PGP/PGM 505 Drive Shaft

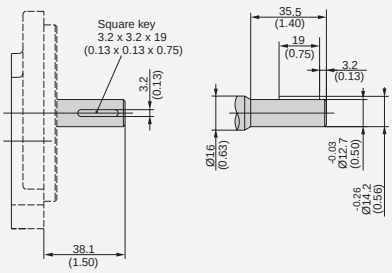
Code A1



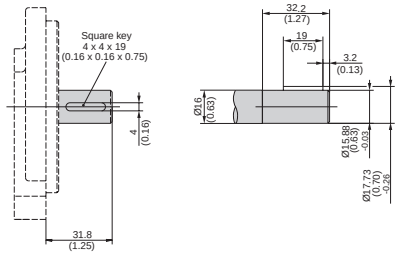
Code A2



Code J1



Code K1



Notes:
1. Dimensions are in millimeters (inches).
2. Dimensions are nominal except where noted.
3. Subscript and/or superscript numbers are tolerances.

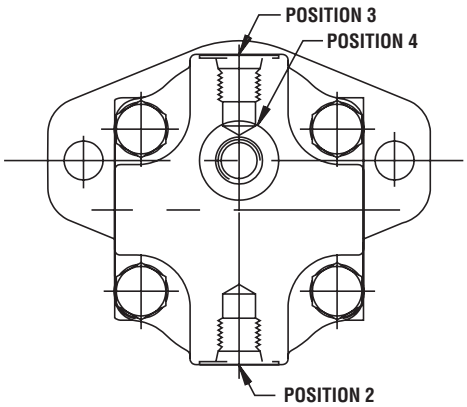
When applying a multiple section pump, the maximum drive shaft load is determined by adding the torque values for each pumping section that will be simultaneously loaded.

PGP/PGM 505 - Shaft Load Capacity

Code	Description	Style	Torque Rating
A1	9T, 16/32 Pitch, SAE "A"	Spline	108Nm/954 in-lb
A2	***9T, 20/40 Pitch, SAE "A-A"***	***Spline***	***108Nm/954 in-lb***
J1	***Ø 12.7,3.2 Key, No thread, 38L***	***Parallel***	***43Nm/380in-lb***
K1	Ø 15.88, 4.0 Key. No Thread, 32L, SAE "A"	Parallel	85Nm/751in-lb
	Tandem Pump/Connecting Shaft	Spline	36Nm/318in-lb

$$\text{Torque [in-lb]} = \frac{\text{Displacement [in}^3\text{/rev]} \times \text{Pressure [psi]}}{5.72} \qquad \text{Torque [Nm]} = \frac{\text{Displacement [cc/rev]} \times \text{Pressure [bar]}}{57.2}$$

PGP/PGM 505 Drain Positions

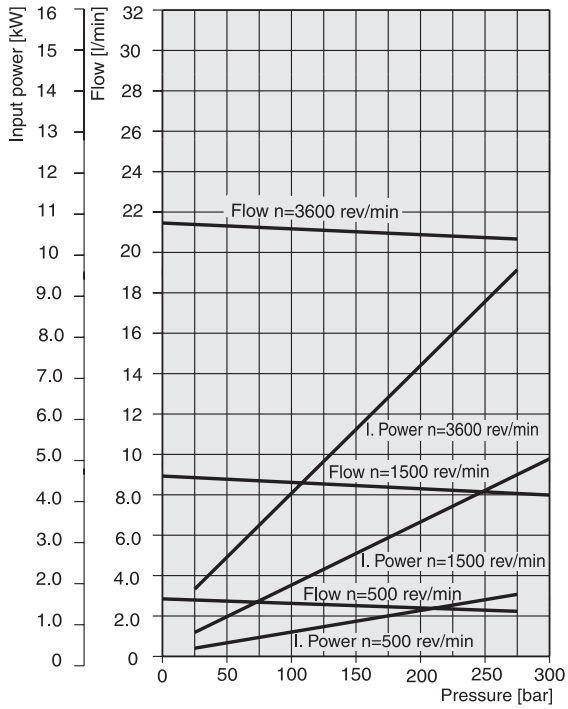


Please note the bold, italicized items reflect Parker preferred product options.

PGP 505 - 6.0 CC

Fluid Temperature = 45± 2°C
Viscosity = 36mm^2/s

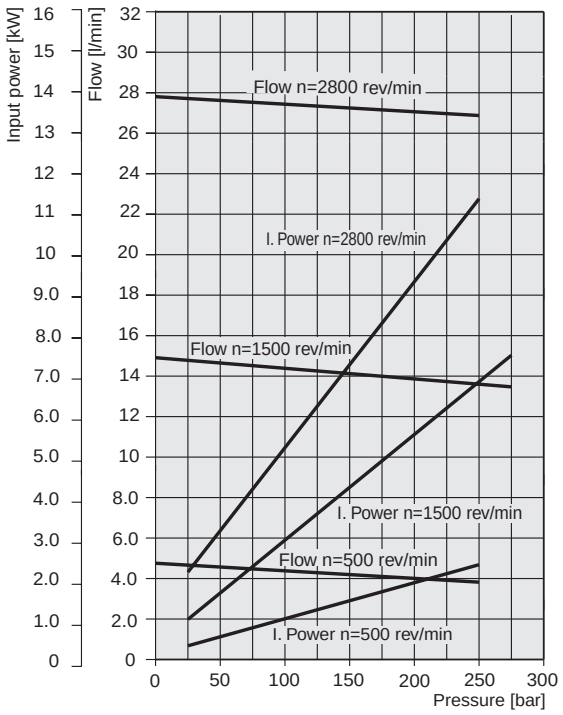
Inlet Pressure = 0.9 + 0.1 bar absolute



PGP 505 - 10.0 CC

Fluid Temperature = 45± 2°C
Viscosity = 36mm^2/s

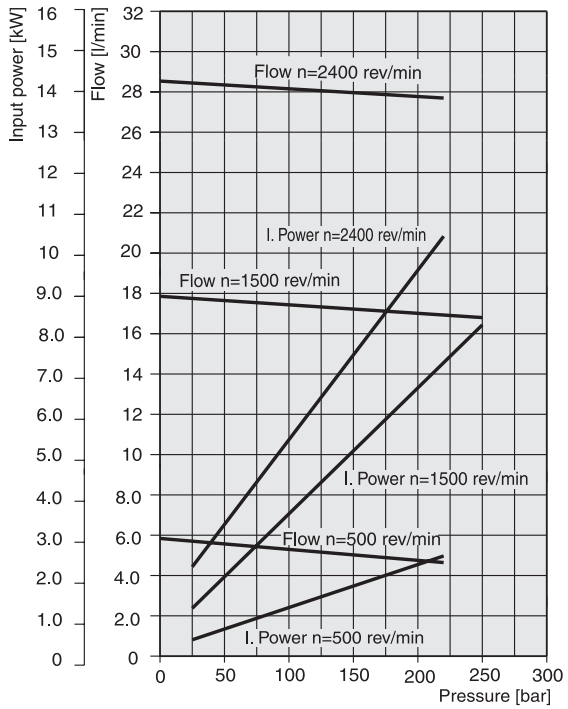
Inlet Pressure = 0.9 + 0.1 bar absolute



PGP 505 - 12.0 CC

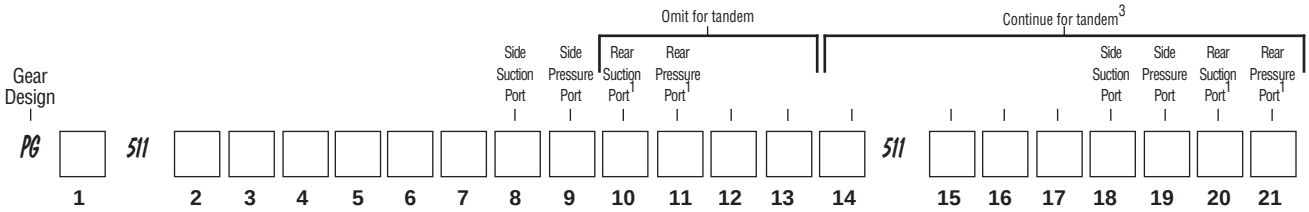
Fluid Temperature = 45± 2°C
Viscosity = 36mm^2/s

Inlet Pressure = 0.9 + 0.1 bar absolute



Performance data shown is based upon a series of laboratory tests and is not representative of any one unit.

PGP/PGM 511 How to Specify



1 Pump/Motor

P	***Pump***
M	***Motor***

2,15 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

***** Only for displacement codes 0060 to 0280

3,16 Displacement

0060	6.0 ccm (0.37 cir)
0070	***7.0 ccm (0.43 cir)***
0080	8.0 ccm (0.49 cir)
0100	***10.0 ccm (0.61 cir)***
0110	***11.0 ccm (0.67 cir)***
0140	***14.0 ccm (0.85 cir)***
0160	16.0 ccm (0.98 cir)
0180	***18.0 ccm (1.10 cir)***
0190	19.0 ccm (1.16 cir)
0210	***21.0 ccm (1.28 cir)***
0230	23.0 ccm (1.40 cir)
0270	27.0 ccm (1.65 cir)
0280	***28.0 ccm (1.71 cir)***
0310	31.0 ccm (1.89 cir)

4 Rotation

C	***Clockwise***
A	***Counter clockwise***
B	***Bi-directional motors only***

5 Shaft

A1	***9T, 16/32 Pitch, 32L, SAE "A" spline***
B1	10T, 16/32 Pitch, 32L spline
B2	10T, 16/32 Pitch, 38.2L spline
C1	11T, 16/32 Pitch, 38.2L, SAE 19-4 spline
C2	11T, 16/32 Pitch, 32.2L, SAE 19-4 spline
K1	***Ø15.88, 4.0 Key, no thread, 32L, SAE "A", parallel***
K4	Ø15.88, 4.0 Key, no thread, 58.7L, parallel
L1	Ø17.46, 4.8 Key, 7/16" UNF ext., 44.7L, parallel
L6	Ø19.05, 4.8 Key, no thread, 32L, parallel

6 Shaft End Covers

D4	72.0x100.0 - Ø80 rectangular
H2	***106.4 - Ø82.55 SAE "A" 2bolt flange***
H3	146.1 - Ø101.6 SAE "B" 2bolt flange
Q2	60.0x60.0 - Ø50.0 w. shaft seal, O' 'thrubolt flange
Q4	60.0x60.0 - Ø50.0 w. shaft seal, O',thrubolt flange
J5	H2 with slots, spec 2bolt
L2	106.4 - Ø82.55 SAE "A" 2bolt, w. OBB + cont. drive shaft

7,17 Shaft Seal

X	No seal
N	***NBR***
V	FPM, FKM
M	Double NBR
W	Double FPM

8,9,10,11,18,19,20,21 Port Options

B1	No ports
D2	9/16" - 18 UNF thread
D3	3/4" - 16 UNF thread
D4	***7/8" - 14 UNF thread***
D5	***1 1/16" - 12UN thread***
D6[1]	***1 5/16" - 12 UN thread***
D7[2]	1 5/8" - 12 UN thread
D8[2]	1 7/8" - 12 UN thread

[1]Not usable for rear ports.
[2]Inlet port only. For 19cc and larger.

12 Motor Drain Option[2]

B1	No drain
C	***9/16-18 UNF thread***

13 Drain Position[2]

2	Drain on bottom
3	Drain on top
4	***Rear drain***
5	Drain right view on drive shaft
6	Drain left view on drive shaft

14 Section Connection

S	Separate inlets
C	Common inlets

NOTES:

1 Only coded for the last section.

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.

4. Dimensions are in millimeters except where noted.

Please note the bold, italicized items reflect Parker preferred product options.

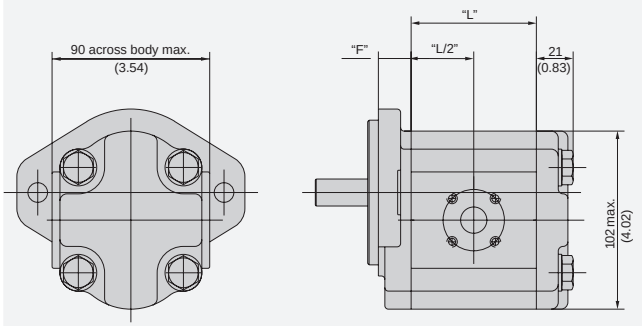
PGP/PGM 511 Specifications

Description	Code	0060	*0070*	0080	*0100*	*0110*	*0140*	0160	*0180*	0190	*0210*	0230	0270	*0280*	0310
Displacements	cm^3/rev in^3/rev	6 0.37	***7*** ***0.43***	8 0.49	***10*** ***0.61***	***11*** ***0.67***	***14*** ***0.85***	16 0.98	***18*** ***1.10***	19 1.16	***21*** ***1.28***	23 1.40	27 1.65	***28*** ***1.71***	31 1.89
Continuous Pressure	bar psi	250 3625	***250*** ***3625***	250 3625	***250*** ***3625***	***250*** ***3625***	***250*** ***3625***	250 3625	***250*** ***3625***	250 3625	***235*** ***3410***	225 3265	190 2755	***185*** ***2685***	165 2395
Intermittent Pressure	bar psi	275 3988	***275*** ***3988***	275 3988	***275*** ***3988***	***275*** ***3988***	***275*** ***3988***	275 3988	***260*** ***3770***	260 3770	***240*** ***3480***	235 3408	200 2900	***190*** ***2755***	170 2465
Minimum Speed @ Max. Outlet Pressure	rpm	500	***500***	500	***500***	***500***	***500***	500	***500***	500	***500***	500	500	***500***	500
Maximum Speed @ 0 Inlet & Max. Outlet Pressure	rpm	4000	***4000***	4000	***3600***	***3600***	***3300***	3000	***3000***	3000	***2800***	2800	2400	***2300***	2300
Pump Input Power @ Max. Pressure and 1500 rpm	kW HP	4.5 6.03	***5.25*** ***7.04***	6 8.05	***7.5*** ***10.06***	***8.3*** ***11.1***	***10.5*** ***14.0***	12 16.0	***13.5*** ***18.1***	14.3 19.1	***14.4*** ***19.3***	14.7 19.7	14.9 19.9	***15.8*** ***21.1***	16.7 22.4
Dimension "L"	mm in	51.8 2.04	***53.3*** ***2.10***	54.9 2.16	***57.9*** ***2.28***	***59.4*** ***2.34***	***64*** ***2.52***	67 2.64	***70.1*** ***2.76***	71.6 2.82	***76.6*** ***3.02***	77.6 3.06	83.7 3.30	***84.2*** ***3.31***	89.8 3.54
Approximate Weight [1]	kg LB	3.5 7.70	***3.5*** ***7.70***	3.6 7.90	***3.6*** ***7.90***	***3.7*** ***8.10***	***3.8*** ***8.40***	3.9 8.60	***4.0*** ***8.80***	4.0 8.80	***4.1*** ***9.00***	4.2 9.20	4.3 9.50	***4.4*** ***9.70***	4.5 9.9

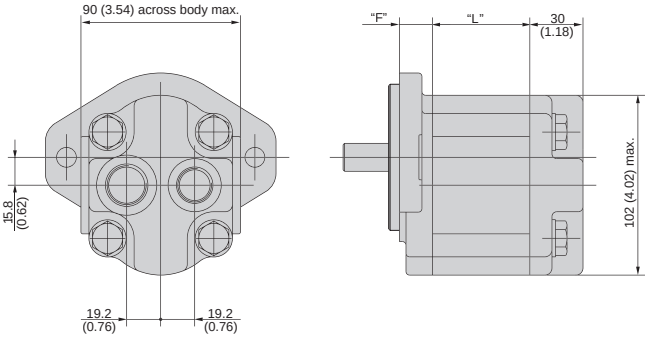
[1] Single pump with Shaft End Cover Q1 and non ported Port End Cover.

PGP/PGM 511 Dimensions

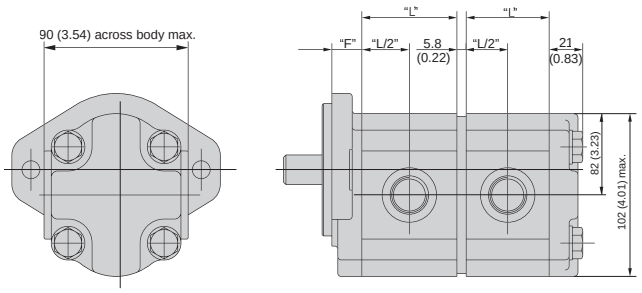
Single Unit PGP/PGM 511



Single Unit PGP/PGM 511 with rear ports



Tandem Unit PGP/PGM 511



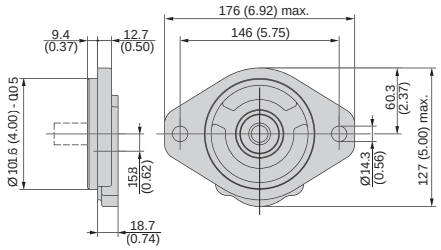
NOTE:
Dimension "F" see shaft end covers on page 15
Dimension "L" see table above

Notes: 1. Dimensions are in millimeters (inches).
2. Dimensions are nominal except where noted.
3. Subscript and/or superscript numbers are tolerances.

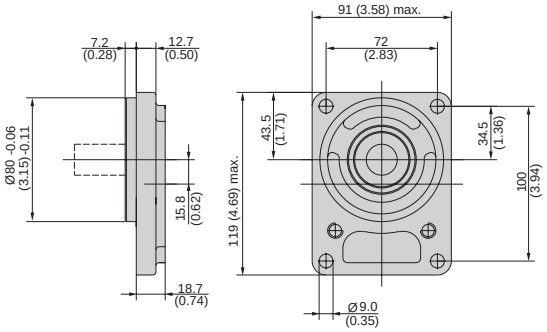
Please note the bold, italicized items reflect Parker preferred product options.

PGP/PGM 511 Shaft End Covers

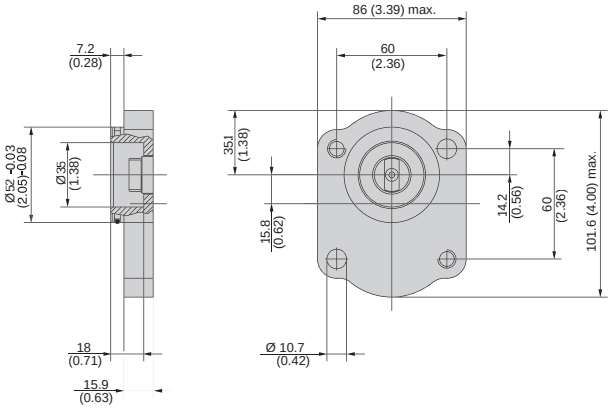
Code H3



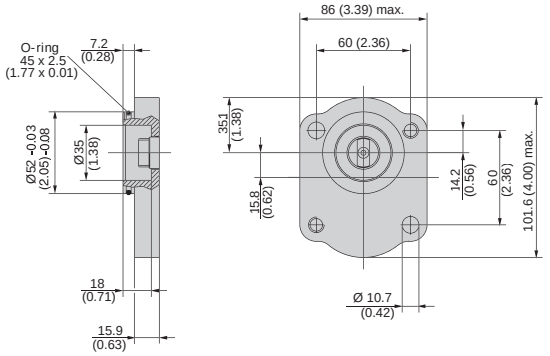
Code D4



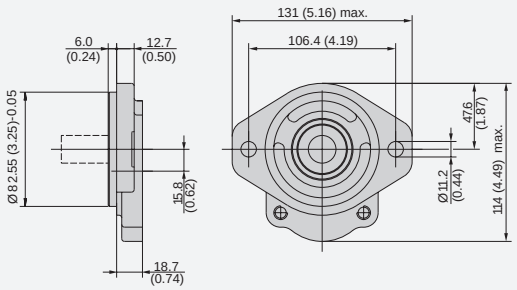
Code Q2



Code Q4



Code H2

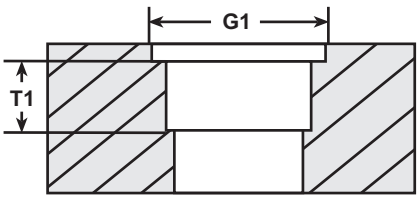


Notes: 1. Dimensions are in millimeters (inches).
2. Dimensions are nominal except where noted.
3. Subscript and/or superscript numbers are tolerances.

Please note the bold, italicized items reflect Parker preferred product options.

PGP/PGM 511 Porting

Code D
SAE straight thread
See table at right for specific port dimensions.



Code	G1 Thread	T1 Dimensions
D2	9/16"-18 UNF	12.7
D3	3/4"-16 UNF	14.3
D4	***7/8"-14 UNF***	***16.7***
D5	***1 1/16"-12 UN***	***19.0***
D6	***1 5/16"-12 UN***	***19.0***
D7	1 5/8"-12 UN	19.0
D8	1 7/8"-12 UN	19.0

Please note the bold, italicized items reflect Parker preferred product options.

Notes: 1. Dimensions are in millimeters (inches).
2. Dimensions are nominal except where noted.
3. Subscript and/or superscript numbers are tolerances.

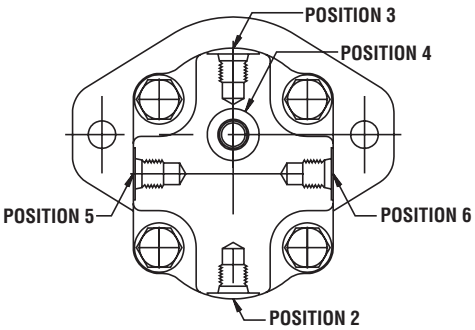
PGP/PGM 511 - Shaft Load Capacity

Code	Description	Style	Torque Rating
A1	***9T, 16/32 Pitch, 32L, SAE "A"***	***Spline***	***86Nm/759in-lb***
C1	11T, 16/32 Pitch, 38.2L, SAE 19-4	Spline	184Nm/1625in-lb
C2	11T, 16/32 Pitch, 32.2L, SAE 19-4	Spline	184Nm/1625in-lb
K1	***Ø 15.88 4.0 Key, no thread, 32L, SAE "A"***	***Parallel***	***75Nm/662in-lb***
K4	Ø 15.88, 3.95 Key, no thread, 58.7L	Parallel	75Nm/662in-lb
L1	Ø 17.46, 4.8 Key, 7/16UNF ext., 44.2L	Parallel	112Nm/989in-lb
L6	Ø 19.05, 4.8 Key, no thread, 32L, SAE 19-1	Parallel	145Nm/1280in-lb
	Tandem pump Connecting Shaft	Spline	110Nm/971in-lb

When applying a multiple section pump, the maximum drive shaft load is determined by adding the torque values for each pumping section that will be simultaneously loaded.

$$\text{Torque [in-lb]} = \frac{\text{Displacement [in}^3\text{/rev] x Pressure [psi]}}{5.72} \qquad \text{Torque [Nm]} = \frac{\text{Displacement [cc/rev] x Pressure [bar]}}{57.2}$$

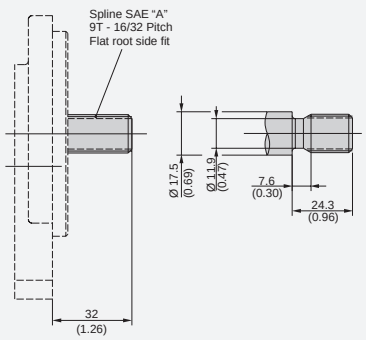
PGP/PGM 511 Drain Positions



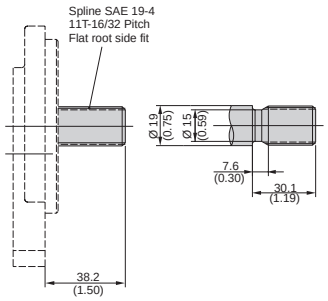
Please note the bold, italicized items reflect Parker preferred product options.

PGP/PGM 511 Drive Shaft

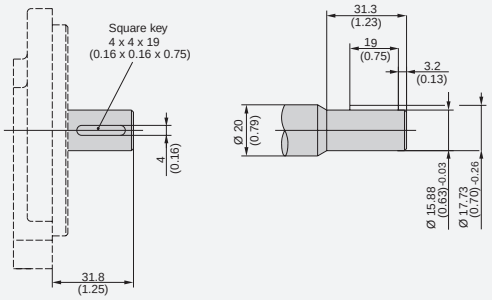
Code A1



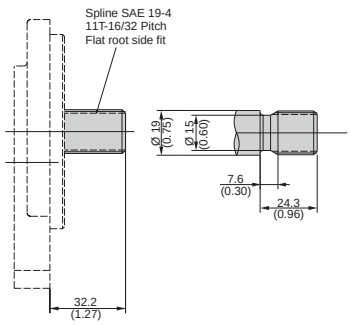
Code C1



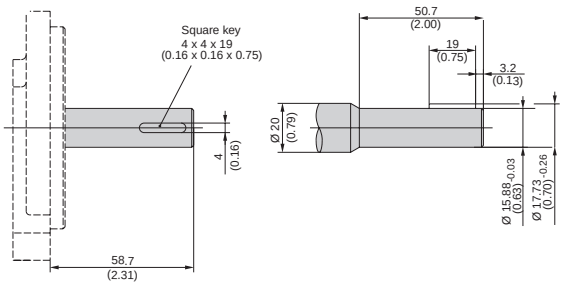
Code K1



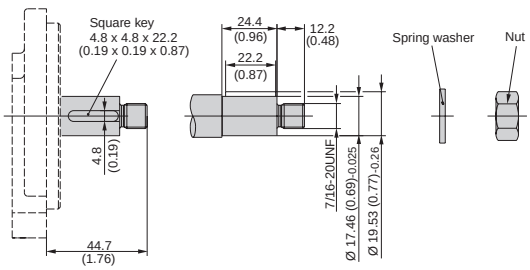
Code C2



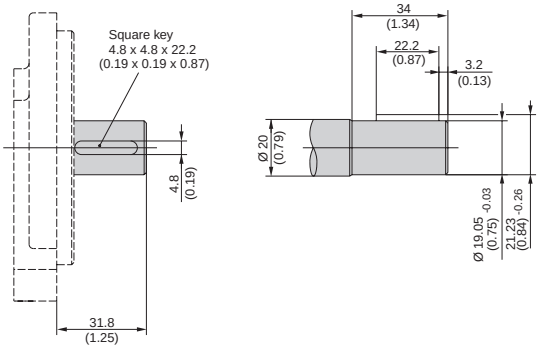
Code K4



Code L1



Code L6



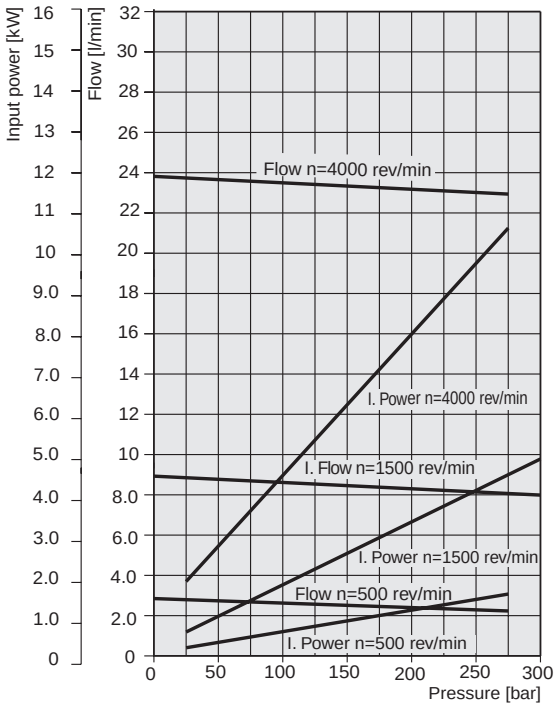
Please note the bold, italicized items reflect Parker preferred product options.

Notes:
1. Dimensions are in millimeters (inches).
2. Dimensions are nominal except where noted.
3. Subscript and/or superscript numbers are tolerances.

PGP511 - 6.0 CC

Fluid Temperature = 45± 2°C
Viscosity = 36mm^2/s

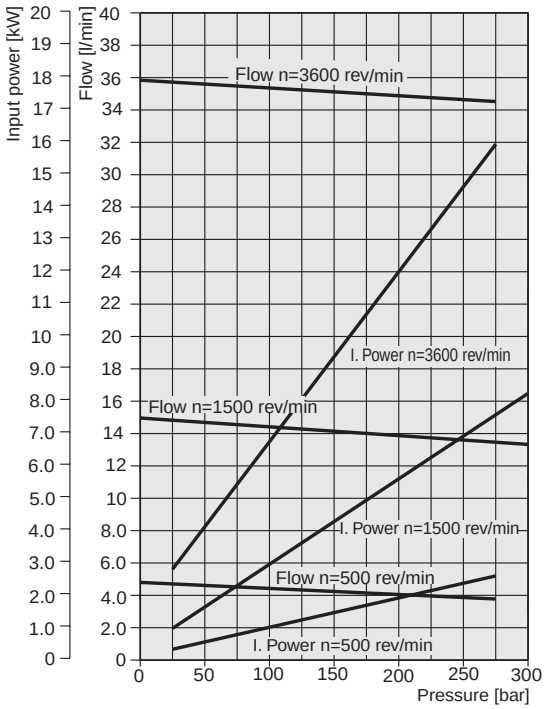
Inlet Pressure = 0.9 + 0.1 bar absolute



PGP511 - 10.0 CC

Fluid Temperature = 45± 2°C
Viscosity = 36mm^2/s

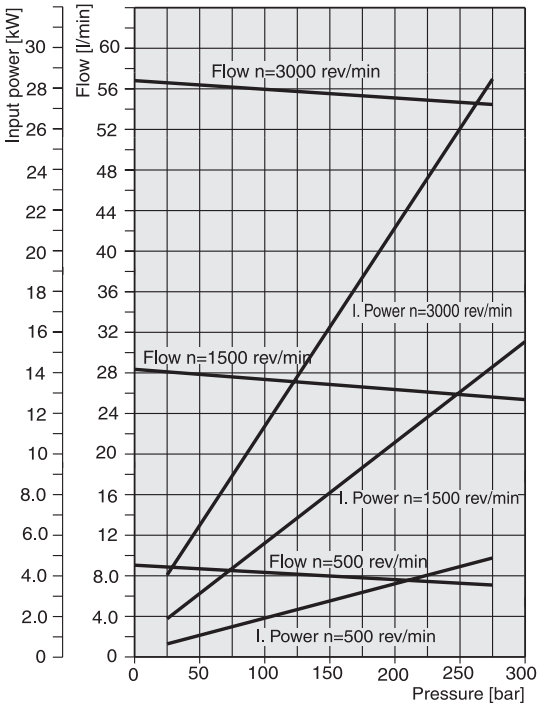
Inlet Pressure = 0.9 + 0.1 bar absolute



PGP511 - 19.0 CC

Fluid Temperature = 45± 2°C
Viscosity = 36mm^2/s

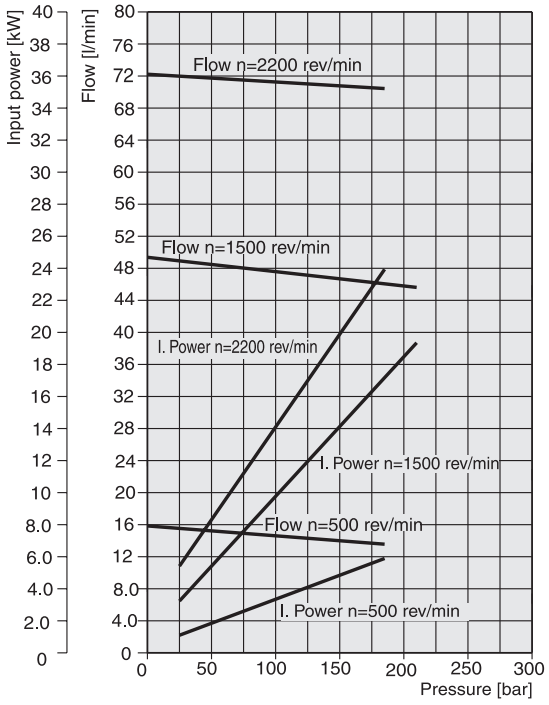
Inlet Pressure = 0.9 + 0.1 bar absolute



PGP511 - 33.0 CC

Fluid Temperature = 45± 2°C
Viscosity = 36mm^2/s

Inlet Pressure = 0.9 + 0.1 bar absolute



Performance data shown is based upon a series of laboratory tests and is not representative of any one unit.

Integral Valve Options and Market Experience

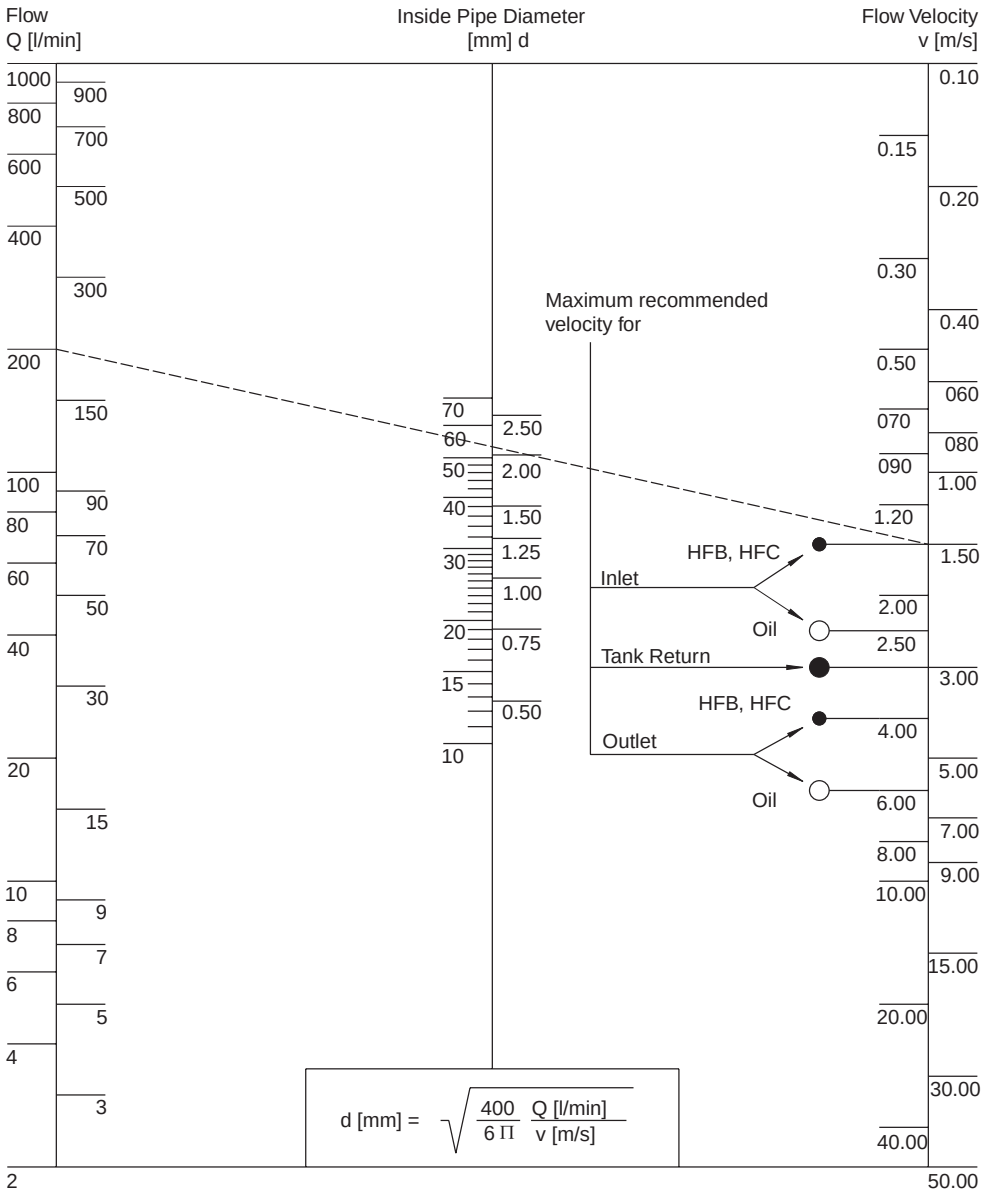
This appendix provides overviews of the valves currently offered as well as options that are available from the wide range of Parker gear pumps and motors. Many valves are already in production for OEM customers on specific pumps or motors, while others have been supplied for prototype evaluation. A few valves are derivatives of valves already in production and can be produced for OEM customers. Parker's integral valve program was developed in response to requests from our OEM customers to reduce the number and total cost of components on their machines. We addressed this challenge by integrating the valves required for machine functions into our hydraulic pumps and motors. This integration has reduced the number of purchased components, eliminated many of the hydraulic hoses and associated fittings (and potential leak points), and reduced assembly labor costs on the production line.

Applications:	Implement Pumps (Single)	Implement Pumps (Tandem)	Triple and Quad Pumps	Two Stage Pumps	Power Steering Pumps	Power Steering/Fan Drive Pumps	Fan Drive Pumps	Direct Acting Relief Valves	Pilot Operated Relief Valves	Load Sensing Relief Valves	Solenoid Unloading Relief Valves	Unloaders for Tandem Pumps	Priority Flow Dividers	Load Sense Priority Valves	Single Accumulator Charge Pumps	Dual Accumulator Charge Pumps	Single Accumulator Charge Valves	Dual Accumulator Charge Valves	Load Sense Charge Valves	Modulating Brake Valves	Hydraulic Motors	Motors with Integral Relief Valves	Motors with Cross Port Relief Valves	Motors with Integral By-Pass Valves	Steering & Accumulator Charge Valve (STAC)	Custom Valve Manifolds	Brake Valve	Check Valve & Restrictor
Materials Handling																												
Electric Lift Trucks	•	•		•				•	•				•	•	•		•									•		
I.C. Powered Lift Trucks	•	•		•					•	•			•	•												•		
Rough Terrain Lift Trucks	•	•		•						•			•	•	•	•	•	•	•	•						•		
Turf Care and Grasscutting																												
Reel Commercial Mowers	•	•	•	•	•	•	•	•	•		•		•	•								•	•	•		•		•
Rotary Commercial Mowers	•	•	•	•	•	•	•	•	•		•		•	•								•	•	•		•		
Heavy Duty Industrial Mowers	•	•	•	•	•	•	•	•	•		•		•	•							•	•	•	•		•	•	•
Construction Equipment																												
Road Construction	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•	•
Wheel Loaders		•		•	•	•	•		•			•	•	•	•	•	•	•	•	•					•	•		
Backhoe-Loaders		•	•	•	•	•	•		•			•	•	•	•	•	•	•	•	•					•	•		
Cranes and Winches	•	•	•	•	•	•	•		•		•		•	•					•	•	•	•	•			•	•	
Haul Trucks			•	•	•									•	•	•	•	•								•		
Truck, Bus & Rec. Vehicles				•	•	•	•	•					•	•		•		•	•	•	•	•				•		
Municipal, Street Sweepers	•	•	•	•	•	•	•	•	•		•		•	•	•	•	•	•	•	•	•	•	•	•		•		

List of Available Pump Combinations - PGP 505 and PGP 511

First pump	Second pump	
	PGP 505	**PGP 511**
PGP 505	X	
PGP 511		X

Nomograph for Pipe Velocity



Gear Pumps / Motors

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

Contents

Change History for edition 03.2017
Page 18, table. Max speed for 1.6 cc 4500 rpm, for 2.5 cc 4000 rpm.
Page 68, Shaft Load Capacity T2
Pages 14-17 and 56-58: Performance data

Contents

PGP 500 pumps offer superior performance, high efficiency and low noise operation at high operating pressures. They are produced in four frame sizes (PGP 502, PGP 505, PGP 511, PGP 517) with displacements ranging from 0.8 to 70 cm³/rev. A wide variety of standard options is available to meet specific application requirements.

Characteristics

- **Up to 280 bar continuous operation**
  High strength materials and large journal diameters provide low bearing loads for high pressure operation.
- **Low noise**
  PGP 502 - 9 tooth gear profile, PGP 505 and 517 - 13 tooth gear profile, PGP 511 - 12 tooth gear profile and optimized flow metering provide reduced pressure pulsation and exceptionally quiet operation.
- **High efficiency**
  Pressure balanced bearing blocks assure maximum efficiency under all operating conditions.
- **Application flexibility**
  International mounts and connections, integrated valve capabilities and common inlet multiple pump configurations provide unmatched design and application versatility.
- **Large range of integrated valves**

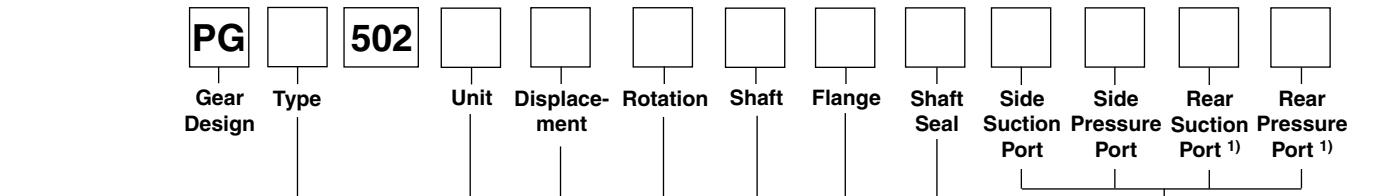
Characteristics

Pump type	Heavy-duty, aluminium, external gear.
Mounting	SAE, rectangular, thru-bolt standard specials on request.
Ports	SAE and metric split flanges and others
Shaft style	SAE splined, keyed, tapered, cylindrical tang drive, specials on request
Speed	500 - 5000 rpm, see Technical Data
Theor. displacement	See Technical Data
Drive	Drive direct with flexible coupling is recommended.
Axial / Radial load	Units subject to axial or radial loads must be specified with an outboard bearing.
Inlet pressure	Operating range 0.8 to 2 bar abs. Min. inlet pressure 0.5 bar abs. Short time without load. Consultation is recommended.
Outlet pressure	See Technical Data
Pressure rising rate	Max. 3000 bar/s
Flow velocity	See Nomograph for Pipe Velocity
Hydraulic fluids	Hydraulic oil HLP, DIN 51524-2
Fluid temperature	Range of operating temperature -15 to +80 °C. Max. permissible operating pressure dependent on fluid temperature. Temperature for cold start -20 to -15 °C at speed ≤ 1500 rpm. Max. permissible operating pressure dependent on fluid temperature.

Fluid viscosity	Range of operating viscosity 8 to 1000 mm²/s (511 & 517) 20 to 1000 mm²/s (502 & 505) Max. permissible operating pressure dependent on viscosity. Viscosity range for cold start 1000 to 2000 mm²/s at operating pressure p≤10 bar and speed n ≤1500 rpm.
Range of ambient temperature	-40 °C to +70 °C
Filtration	According to ISO 4406 Cl. 19/17/13
Direction of rotation (looking at the drive shaft)	Clockwise, counter-clockwise or double. Attention! Drive pump only in indicated direction of rotation.
Multiple pump assemblies	• Available in two or three section the limitations shown in the shaft loading rating table in this catalogue. • Max. load is determined by adding the torque values for each pumping section that will be simultaneously loaded.
Separate or common inlet capability	Separate inlet configuration: • Each gear housing has individual inlet and outlet ports. Common inlet configuration: • Two gear sets share a common inlet.

Ordering code

Series PGP 502



Code	Type
P	Pump

Code	Unit
	Pump
A	Single unit
B	Multiple unit

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 clock-wise

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

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

1) Only coded for the last section.

	502								3)
Section Connection		Unit	Displacement	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port [1]	Rear Pressure Port [1]	

Code	Section Connection
S	Separate inlets
C	Common inlets

Code	Port Options
B1	No ports
D2[2]	9/16 - 18 UNF thread
D3[2]*	3/4 - 16 UNF thread
E1	1/4 - 19 BSP thread
E2	3/8 - 19 BSP thread
E3*	1/2 - 14 BSP thread
G1[2]	M14x1.5 thread
G3[2]*	M18x1.5 thread
J1*	8 mm - Ø26 mm - M5 square flange
J2*	10 mm - Ø26 mm - M5 square flange
J3*	8 mm - Ø30 mm - M6 square flange
J4*	12 mm - Ø30 mm - M6 square flange

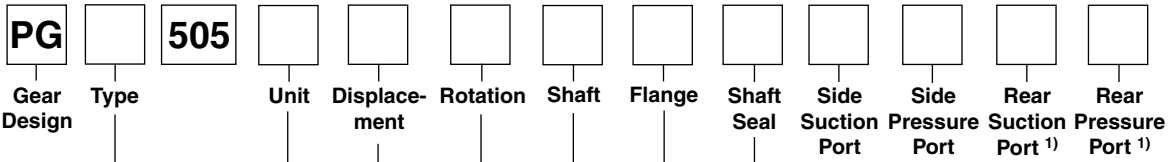
2) Non standard, on request only

*) Not usable for rear ports

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

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

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



Code	Type
P	Pump

Code	Unit
	Pump
A	Single unit
B	Multiple unit
C	—

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

Code	Rotation
C	Clockwise
A	Counter clock-wise

Code	Shaft
A1	9T, 16/32DP, 32L, SAE "A" spline
J1	Ø12.7, 3.2Key, no thread, 38L, parallel
K1	Ø15.88, 4.0Key, no thread, 32L, SAE "A", parallel
Q2	Ø14.25, 5.5L, 3.0Key, M10x1, taper 1:8

Code	Flange
D2	56.0x73.0 - Ø30.0 rectangular
H1	82.5 - Ø50.8 SAE "A-A" 2 bolt flange
H2	106.4 - Ø82.55 SAE "A" 2 bolt flange

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

1) Only coded for the last section.

	505								3)
Section Connection		Unit	Displacement	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port [1]	Rear Pressure Port [1]	

Code	Section Connection
S	Separate inlets
C	Common inlets

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

2) Non standard, on request only

*) Not usable for rear ports

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

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

PG		511										
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 cavita-tion check (ACC)
D		Standard Motor w. one ACC + restrictor
M	Single distributor unit	—

Displacement*	
Code	ccm
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
0330	33.0

*) Others on request

Code	Rotation
C	Clockwise
A	Counter clock-wise
B	bi-directional

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

Code	Shaft
A1	9T, 16/32DP, 32L, SAE "A" spline
C1	11T, 16/32DP, 38.2L, SAE 19-4 spline
K1	Ø15.88, 4.0Key, no thread, 32L, SAE "A", parallel
L6	Ø19.05, 4.8 Key, no thread, 32L, SAE 19-1, parallel
S1	Ø17.0, 7.7L, 3.0 Key, M12x1.5, taper 1:5
S2	Ø16.65, 12.0L, 3.2 Key, M12x1.5, taper 1:8
V5	8x6.5 short shaft, tang drive
S8*	Ø20, 9.4L, 4.0 Key, M14x1.5, taper 1:5
F5	B8x32x36 DIN ISO 14 spline (similar to DIN 5462)

*) To be used with outboard bearing only

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

[1] Only coded for the last section.

Motor Drain Option[3]	Drain Position [3]	Section Connection	511	Unit	Displacement	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port [2]	Rear Pressure Port [2]	4)

Code	Section Connection
S	Separate inlets
C	Common inlets

Code	Drain Position
2	Drain on bottom
3	Drain on top
4	Rear drain
5	Drain right view on drive shaft
6	Drain left view on drive shaft

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

2) Non standard, on request only

Code	Flange
D3	71.4x96.0 - Ø36.47 rectangular
D4	72.0x100.0 - Ø80 rectangular
H2	106.4 - Ø82.55 SAE "A" 2 bolt flange
H3	146.1 - Ø101.6 SAE "B" 2 bolt flange
Q1[2]	60.0x60.0 - Ø52.0 w/o seal ,O' thrubolt flange
Q2	60.0x60.0 - Ø50.0 w. seal ,O' 'thrubolt flange
Q3[2]	60.0x60.0 - Ø52.0 w/o seal ,O' thrubolt flange
Q4	60.0x60.0 - Ø50.0 w. seal ,O',thrubolt flange
F4	72.0x100.0 - Ø80.0 rect., w. OBB and cont. drive shaft
C3	80x80 - Ø80.0 4 bolt flange

2) Non standard, on request only

Code	Port Options
B1	No ports
D2[2]	9/16 - 18 UNF thread
D3[2]	3/4 - 16 UNF thread
D4[2]	7/8 - 14 UNF thread
D5[2]	1 1/16 - 12 UN thread
D6[2]*	1 5/16 - 12 UN thread
D7[2]*	1 5/8 - 12 UN thread
E2	3/8 - 19 BSP thread
E3	1/2 - 12 BSP thread
E4*	5/8 - 14 BSP thread
E5*	3/4 - 14 BSP thread
E6*	1 - 11 BSP thread
E7*	1 1/4 - 11 BSP thread
G1[2]	M14x1.5 thread
G3[2]	M18x1.5 thread
G4[2]	M22x1.5 thread
G5[2]*	M26x1.5 thread
G7[2]*	M30x1.5 thread
J3[2]*	8 mm - Ø30 mm - M6 square
J4[2]*	12 mm - Ø30 mm - M6 square
J5*	15 mm - Ø35 mm - M6 square
J6[2]*	15 mm - Ø40 mm - M8 square
J7*	20 mm - Ø40 mm - M6 square
J8*	18 mm - Ø55 mm - M8 square
J9*	26 mm - Ø55 mm - M8 square

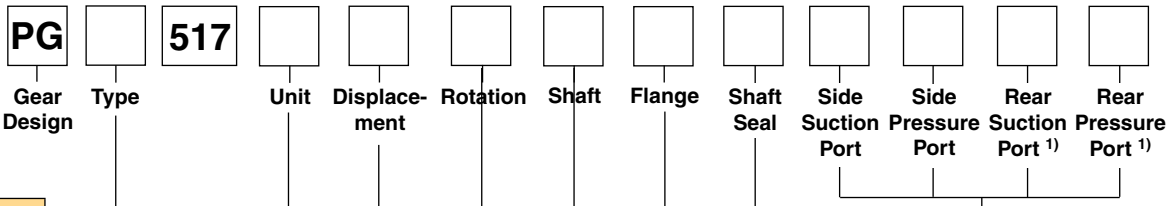
Code	Port Options
L1*	13 mm-Ø30 mm-M6 diamond
L2*	19 mm-Ø40 mm-M8 diamond
N1[2]*	1/2"-5/16-18UNC SAE Split Flange
N2[2]*	3/4"-3/8-16UNC SAE Split Flange
N3[2]*	1"-3/8-16UNC SAE Split Flange
N4[2]*	1 1/4"-7/16-14UNC SAE Split Flange
P1*	12.7 mm - M8 1/2" Metric Split Flange
P2*	19.0 mm - M10 3/4" Metric Split Flange
P3*	25.4 mm - M10 1" Metric Split Flange
P4*	31.8 mm - M10 1 1/4" Metric Split Flange

2)Non standard, on request only

*) Not usable for rear ports

[3] Only for motors

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



Code	Type
P	Pump

Code	Unit
	Pump
A	Single unit
B	Multiple unit
M	Single distributor unit

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

*) Others on request

Code	Rotation
C	Clockwise
A	Counter clock-wise

Code	Shaft
D1	13T, 16/32DP, 41.2L, SAE "B" spline
E1	15T, 16/32DP, 46L, SAE "B-B" 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, 4.0 Key, M14x1.5, taper 1:8

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

1) Only coded for the last section.

	517								3)
Section Connection		Unit	Displacement	Shaft Seal	Side Suction Port	Side Pressure Port	Rear Suction Port [1]	Rear Pressure Port [1]	

Code	Section Connection
S	Separate inlets
C	Common inlets

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

Code	Flange
D7	98.4x128.2 - Ø50.77 rectangular
H3	146.1 - Ø101.6 SAE "B" 2 bolt flange
K6	146.1 - Ø101.6 SAE "B" 2 bolt flange, aluminium

Code	Port Options
B1	No ports
D3[2]	3/4 - 16 UNF thread
D4[2]	7/8 - 14 UNF thread
D5[2]	1 1/16 - 12 UN thread
D6[2]	1 5/16 - 12 UN thread
D7[2]*	1 5/8 - 12 UN thread
D8*	1 7/8 - 12 UN thread
E3	1/2 - 12 BSP thread
E4	5/8 - 14 BSP thread
E5	3/4 - 16 BSP thread
E6	1 - 11 BSP thread
E7*	1 1/4 - 11 BSP thread
E8*	1 1/2 - 11 BSP thread
G4[2]	M22x1.5 thread
G5[2]	M26x1.5 thread
G7[2]	M30x1.5 thread
G8[2]	M33x2 thread
G9[2]*	M42x2 thread
J5*	15 mm - Ø35 mm - M6 square
J7*	20 mm - Ø40 mm - M6 square
J8*	18 mm - Ø55 mm - M8 square
J9*	26 mm - Ø55 mm - M8 square

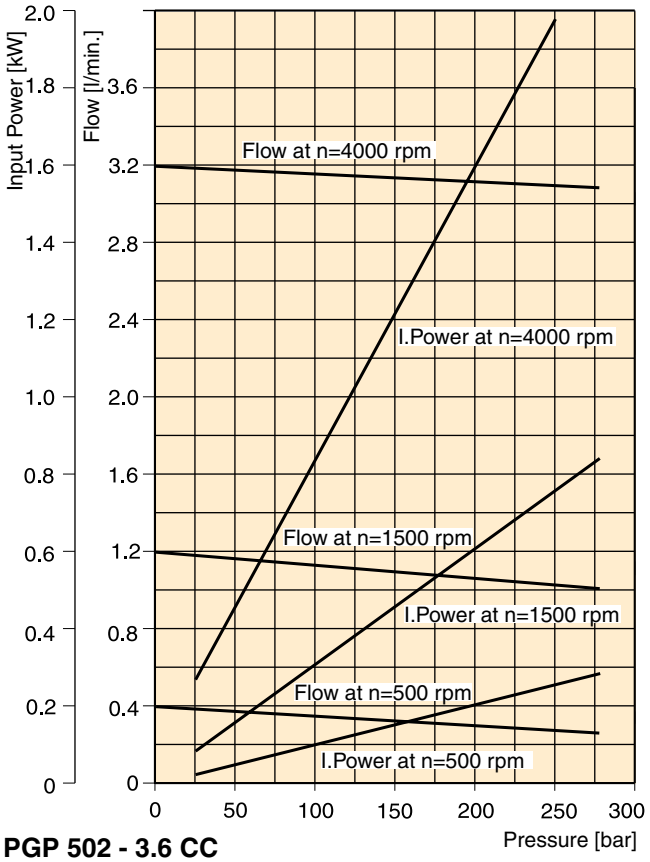
Code	Port Options
L1*	13 mm-Ø30 mm-M6 diamond
L2*	19 mm-Ø40 mm-M8 diamond
L3*	27 mm-Ø51 mm-M10 diamond
N1[2]*	1/2"-5/16-18UNC SAE Split Flange
N2[2]*	3/4"-3/8-16UNC SAE Split Flange
N3[2]*	1"-3/8-16UNC SAE Split Flange
N4[2]*	1 1/4"-7/16-14UNC SAE Split Flange
N5[2]*	1 1/2"-1/2-13UNC SAE Split Flange
P1[2]*	12.7 mm - M8 1/2" Metric Split Flange
P2*	19.0 mm - M10 3/4" Metric Split Flange
P3*	25.4 mm - M10 1" Metric Split Flange
P4*	31.8 mm - M10 1 1/4" Metric Split Flange
P5*	38.1mm - M12 1 1/2" Metric Split Flange

2) Non standard, on request only

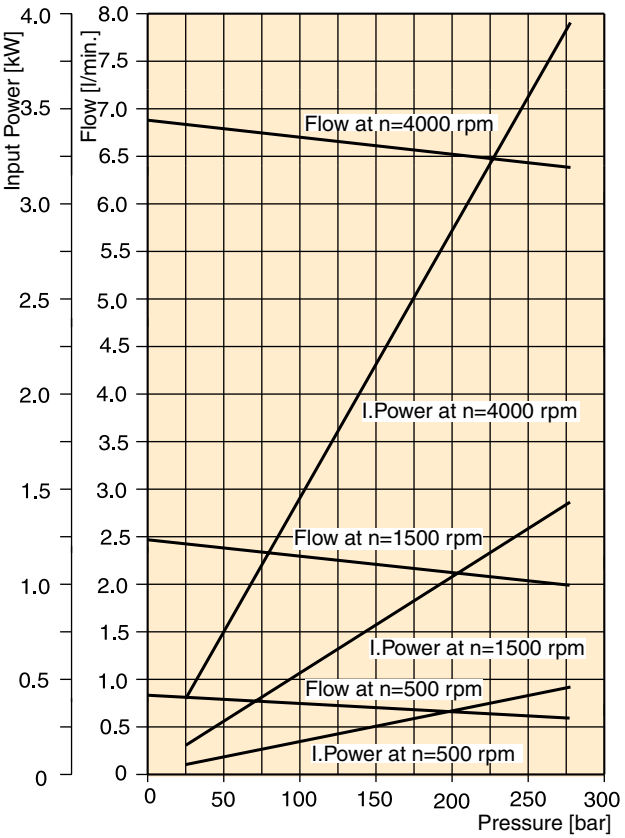
*) Not usable for rear ports

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

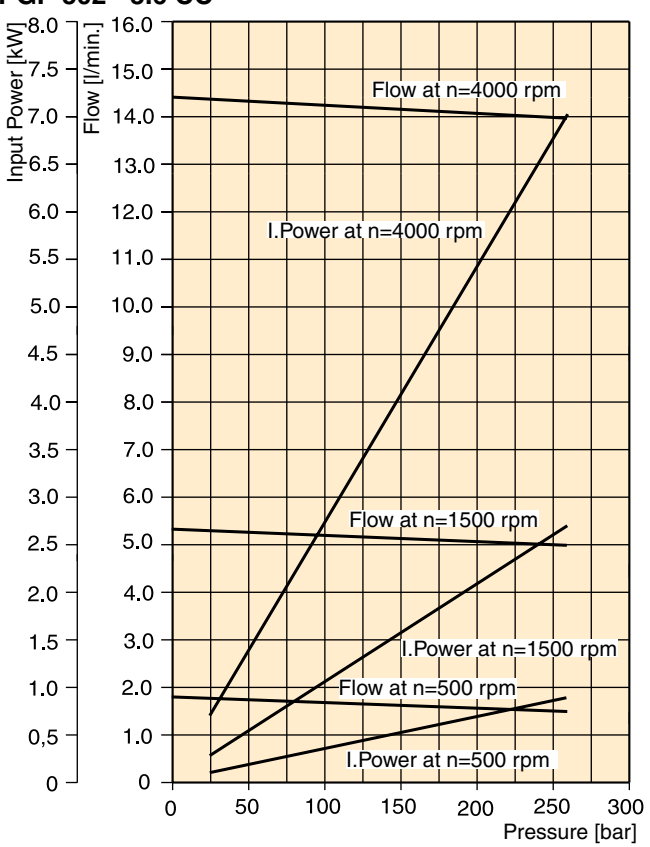
PGP 502 - 0.8 CC



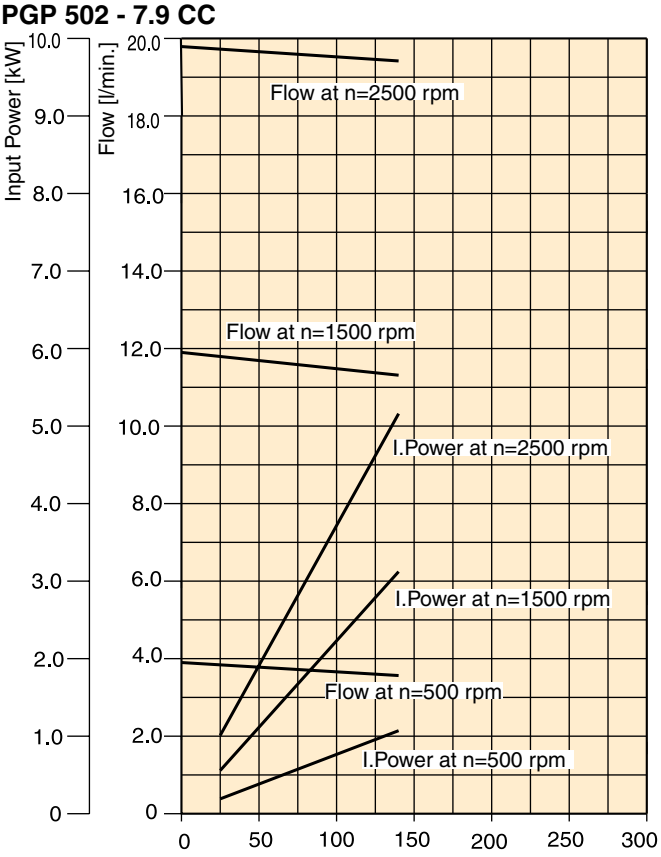
PGP 502 - 1.6 CC



PGP 502 - 3.6 CC

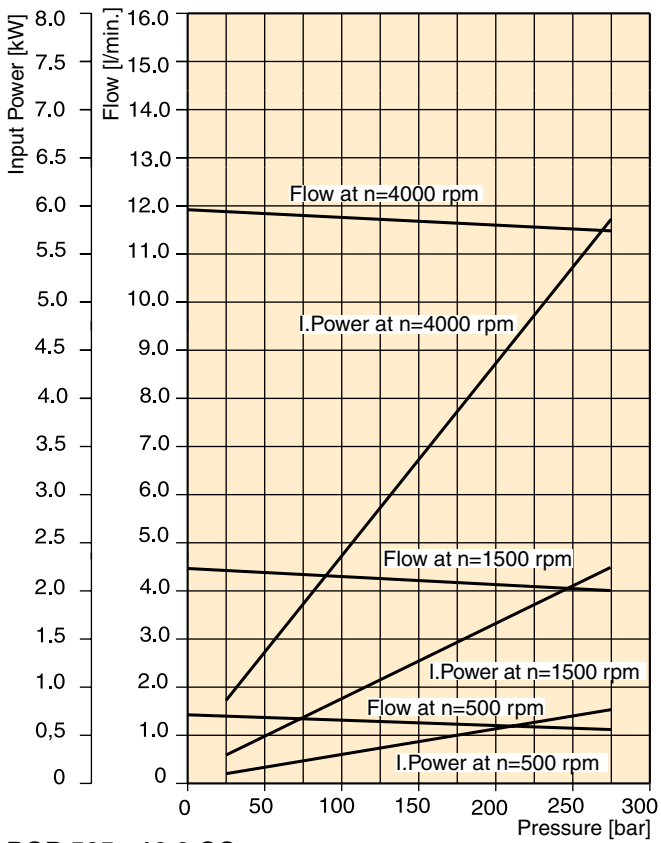


PGP 502 - 7.9 CC

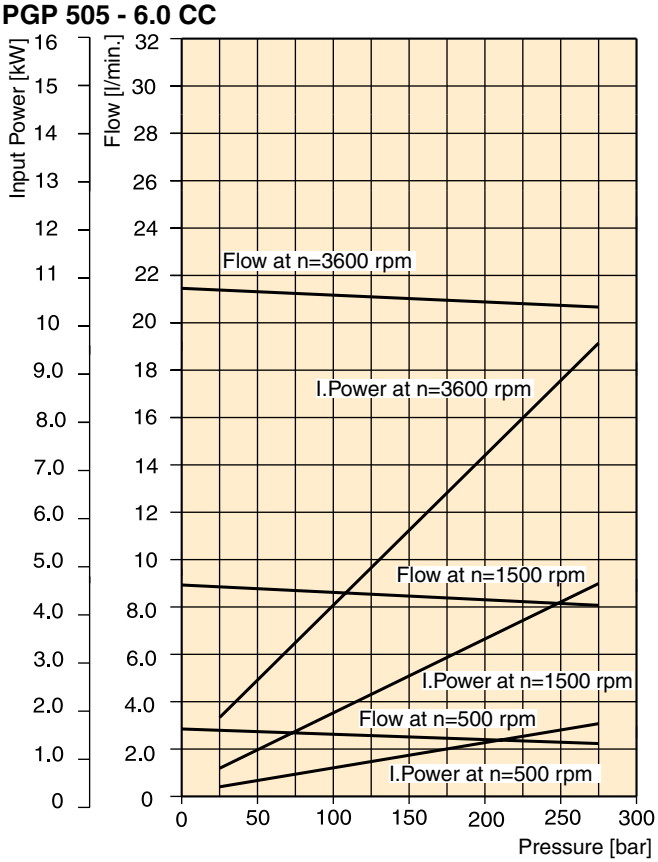


Fluid Temperature = 45± 2°C
Viscosity = 36 mm^2/s
Inlet Pressure = 0.9 + 0.1 bar absolute

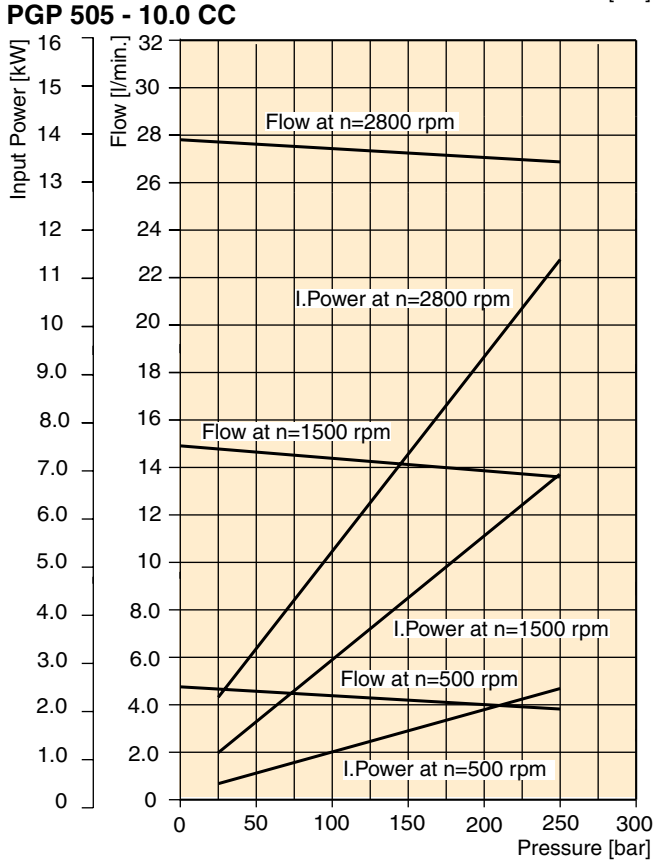
PGP 505 - 3.0CC



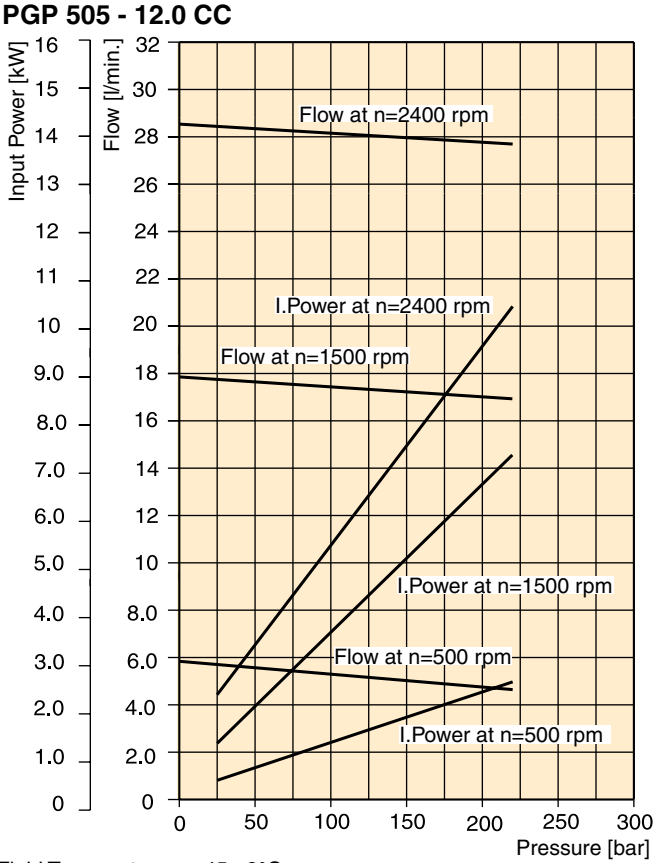
PGP 505 - 6.0 CC



PGP 505 - 10.0 CC

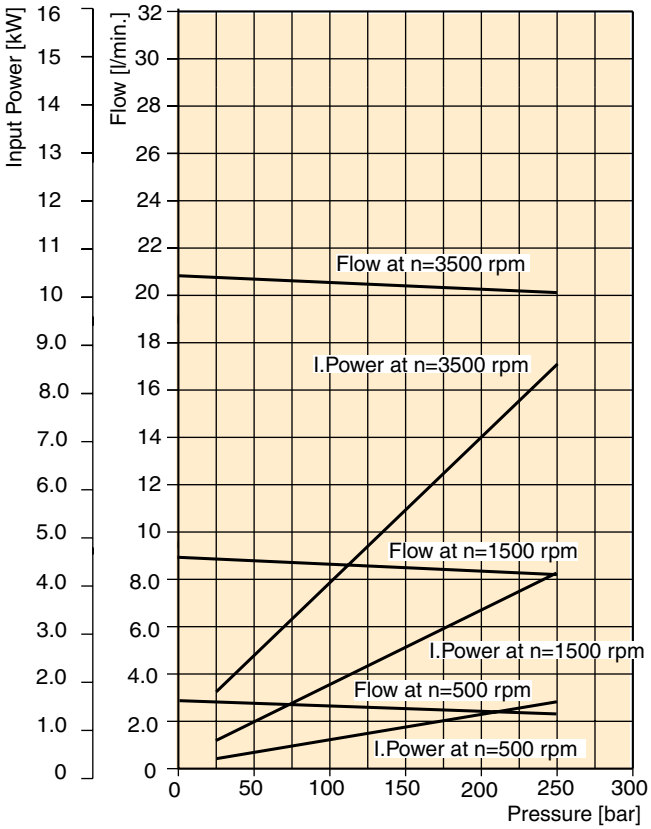


PGP 505 - 12.0 CC

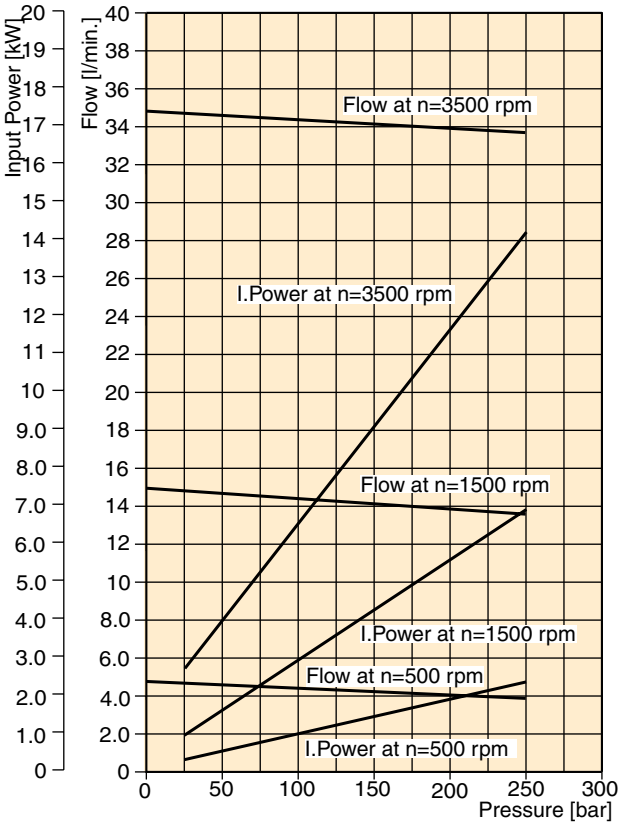


Fluid Temperature	= 45± 2°C
Viscosity	= 36 mm^2/s
Inlet Pressure	= 0.9 + 0.1 bar absolute

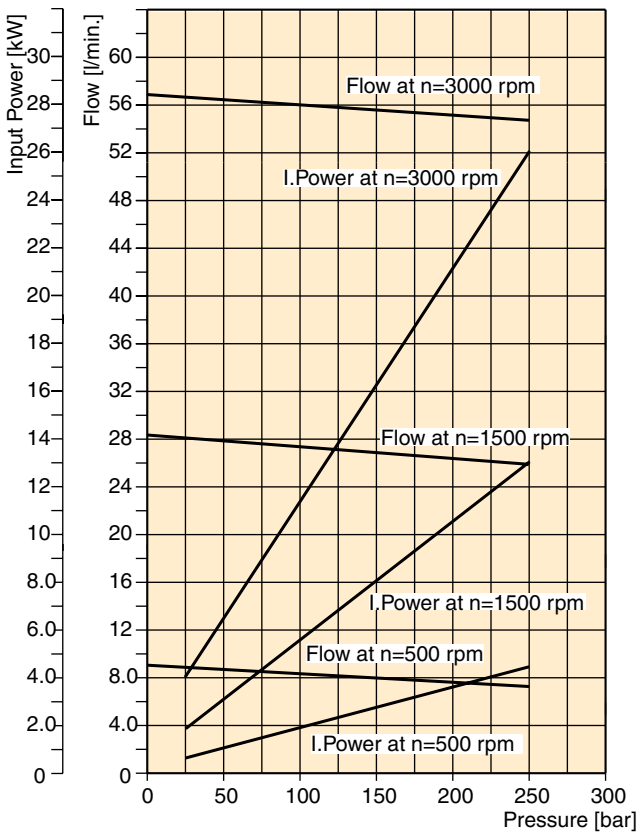
PGP/PGM 511 - 6.0 CC



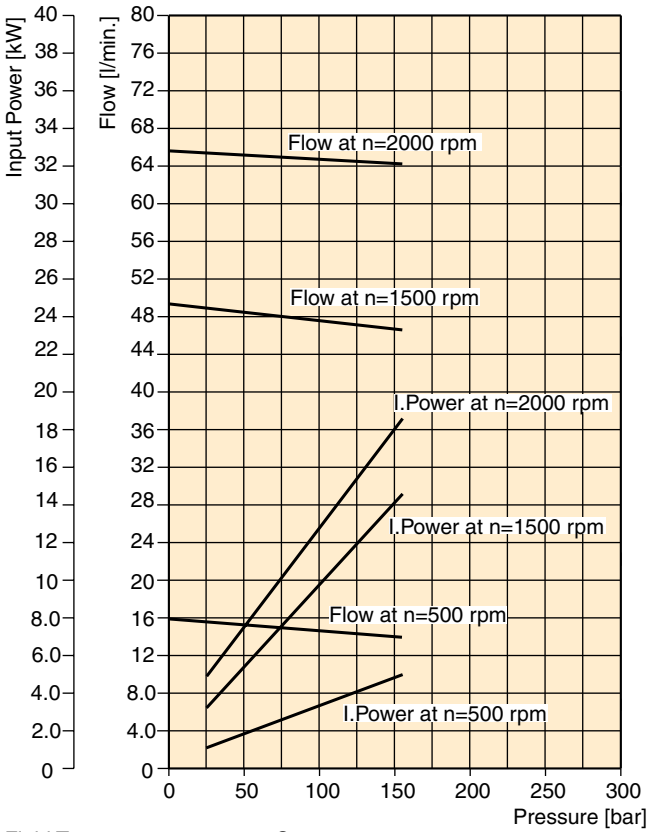
PGP 511 - 10.0 CC



PGP/PGM 511 - 19.0 CC

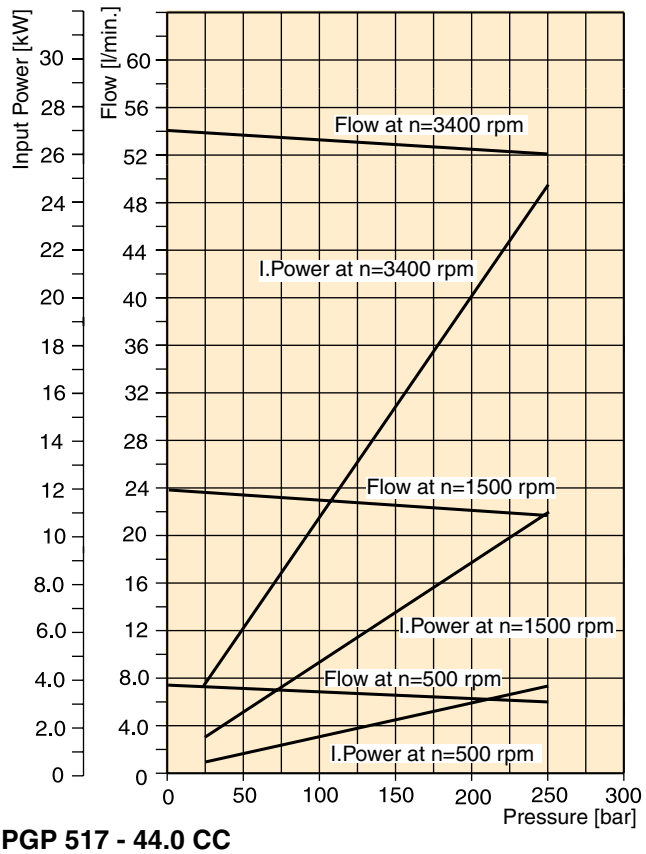


PGP 511 - 33.0 CC

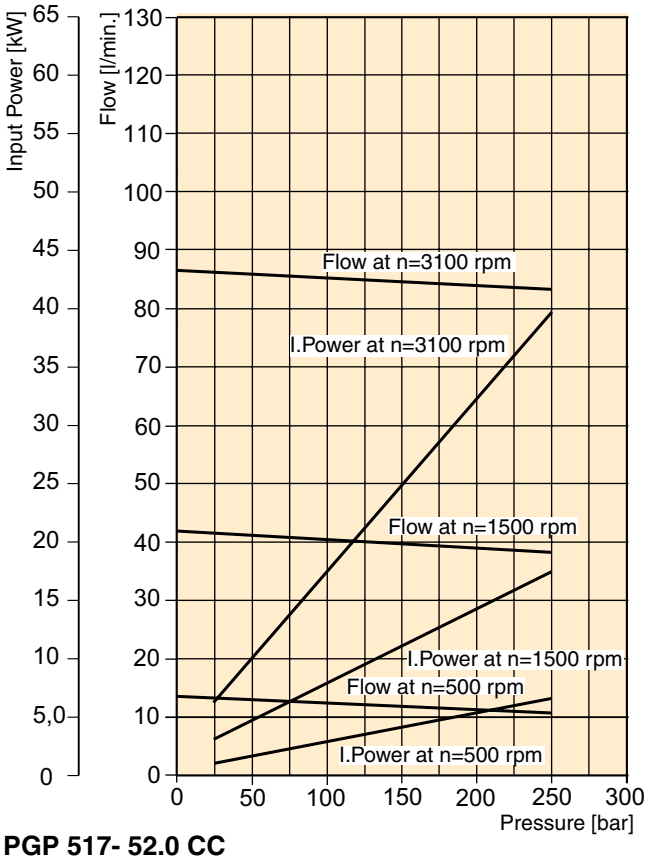


Fluid Temperature = 45± 2°C
Viscosity = 36 mm^2/s
Inlet Pressure = 0.9 + 0.1 bar absolute

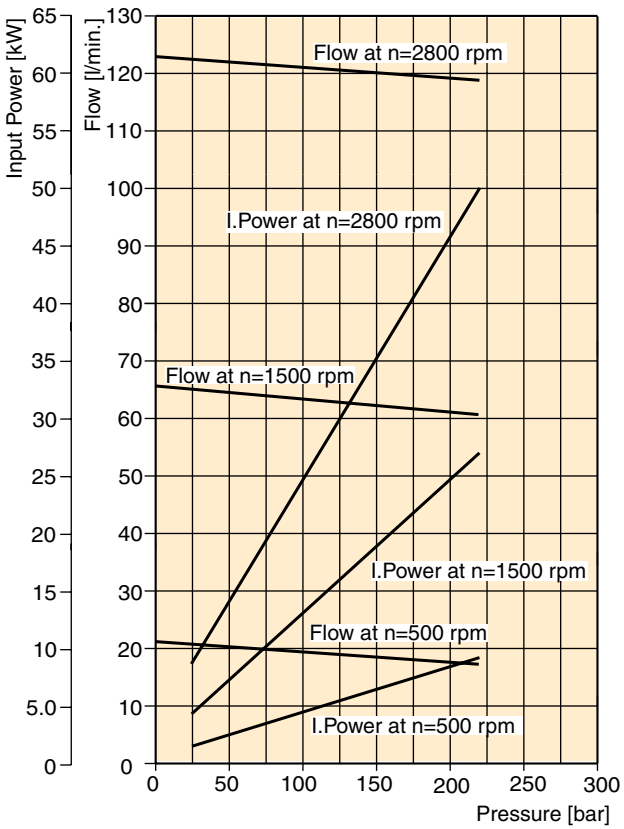
PGP 517- 16.0 CC



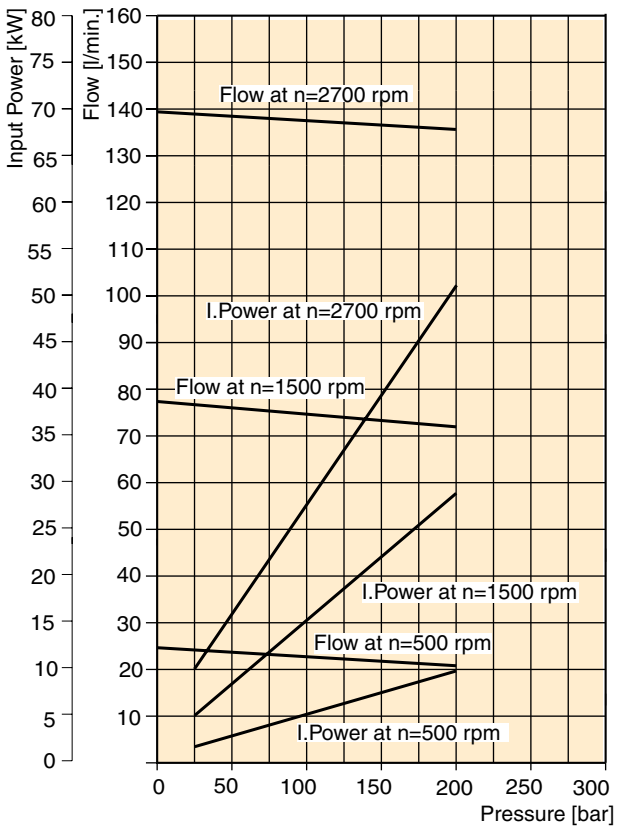
PGP 517 -28.0 CC



PGP 517 - 44.0 CC



PGP 517- 52.0 CC



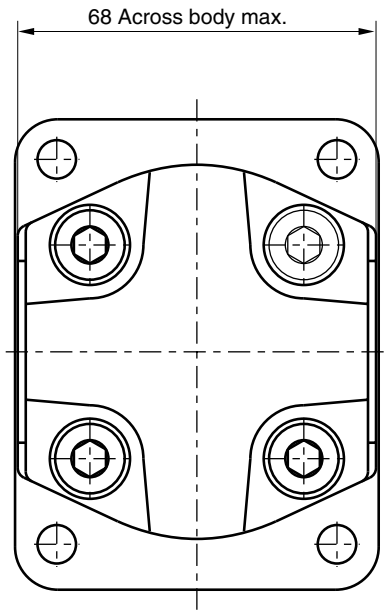
Fluid Temperature	= 45± 2°C
Viscosity	= 36 mm^2/s
Inlet Pressure	= 0.9 + 0.1 bar absolute

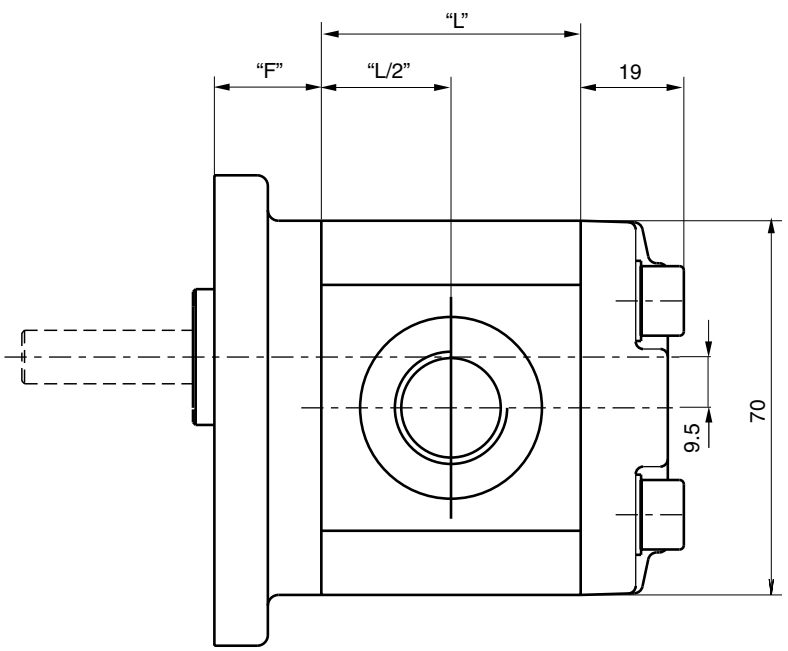
PGP 502 Pump Specification - Standard Displacements

Pump Displacement	Code	0008	0012	0016	0021	0025	0033	0036	0043	0048	0058	0062	0079
	cm³/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
Max. Continuous Pressure	bar	280	280	280	280	280	280	260	250	230	200	180	160
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	5000	5000	4500	4500	4000	4000	4000	3500	3000	3000	3000	3000
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 Weight [1]	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

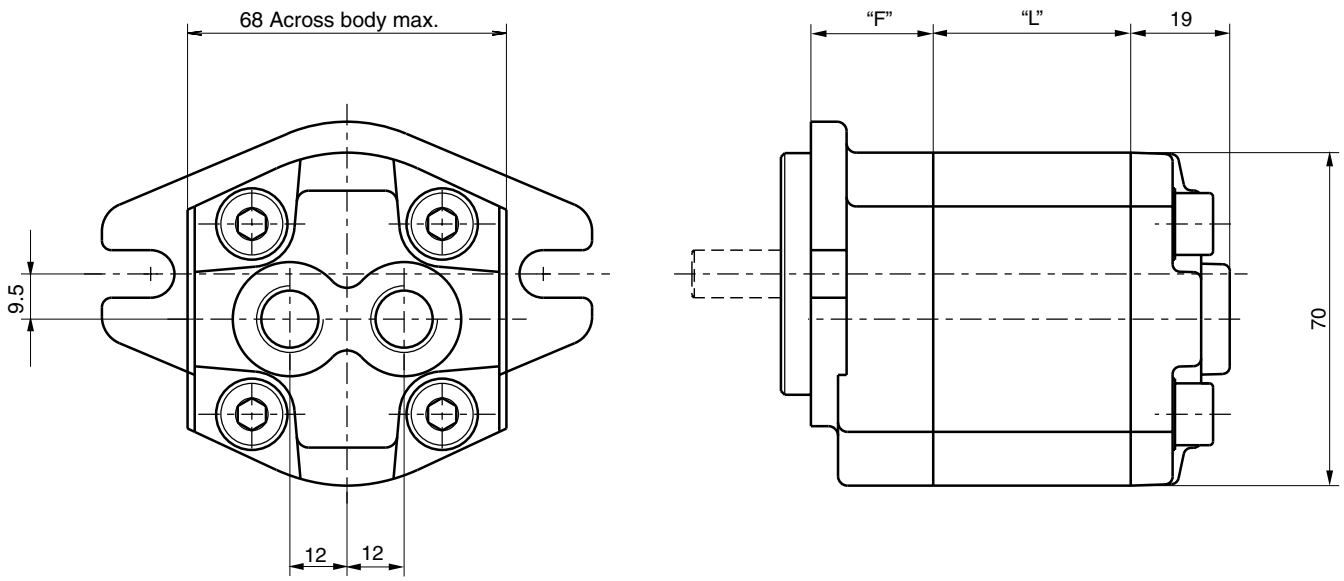
Single Unit PGP 502





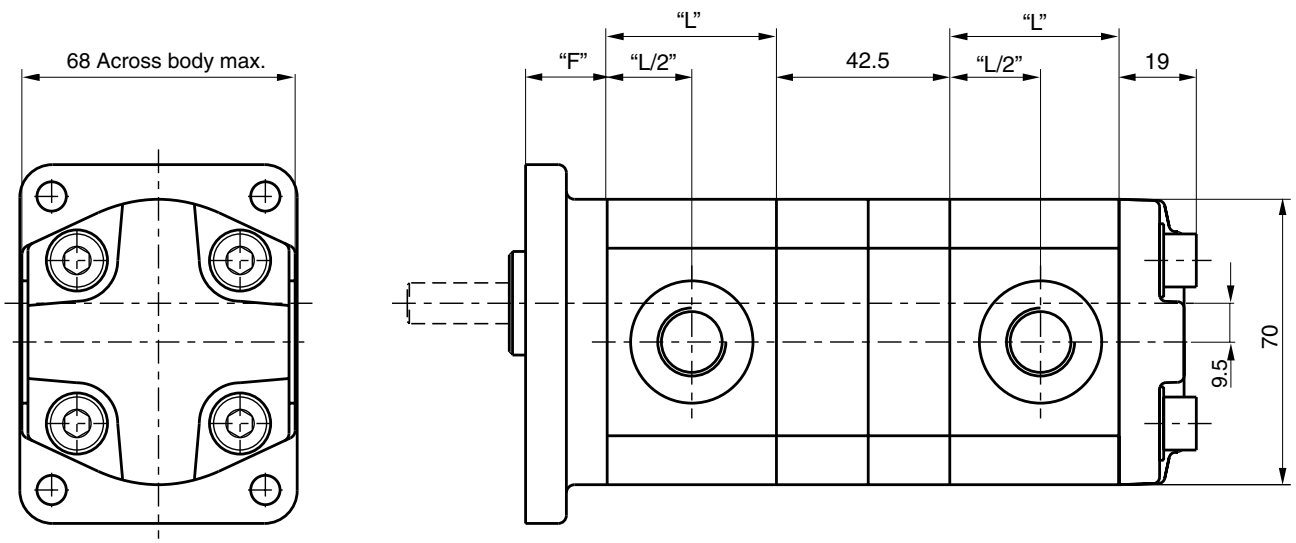
Dimension "L" see table above
Dimension "F" see flanges on page 20
Dimension Shafts see page 22

Single Unit PGP 502 with rear ports



Dimension "L" see table on page 18
Dimension "F" see flanges on page 20
Dimension Shafts see page 22

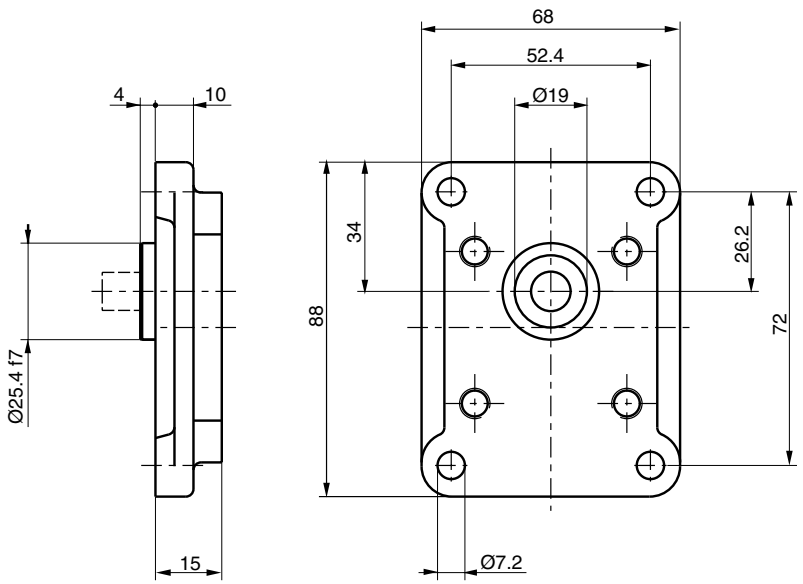
Tandem Unit PGP 502



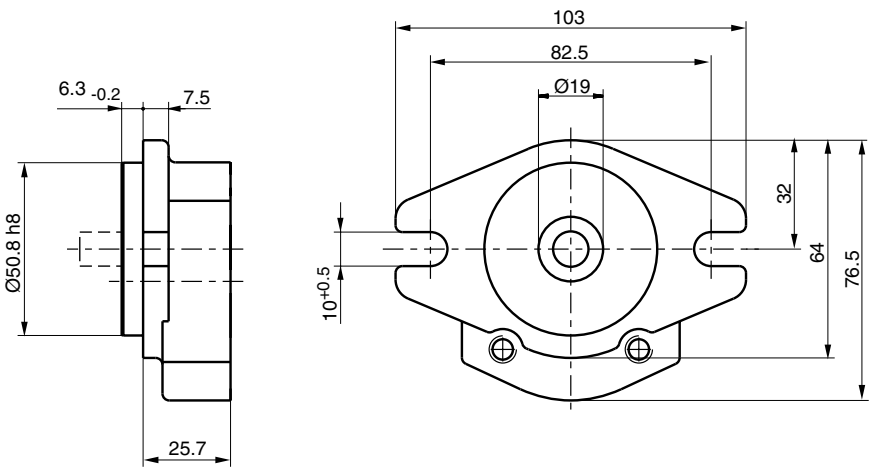
Dimension "L" see table on page 18
Dimension "F" see flanges on page 20
Dimension Shafts see page 22

PGP 502 Mounting Flange

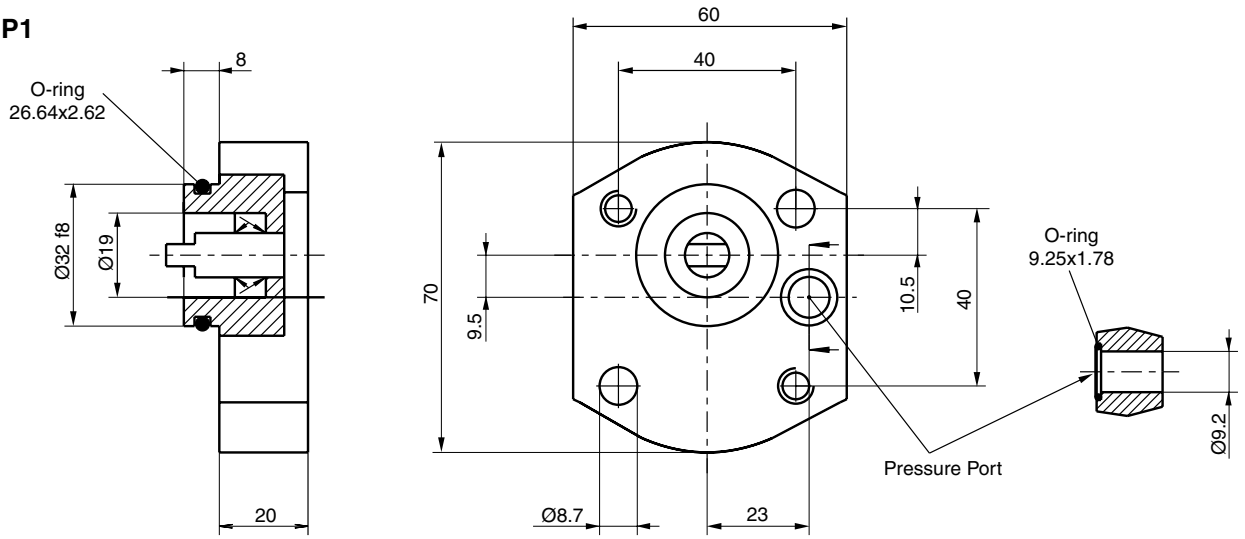
Code D1



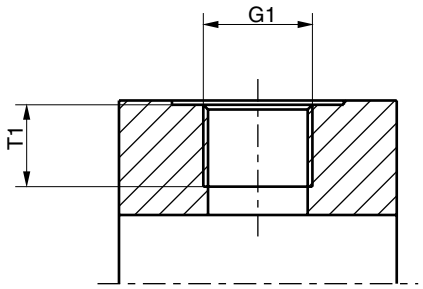
Code H1

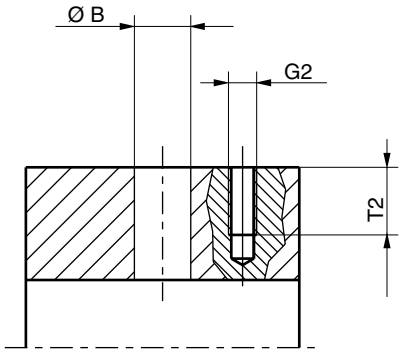


Code P1



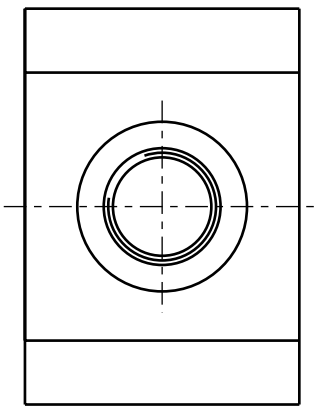
PGP 502 Porting

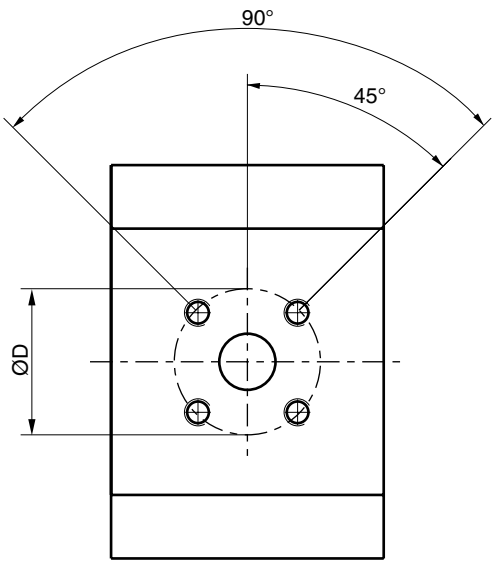


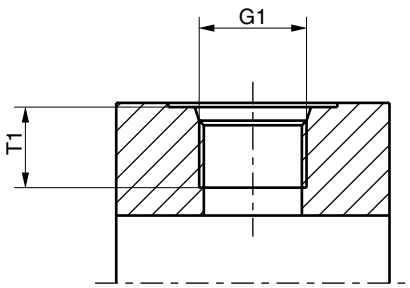


Code E British Standard Pipe Parallel (BSPP)

Code G Metric straight thread







Code J European flange

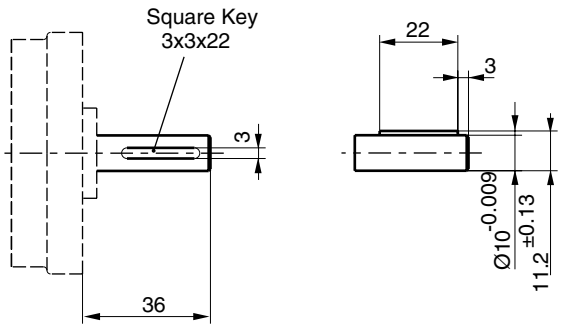
Code D SAE straight thread

PGP 502

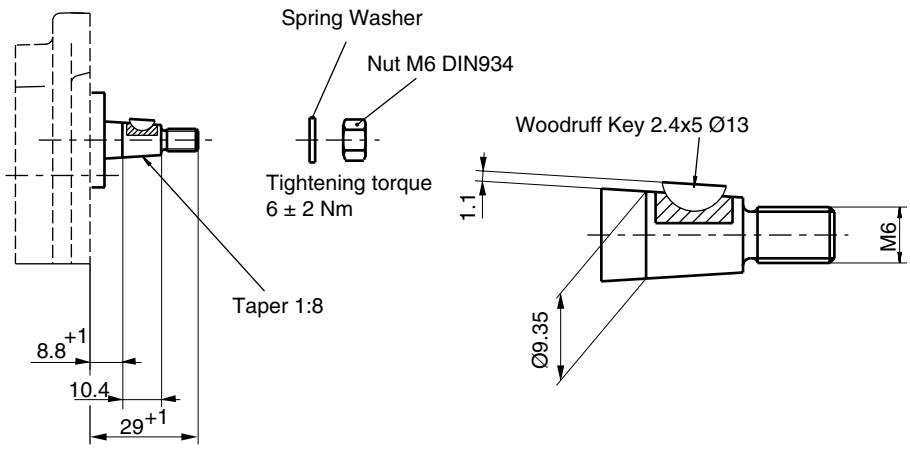
Code	G1	G2	T1	Ø B	Ø D	T2
D2	9/16-18 UNF		12.7			
D3	3/4-16 UNF		14.3			
E1	1/4-19 BSP		12.0			
E2	3/8-19 BSP		12.0			
E3	1/2-14 BSP		14.0			
G1	M14x1.5		12.0			
G3	M18x1.5		12.0			
J1		M5		8.0	26.0	12.0
J2		M5		10.0	26.0	12.0
J3		M6		8.0	30.0	12.0
J4		M6		12.0	30.0	12.0

PGP 502 Drive Shaft

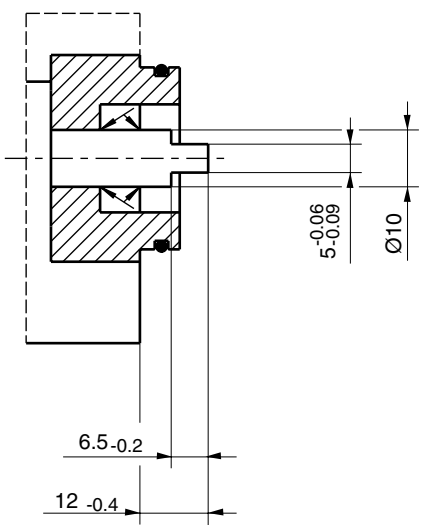
Code H1



Code P2



Code V1



PGP/PGM 502 - Shaft Load Capacity

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

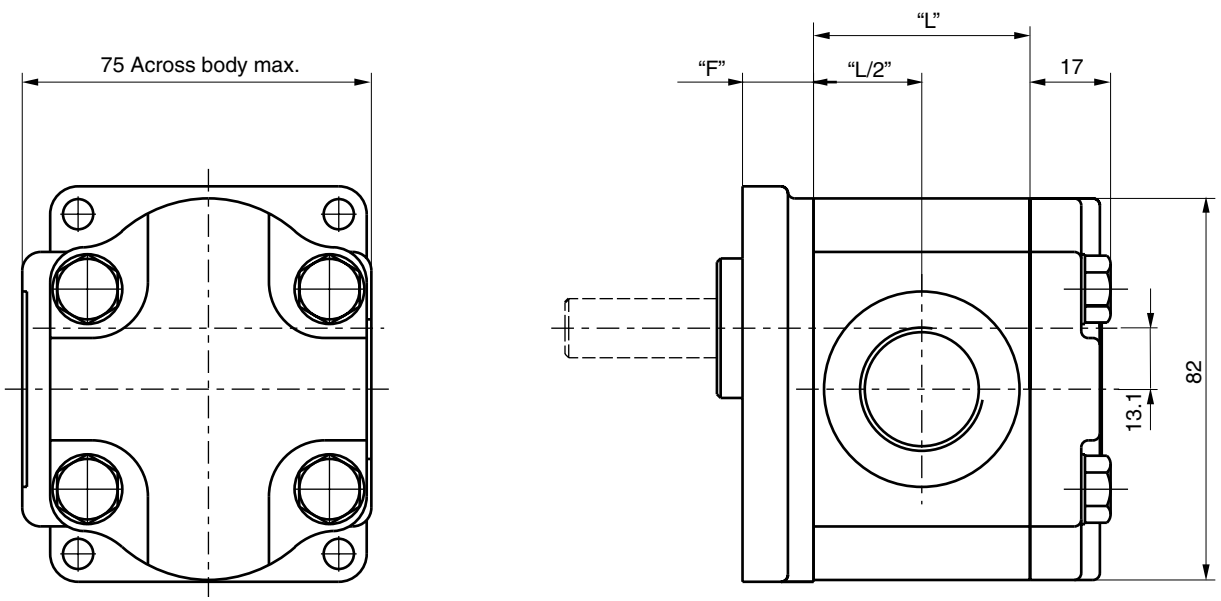
$$\text{Torque [Nm]} = \frac{\text{Displacement [cm}^3\text{/rev] x Pressure [bar]}}{57.2}$$

PGP 505 Specification - Standard Displacements

Pump Displacement	Code	0030	0040	0050	0060	0070	0080	0100	0110	0120
	cm³/rev	3.0	4.0	5.0	6.0	7.0	8.0	10.0	11.0	12.0
Max. Continuous Pressure	bar	275	275	275	275	275	275	250	250	220
Minimum Speed @ Max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet pressure	rpm	4000	4000	4000	3600	3300	3000	2800	2400	2400
Pump Input Power @ Max. Pressure and 1500 rpm	kW	2.3	3.0	3.8	4.5	5.3	6.0	6.9	7.6	7.5
Dimension "L"	mm	41.1	43.8	46.5	49.1	51.8	54.5	59.8	62.5	65.2
Approximate Weight1)	kg	2.22	2.27	2.32	2.38	2.43	2.48	2.58	2.63	2.68

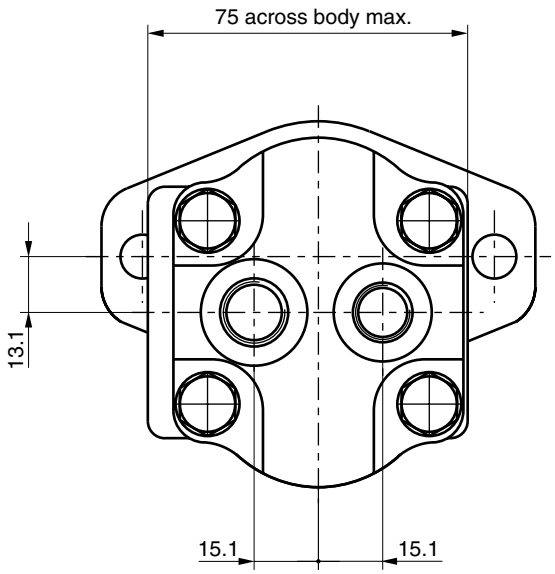
[1)] Single pump with Flange D3 and Port end cover B1

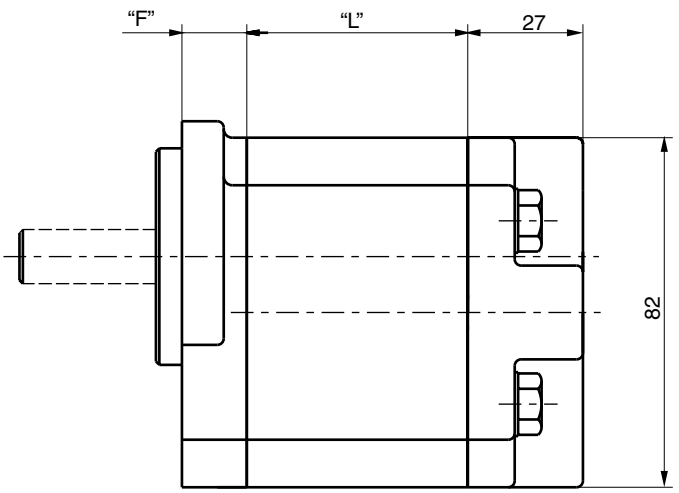
Single Unit PGP 505



Dimension "L" see table above
Dimension "F" see flanges on pages 25
Dimension Shafts see pages 27 and 28

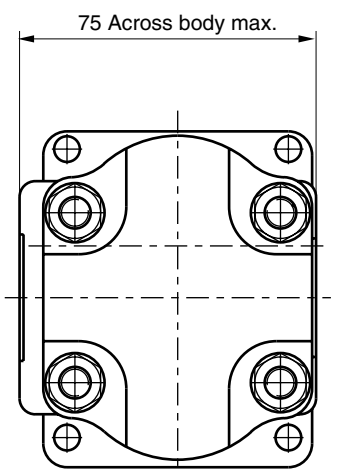
Single Unit PGP 505 with rear ports

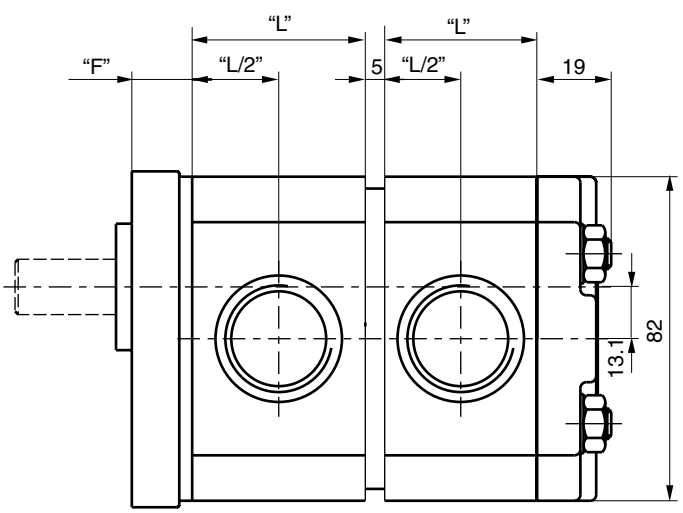




Dimension "L" see table on page 23
Dimension "F" see flanges on pages 25
Dimension Shafts see pages 27 and 28

Tandem Unit PGP 505

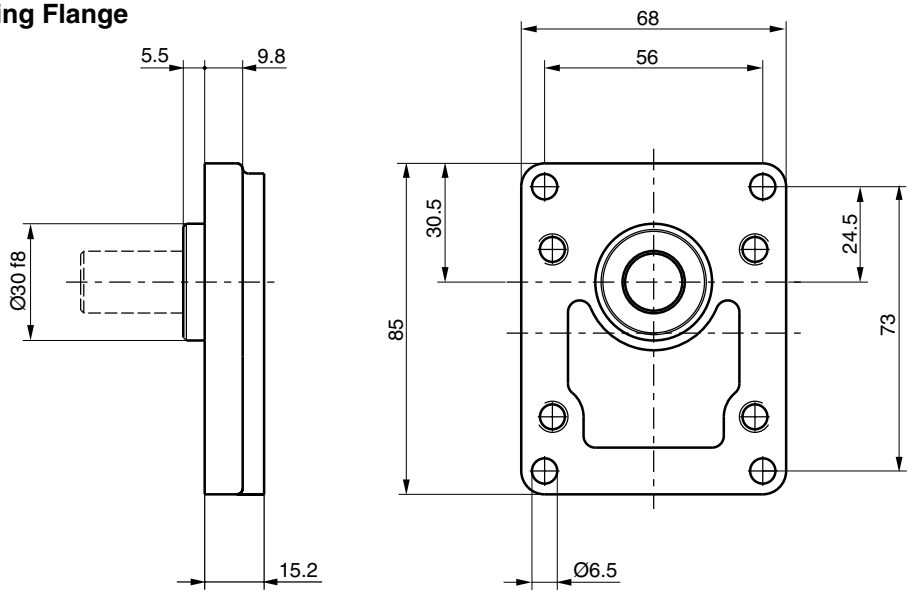




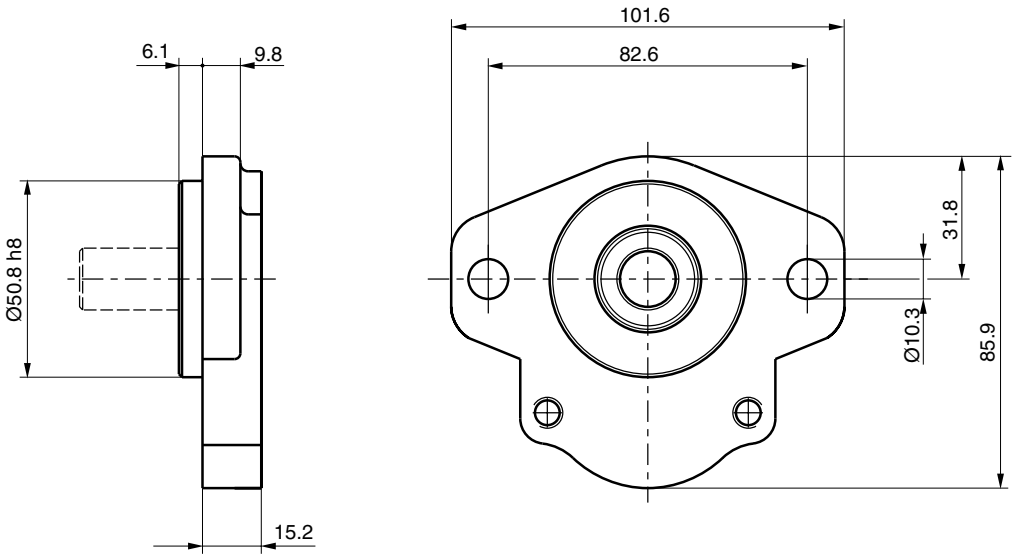
Dimension "L" see table on page 23
Dimension "F" see flanges on pages 25
Dimension Shafts see pages 27 and 28

PGP 505 Mounting Flange

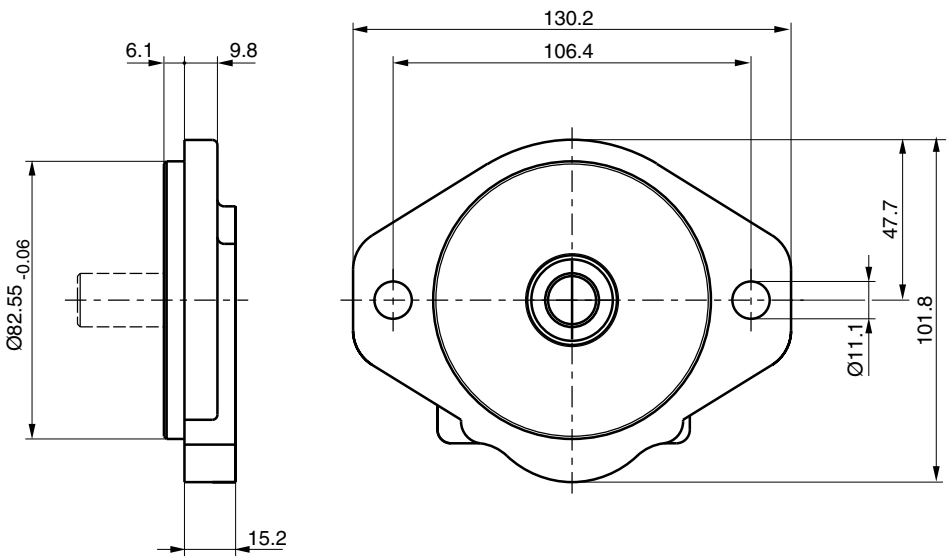
Code D2



Code H1



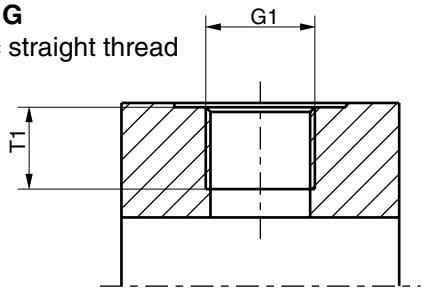
Code H2



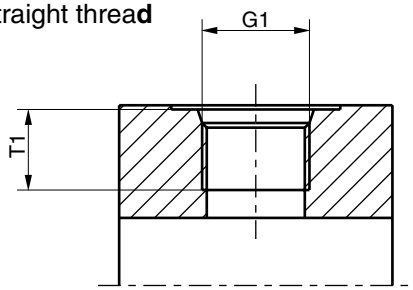
PGP 505 Porting

Code E
British Standard Pipe

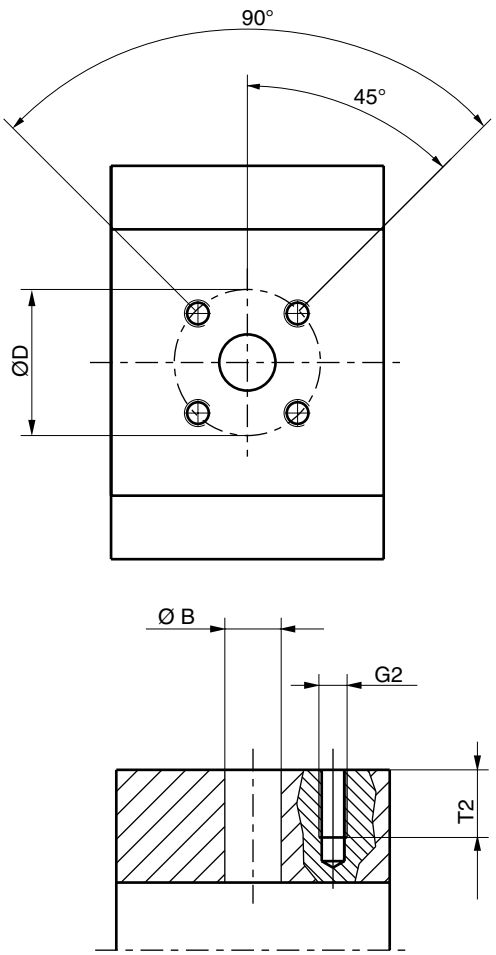
Code G
Metric straight thread



Code D
SAE straight thread



Code J
European flange

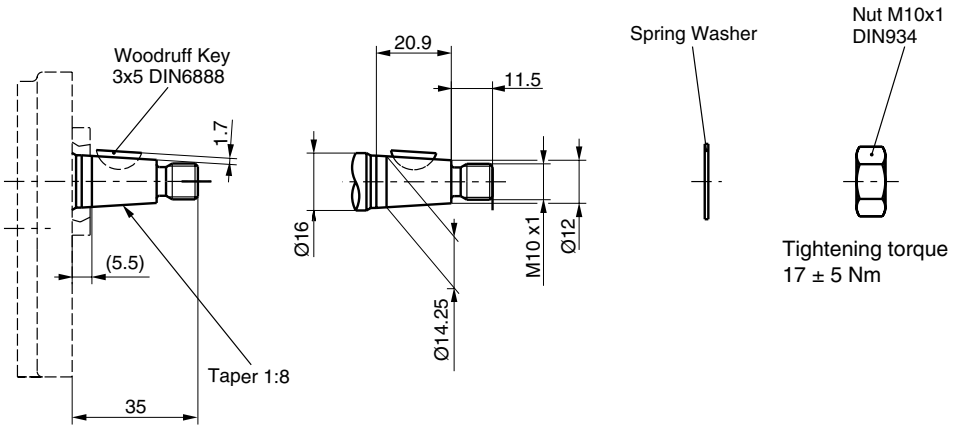


PGP 505

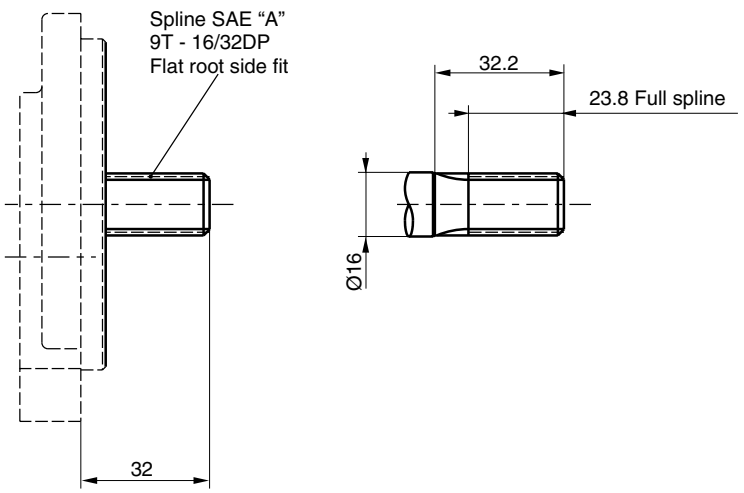
Code	G1	G2	T1	∅ B	∅ D	S	T2
Thread	Thread	Dimensions					
D2	9/16-18 UNF		12.7				
D3	3/4-16 UNF		14.3				
D4	7/8-14 UNF		16.7				
D5	1 1/16-12 UN		19.0				
E2	3/8-19 BSP		12.0				
E3	1/2-14 BSP		14.0				
E5	3/4-14 BSP		16.0				
G1	M 14x1.5		12.0				
G3	M 18x1.5		12.0				
G4	M 22x1.5		14.0				
J3		M6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

PGP 505 Drive Shaft

Code Q2

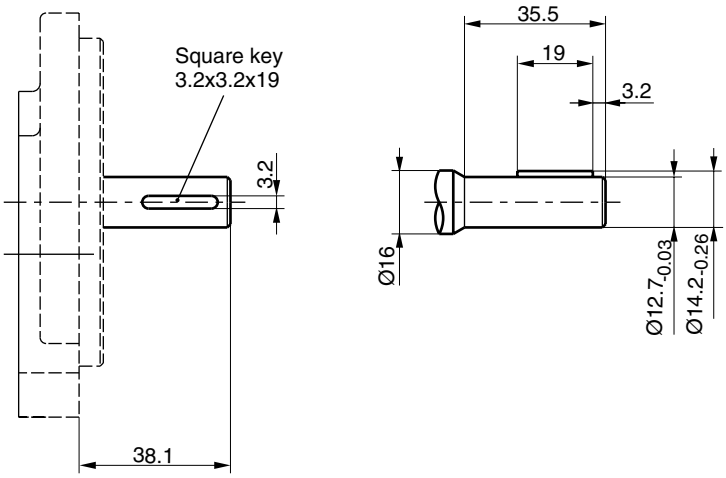


Code A1

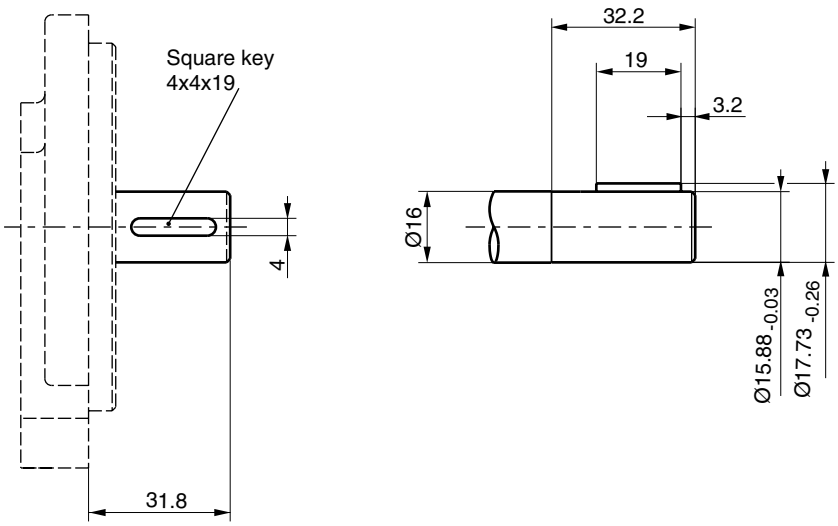


PGP 505 Drive Shaft

Code J1



Code K1



PGP 505 - Shaft Load Capacity

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

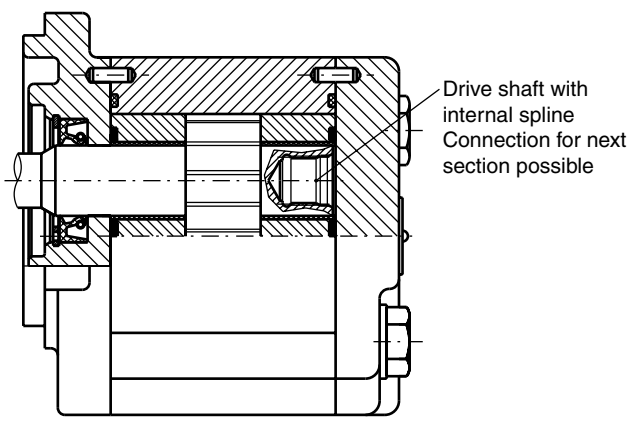
$$\text{Torque [Nm]} = \frac{\text{Displacement [cm}^3\text{/rev]} \times \text{Pressure [bar]}}{57.2}$$

PGP/PGM 511 Specification - Standard Displacements

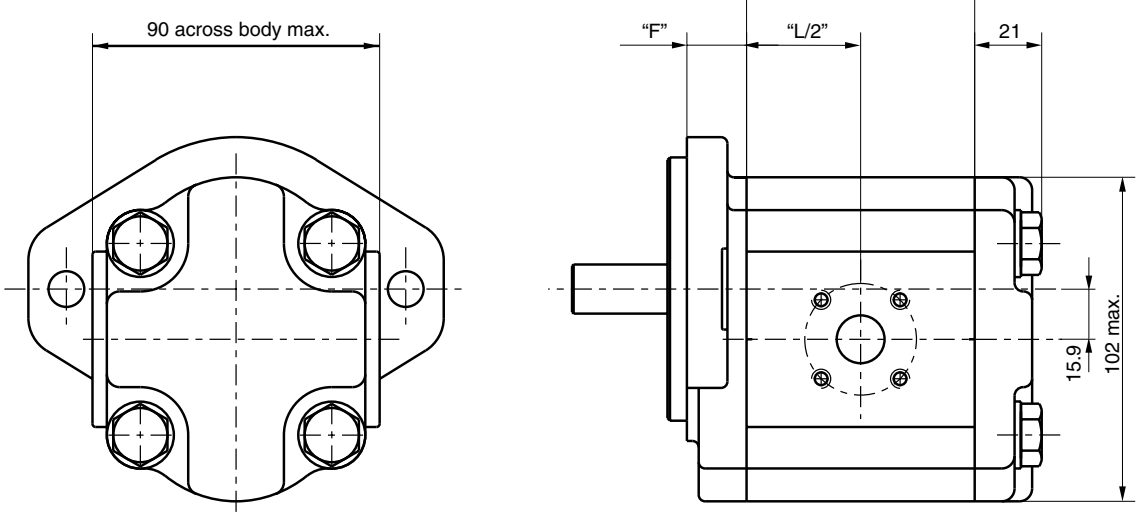
Pump Displacement	Code	0060	0080	0100	0110	0140	0160	0190	0230	0270	0330
	cm³/rev	6.0	8.0	10.0	11.0	14.0	16.0	19.0	23.0	27.0	33.0
Max. Continuous Pressure	bar	250	250	250	250	250	250	250	225	190	155
Minimum Speed @ 0 Inlet & Max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet pressure	rpm	3500	3500	3500	3500	3500	3500	3250	2750	2350	2000
Pump Input Power @ Max. Pressure and 1500 rpm	kW	4.5	6.0	7.5	8.3	10.5	12.0	14.3	14.7	14.9	17.3
Dimension "L"	mm	50.1	53.3	56.5	58.0	62.8	65.9	70.6	76.9	83.2	92.6
Approximate Weight [1]	kg	3.40	3.47	3.55	3.57	3.71	3.79	3.91	4.06	4.21	4.45

[1] Single pump with Flange Q1 and Port end cover B1

Distributor Unit PGP 511



Single Unit PGP/PGM 511

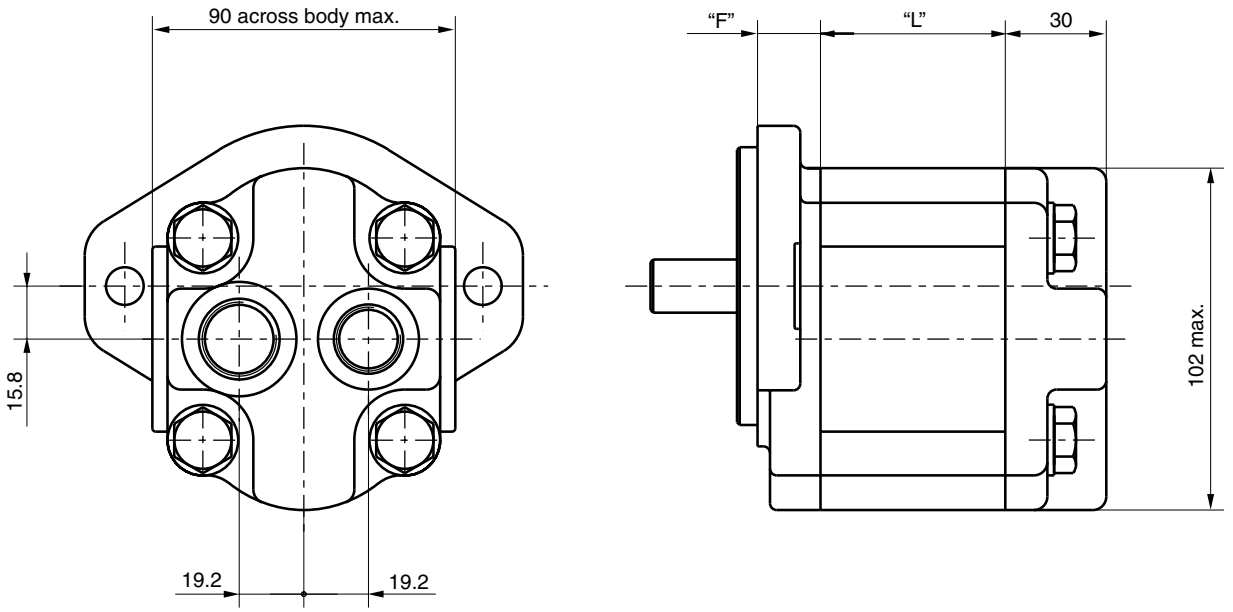


Dimension "L" see table above

Dimension "F" see flanges on pages 31 to 34

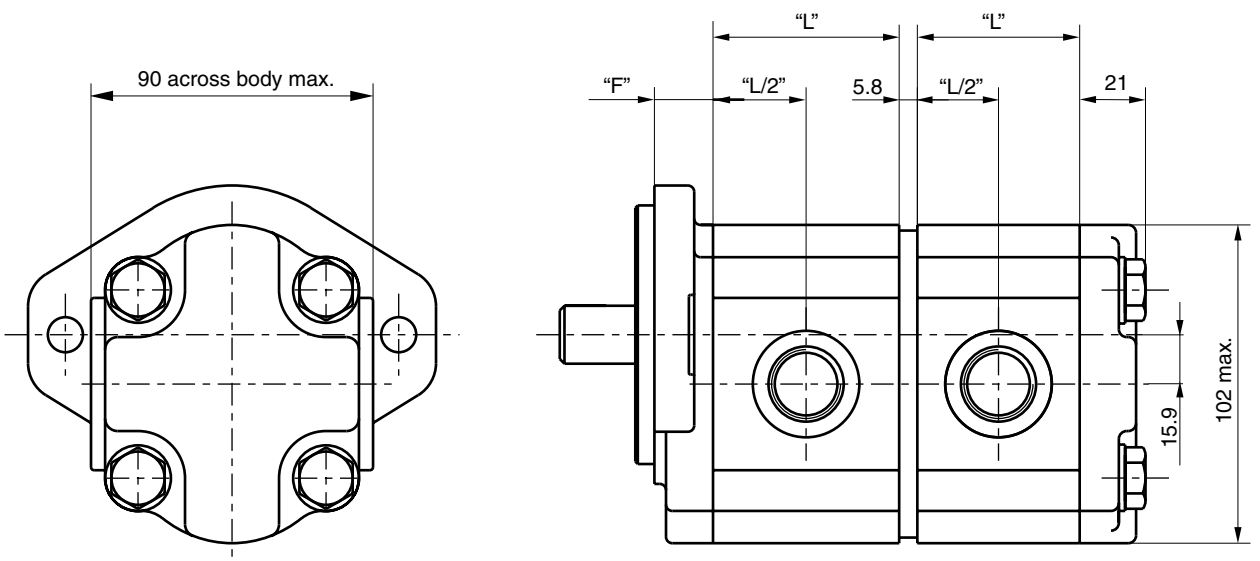
Dimension Shafts see pages 38 to 40

Single Unit PGP/PGM 511 with rear ports



Dimension "L" see table on page 29
Dimension "F" see flanges on pages 31 to 34
Dimension Shafts see pages 38 to 40

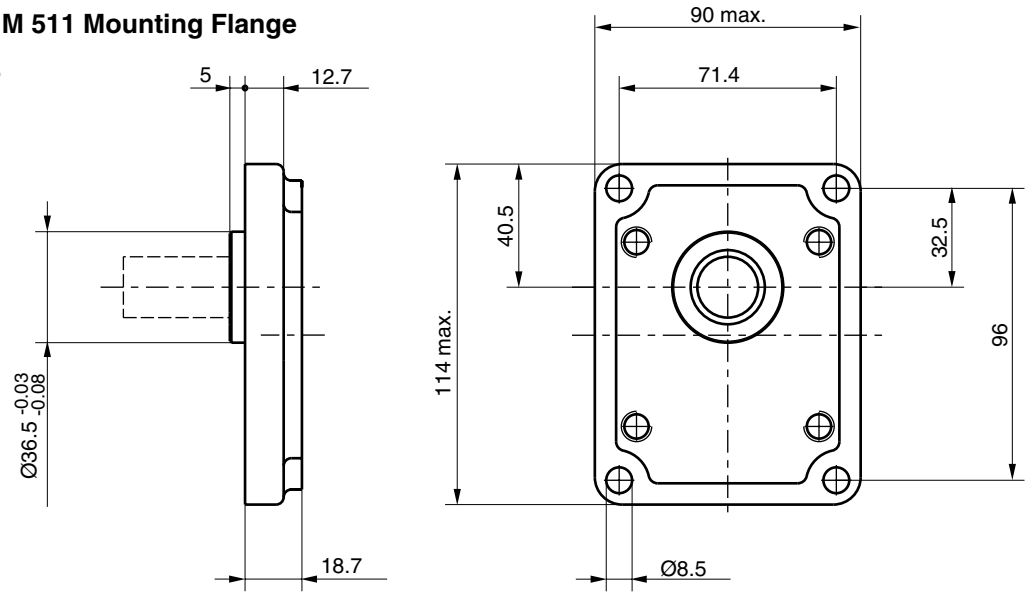
Tandem Unit PGP/PGM 511



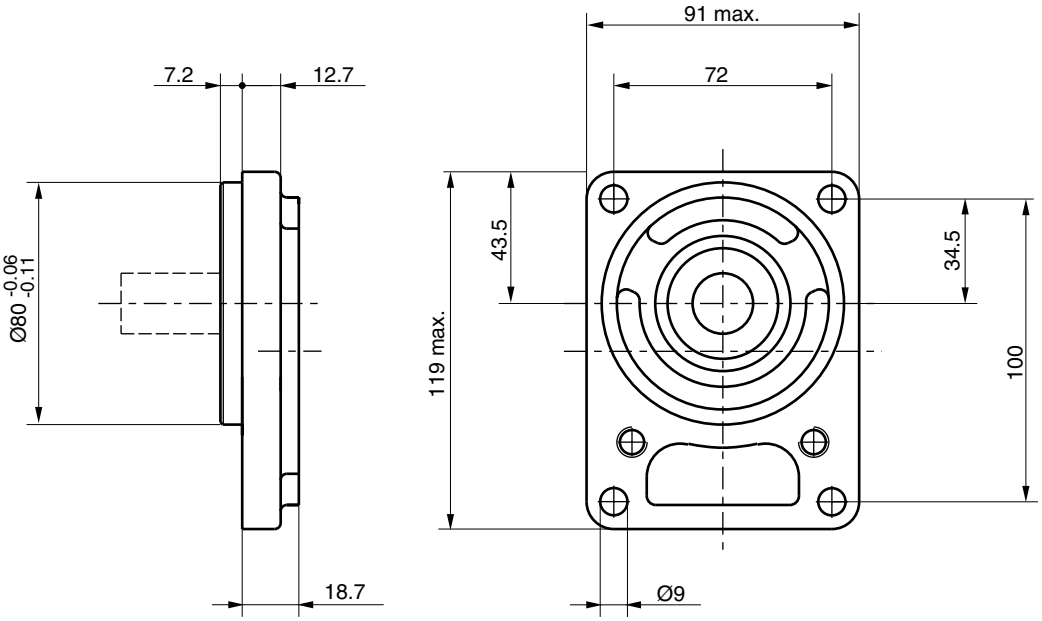
Dimension "L" see table on page 29
Dimension "F" see flanges on pages 31 to 34
Dimension Shafts see pages 38 to 40

PGP/PGM 511 Mounting Flange

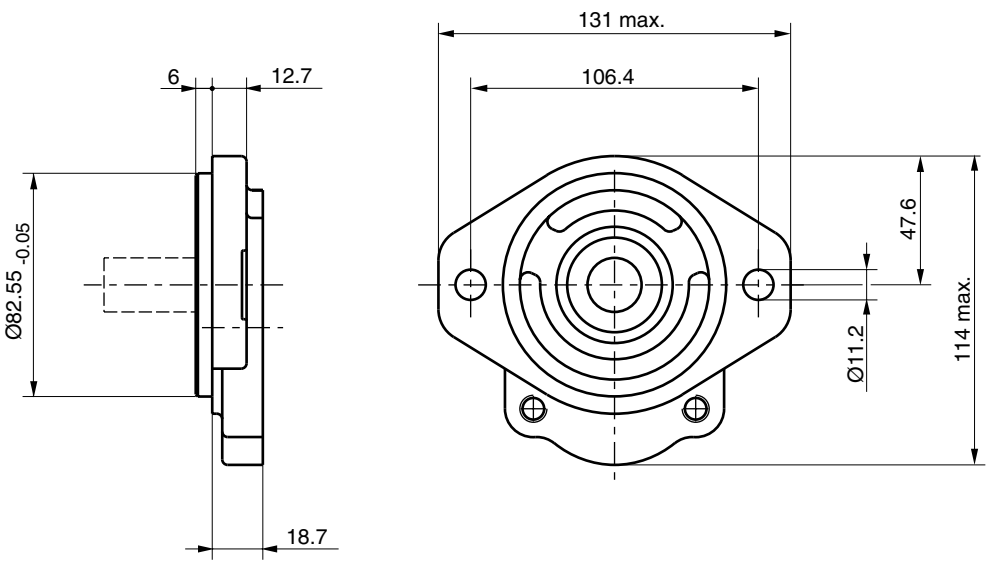
Code D3



Code D4

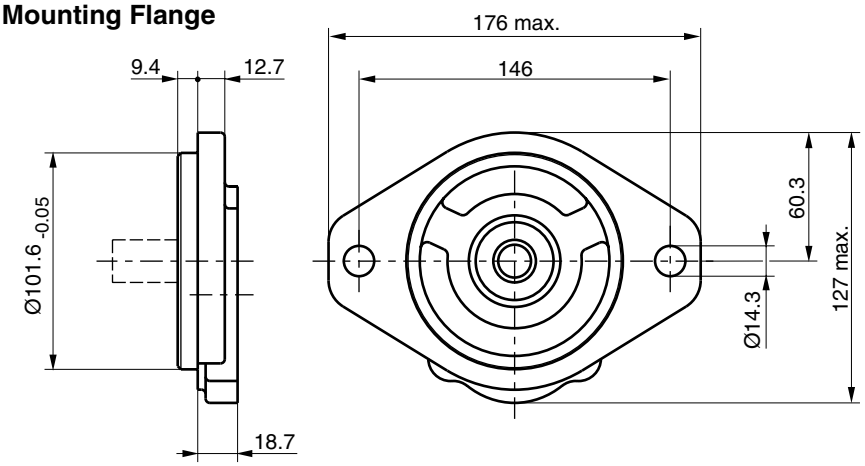


Code H2

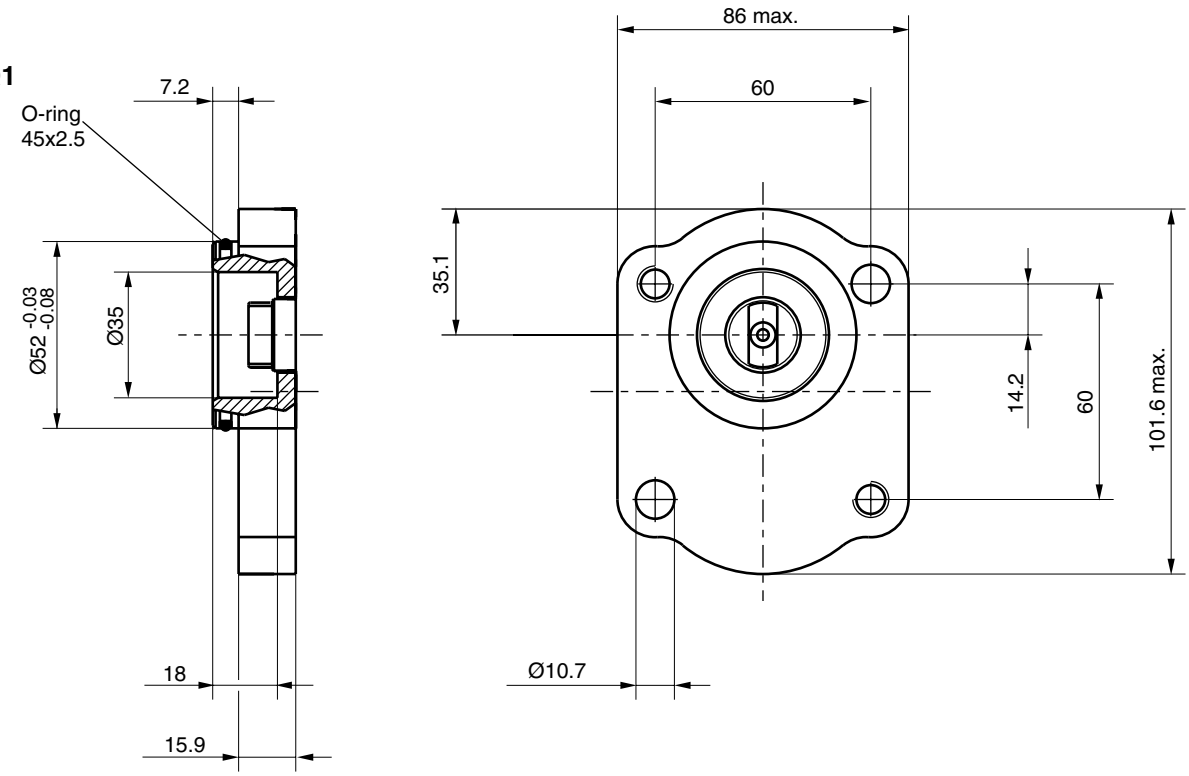


PGP/PGM 511 Mounting Flange

Code H3

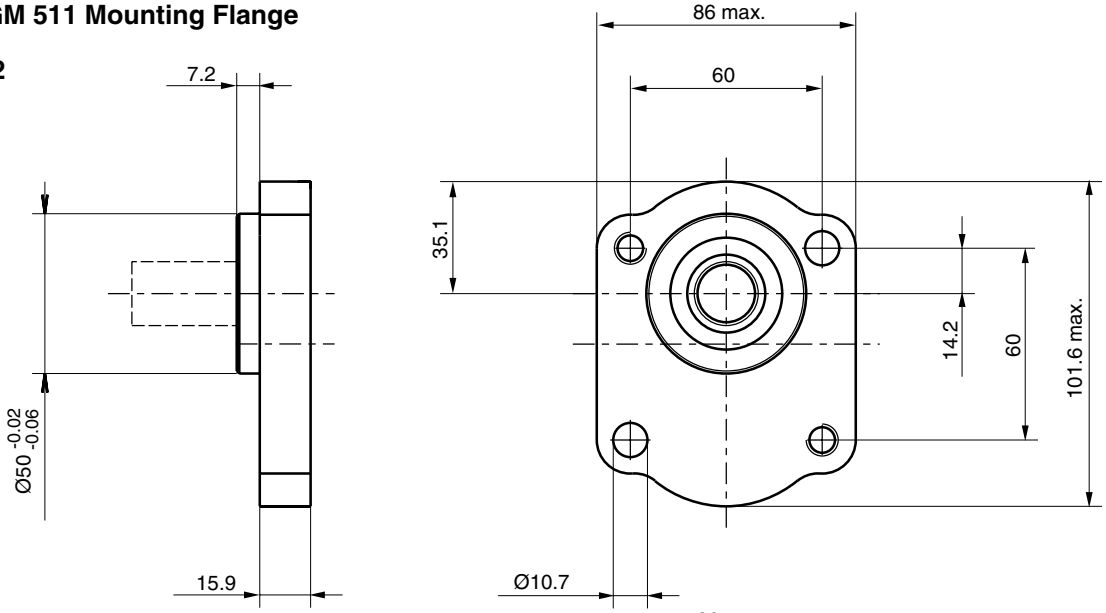


Code Q1

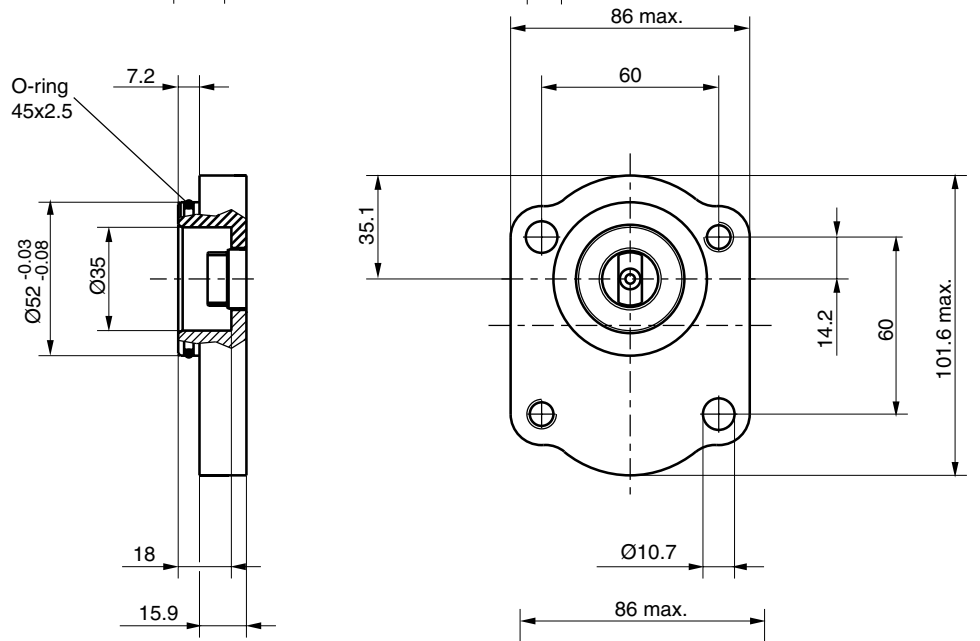


PGP/PGM 511 Mounting Flange

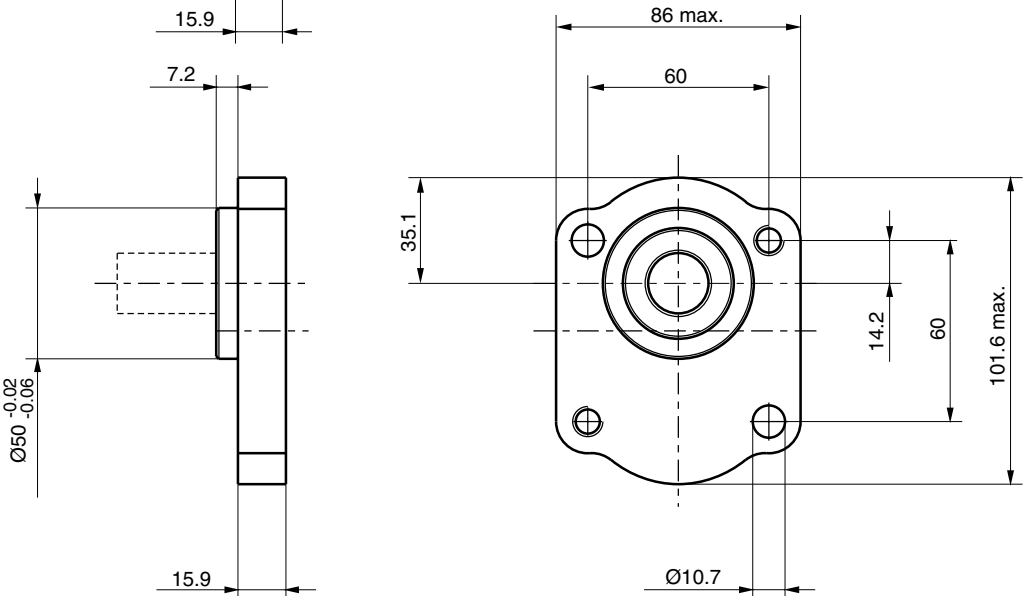
Code Q2



Code Q3

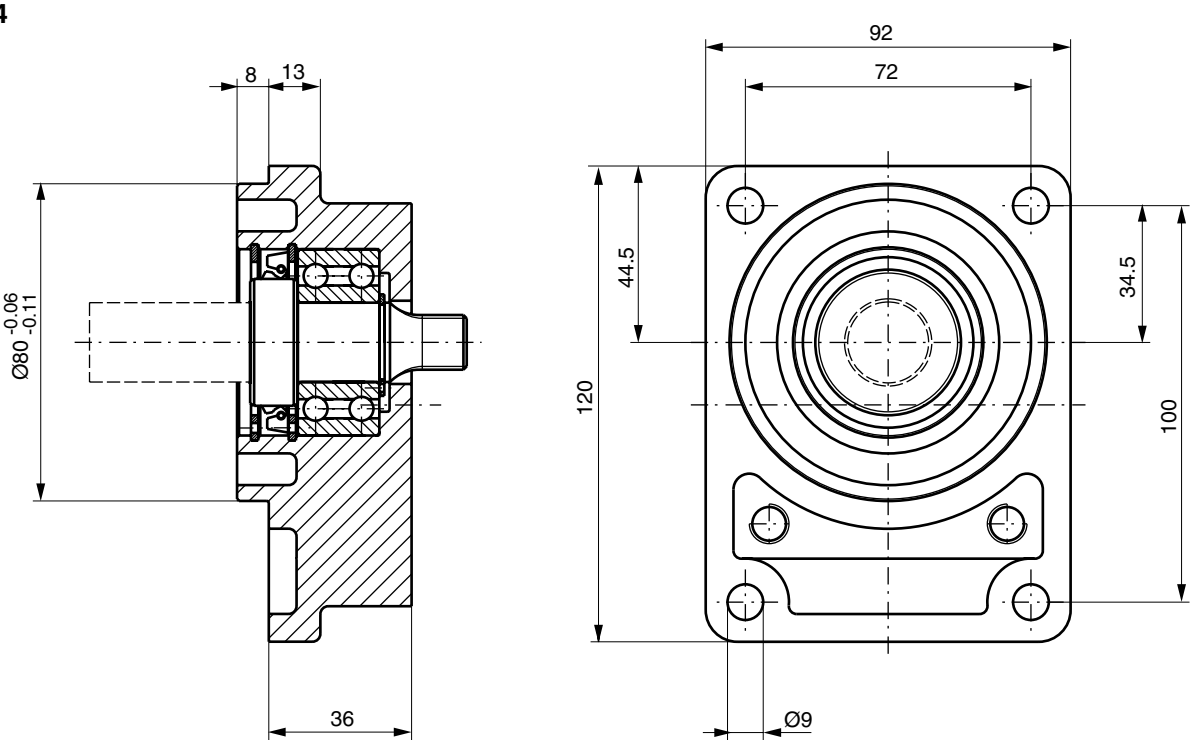


Code Q4

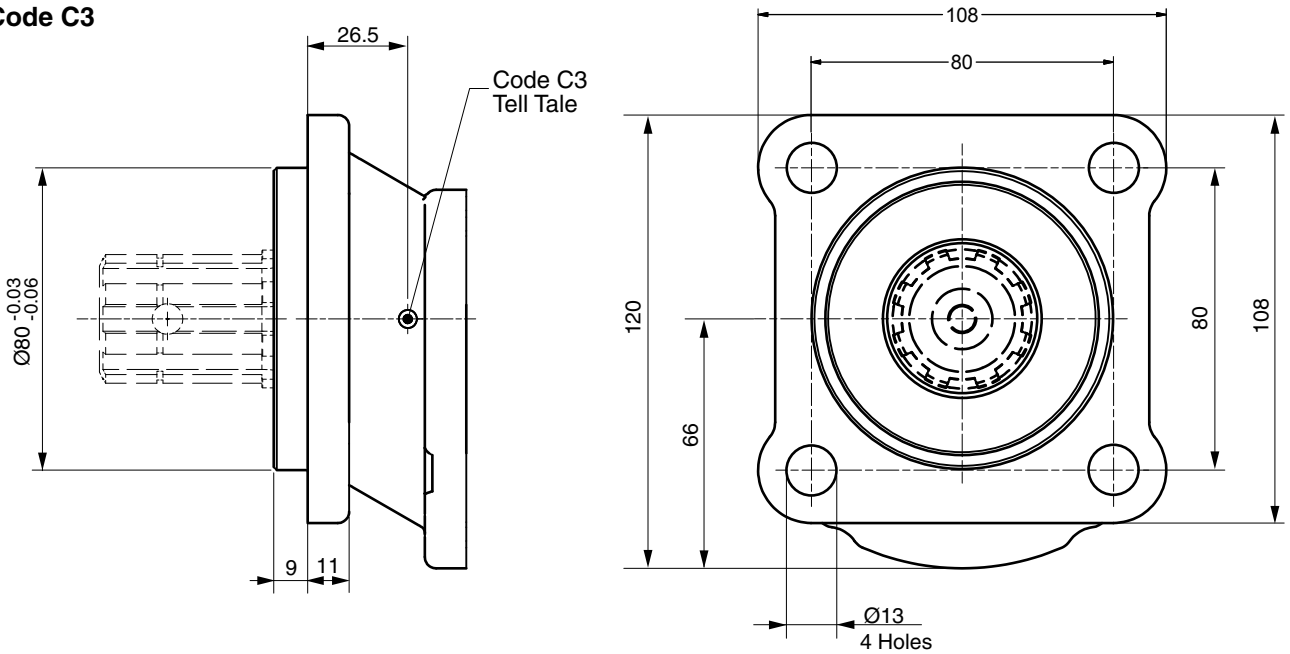


PGP/PGM 511 Mounting Flange

Code F4



Code C3



Outboard Bearing PGP-PGM 511

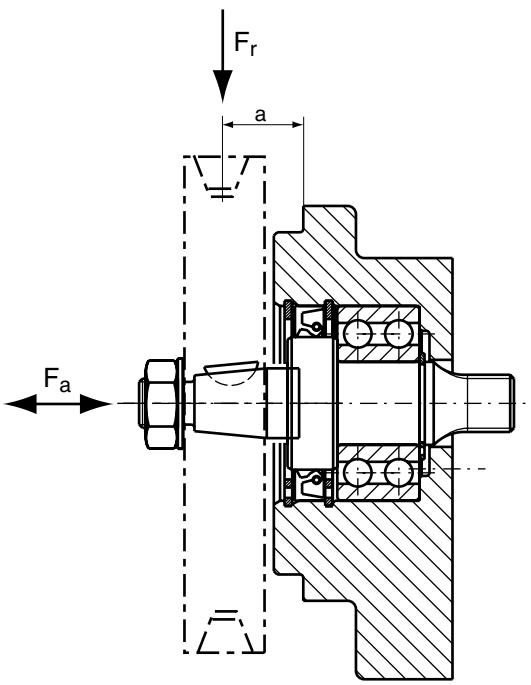
Bearing loads for code F4

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

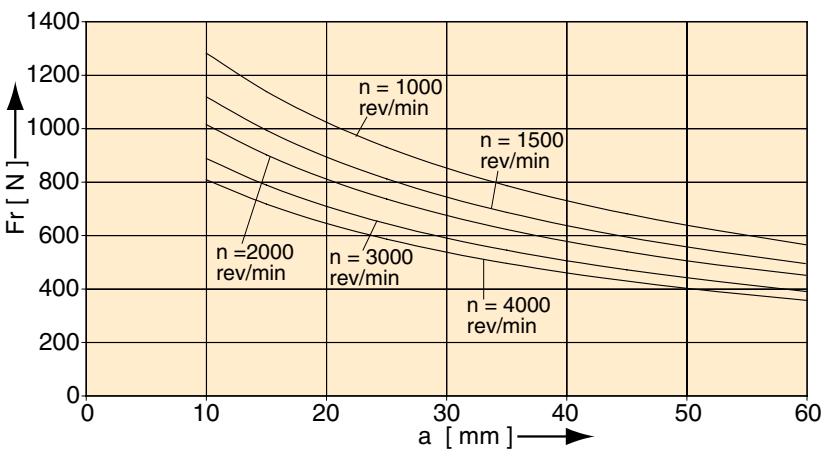
The diagrams below show the maximum axial or radial loads that can be tolerated referred to a bearing life of L_H = 1000 h.

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

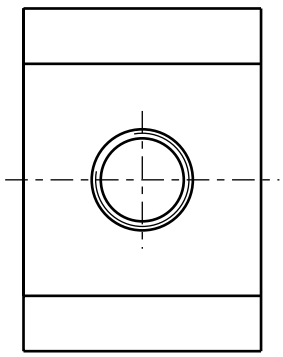
Outboard Bearing Code F4



Shaft load for outboard bearings PGP/PGM 511

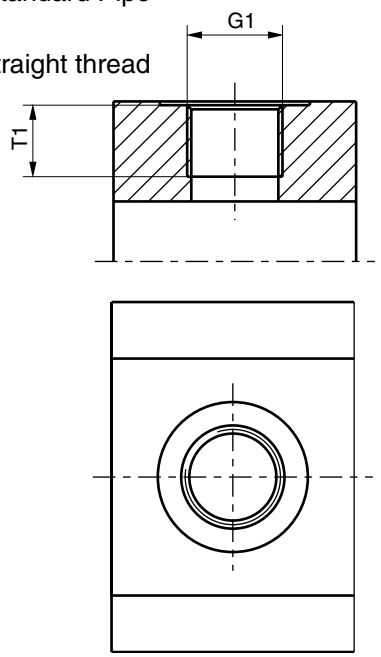


PGP/PGM 511 Porting



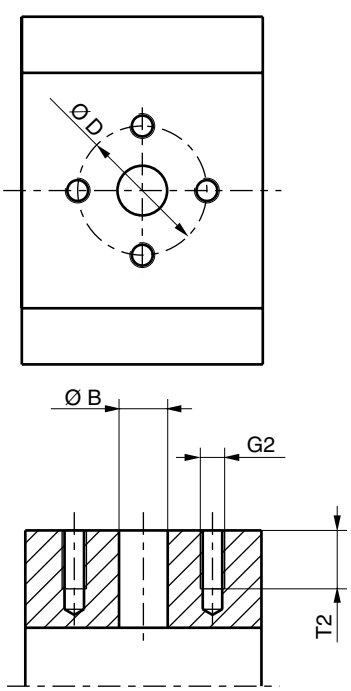
Code E
British Standard Pipe

Code G
Metric straight thread



Code D
SAE straight thread

Code L
4-Bolt flange



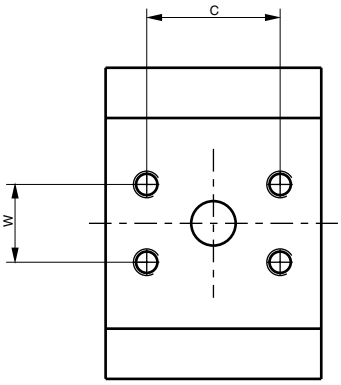
PGP/PGM 511

Code	G1	T1
	Thread	Dimensions
D2	9/16-18 UNF	12.7
D3	3/4-16 UNF	14.3
D4	7/8-14 UNF	16.7
D5	1 1/16-12 UN	19.0
D6	1 5/16-12 UN	19.0
D7	1 5/8-12 UN	19.0
E2	3/8-19 BSP	12.0
E3	1/2-14 BSP	14.0
E4	5/8-14 BSP	16.3
E5	3/4-16 BSP	16.0
E6	1-11 BSP	18.0
E7	1 1/4-11 BSP	20.0
G1	M 14x1.5	12.0
G3	M 18x1.5	12.0
G4	M 22x1.5	14.0
G5	M 26x1.5	16.0
G7	M 30x1.5	12.0

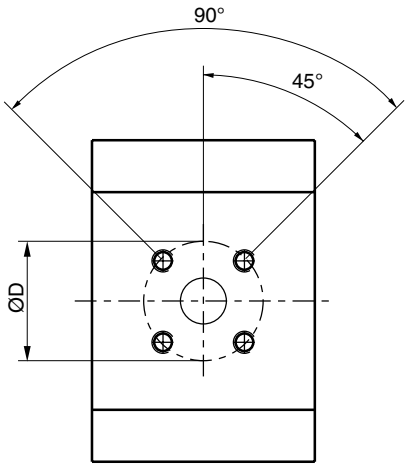
PGP/PGM 511 Porting

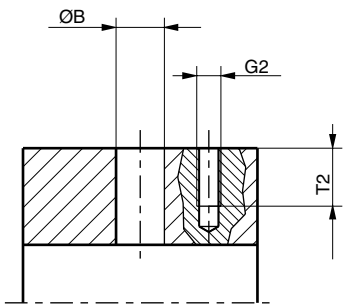
Code N
SAE Split flange

Code P
SAE Split flange
metric thread



Code J
European flange



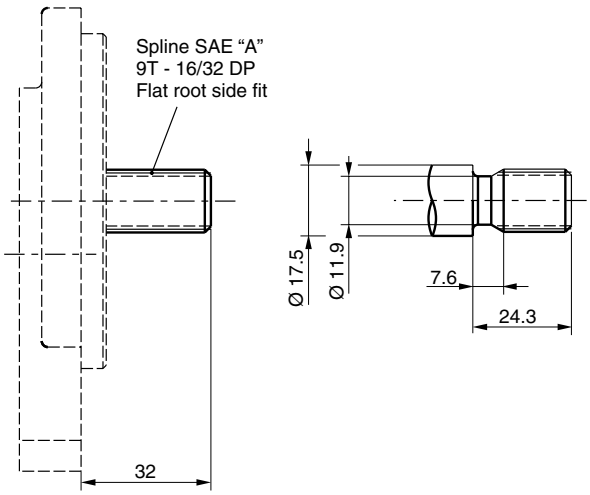


PGP/PGM 511

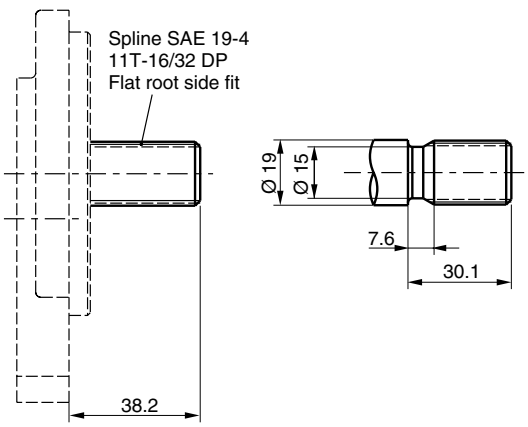
Code	G2	∅ B	∅ D	S	C	W	T2
	Thread	Dimensions					
J3	M6	8.0	30.0				12.0
J4	M6	12.0	30.0				12.0
J5	M6	15.0	35.0				12.5
J6	M8	15.0	40.0				15.0
J7	M6	20.0	40.0				13.0
J8	M8	18.0	55.0				15.0
J9	M8	26.0	55.0				15.0
K1	5/16-18 UNF	19.0		30.48			15.0
K2	M8	19.0		30.48			15.0
K3	M6	19.0		32.00			13.0
K4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

PGP/PGM 511 Drive Shaft

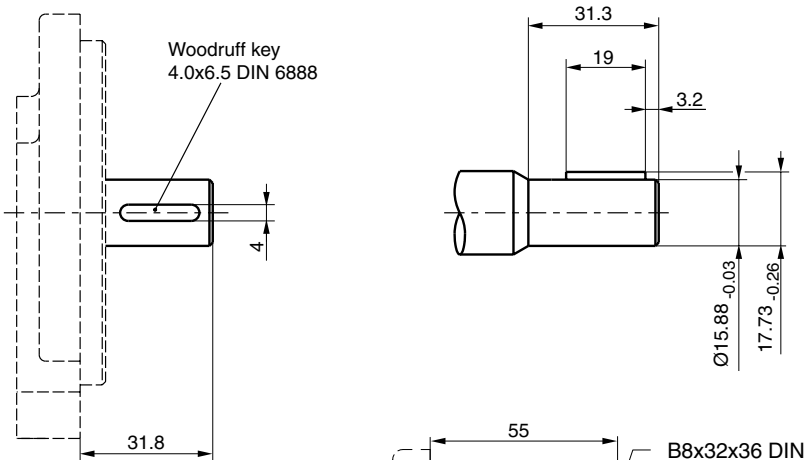
Code A1



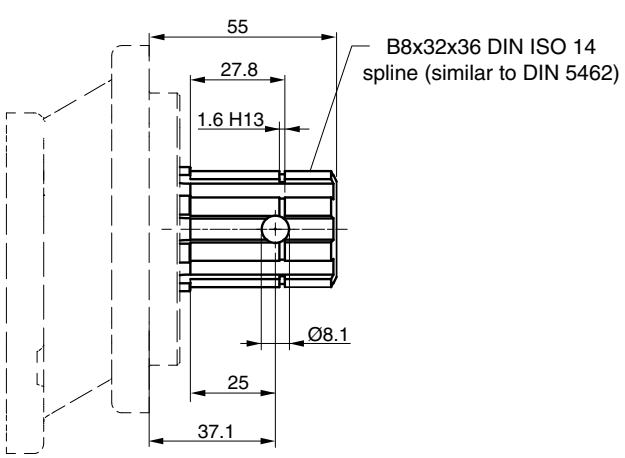
Code C1



Code K1

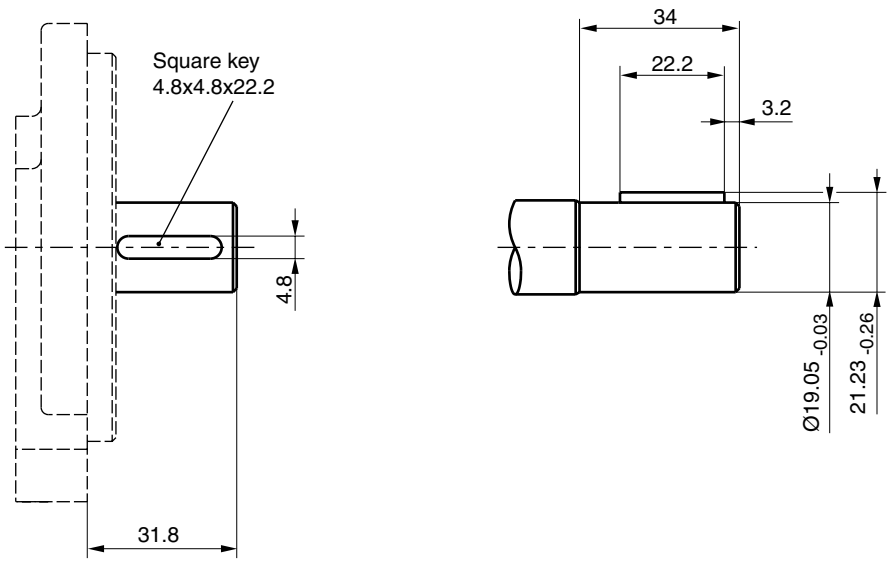


Code F5

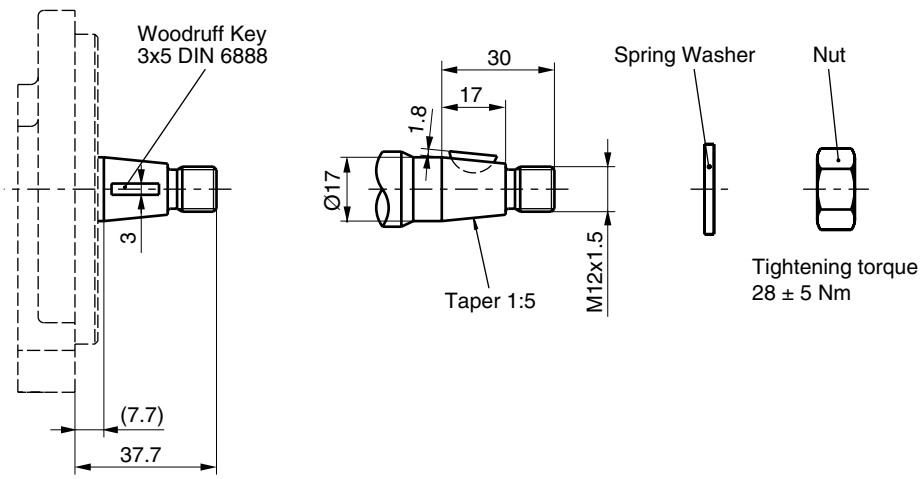


PGP/PGM 511 Drive Shaft

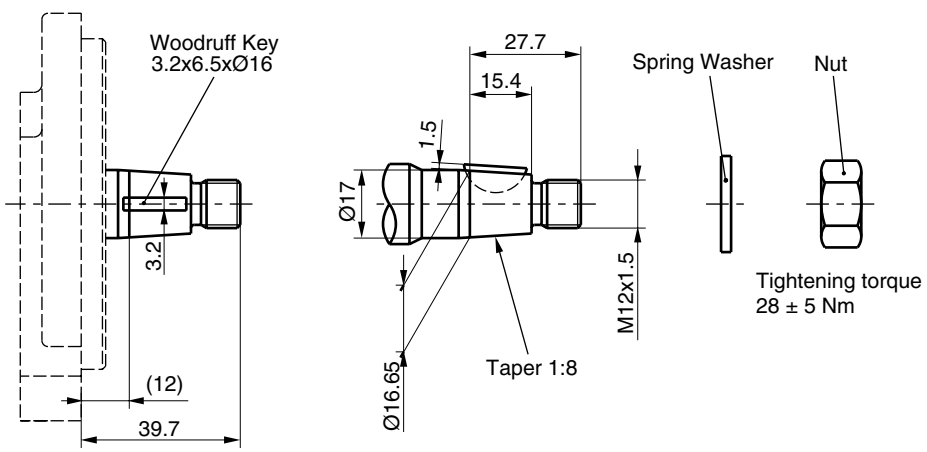
Code L6



Code S1

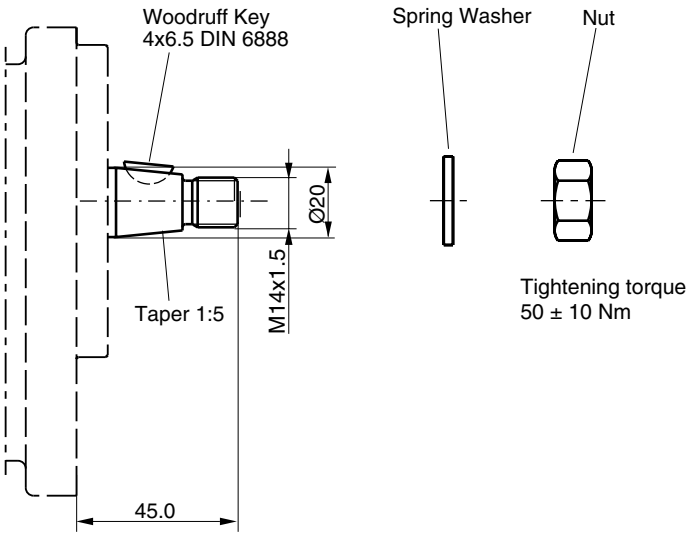


Code S2

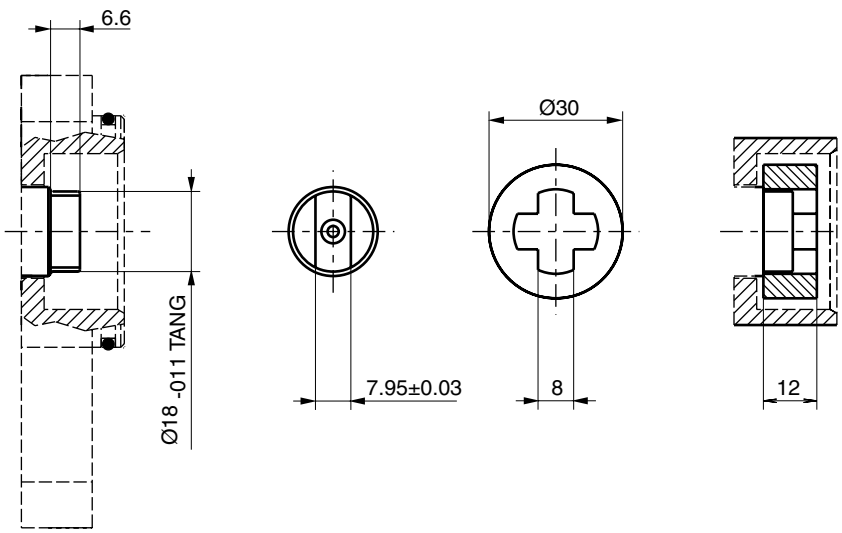


PGP/PGM 511 Drive Shaft

Code S8



Code V5



PGP/PGM 511 - Shaft Load Capacity

Code	Description		Torque Rating [Nm]
A1	9T, 16/32DP, 32L, SAE“A“	spline	86
C1	11T, 16/32DP, 38.2L, SAE 19-4	spline	166
F5	B8x32x36 DIN ISO 14 (similar to DIN 5462)	spline	166
K1	Ø15.88, 4.0 KEY, no thread, 32L, SAE“A“	parallel	75
L6	Ø19.05, 4.8 KEY, no thread, 32L, SAE 19-1	parallel	145
S1	Ø17.0, 7.7L, 3.0 KEY, M12x1.5	taper 1:5	193
S2	Ø16.65, 12.0L, 3.2 KEY, M12x1.5	taper 1:8	198
S8	Ø20, 9.4L, 4.0 KEY, M14x1.5	taper 1:5	110
V5	8x6.5 short shaft	tang drive	60
	Multiple pump connection shaft		110

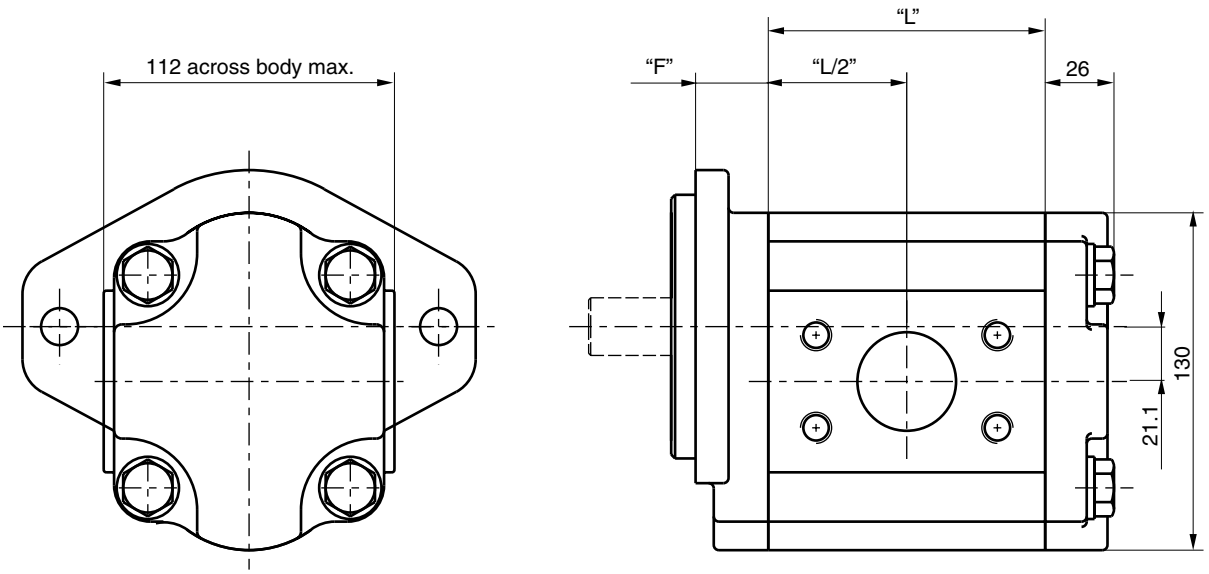
$$\text{Torque [Nm]} = \frac{\text{Displacement [cm}^3\text{/rev] x Pressure [bar]}}{57.2}$$

PGP 517 Specification - Standard Displacements

Pump Displacement	Code	0160	0190	0230	0280	0330	0380	0440	0520	0700
	cm³/rev	16.0	19.0	23.0	28.0	33.0	38.0	44.0	52.0	70.0
Max. Continuous Pressure	bar	250	250	250	250	250	250	220	200	160
Minimum Speed @ Max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet pressure	rpm	3400	3300	3300	3100	3000	3000	2800	2700	2400
Pump Input Power @ Max. Pressure and 1500 rpm	kW	11	13.1	15.8	19.3	22.7	26.1	27	28.6	31.2
Dimension "L"	mm	70.3	73.3	77.4	82.4	87.5	92.5	98.6	106.7	124.9
Approximate Weight [1]	kg	8.00	8.12	8.29	8.50	8.70	8.91	9.16	9.49	10.24

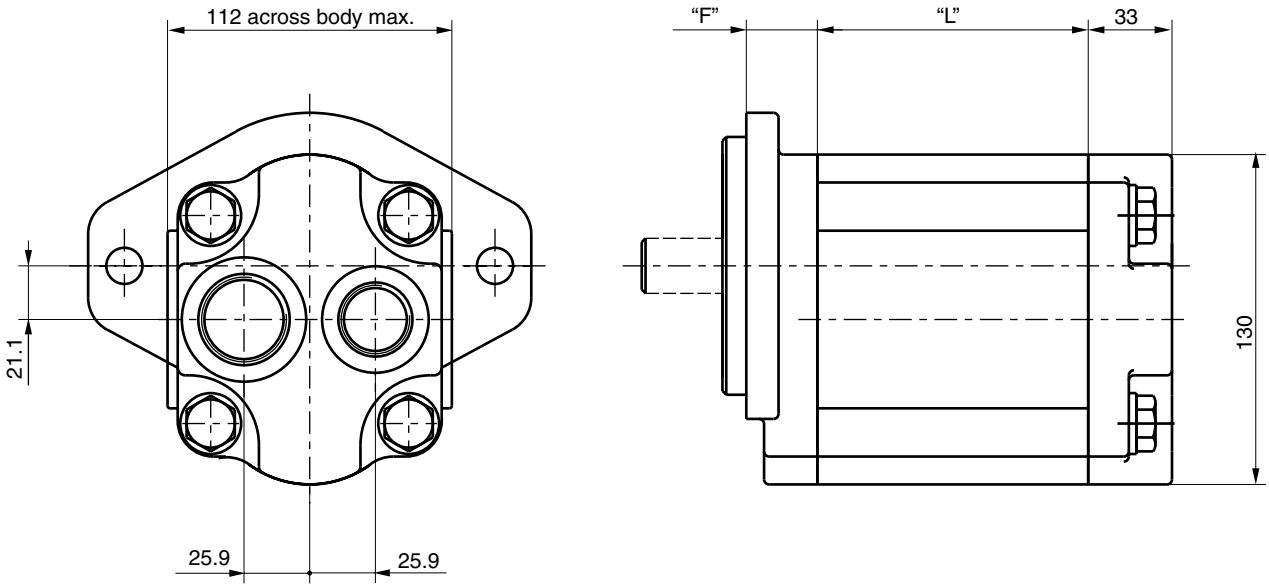
[1] Single pump with Flange H3 and Port end cover B1

Single Unit PGP 517



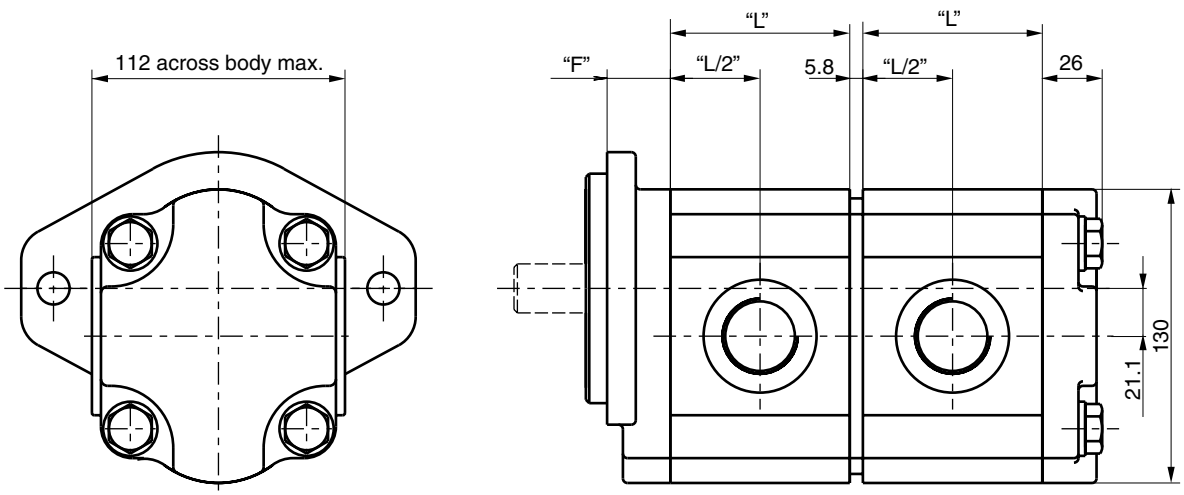
Dimension "L" see table above
Dimension "F" see flanges on page 43
Dimension Shafts see pages 46 to 48

Single Unit PGP 517 with rear ports



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

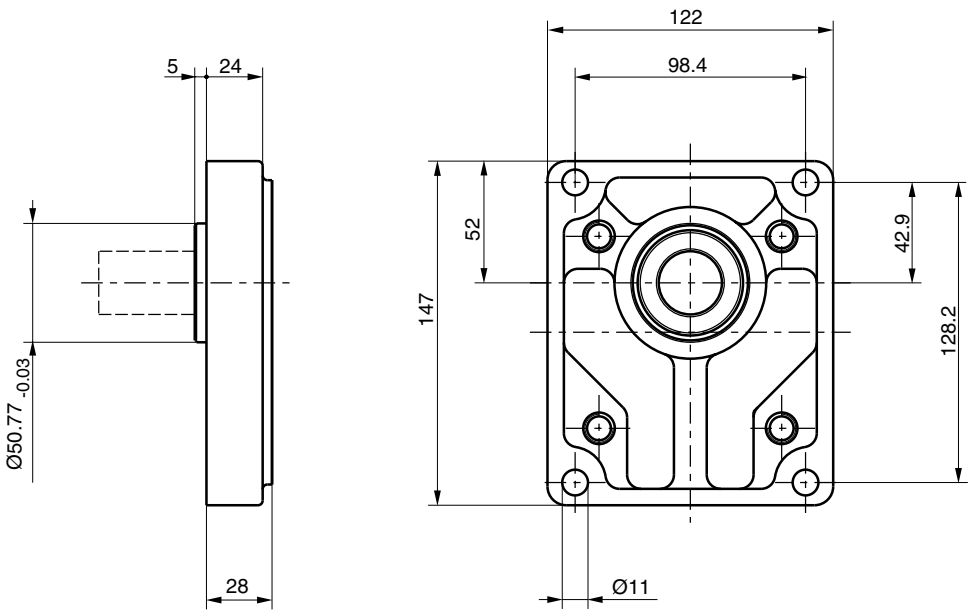
Tandem Unit PGP 517



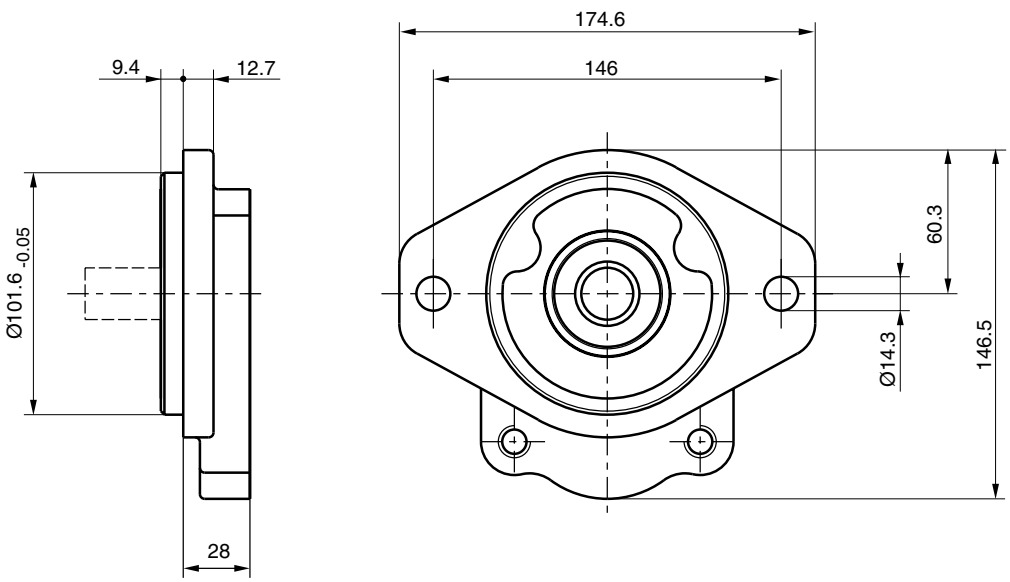
Dimension "L" see table on page 41
Dimension "F" see flanges on page 43
Dimension Shafts see pages 46 to 48

PGP 517 Mounting Flange

Code D7



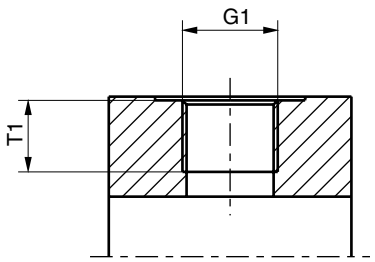
Code H3/K6



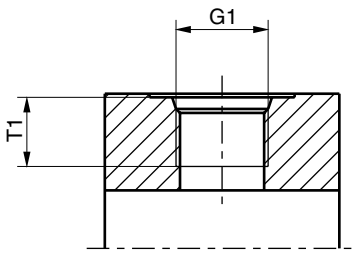
PGP 517 Porting

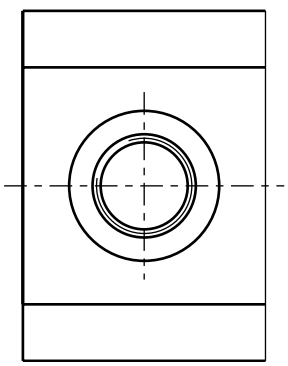
Code E
British Standard Pipe

Code G
Metric straight thread



Code D
SAE straight thread



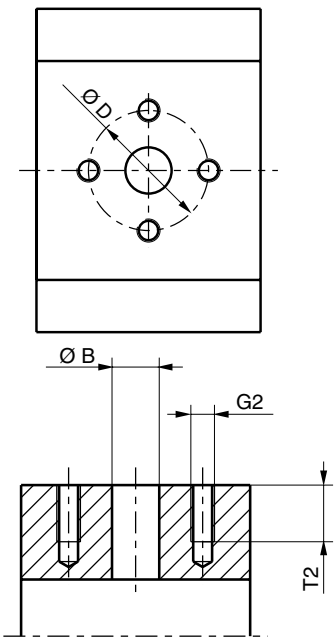


PGP 517

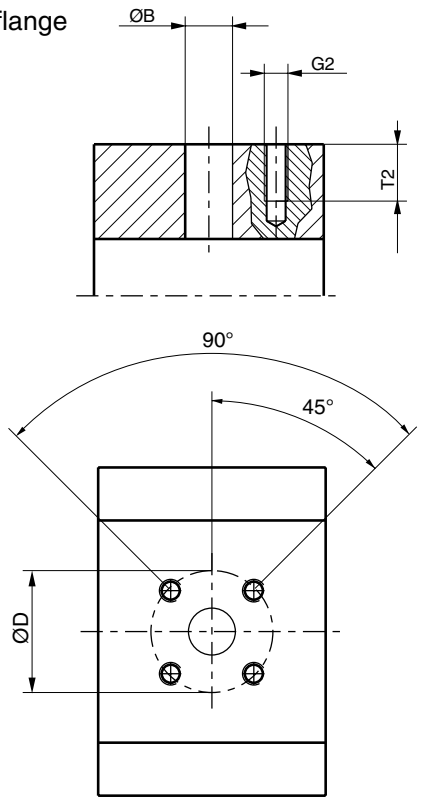
Code	G1	T1
	Thread	Dimensions
D2	9/16-18 UNF	12.7
D3	3/4-16 UNF	14.3
D4	7/8-14 UNF	16.7
D5	1 1/16-12 UN	19.0
D6	1 5/16-12 UN	19.0
D7	1 5/8-12 UN	19.0
D8	1 7/8-12 UN	19.0
E2	3/8-19 BSP	12.0
E3	1/2-14 BSP	14.0
E4	5/8-14 BSP	16.3
E5	3/4-16 BSP	16.0
E6	1-11 BSP	18.0
E7	1 1/4-11 BSP	20.0
E8	1 1/2-11 BSP	22.0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

PGP 517 Porting

Code L
4-Bolt flange

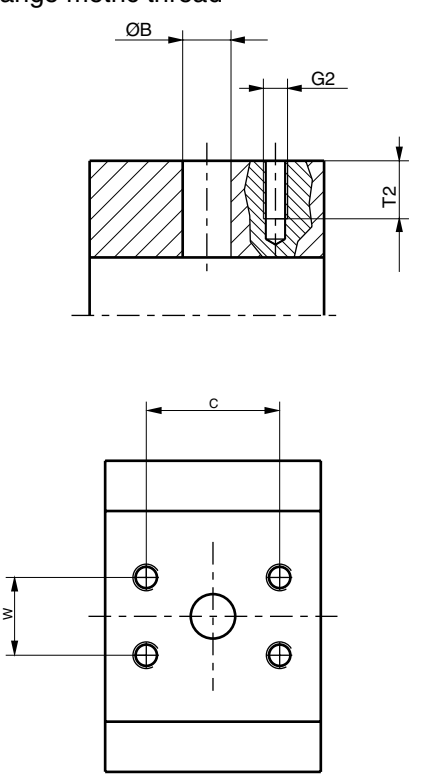


Code J
European flange



Code N
SAE split flange

Code P
SAE split flange metric thread

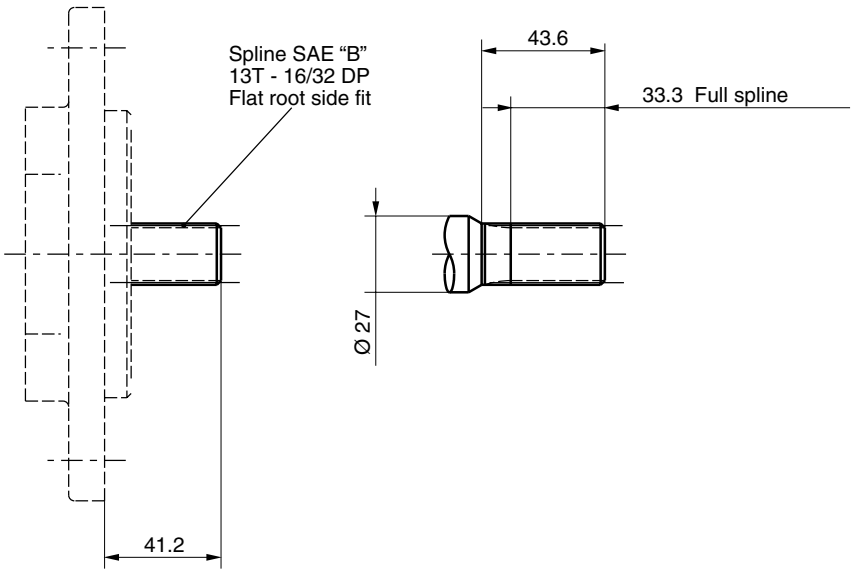


PGP 517

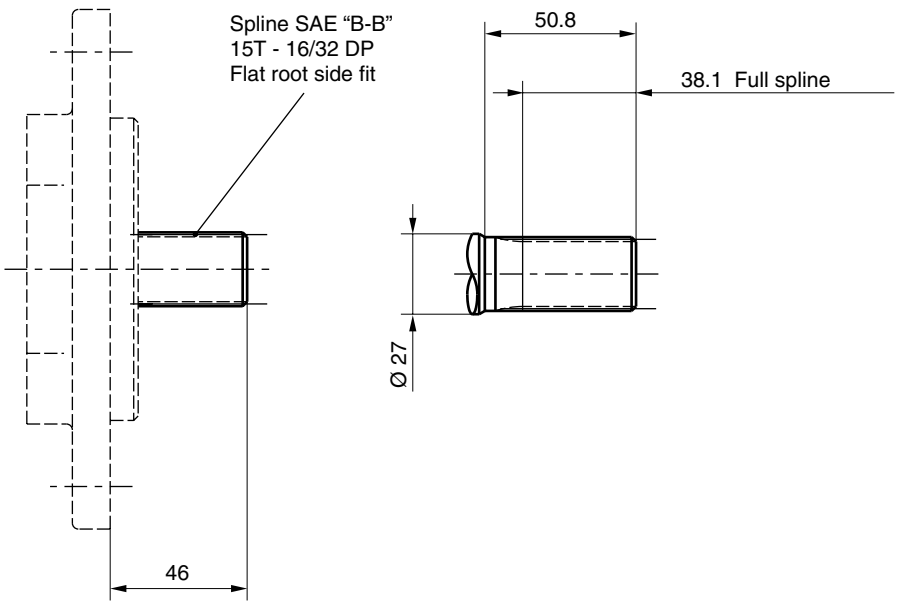
Code	G2	∅ B	∅ D	S	C	W	T2
	Thread	Dimensions					
J5	M6	15.0	35.0				12.5
J7	M6	20.0	40.0				13.0
J8	M8	18.0	55.0				15.0
J9	M8	26.0	55.0				15.0
L1	M6	13.0	30.0				13.0
L2	M8	19.0	40.0				15.0
L3	M10	27.0	51.0				18.0
L4	1/4-20 UNF	13.0	30.0				13.0
N1	5/16-18 UNC	12.7			38.10	17.48	15.0
N2	3/8-16 UNC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

PGP 517 Drive Shaft

Code D1

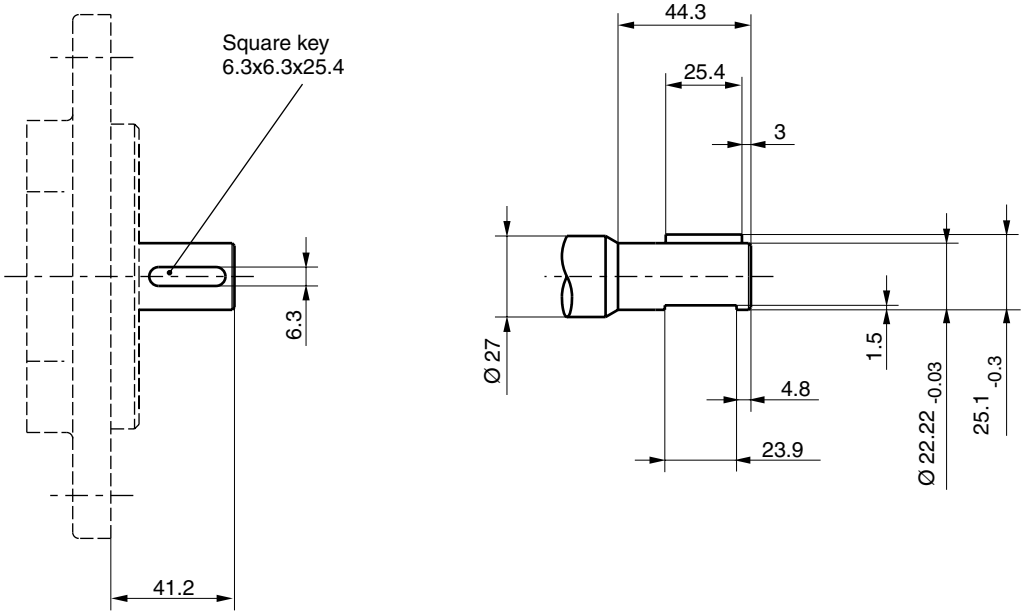


Code E1

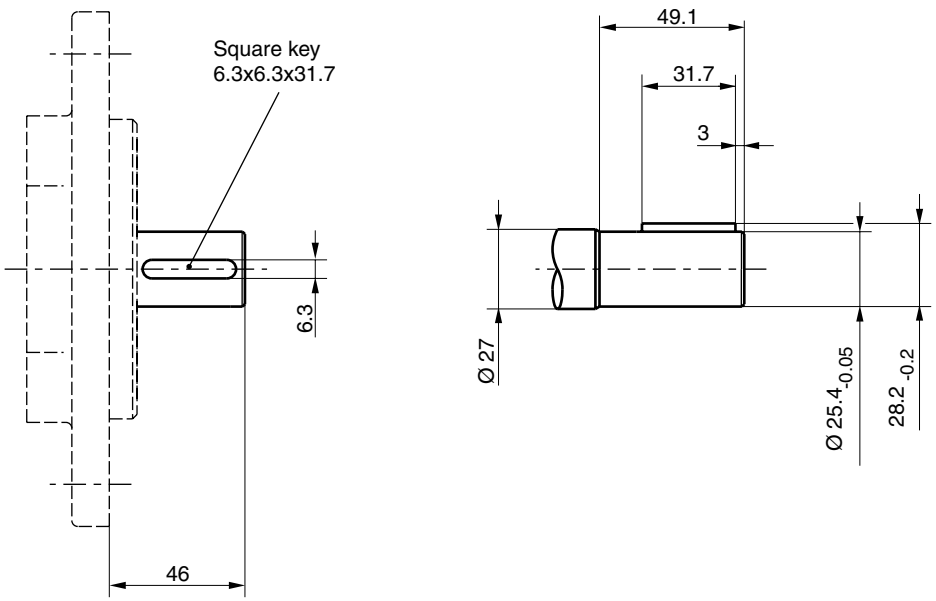


PGP 517 Drive Shaft

Code M1

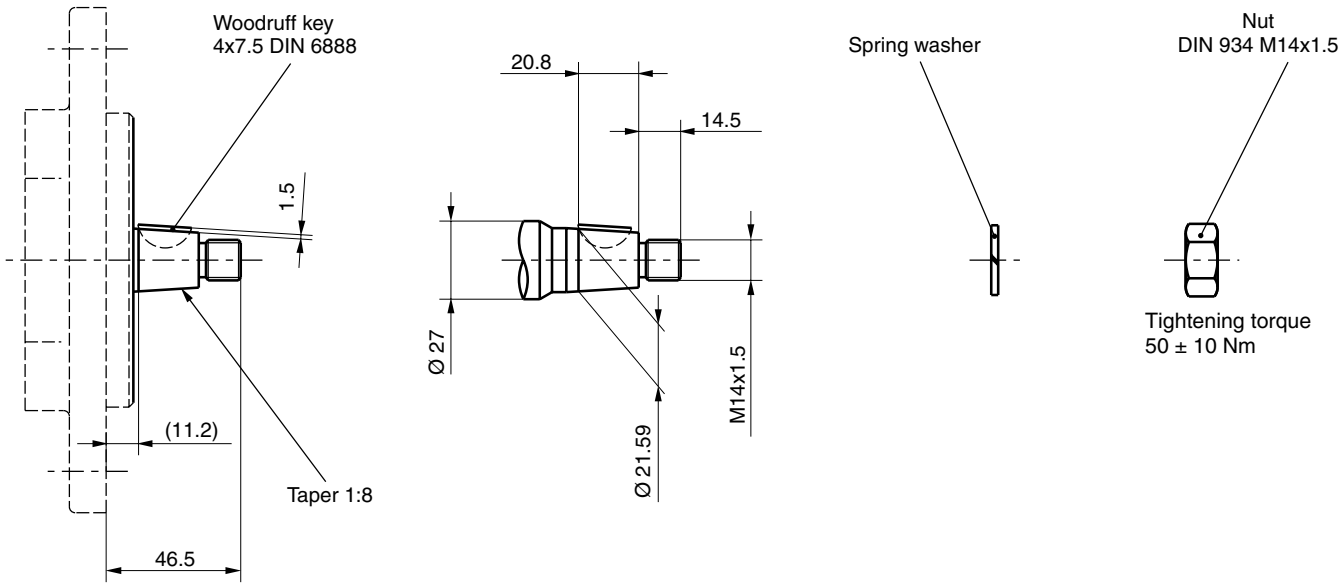


Code M2



PGP 517 Drive Shaft

Code T1

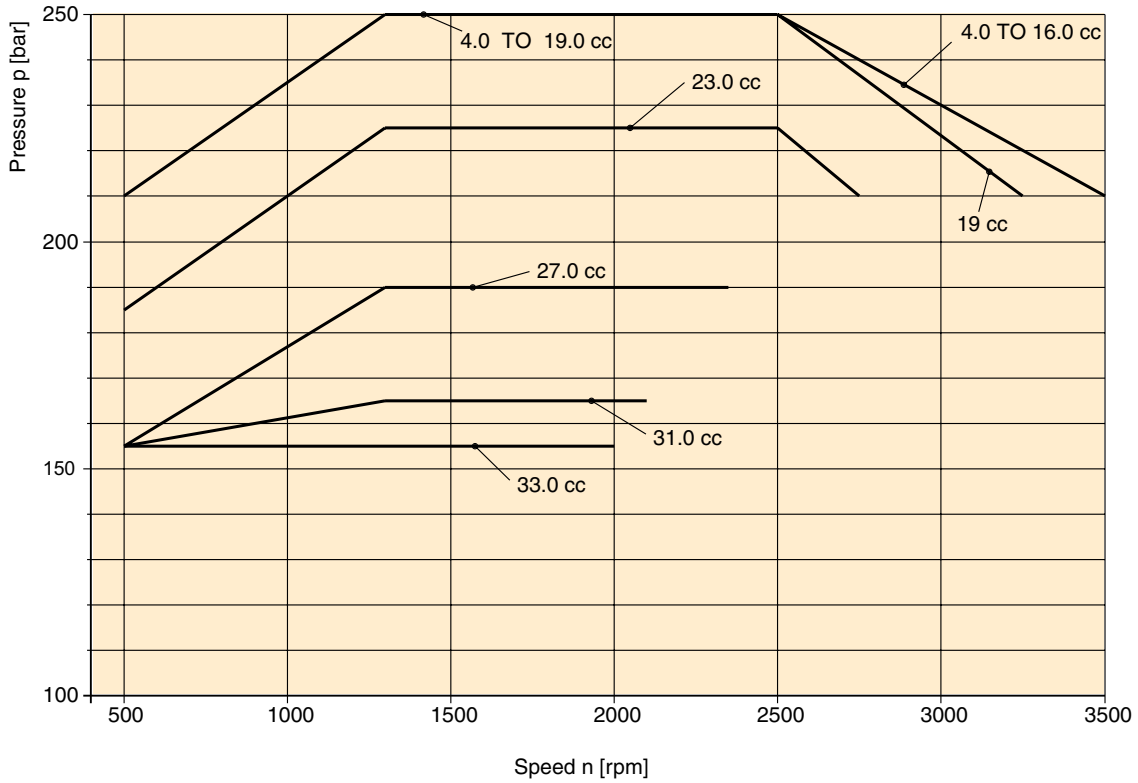


PGP/PGM 517 - Shaft Load Capacity

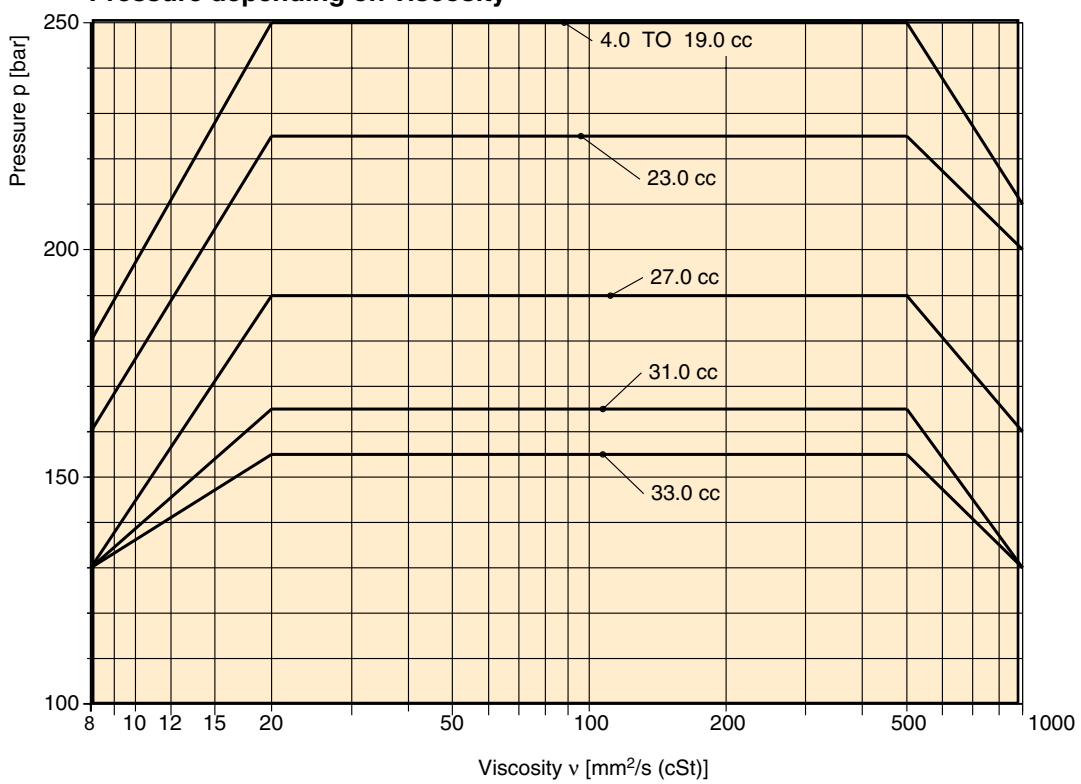
Code	Description		Torque Rating [Nm]
D1	13T,16/32DP, 41.2L, SAE“B“	spline	345
E1	15T, 16/32DP, 46L, SAE“B-B“	spline	530
M1	Ø22.2, 6.3 KEY, no thd, 41.2L, SAE“B“	parallel	251
M2	Ø25.4, 6.3 KEY, no thd, 46L, SAE“B-B“	parallel	395
T1	Ø21.59,11.2 L,4.0 KEY, M14x1.5	taper 1:8	250
	Multiple pump connection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

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

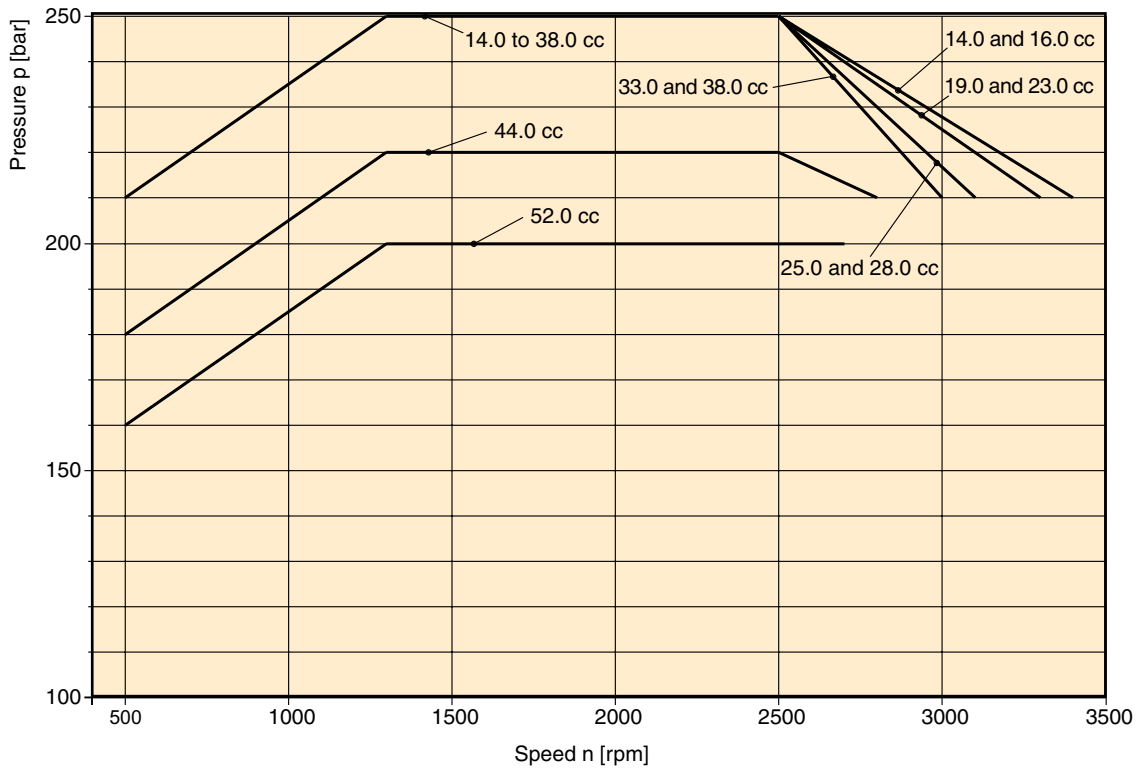
Pressure depending on speed



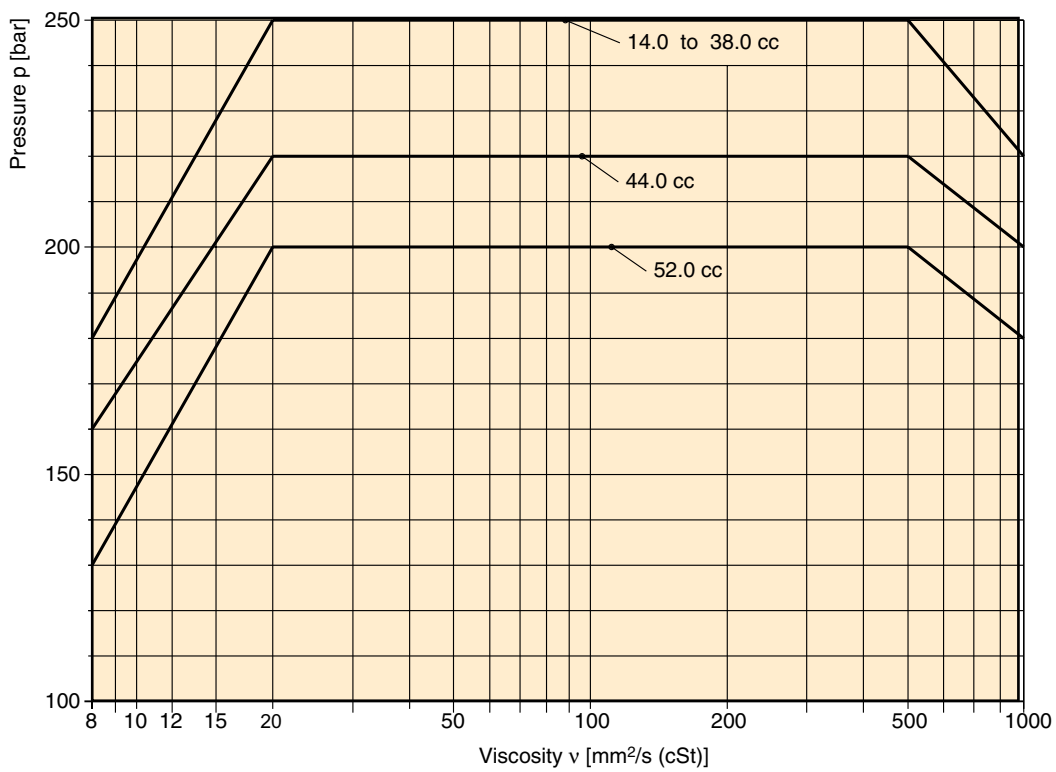
Pressure depending on viscosity



Pressure depending on speed



Pressure depending on viscosity



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

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

Features

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

Characteristics

Pump type	Heavy-duty, cast iron, external gear.
Mounting	SAE, rectangular, thru-bolt standard specials on request.
Ports	SAE and metric split flanges and others
Shaft style	SAE splined, keyed, tapered, cylindrical tang drive, specials on request
Speed	500 - 3500 rpm, see Technical Data
Theor. displacement	See Technical Data
Drive	Drive direct with flexible coupling is recommended.
Axial / Radial load	Units subject to axial or radial loads must be specified with an outboard bearing.
Inlet pressure	Operating range 0.8 to 2 bar abs. Min. inlet pressure 0.5 bar abs. Short time without load. Consultation is recommended.
Outlet pressure	See Technical Data
Flow velocity	See Nomograph for Pipe Velocity
Hydraulic fluids	Hydraulic oil HLP, DIN 51524-2
Fluid temperature	Range of operating temperature -15 to +80 °C. Max. permissible operating pressure dependent on fluid temperature. Temperature for cold start -20 to -15 °C at speed ≤ 1500 rpm. Max. permissible operating pressure dependent on fluid temperature.

Fluid viscosity	Range of operating viscosity 8 to 1000 mm²/s. Max. permissible operating pressure dependent on viscosity. Viscosity range for cold start 1000 to 2000 mm²/s at operating pressure p≤10 bar and speed n ≤1500 rpm.
Range of ambient temperature	-40 °C to +70 °C
Filtration	According to ISO 4406 Cl. 19/17/13
Direction of rotation (looking at the drive shaft)	Clockwise, counter-clockwise or double. Attention! Drive pump only in indicated direction of rotation.
Multiple pump assemblies	• Available in two or three section configuration. • Max. shaft load must be conform to the limitations shown in the shaft loading rating table in this catalogue. • Max. load is determined by adding the torque values for each pumping section that will be simultaneously loaded.
Separate or common inlet capability	Separate inlet configuration: • Each gear housing has individual inlet and outlet ports. Common inlet configuration: • Two gear sets share a common inlet.

PG												
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

Design	
Pump and Motor	**620**
Pump	**625**

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)

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

Displacement Code	Design	
	620 ccm	**625** ccm
0160	16	–
0190	19	–
0230	23	–
0260	26	–
0290	29	–
0330	33	–
0360	36	36
0370	37	–
0410	41	41
0440	44	–
0450	–	45
0500	50	50
0520	52	–

Code	Rotation
C	Clockwise
A	Counter clockwise
B	bi-directional

Code	Shaft
D1	13T, 16/32DP, 41.2L, SAE ”B” spline
E1	15T, 16/32DP, 46L, SAE ”B-B” spline
E4[4]	14T, 12/24 DP, 55.6L, SAE ”C” spline
M3	Ø25.4, 6.3 Key, M8, 46L, SAE "B-B", parallel
T1	Ø21.59, 11.2L, 4.0 Key, M14x1.5, taper 1:8
T2[5]	Ø25.0, 12L, 5.0 Key, M16x1.5, taper 1:5

[4] (via drive adaptor)
[5] Non standard, on request only

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

[1] Only coded for the last section.

[2] Only for motors

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]	3)

Design	
Pump and Motor	**620**
Pump	**625**

Code	Section Connection
S	Separate inlets
C	Common inlets

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

[6] Non standard, on request only

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

Code	Port Options
B1	No ports
D3[6]	3/4 - 16 UNF thread
D4[6]	7/8 - 14 UNF thread
D5[6]	1 1/16 - 12 UN thread
D6[6]*	1 5/16 - 12 UN thread
D7[6]*	1 5/8 - 12 UN thread
D8[6]*	1 7/8 - 12 UN thread
E3	1/2 - 14 BSP thread
E4	5/8 - 14 BSP thread
E5	3/4 - 16 BSP thread
E6*	1 - 11 BSP thread
E7*	1 1/4 - 11 BSP thread
E8*	1 1/2 - 11 BSP thread
J5*	15 mm - Ø35 mm - M6 square
J7*	20 mm - Ø40 mm - M6 square
J8*	18 mm - Ø55 mm - M8 square
J9*	26 mm - Ø55 mm - M8 square
L1*	13 mm-Ø30 mm-M6 diamond
L2*	19 mm-Ø40 mm-M8 diamond
L3*	27 mm-Ø51 mm-M10 diamond

Code	Port Options
S2[6]*	3/4"-3/8-16 UNC SAE Split Flange
S3[6]*	1"-3/8-16 UNC SAE Split Flange
S4[6]*	1 1/4"-7/16-14 UNC SAE Split Flange
S5[6]*	1 1/2"-1/2-13 UNC SAE Split Flange
S6[6]*	2"-1/2-13 UNC SAE Split Flange
T2*	19.0 mm - M10 3/4" Metric Split Flange
T3*	25.4 mm - M10 1" Metric Split Flange
T4*	31.8 mm - M10 1 1/4" Metric Split Flange
T5*	38.1 mm - M12 1 1/2" Metric Split Flange
T6*	50.8 mm - M12 2" Metric Split Flange

[6] Non standard, on request only

*) Not usable for rear ports

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

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

PG		640										
Gear design	Type		Unit	Dis-placement	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)

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
0900*	90.0
1000	100.0

*) Non standard, on request only

Code	Rotation
C	Clockwise
A	Counter clockwise
B	Bi-directional

Code	Shaft
D1	13T, 16/32DP, 41.2L, SAE ”B” spline
E1	15T, 16/32DP, 46.0L, SAE ”B-B” spline
E4	14T, 12/24DP, 55.6L, SAE ”C” spline
N1	1 1/4" Keyed SAE-C

Code	Shaft Seal
X	No seal
N	NBR
V	FPM
T	PTFE (motors only)

Code	Flange
A3	89.8x89.8 - Ø101.06, SAE "B" 4 bolt square flange
A4	114.5x114.5 - Ø127, SAE "C" 4 bolt square flange
H3	146.1 - Ø101.06 SAE "B" 2 bolt flange
K3	181.0 - Ø127 SAE ”C” 2 bolt flange

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

[1] Only coded for the last section.

[2] Only for motors

B	1	B	1				640									3)
No rear ports (rear ports on request)				**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	Separate inlets
C	Common inlets

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

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

Code	Port Options
B1	No ports
D5[4)]	1 1/16 - 12 UN thread
D6[4)]*	1 5/16 - 12 UN thread
D7[4)]*	1 5/8 - 12 UN thread
D8[4)]*	1 7/8 - 12 UN thread
E4	5/8 - 14 BSP thread
E5	3/4 - 16 BSP thread
E6*	1 - 11 BSP thread
E7*	1 1/4 - 11 BSP thread
E8*	1 1/2 - 11 BSP thread
J8*	18 mm - Ø55 mm - M8 square
J9*	26 mm - Ø55 mm - M8 square
L2*	19 mm-Ø40 mm-M8 diamond
L3*	27 mm-Ø51 mm-M10 diamond

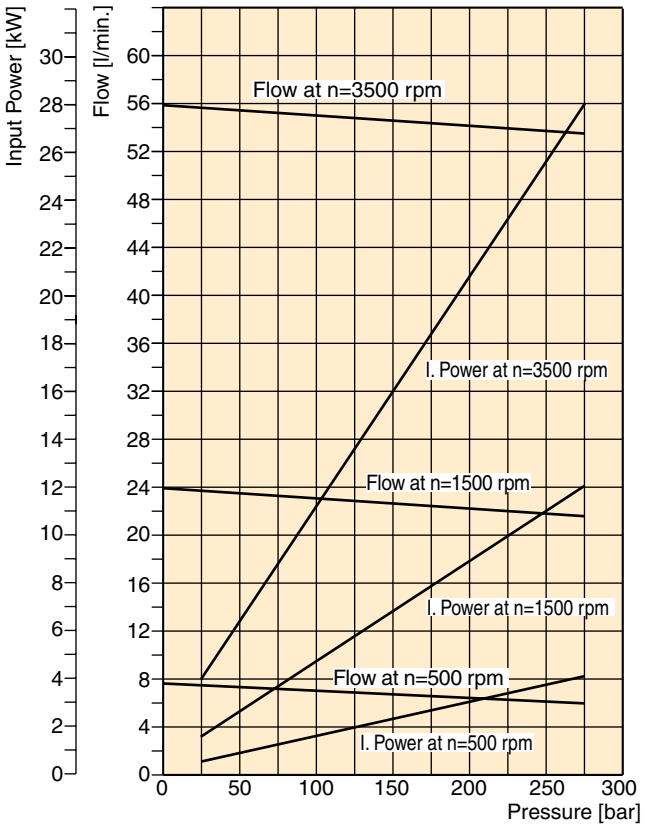
Code	Port Options
S2[4)]*	3/4"-3/8-16 UNC SAE Split Flange
S3[4)]*	1"-3/8-16 UNC SAE Split Flange
S4[4)]*	1 1/4"-7/16-14 UNC SAE Split Flange
S5[4)]*	1 1/2"-1/2-13 UNC SAE Split Flange
S6[4)]*	2"-1/2-13 UNC SAE Split Flange
T2*	19.0 mm - M10 3/4" Metric Split Flange
T3*	25.4 mm - M10 1" Metric Split Flange
T4*	31.8 mm - M10 1 1/4" Metric Split Flange
T5*	38.1 mm - M12 1 1/2" Metric Split Flange
T6*	50.8 mm - M12 2" Metric Split Flange

[4)] Non standard, on request only

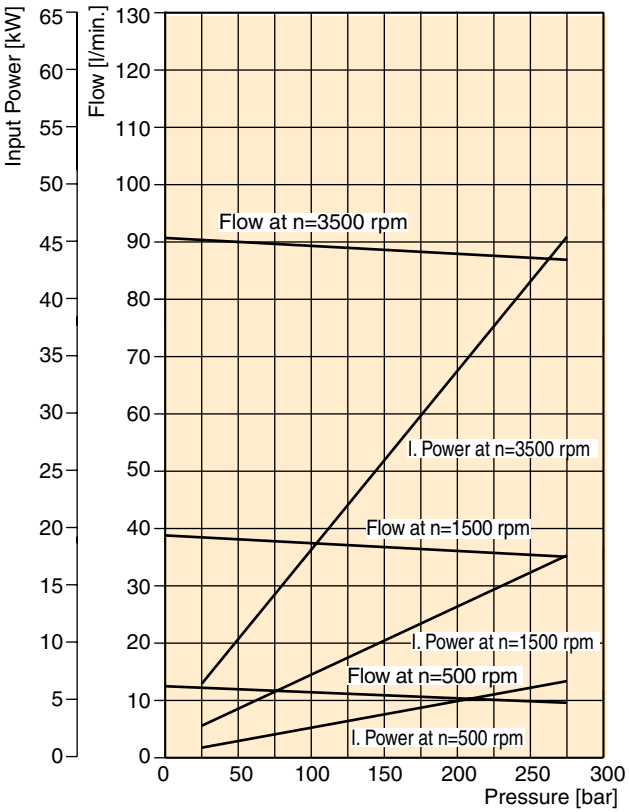
*) Not usable for rear ports

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

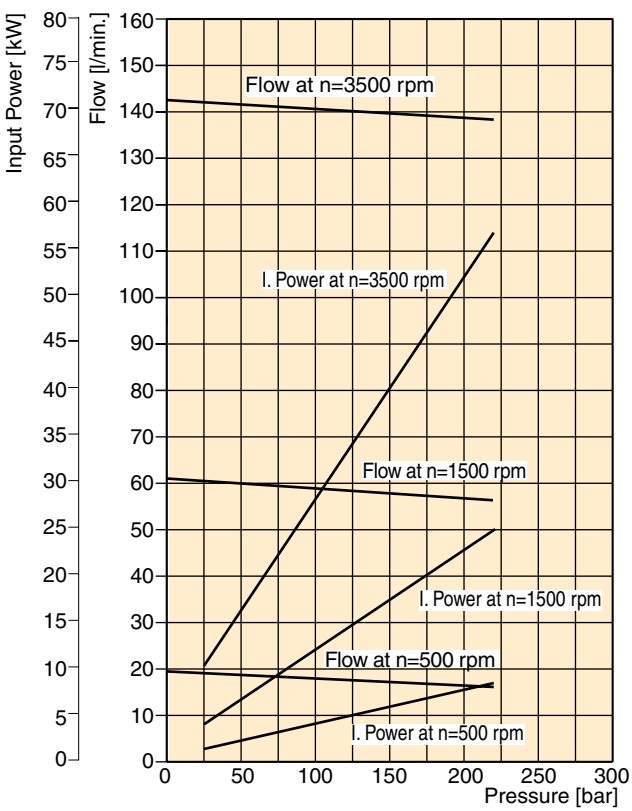
PGP 620 - 16.0 CC



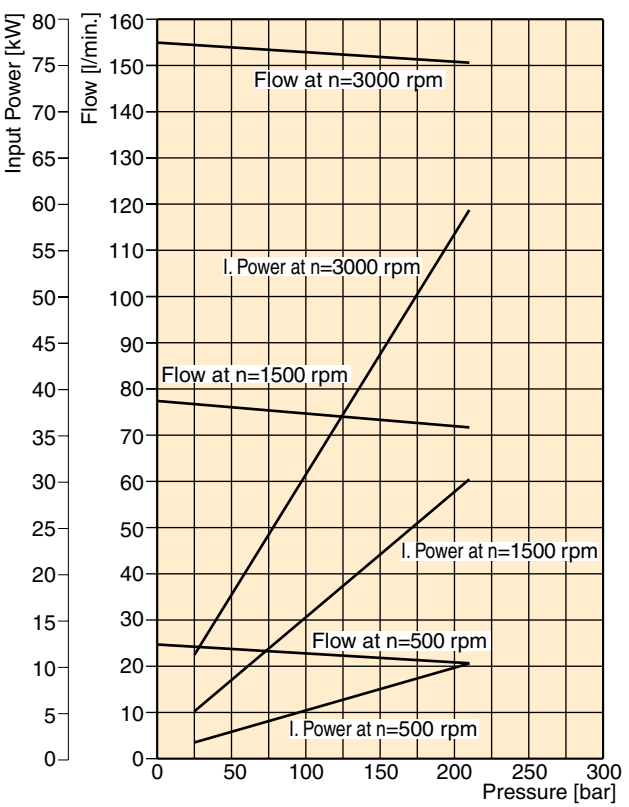
PGP 620 - 26.0 CC



PGP 620 - 41.0 CC

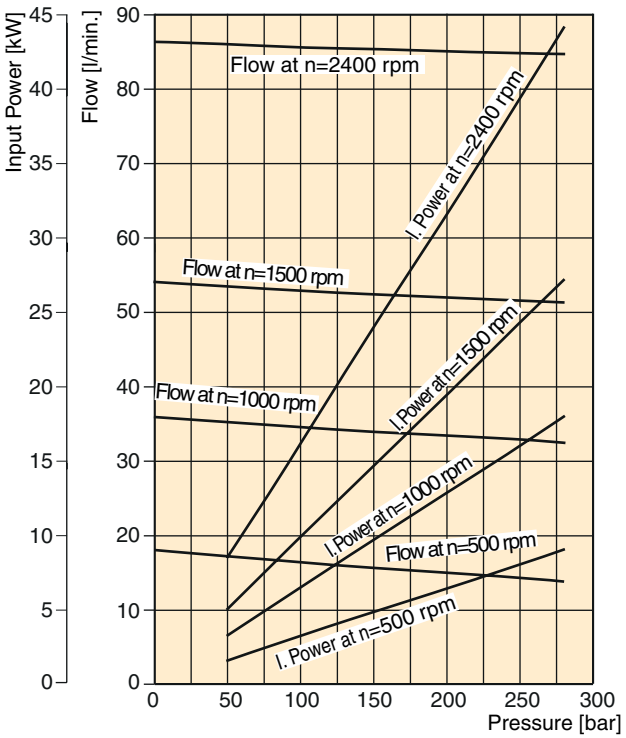


PGP 620 - 52.0 CC

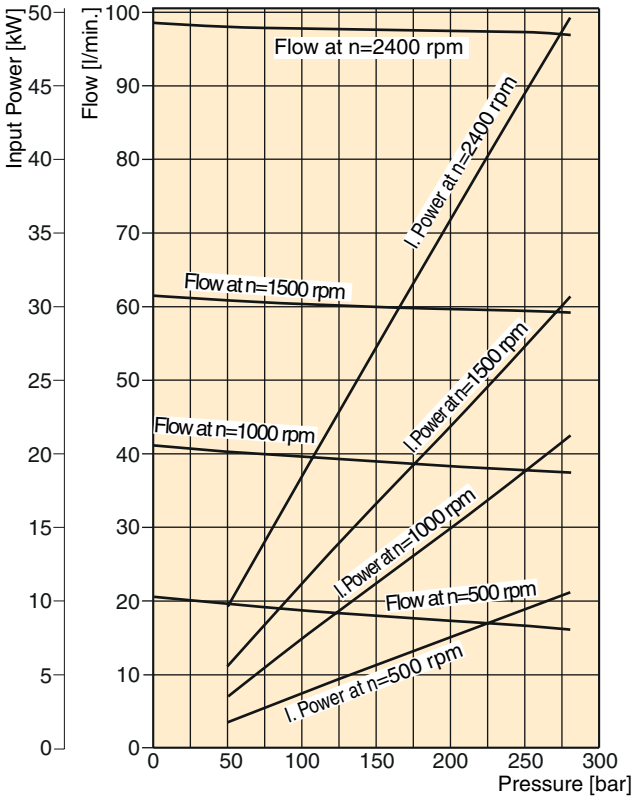


Fluid Temperature = 45± 2 °C
Viscosity = 36 mm^2/s
Inlet Pressure = 0.9 + 0.1 bar absolute

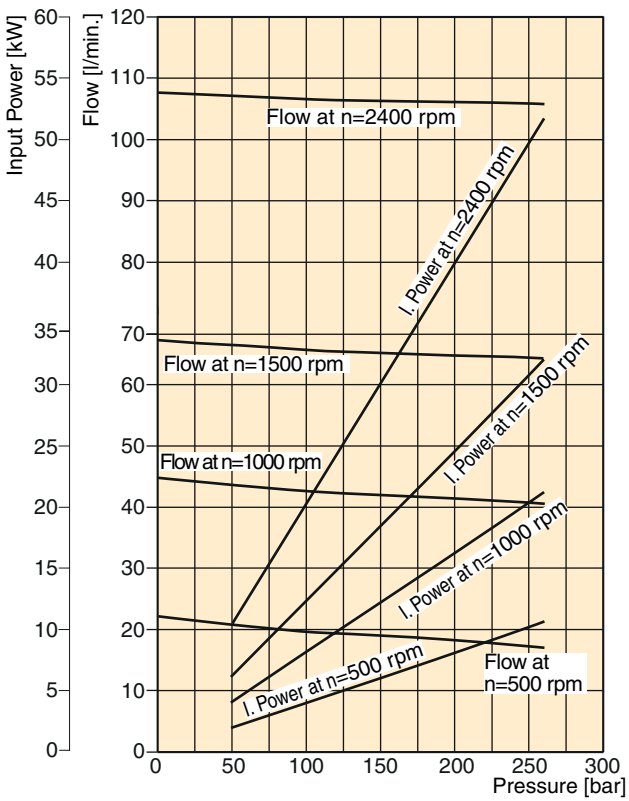
PGP 625 - 36.0 CC



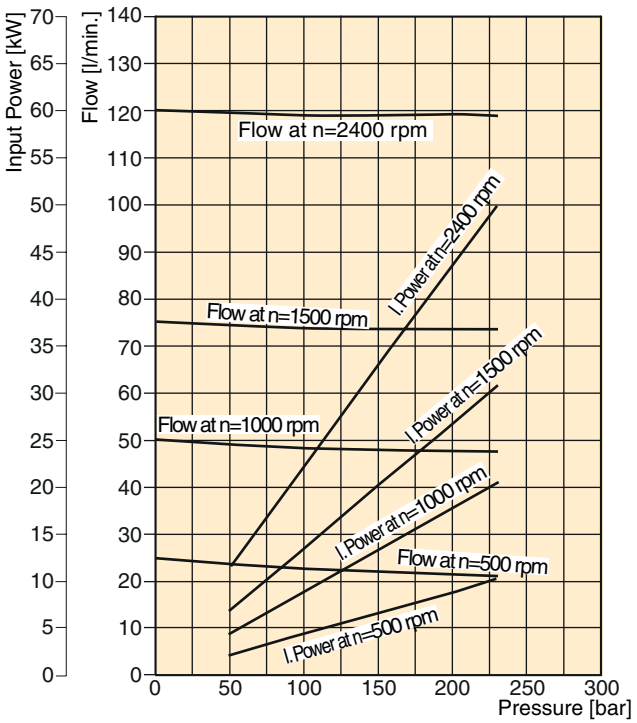
PGP 625 - 41.0 CC



PGP 625 - 45.0 CC

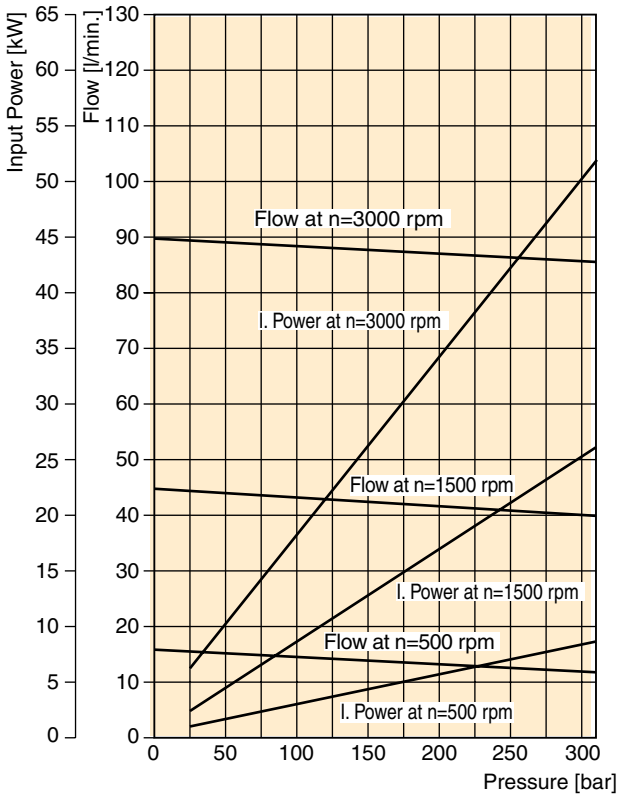


PGP 625 - 50.0 CC

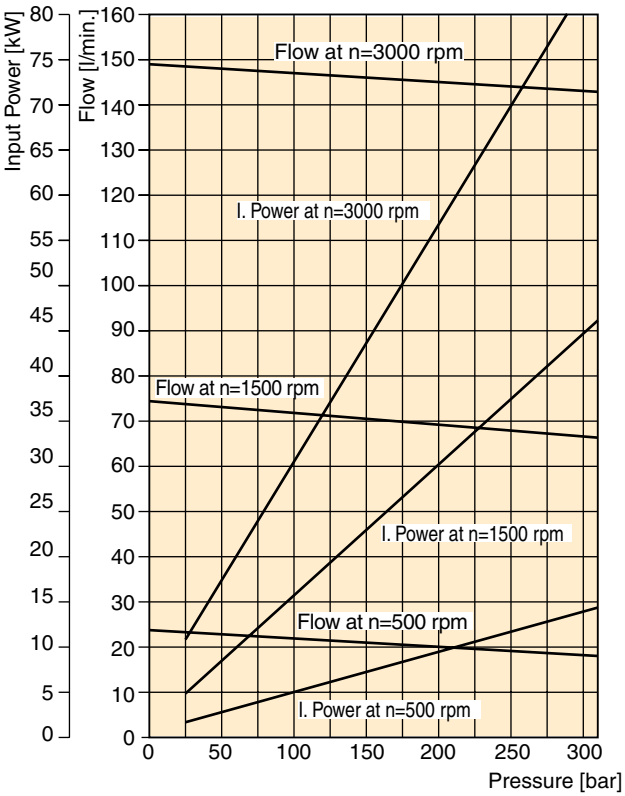


Fluid Temperature = 45± 2 °C
Viscosity = 36 mm^2/s
Inlet Pressure = 0.9 + 0.1 bar absolute

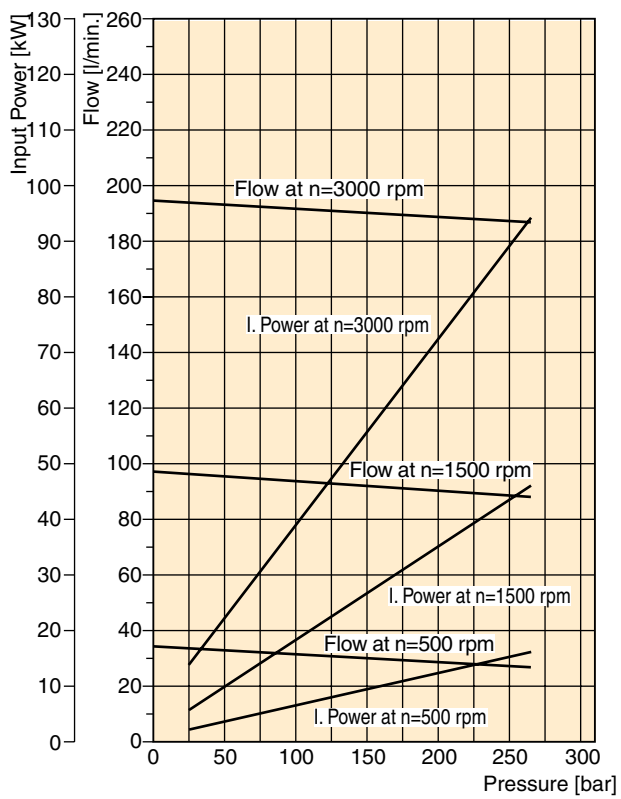
PGP640 - 30.0 CC



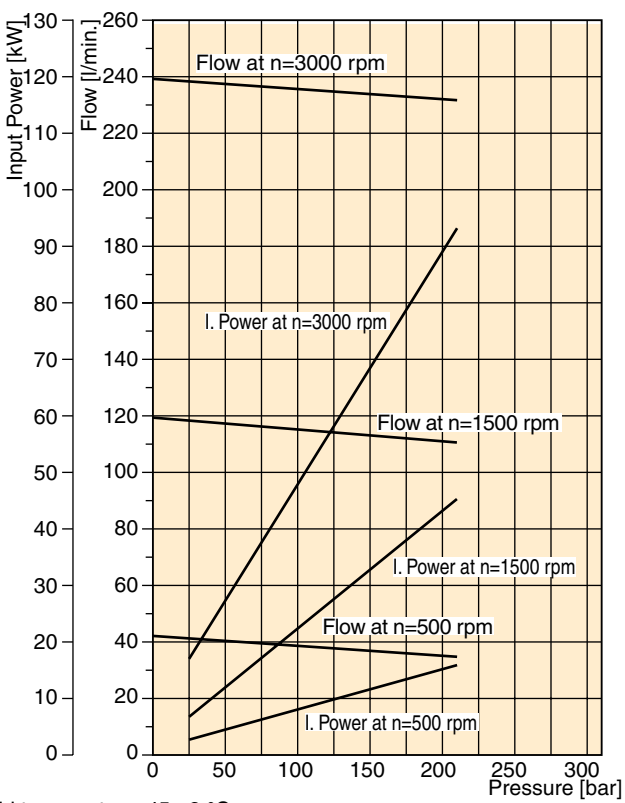
PGP640 - 50.0 CC



PGP640 - 65.0 CC



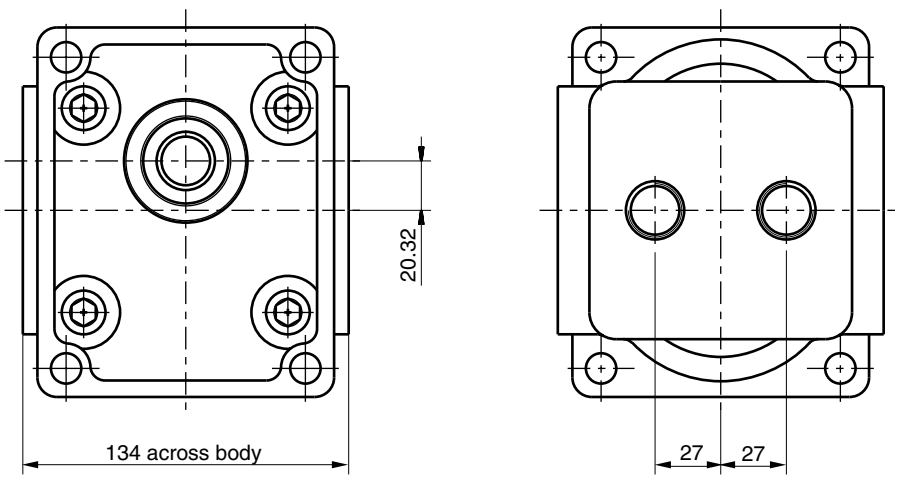
PGP640 - 80.0 CC

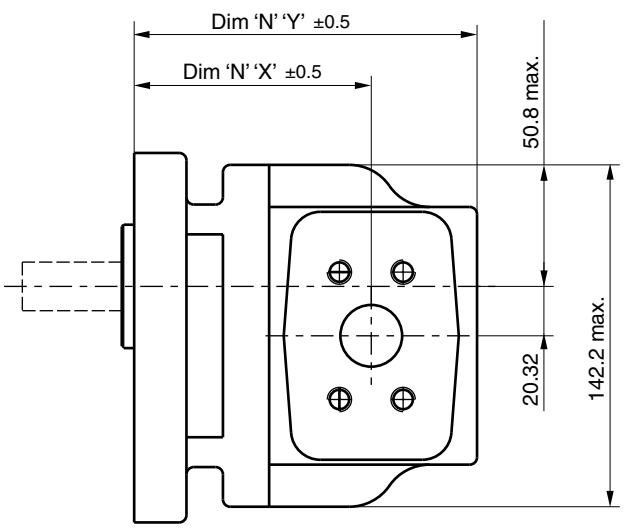


Fluid temperature: 45± 2 °C
Viscosity: 36 mm^2/s
Inlet pressure: 0.9 + 0.1 bar absolute

PGP/PGM 620 Specification - Standard Displacements - Single Unit

Pump Displacement	Code	0160	0190	0230	0260	0290	0330	0360	0370	0410	0440	0500	0520
	cm³/rev	16.0	19.0	23.0	26.0	29.0	33.0	36.0	37.0	41.0	44.0	50.0	52.0
Max. Continuous Pressure	bar	275	275	275	275	275	275	250	250	220	210	210	210
Minimum Speed @ Max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet pressure	rpm	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3000	3000
Dimension "X"	mm	79.2	82.5	86.9	90.2	93.5	97.9	101.2	102.3	106.7	110.0	116.6	118.8
Dimension "Y"	mm	122.7	126.0	130.4	133.7	137.0	141.4	144.7	145.8	150.2	153.5	160.1	162.3
Approx. Weight	kg	12.0	12.1	12.2	12.3	12.6	12.7	12.8	12.9	13.0	13.1	13.3	13.4

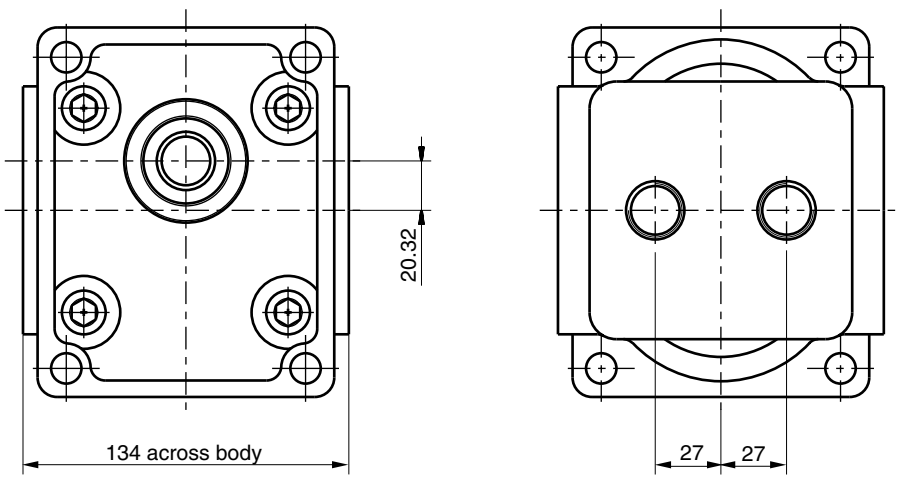


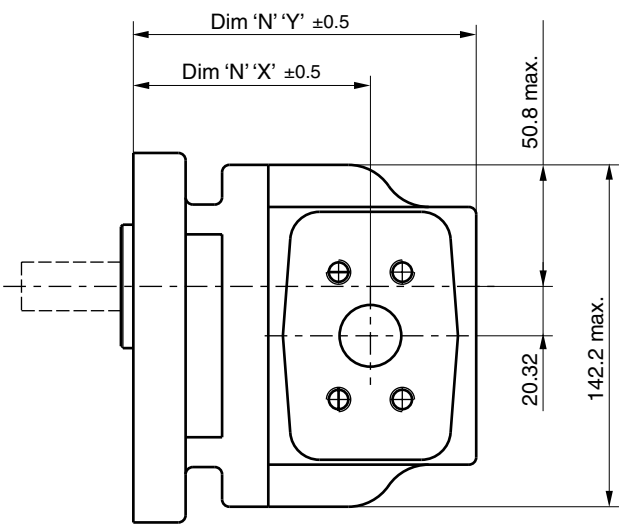


Dimension Flanges see pages 63 to 64
Dimension Shafts see pages 67 to 68

PGP 625 Specification - Standard Displacements - Single Unit

Pump Displacement	Code	0360	0410	0450	0500
	cm³/rev	36.0	41.0	45.0	50.0
Max. Continuous Pressure	bar	280	280	260	230
Minimum Speed @ Max. outlet pressure	rpm	500	500	500	500
Maximum Speed @ 0 Inlet & Max. outlet pressure	rpm	3500	3500	3500	3000
Dimension "X"	mm	101.2	106.7	110.0	116.6
Dimension "Y"	mm	144.7	150.2	153.5	160.1
Approx. Weight	kg	12.8	13.0	13.1	13.3

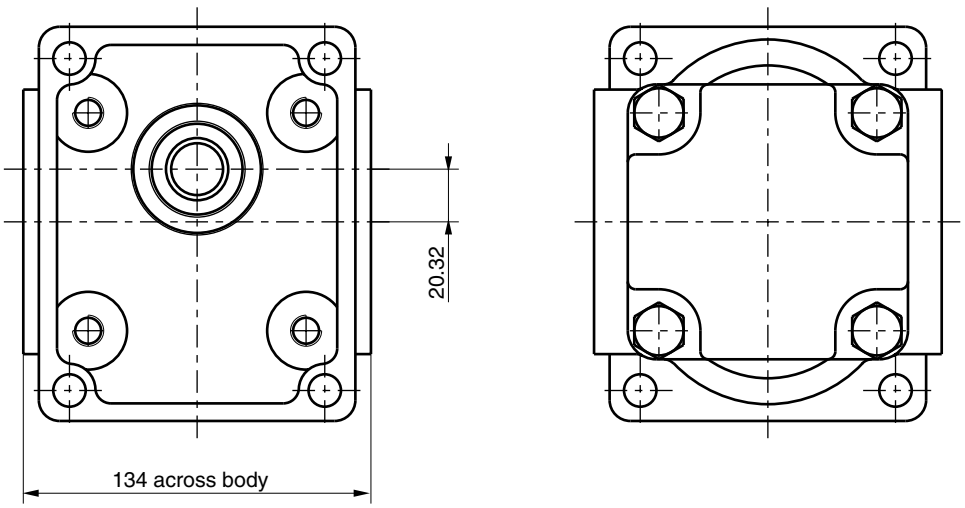


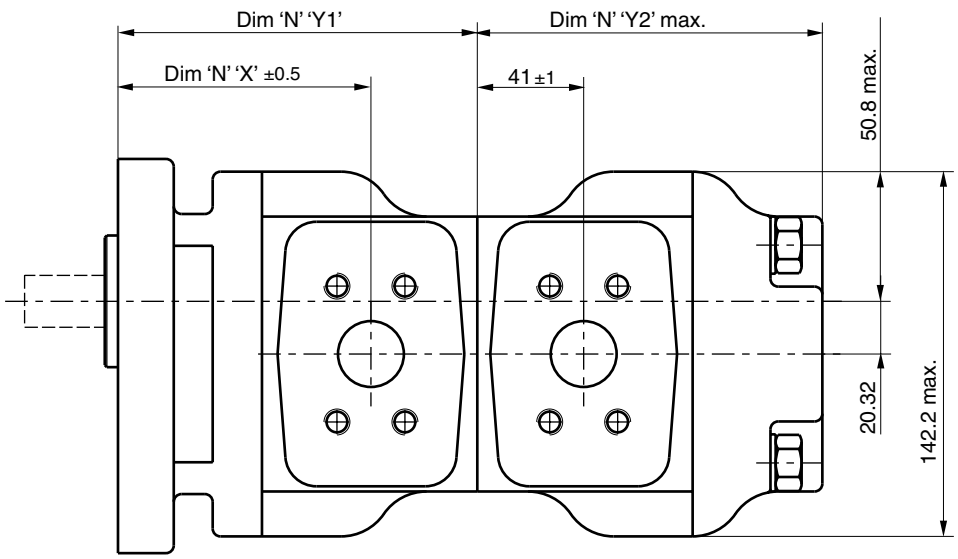


Dimension Flanges see pages 63 to 64
Dimension Shafts see pages 67 to 68

PGP/PGM 620 Specification - Standard Displacements - Tandem Unit

Pump Displacement	Code	0160	0190	0230	0260	0290	0330	0360	0370	0410	0440	0500	0520
	cm³/rev	16.0	19.0	23.0	26.0	29.0	33.0	36.0	37.0	41.0	44.0	50.0	52.0
Dimension "X"	mm	79.2	82.5	86.9	90.2	93.5	97.9	101.2	102.3	106.7	110.0	116.6	118.8
Dimension "Y1 "	mm	120.2	123.5	127.9	131.2	134.5	138.9	142.2	143.3	147.7	151.0	157.6	159.8
Dimension "Y2" max.	mm	115.2	118.5	122.9	126.2	129.5	133.9	137.2	138.3	142.7	146.0	152.6	154.8
Approximate Weight (front section)	kg	12.0	12.1	12.2	12.3	12.6	12.7	12.8	12.9	13.0	13.1	13.3	13.4
Approx. Weight (rear section)	kg	10.4	10.5	10.6	10.7	11.0	11.1	11.2	11.3	11.4	11.5	11.7	11.8

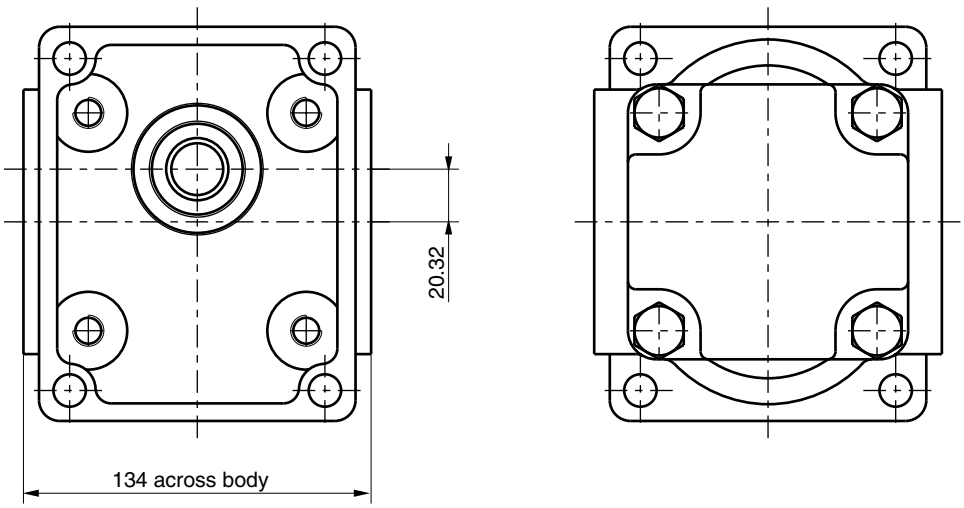


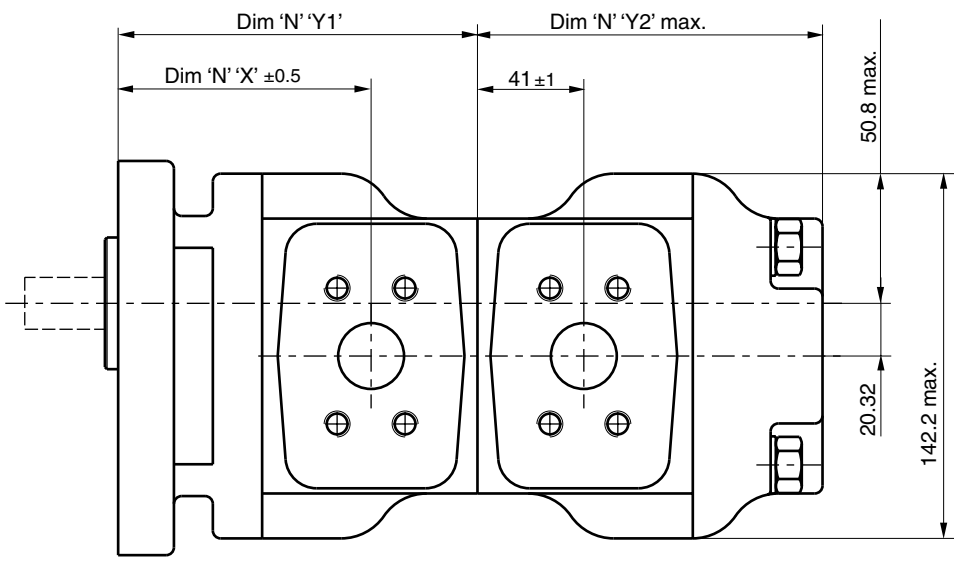


Dimension Flanges see pages 63 to 64
Dimension Shafts see pages 67 to 68

PGP 625 Specification - Standard Displacements - Tandem Unit

Pump Displacement	Code	0360	0410	0450	0500
	cm³/rev	36.0	41.0	45.0	50.0
Dimension "X"	mm	101.2	106.7	110.0	116.6
Dimension "Y1 "	mm	142.2	147.7	151.0	157.6
Dimension "Y2" max.	mm	137.2	142.7	146.0	152.6
Approximate Weight (front section)	kg	12.8	13.0	13.1	13.3
Approx. Weight (rear section)	kg	11.2	11.4	11.5	11.7

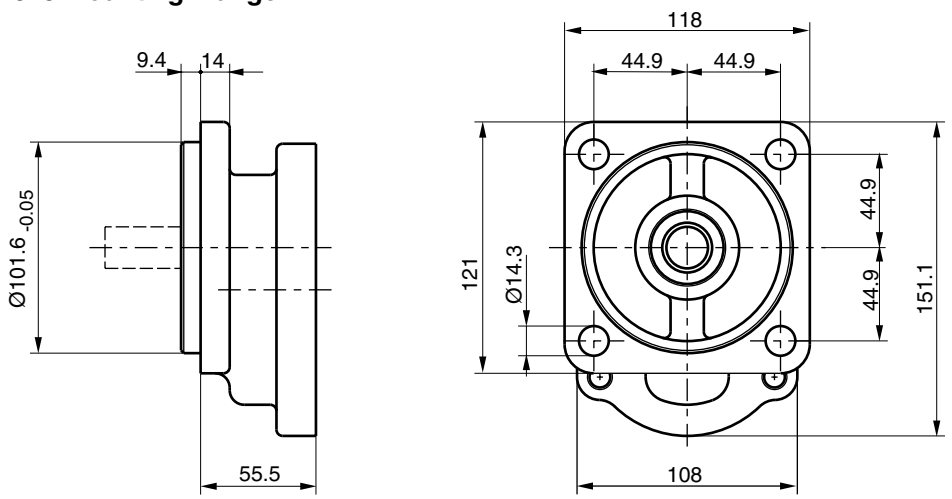




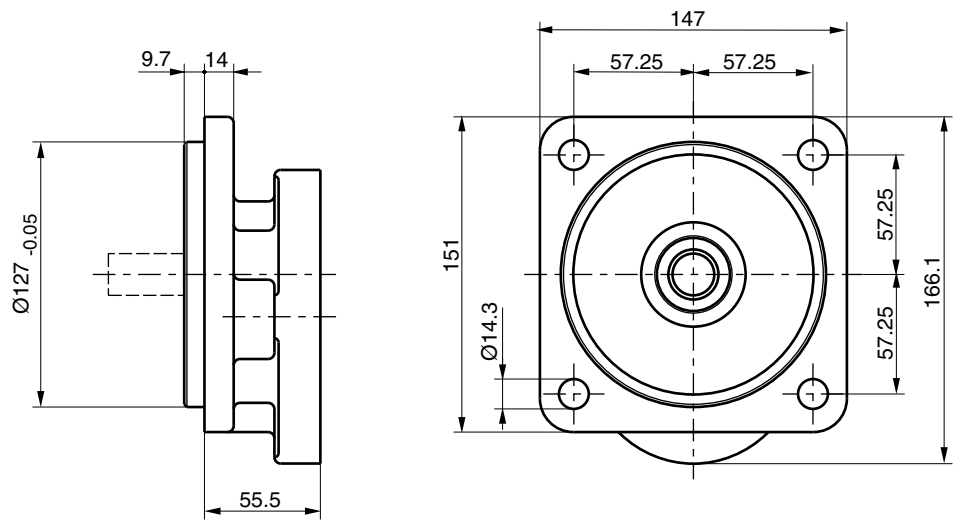
Dimension Flanges see pages 63 to 64
Dimension Shafts see pages 67 to 68

PGP/PGM 620 / 625 Mounting Flange

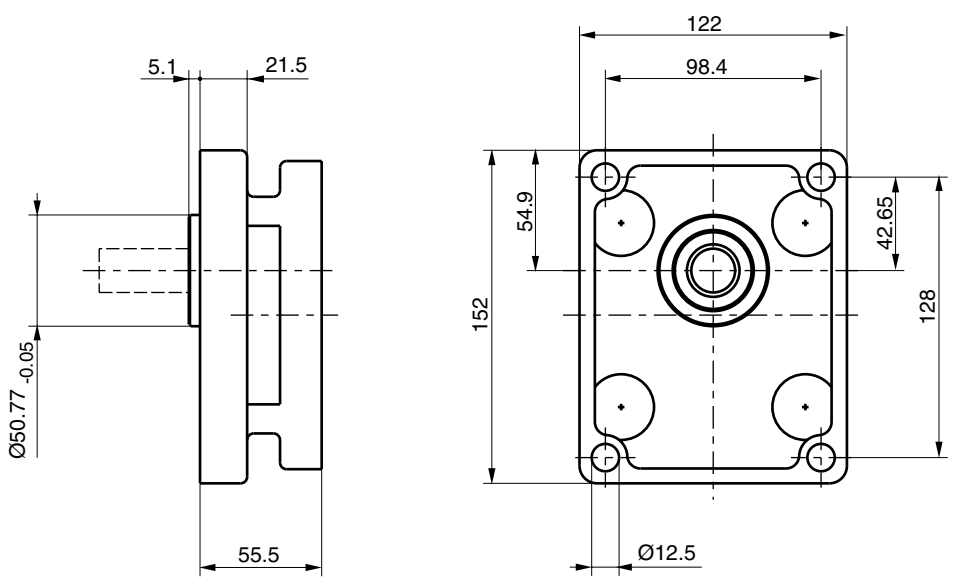
Code A3



Code A4

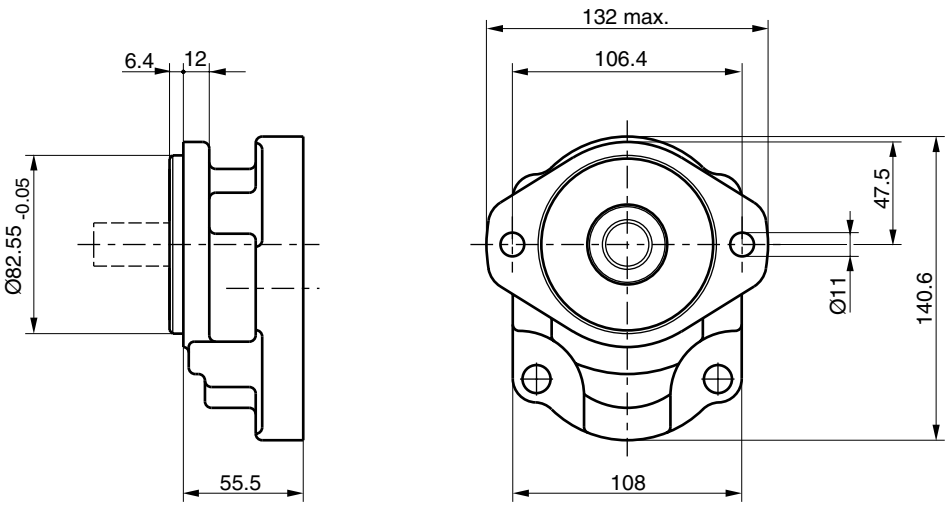


Code D7

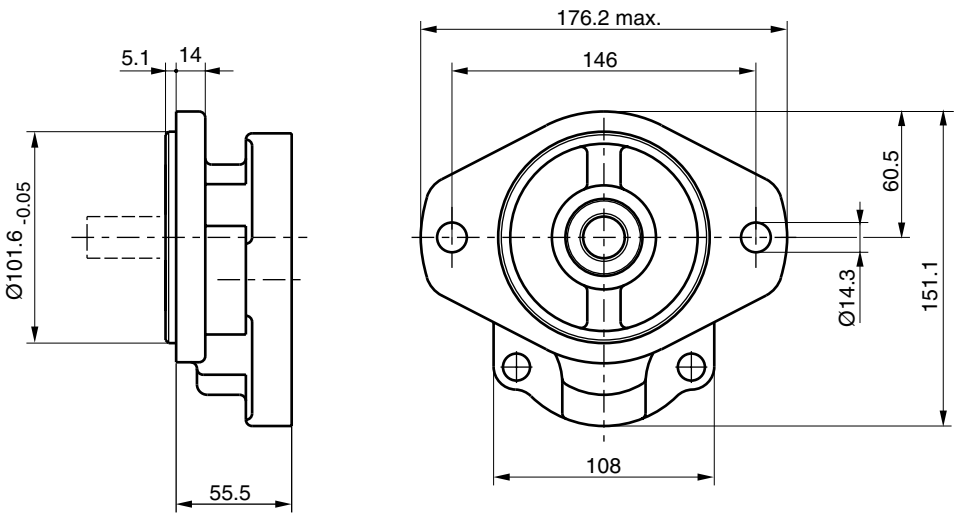


PGP/PGM 620 / 625 Mounting Flange

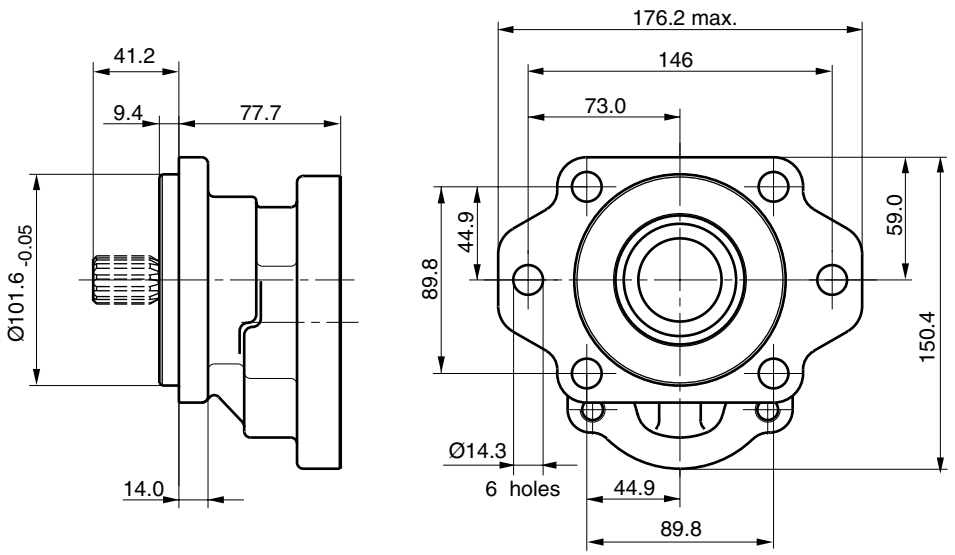
Code H2



Code H3

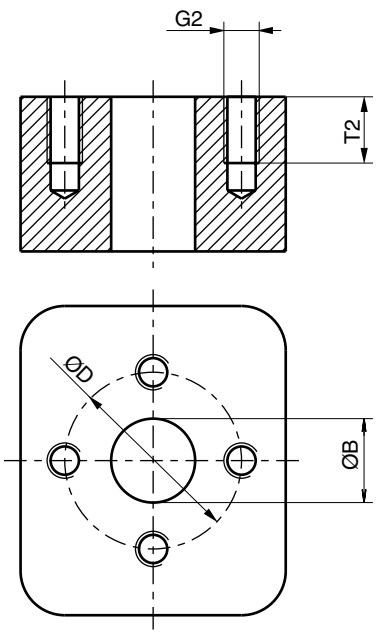


Code L3

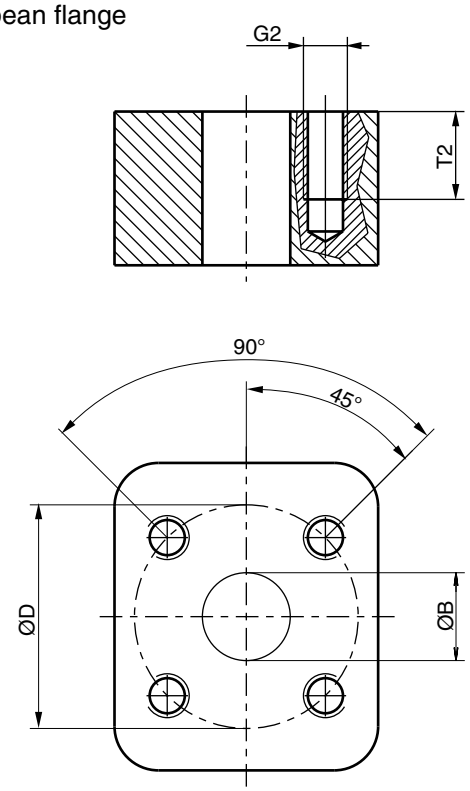


PGP/PGM 620 / 625 Porting

Code L
4-Bolt flange



Code J
European flange

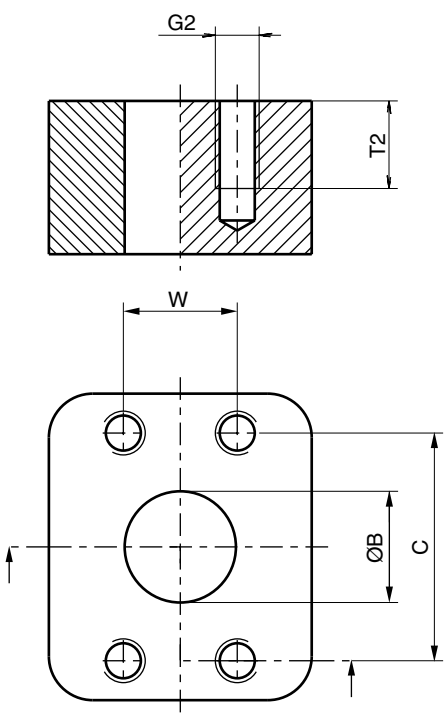


PGP/PGM / 625 620

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

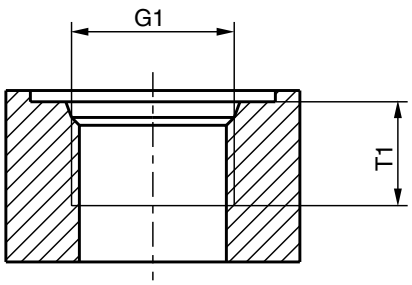
Code S
SAE split flange

Code T
SAE split flange metric thread

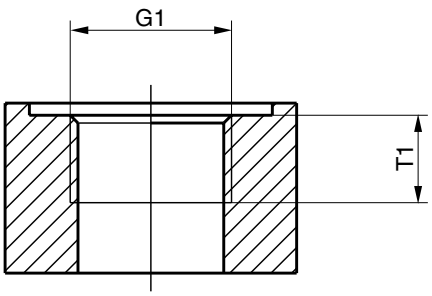


PGP/PGM 620 / 625 Porting

Code D
SAE straight thread



Code E
BSP - thread

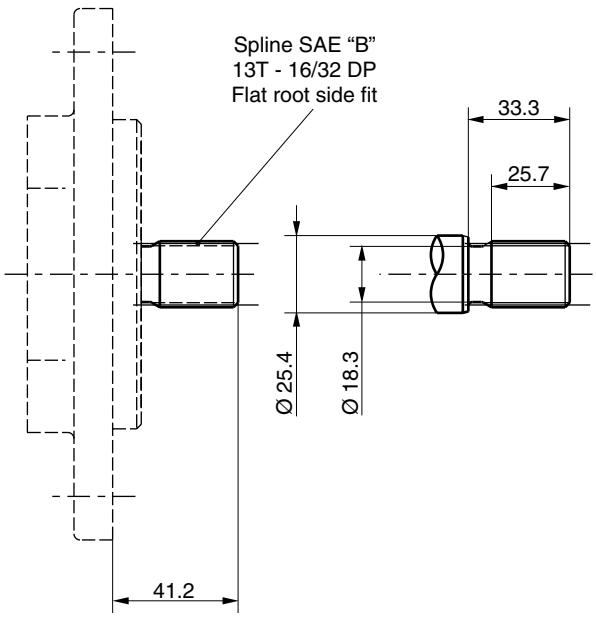


PGP/PGM 620 / 625

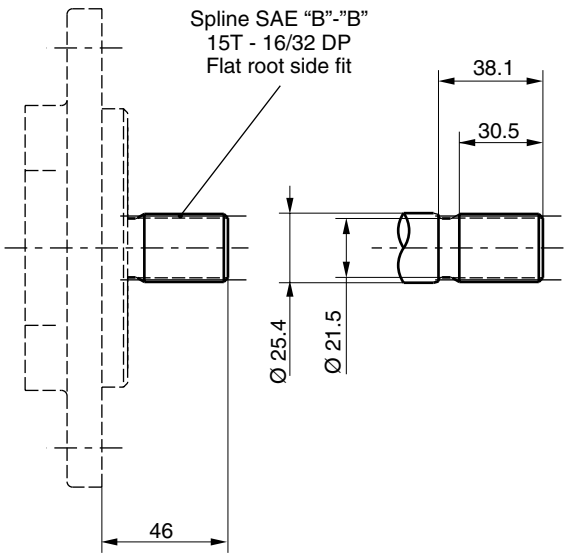
Code	G1	T1
	Thread	Dimensions
D3	3/4-16 UNF	14.3
D4	7/8-14 UNF	16.7
D5	1 1/16-12 UN	19.0
D6	1 5/16-12 UN	19.0
D7	1 5/8-12 UN	19.0
D8	1 7/8-12 UN	19.0
E3	1/2-14 BSP	14.0
E4	5/8-14 BSP	16.3
E5	3/4-16 BSP	16.0
E6	1-11 BSP	18.0
E7	1 1/4-11 BSP	20.0
E8	1 1/2-11 BSP	22.0

PGP/PGM 620 / 625 Drive Shaft

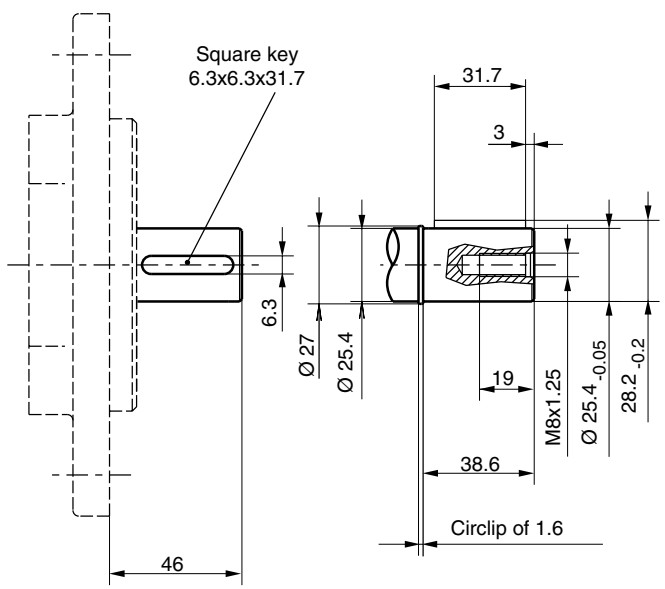
Code D1



Code E1

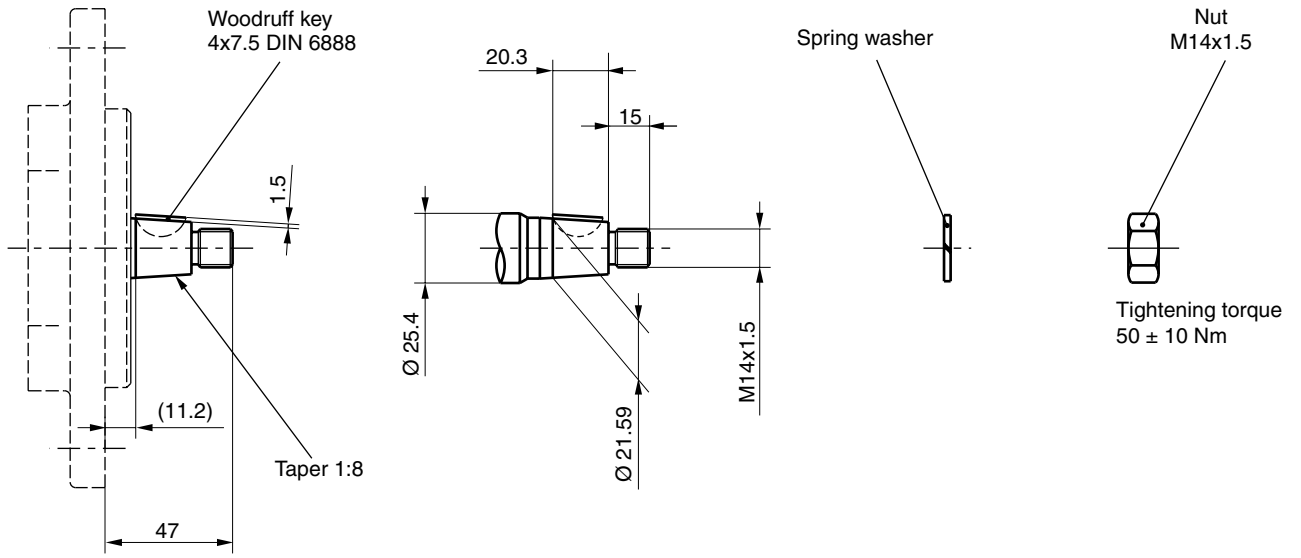


Code M3

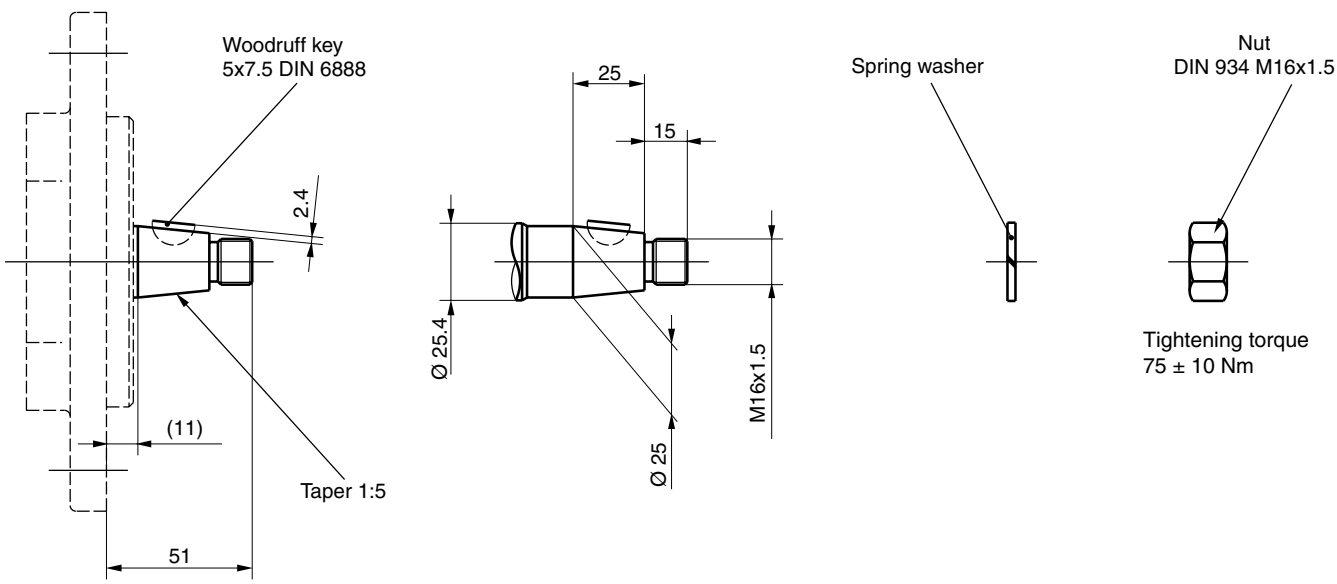


PGP/PGM 620 / 625 Drive Shaft

Code T1



Code T2



PGP/PGM 620 / 625- Shaft Load Capacity

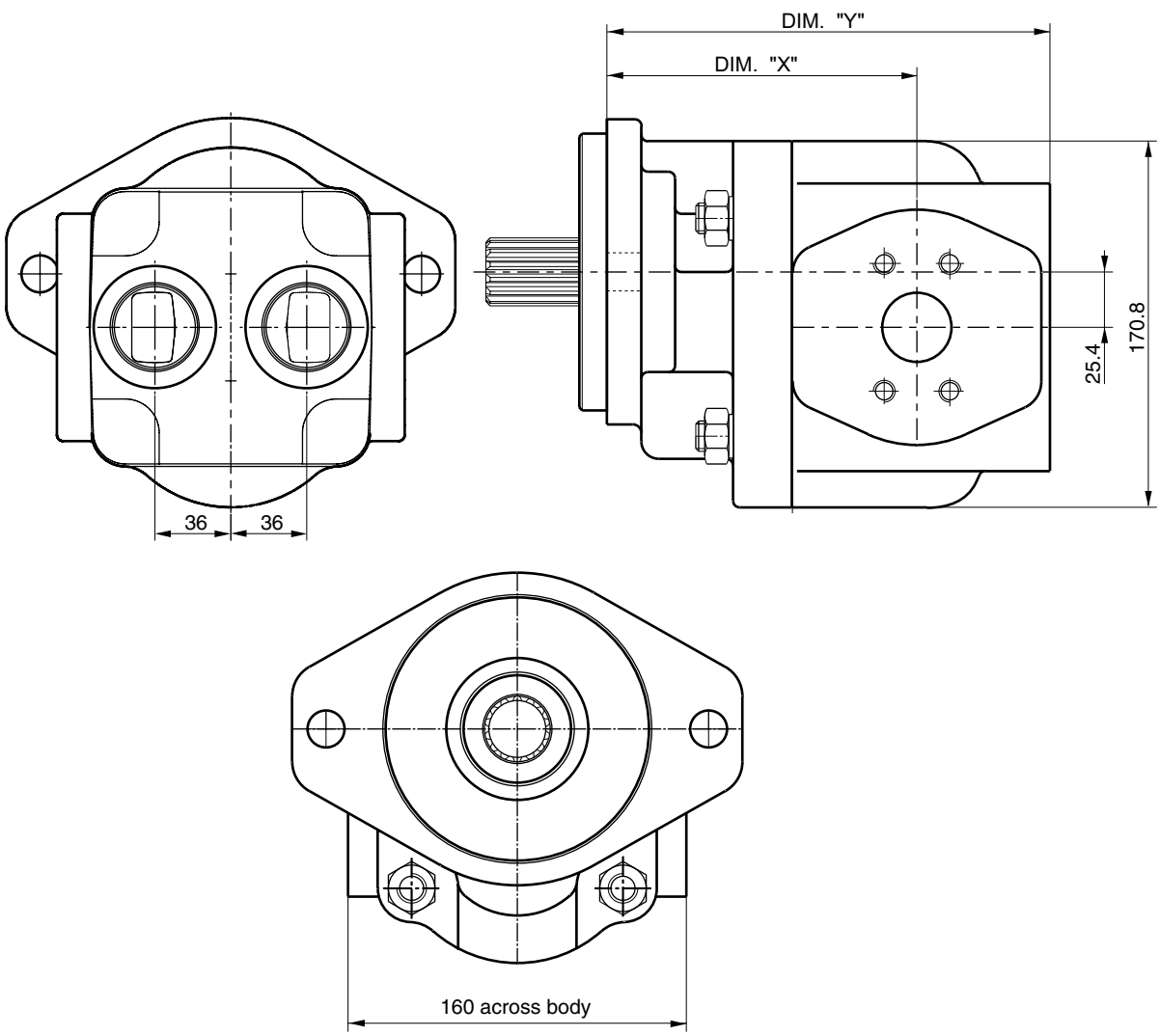
Code	Description		Torque Rating [Nm]
D1	13T, 16/32 DP, 41.2L, SAE “B“	spline	272
E1	15T, 16/32 DP, 46L, SAE “B-B“	spline	460
E4	14T, 12/24 DP, 55.6L, SAE ”C”	splined	(272)
M3	Ø25.4, 6.3 KEY, M8, 46L, SAE “B-B“	parallel	325
T1	Ø21.59, 11.2L, 4.0 KEY, M14x1.5	taper 1:8	218
T2	Ø25.0, 12.0 L, 5.0 KEY, M16x1.5	taper 1:5	301
	Multiple pump connection shaft		228

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

PGP/PGM 640 Specification - Standard Displacements - Single Unit

Pump Displ	Code	300	350	400	450	500	550	600	650	700	750	800	900	1000
	cm³/rev	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	90.0	100.0
Max. Continuous Pressure	bar	310	310	310	310	310	310	290	265	245	225	210	190	180
Minimum Speed at max. outlet pressure	rpm	500	500	500	500	500	500	500	500	500	500	500	500	500
Maximum Speed at = inlet & max. Outlet pressure	rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Dimension "X"	mm	128.6	128.6	131.8	131.8	135.6	135.6	138.4	138.4	142.2	142.2	142.2	149.8	149.8
Dimension "Y"	mm	176.1	176.1	182.7	182.7	189.3	189.3	195.8	195.8	203.2	203.2	203.2	216.4	216.4
Aprox. Weight	Kg	20.6	20.6	21.2	21.2	22.0	22.0	22.6	22.6	23.3	23.3	25.0	25.5	25.5

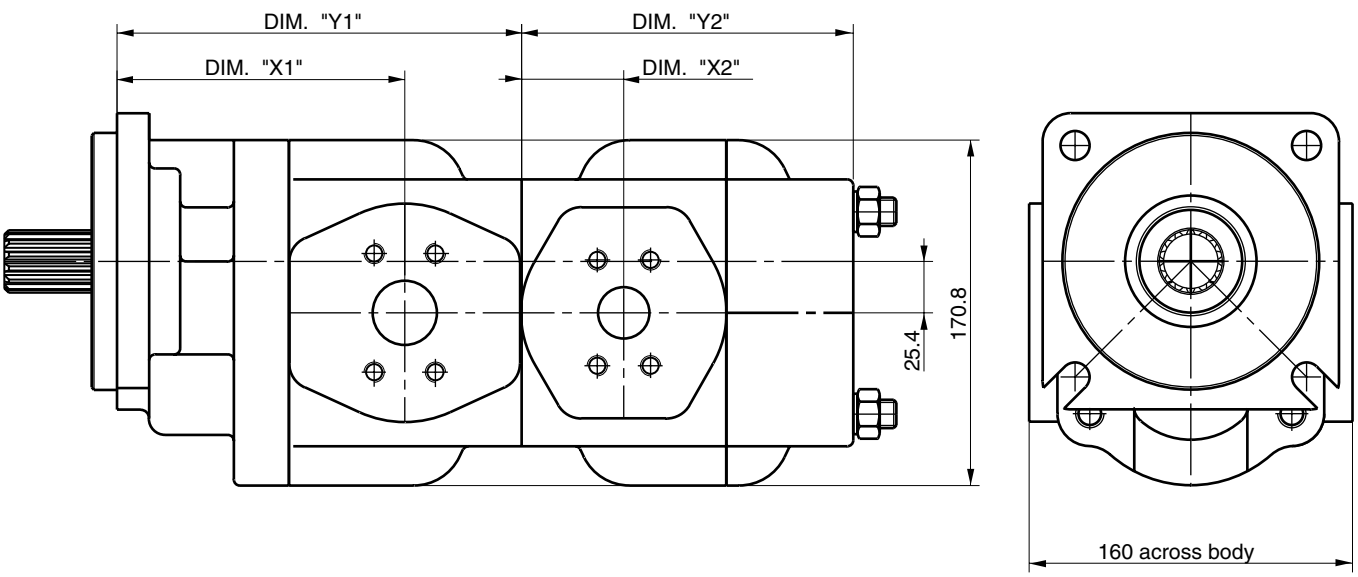
Dimension Flanges see pages 73 to 74
Dimension Shafts see page 77



PGP/PGM 640 Specification - Standard Displacements - Tandem Unit

Pump Displ	Code	300	350	400	450	500	550	600	650	700	750	800	900	1000
	cm³/rev	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	90.0	100.0
Dimension "X1"	mm	128.6	128.6	131.8	131.8	135.6	135.6	138.4	138.4	142.2	142.2	142.2	149.8	149.8
Dimension "Y1"	mm	176.1	176.1	182.7	182.7	189.3	189.3	195.8	195.8	203.2	203.2	203.2	216.4	216.4
Dimension "X2"	mm	44.3	44.3	47.8	47.8	50.5	50.5	54.3	54.3	57.8	57.8	57.8	63.4	63.4
Dimension "Y2"	mm	147.5	147.5	154.1	154.1	160.7	160.7	167.2	167.2	174.6	174.6	174.6	184.2	184.2
Aprox. Weight front section	Kg	20.6	20.6	21.2	21.2	22.0	22.0	22.6	22.6	23.3	23.3	25.0	25.5	25.5
Aprox. Weight rear section	Kg	20.1	20.1	20.7	20.7	21.5	21.5	22.1	22.1	22.8	22.8	24.5	25.0	25.0

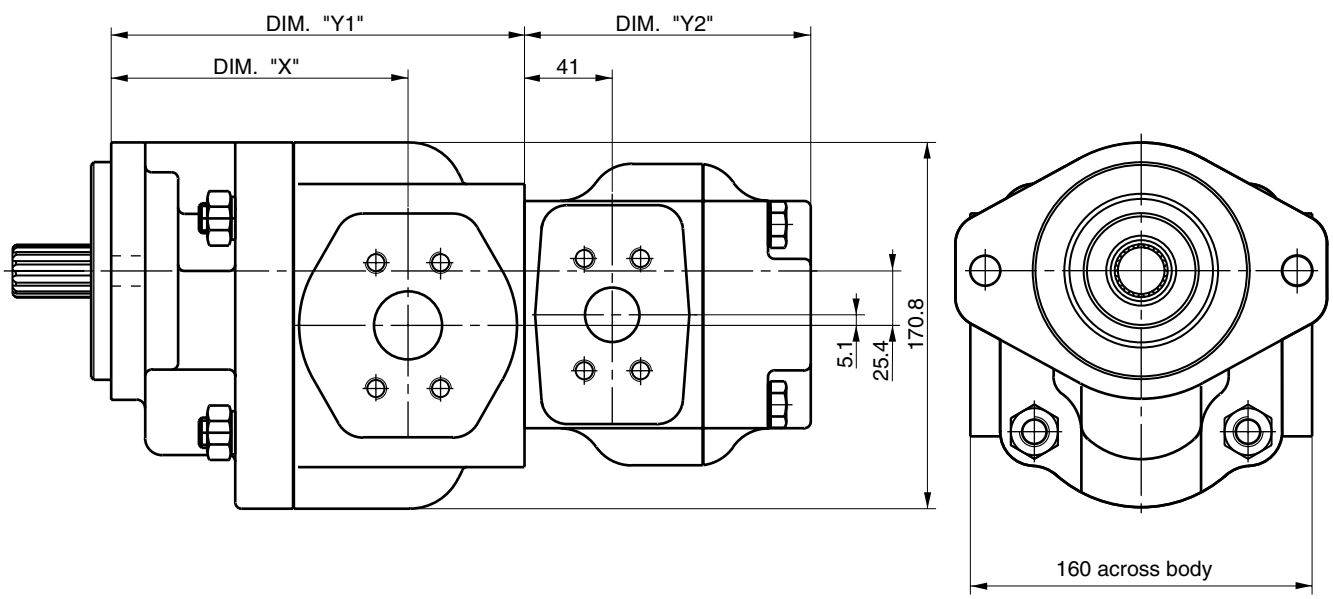
Dimension Flanges see pages 73 to 74
Dimension Shafts see page 77



PGP 640/620 Specification - Standard Displacements - Tandem Unit

Pump Displ. 640	Code	300	350	400	450	500	550	600	650	700	750	800	900	1000
	cm³/rev	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	90.0	100.0
Dimension "X1"	mm	128.6	128.6	131.8	131.8	135.6	135.6	138.4	138.4	142.2	142.2	142.2	149.8	149.8
Dimension "Y1"	mm	176.1	176.1	182.7	182.7	189.3	189.3	195.8	195.8	203.2	203.2	203.2	216.4	216.4
Pump Displ. 620	Code	160	190	210	230	260	290	330	360	370	410	440	500	520
	cm³/rev	16.0	19.0	21.0	23.0	26.0	29.0	33.0	36.0	37.0	41.0	44.0	50.0	52.0
Dimension "Y2"	mm	115.2	118.5	120.7	122.9	126.2	129.5	133.9	137.2	138.3	142.7	146	152.6	154.8
Aprox. Weight front section	Kg	20.6	20.6	21.2	21.2	22.0	22.0	22.6	22.6	23.3	23.3	25.0	25.5	25.5
Aprox. Weight rear section	Kg	10.4	10.5	10.5	10.6	10.7	11	11.1	11.2	11.3	11.4	11.5	11.7	11.8

Dimension Flanges see pages 73 to 74
Dimension Shafts see page 77

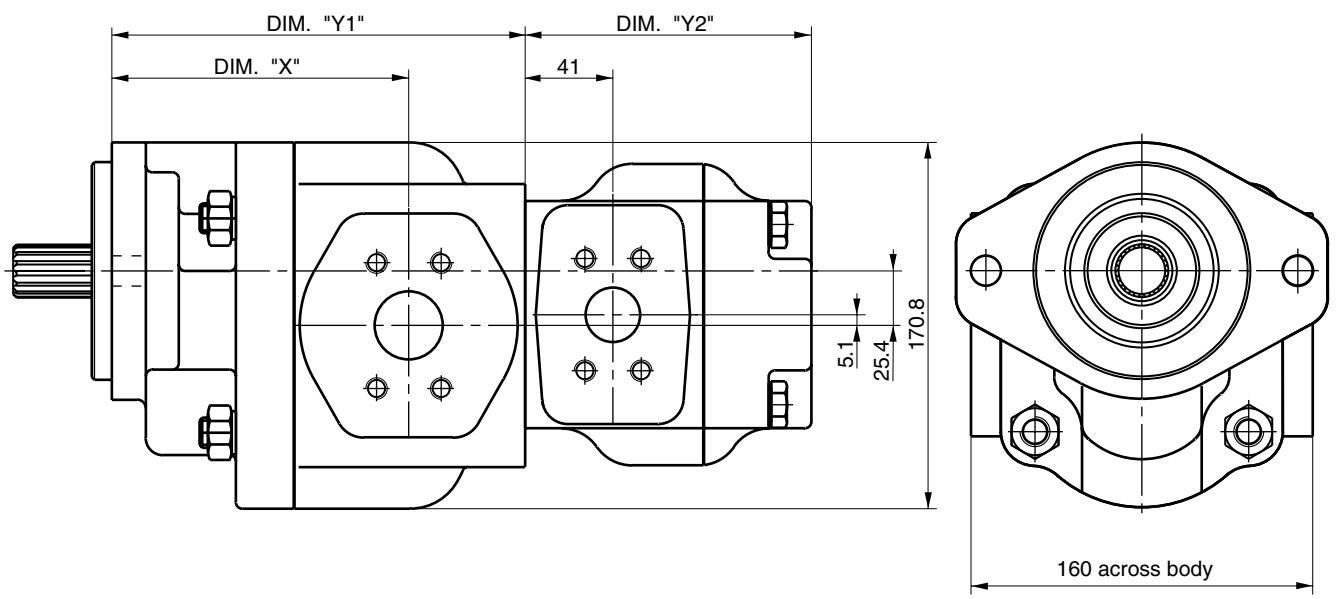


PGP 640/625 Specification - Standard Displacements - Tandem Unit

Pump Displ. 640	Code	300	350	400	450	500	550	600	650	700	750	800	900	1000
	cm³/rev	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	90.0	100.0
Dimension "X1"	mm	128.6	128.6	131.8	131.8	135.6	135.6	138.4	138.4	142.2	142.2	142.2	149.8	149.8
Dimension "Y1"	mm	176.1	176.1	182.7	182.7	189.3	189.3	195.8	195.8	203.2	203.2	203.2	216.4	216.4

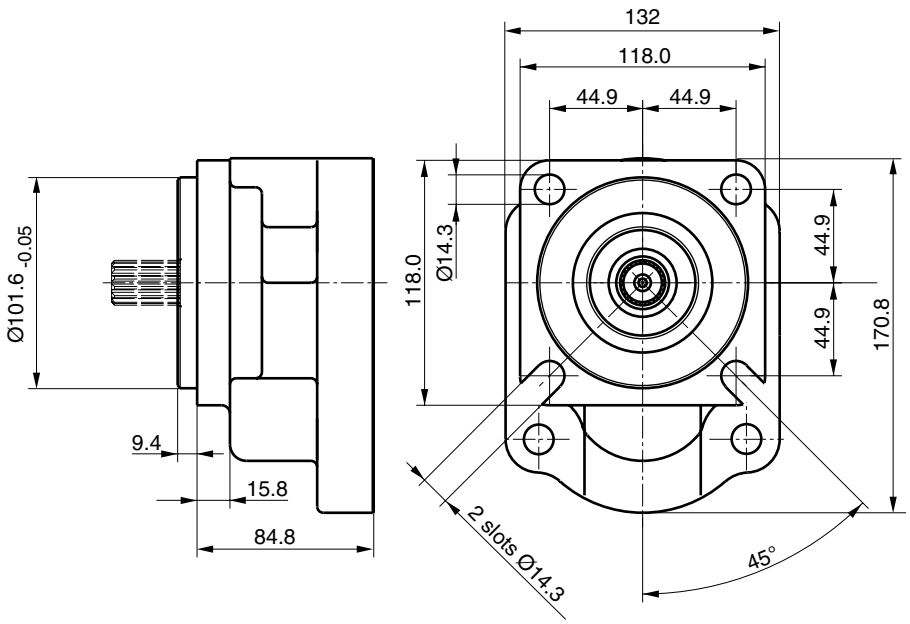
Pump Displ. 625	Code	360	410	450	500
	cm³/rev	36.0	41.0	44.0	50.0
Dimension "Y2"	mm	137.2	142.7	146	152.6
Aprox. Weight front section	Kg	22.6	23.3	25.0	25.5
Aprox. Weight rear section	Kg	11.2	11.4	11.5	11.7

Dimension Flanges see pages 73 to 74
Dimension Shafts see page 77

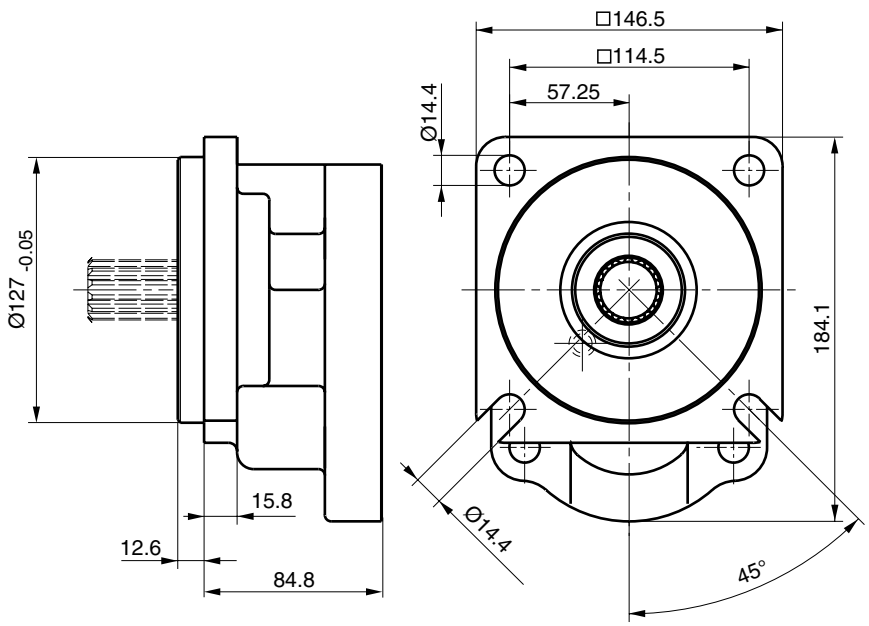


PGP/PGM 640 Mounting Flange

Code A3

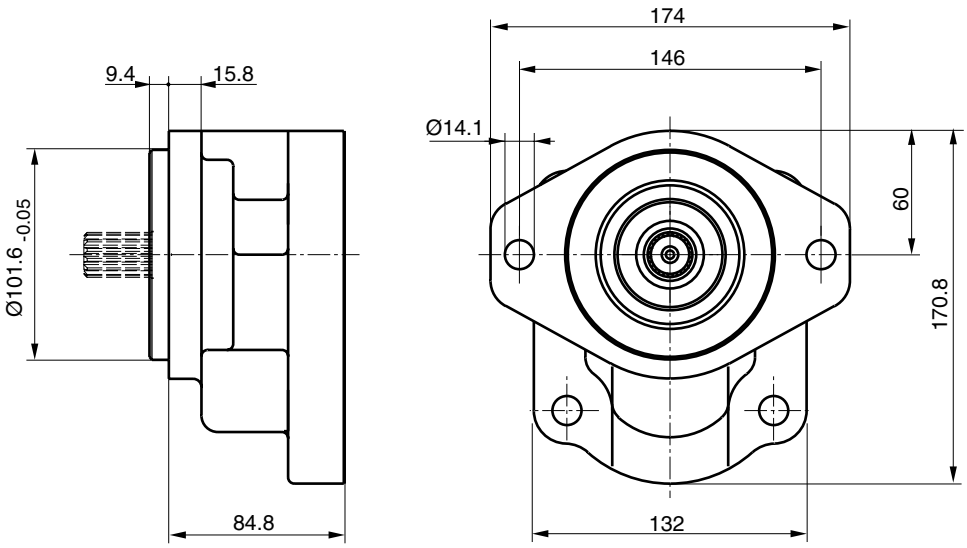


Code A4

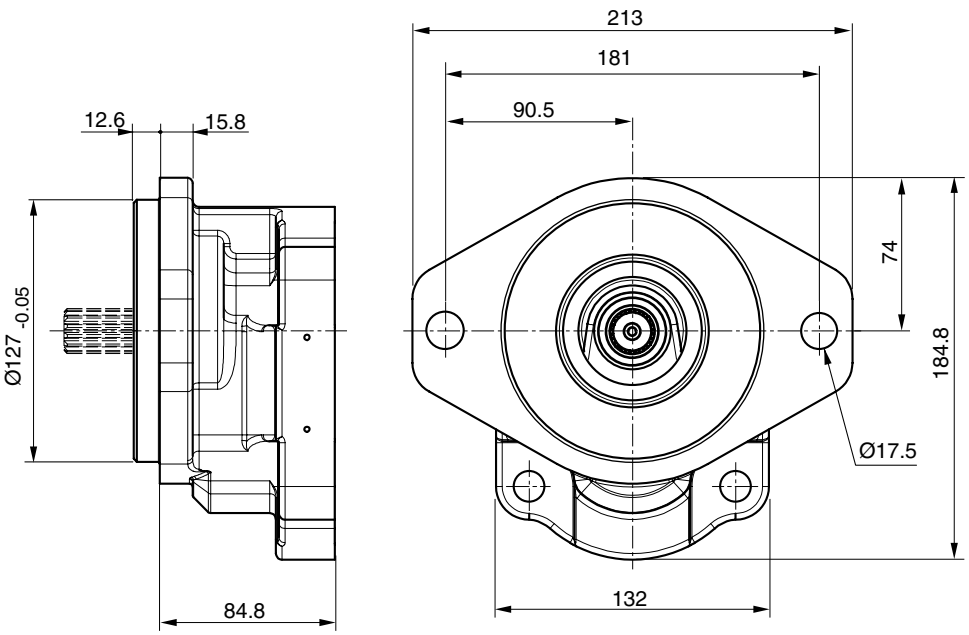


PGP/PGM 640 Mounting Flange

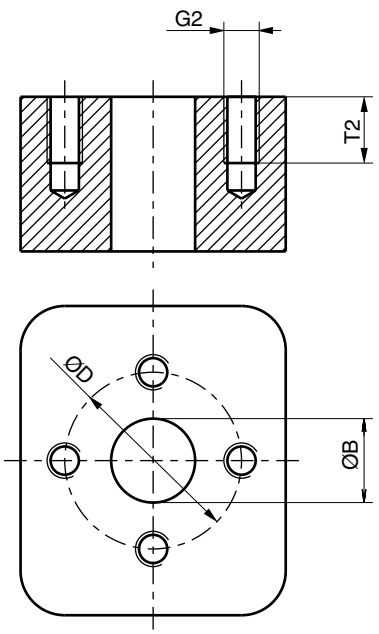
Code H3



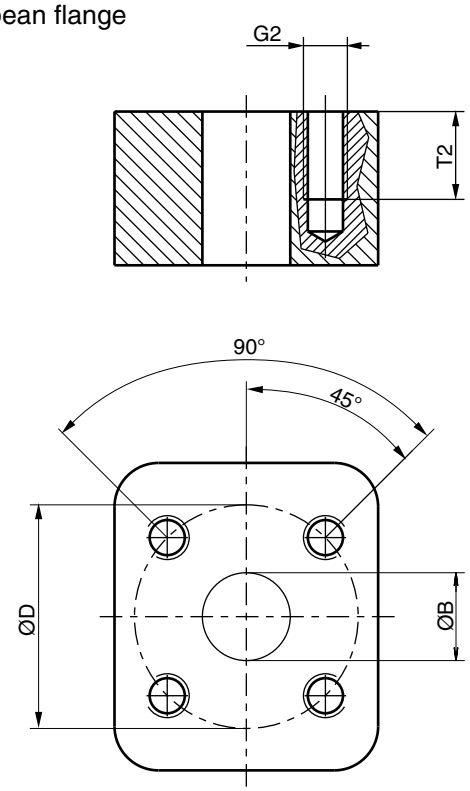
Code K3



PGP/PGM 640 Porting
Code L
4-Bolt flange



Code J
European flange

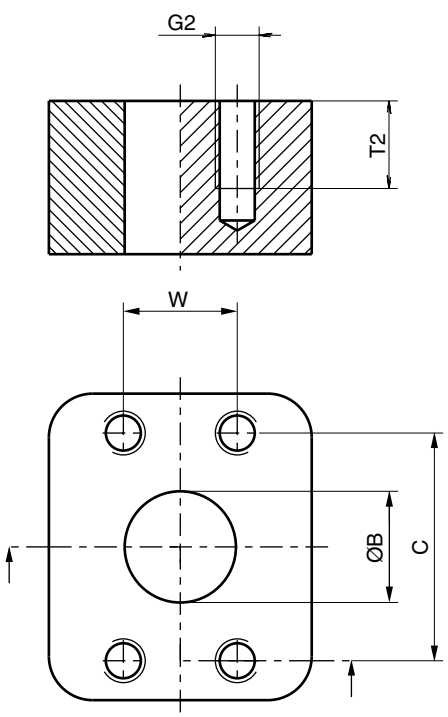


PGP/PGM 640

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

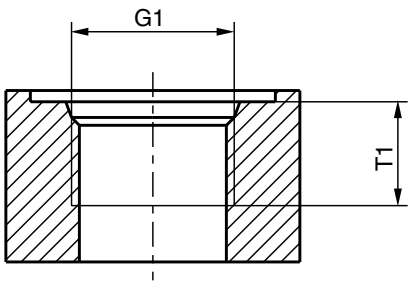
Code S
SAE split flange

Code T
SAE split flange metric thread

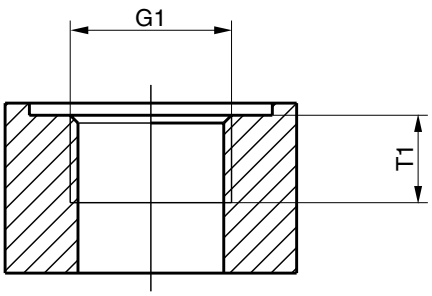


PGP/PGM 640 Porting

Code D
SAE straight thread



Code E
BSP - thread

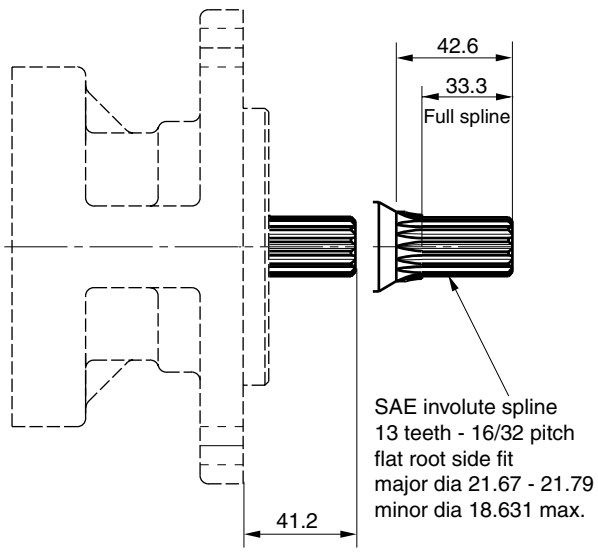


PGP/PGM 640

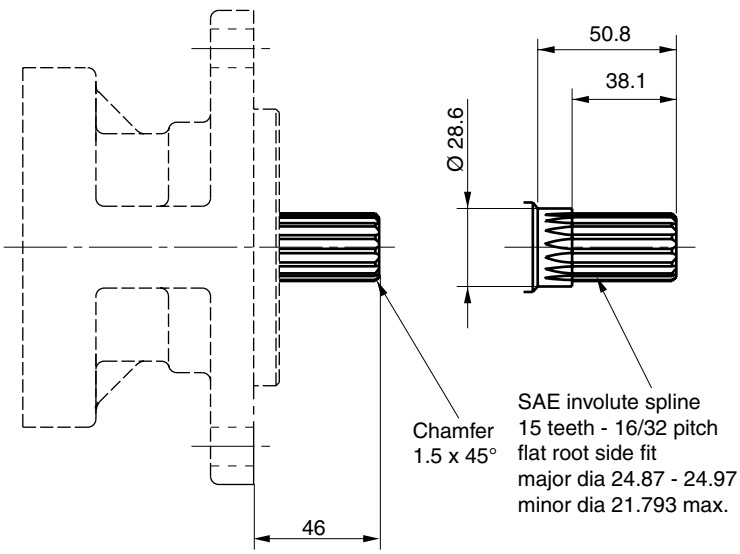
Code	G1	T1
	Thread	Dimensions
D5	1 1/16-12 UN	19.0
D6	1 5/16-12 UN	19.0
D7	1 5/8-12 UN	19.0
D8	1 7/8-12 UN	19.0
E4	5/8-14 BSP	16.3
E5	3/4-16 BSP	16.0
E6	1-11 BSP	18.0
E7	1 1/4-11 BSP	20.0
E8	1 1/2-11 BSP	22.0

PGP/PGM 640 Drive Shaft

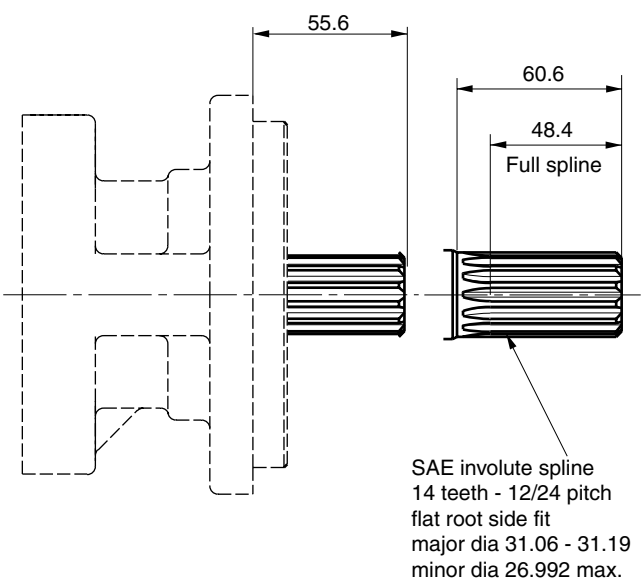
Code D1



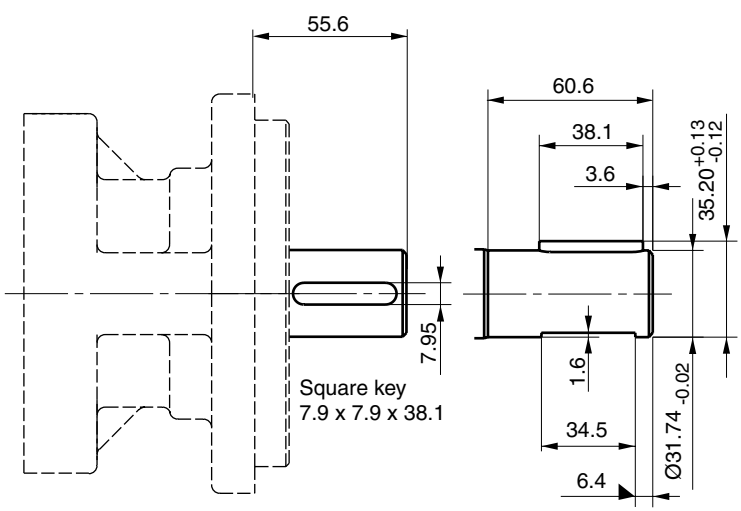
Code E1



Code E4



Code N1



Shaft loads PGP/PGM500

Code	Description	Type	Torque rating [Nm]			
			PGP 502	PGP 505	PGP/PGM511	PGP 517
H1	Ø10.0, 3.0 key, no thread, 36L	parallel	30	—	—	—
P2	Ø9.95, 8.8L, 2.4 key, M6	taper 1:8	30	—	—	—
V1	5 x 6.5 long shaft w/o coupling	tang drive	20	—	—	—
A1	9T, 16/32DP, 32L, SAE ”A”	splined	—	108	—	—
J1	Ø12.7, 3.2 key, no thread, 38L	parallel	—	43	—	—
K1	Ø15.88, 4.0 key, no thread, 32L, SAE ”A”	parallel	—	85	—	—
Q2	Ø14.25, 5.5L, 3.0 key, M10x1	taper 1:8	—	68	—	—
A1	9T, 16/32DP, 32L, SAE ”A”	splined	—	—	86	—
C1	11T, 16/32DP, 38.2L, SAE 19-4	splined	—	—	166	—
F5	B8x32x36 DIN ISO 14 (similar to DIN 5462)	splined	—	—	166	—
K1	Ø15.88, 4.0 key, no thread, 32L, SAE ”A”	parallel	—	—	75	—
L6	Ø19.05, 4.8 key, no thread, 32L, SAE 19-1	parallel	—	—	145	—
S1	Ø17.0, 7.7L, 3.0 key, M12x1.5	taper 1:5	—	—	193	—
S2	Ø16.65, 12.0L, 3.2 key, M12x1.5	taper 1:8	—	—	198	—
S8	Ø20.0, 9.0L, 4.0 key, M14x1.5	taper 1:5	—	—	110	—
D1	13T, 16/32DP, 41.2L, SAE ”B”	splined	—	—	—	345
E1	15T, 16/32DP, 46.2L, SAE ”B-B”	splined	—	—	—	530
M1	Ø22.2, 6.3 key, no thread, 41.2L, SAE ”B”	parallel	—	—	—	251
M2	Ø25.4, 6.3 key, no thread, 46L, SAE ”B-B”	parallel	—	—	—	395
T1	Ø21.59, 11.2L, 4.0 key, M14x1.5	taper 1:8	—	—	—	250
	Connecting shaft for multiple units		20	36	110	228

Shaft loads PGP/PGM600

Code	Description	Type	Torque rating]		
			620 [Nm	625 [Nm]	640 [Nm]
D1	13T, 16/32 DP, 41.2L, SAE "B"	splined	272	272	328
E1	15T, 16/32 DP, 46.0L, SAE "B-B"	splined	460	460	503
E4	14T, 12/24 DP, 55.6L, SAE ”C”	splined	—	(272)	960
M3	Ø25.4, 6.3 KEY, M8, 46L, SAE “B-B“	parallel	325	325	—
T1	Ø21.59, 11.2L, 4.0key, M14x1.5	tapered 1:8	218	218	—
T2	Ø25.0, 12.0L, 5.0 KEY, M16x1.5	taper 1:5	301	—	—
N1	1 1/4" SAE-C	keyed	—	—	678
	connecting shaft		228	228	407

Formula to calculate shaft load

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

Hydraulic fluids

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

* to be used with cast iron pumps/motors only

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

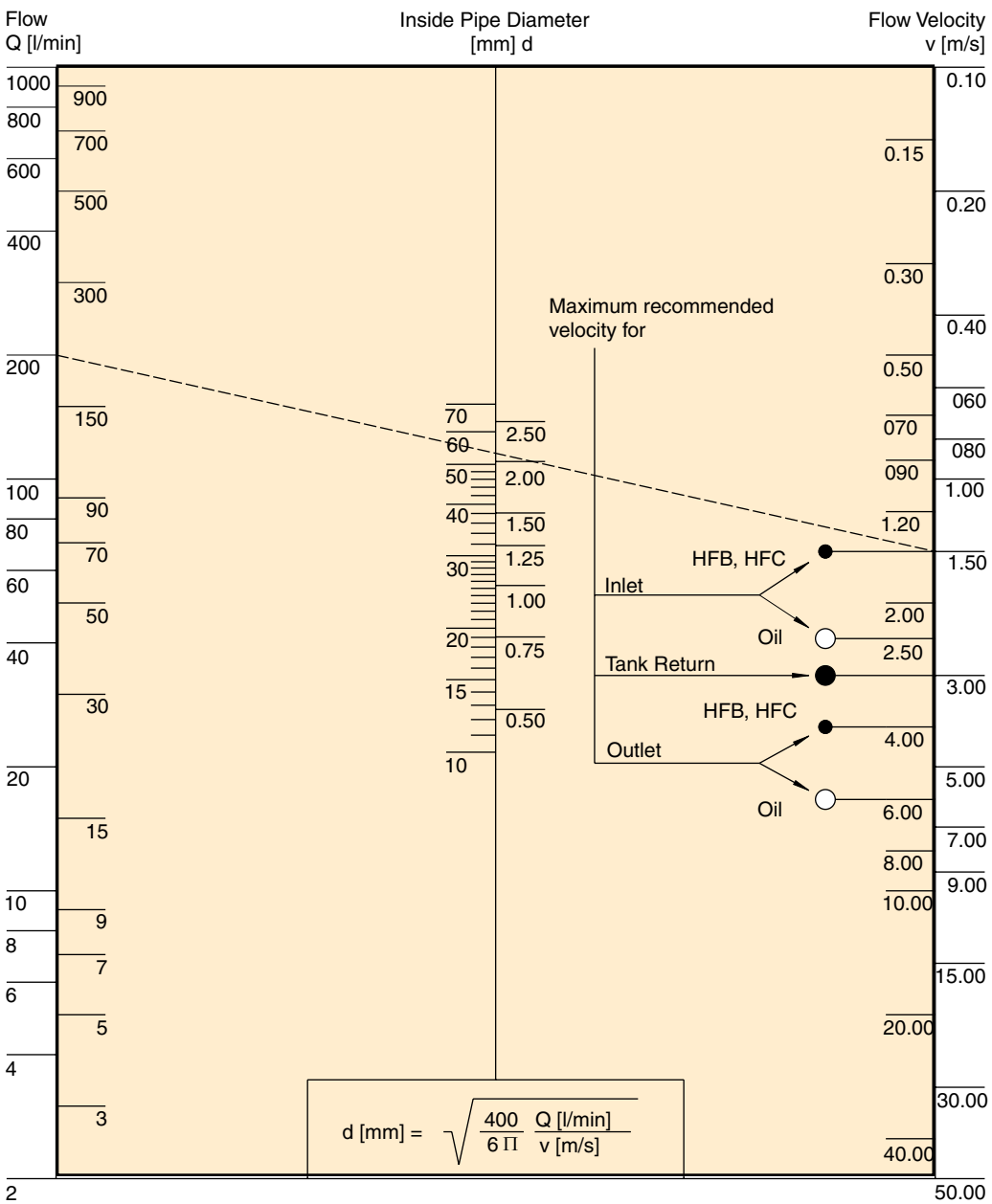
Flanges for suction and discharge ports

Please refer to Parker Bulletin 4040/UK.

Reading Direction

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

Nomograph for Pipe Velocity

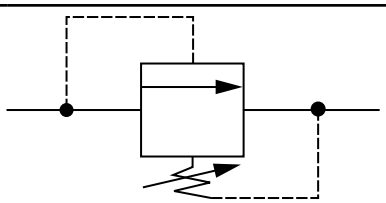


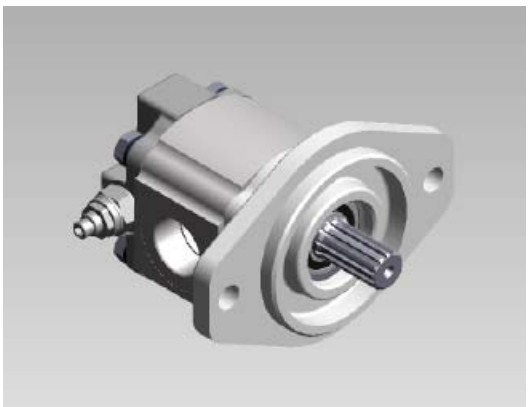
Pressure relief valve / adjustable internal vent

Introduction:

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

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

PGP 502 PGP 505 PGP 511			**PGP 517 PGP 620 PGP 625**	
CODE	**Pressure bar**		**CODE**	**Pressure bar**
RDAA	10		RDPA	10
RDAB	20		RDPB	20
RDAC	30		RDPC	30
RDAD	40		RDPD	40
RDAE	50		RDPE	50
RDAF	60		RDPF	60
RDAG	70		RDPG	70
RDAH	80		RDPH	80
RDAJ	90		RDPJ	90
RDAK	100		RDPK	100
RDAL	110		RDPL	110
RDAM	120		RDPM	120
RDAN	130		RDPN	130
RDAP	140		RDPP	140
RDAQ	150		RDPQ	150
RDAR	160		RDPR	160
RDAS	170		RDPS	170
RDAT	180		RDPT	180
RDAU	190		RDPU	190
RDAV	200		RDPV	200
RDAW	210		RDPW	210
RDAX	220		RDPX	220
RDAY	230		RDPY	230
RDAZ	240		RDPZ	240



Priority Flow Divider

1VP- / CVP100- □ □ □ □ □ □ □

Port Configuration | Port Orientation | Function | Priority Port | Excess Port | Priority Flow | R/V Setting

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

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

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

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

other on request

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

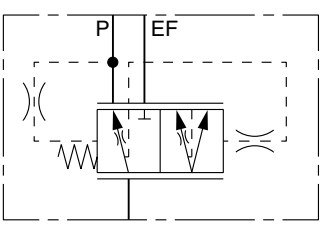
other on request

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

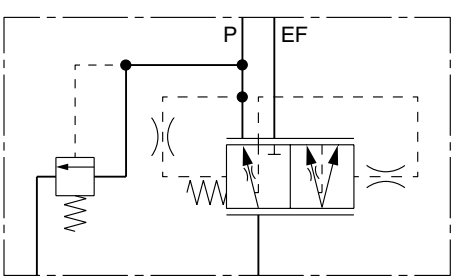
other on request

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

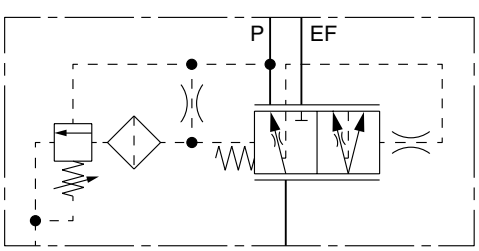
other on request



Priority Flow Divider
Function “A”



Priority Flow Divider With Full Flow R/V
Function “B”



Priority Flow Divider With Pilot R/V
Function “C”

Priority Flow Divider

Comments:

The Priority Flow Divider provides a constant and specified flow for power steering or other priority functions.

The balance of flow produced by the pump is available from the EF port for additional functions such as open center directional control valves, fan drives , etc. It can also be fitted with a pressure relief valve

Variations for PGP 511 / 517 / 620 / 625 / 640

without priority relief valve (Function “A”)

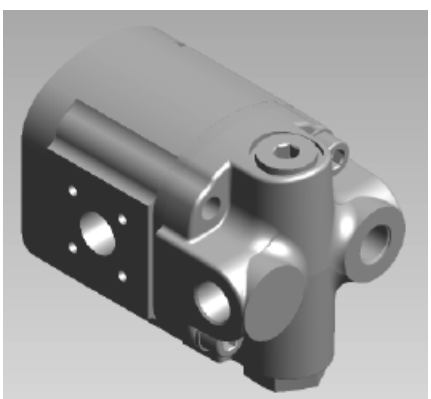
with full flow priority relief valve (Function “B”)

with pilot priority relief valve (Function “C”)

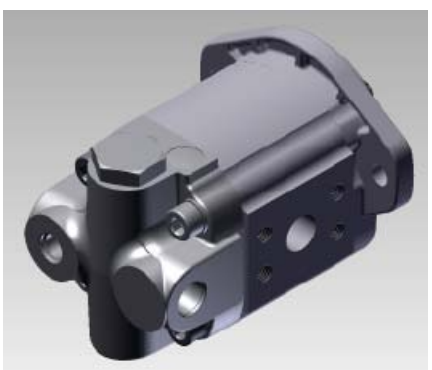
Pressure Range	
P-port Maximum	230 bar
EF-port Maximum	250 bar

Maximum Flows	
for PGP 511	
P-port	32 lpm
EF-port	70 lpm
max. input flow	70 lpm
for PGP 517 / 620 / 625 / 640	
P-port	45 lpm
EF-port	100 lpm
max. input flow	100 lpm

Port Configuration „A“
Port Orientation „B“



Port Configuration „D“
Port Orientation „A“



Port Configuration „C“
Port Orientation „B“

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

Comments:

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

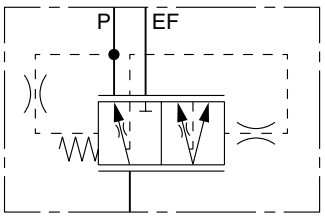
Variations for PGP 511 / 517 / 620 / 625 / 640

without priority relief valve (Function “A”)
with full flow priority relief valve (Function “B”)
with pilot priority relief valve (Function “C”)

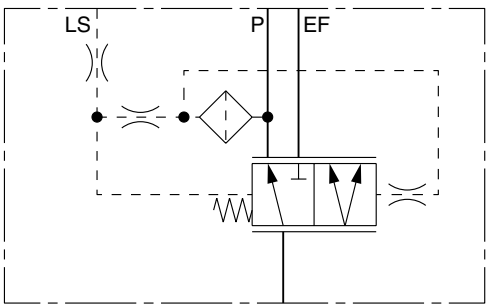
Note: relief valve in the steering unit is required.
control pressure settings and priority flow settings on request

Pressure Range	
for PGP 511 / 517	
P-port Maximum	230 bar
EF-port Maximum	250 bar
for PGP 517 / 620 / 625 / 640	
P-port Maximum	250 bar
EF-port Maximum	310 bar

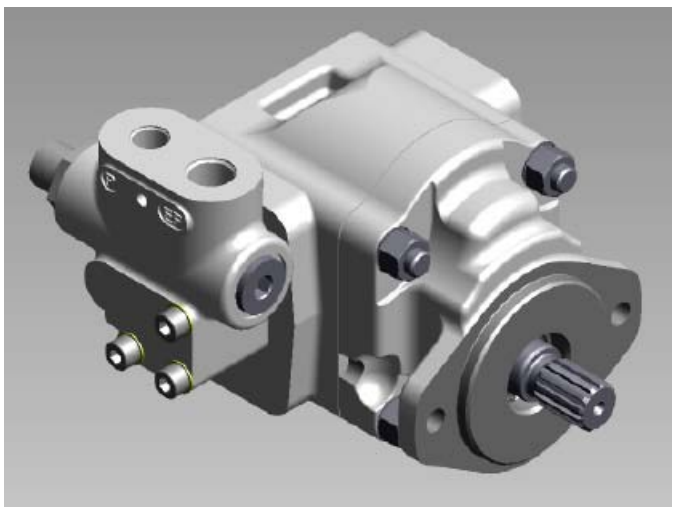
Maximum Flows	
for PGP 511	
P-port	32 lpm
max. input flow	80 lpm
for PGP 517 / 620 / 625 / 640	
P-port	45 lpm
max. input flow	160 lpm

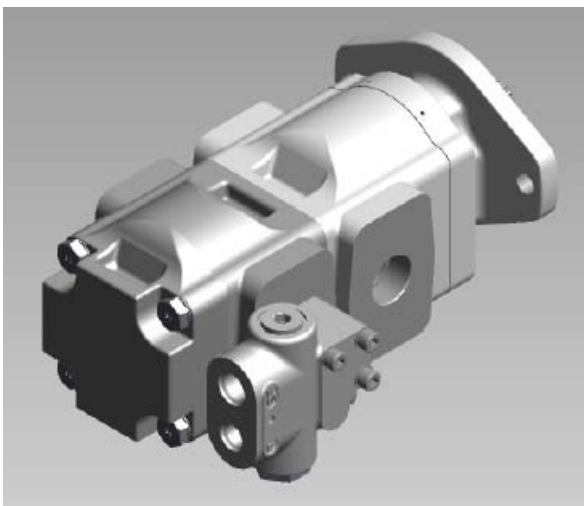


Priority Flow Divider
Function “A”



Load Sensing Priority Valve
with Dynamic Load Sensing Signal
Function “F”





Load Sensing Priority Valve

1VP- / CVP100- □ □ □ □ □ □ □ □

Port Configuration | Port Orientation | Function | Priority Port | Excess Port | LS Port | R/V Setting | Control Setting LS

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

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

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

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

other on request

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

other on request

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

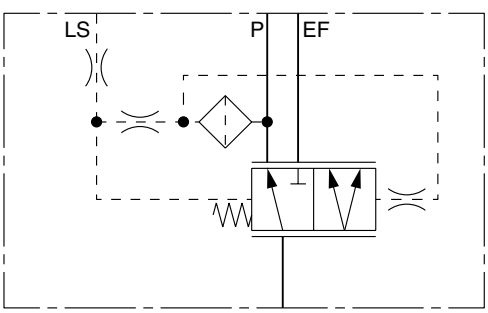
other on request

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

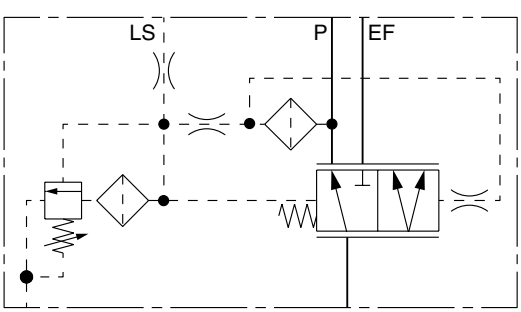
other on request

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

other on request



Load Sensing Priority Valve
with Dynamic Load Sensing Signal
Function “F”



Load Sensing Priority Valve
with Dynamic Load Sensing Signal
Function “G”

Load Sensing Priority Valve

Comments:

The Load sense Priority Valve provides priority flow on demand, typically for LS power steering: The balance of the flow produced by the pump is available from the EF port for additional functions such as open center directional control valves, fan drives , etc. When the power steering is idle, full pump flow is available for these functions

The selection of pilot relief and static or dynamic signal is dependent on the characteristics of the selected steering unit.

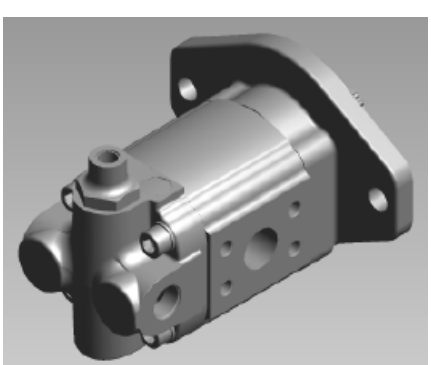
Variations for PGP 511 / 517 / 620 / 625 / 640

without pilot relief, dynamic LS signal (Function “G”) / with pilot relief,

dynamic LS signal (Function “F”) without pilot relief, static LS signal / with pilot relief, static LS signal

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

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



Port Confiiguration „B“
Port Orientation „A“

Port Confiiguration „D“
Port Orientation „B“

Port Confiiguration „E“
Port Orientation „A“

Single Pressure Relief Valve

Comments:

Integral relief valve to protect the motor.

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

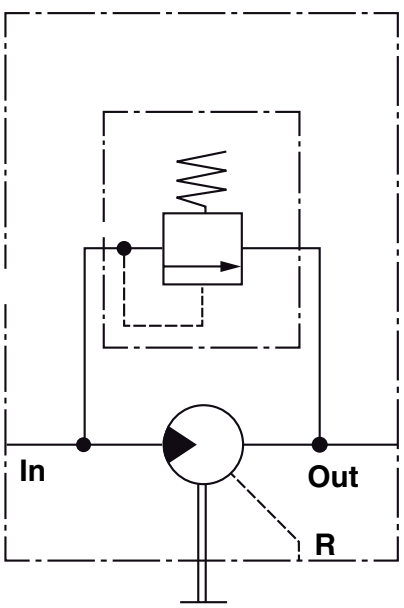
Variations for PGM 511 / PGM 620 / PGM 640

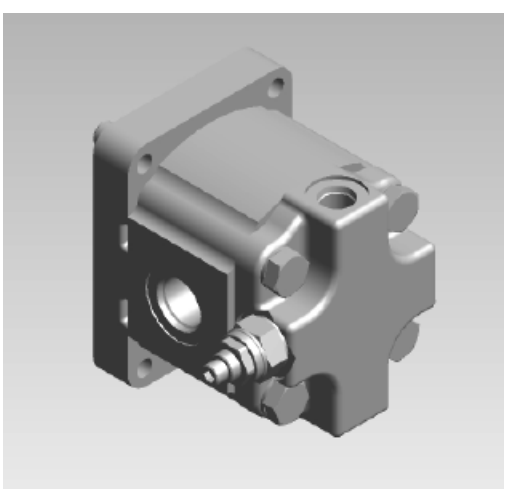
adjustable, with internal or external drain

Applications

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

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





Single Pressure Relief Valve with Anti-Cavitation

Comments:

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

Variations for PGM 511 / PGM 620 / PGM 640

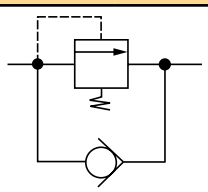
non-adjustable, with reverse flow check with internal or external drain

Applications

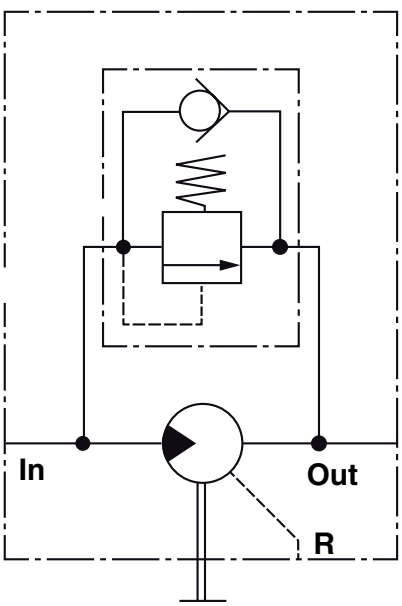
Fan Drives, Mower Blade Drives, Compressor Drives and Water Pump Drives

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

Motor Range PGM511 / PGM 620 / PGM 640



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



Cross Port Pressure Relief Valves

Comments:

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

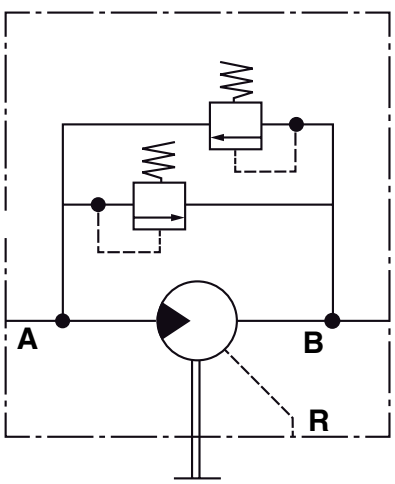
Variations for PGM 511 / PGM 620 / PGM 640

adjustable with internal and external drain

Applications

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

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



Cross Port Pressure Relief Valves with Anti-Cavitation

Comments:

Motors fitted this relief valve may be applied in series or in hydraulic transmission with relief valve providing a limit to the pressure differential, and hence, the output torque.
The check valves allow flow to return to the inlet of the motor to prevent cavitation.
Motor available with side ports, rear ports or combination of side and rear ports.

Variations for PGM 511 / PGM 620 / PGM 640

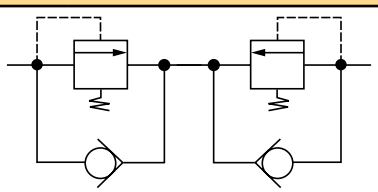
non-adjustable with internal or external drain

Applications

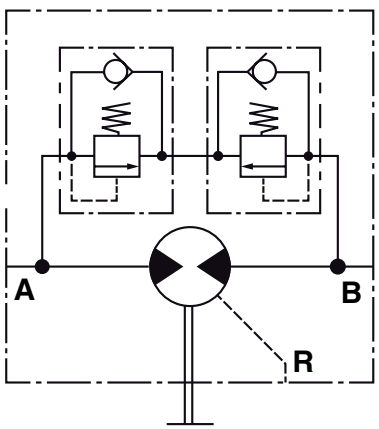
Fan Drives, Mower Blade Drives, Water Pump Drives and reversible hydrostatic transmissions

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

Motor Range PGM 511 / PGM 620 / PG M640



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



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

Comments:

Motors with cross-port relief valve and anti-cavitation check valves in case drain passages are suitable for open-circuit applications with closed center valves and hydrostatic transmissions. The check valves allow flow to return to the inlet of the motor to prevent cavitation.
For winches, make up flow at low pressure is introduced at the case drain port.

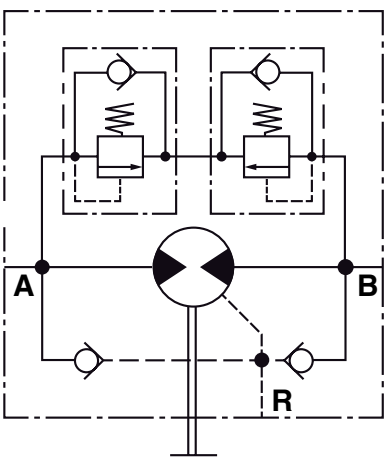
Variations for PGM 511 / PGM 620 / PGM 640

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

Applications

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

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



Solenoid Proportional Pressure Relief Valve

Comments:

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

Variations for PGM 511 / PGM 620 / PGM 640

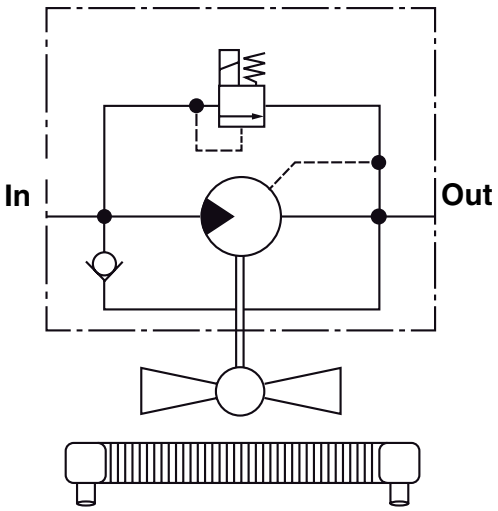
normally open valves, increasing pressure with increasing current
normally closed valves, decreasing pressure with increasing current with internal or tank return

Applications

Fan Drives

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

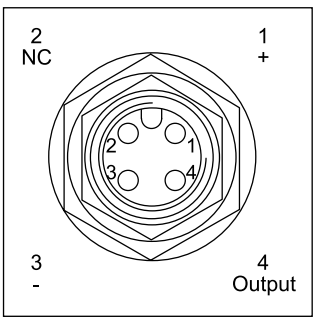
Pressure Range	
Pressure Range	standby pressure differential: 5 bar max. : equal to the max. pressure rating of the motor
Standard Pressure Relief Settings	100 / 210 / 350 bar other`s on request
Termination	on request

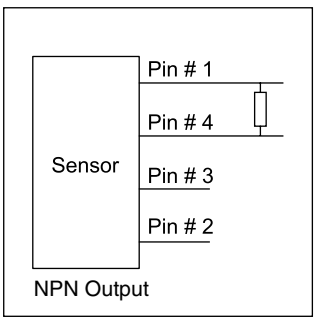


Speed Sensor

This rugged, weather resistant speed sensor is a Hall effect device. When externally powered, 30 square wave digital pulses per output shaft revolution are produced. By signal multiplication, 60 pulses per revolution can be obtained. The installation of this economical sensor does not affect the torque or side load capability of the motor into which it is installed.
The sensor has reverse polarity protection but no short circuit protection.

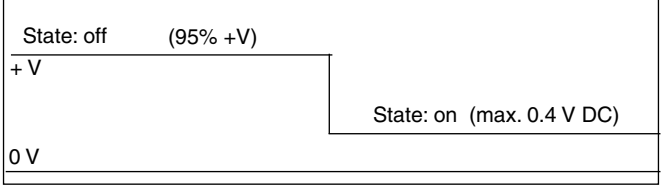
Speed sensor data	
Operating voltage range	4.5...24 V (DC)
Operating temperature	-30°...100° C
Operating frequency range	0...10 KHZ
Sink current	0...20 mA (max.)
Connection	4 Pin (12mm) DIN Standard





Formula pull-up resistor value (0.25 Watt, 5% tol.)

$$\frac{\text{Courant/Tensione } 4.5...24\text{ V}}{\text{Sink current } 0...20\text{ mA}} = \text{Resistor k Ohm}$$



Standard Seal Kits for pumps/motors 500 + 600

Model Code	Pump Series	TDN
PGP502	Single	391 1832 810
	Tandem	
	Single (FPM)	391 1832 811
PGP505	Single	391 1822 101
	Tandem	391 1822 102
PGP511	Single	8611-023-00N
	Single (Large size shaft)	8611-023-Q1N
	Single (FPM)	8611-023-00V
	Triple (FPM unsealed)	391 1832 770
	Tandem	8677-023-0NE
	Tandem rear	8677-023-000
	Triple PGP511	8832-023-0NX
	Tandem (sealed section)	3911832766
("S8F4")	Pump with outboard bearing	3911832133
PGP511S	Split gear	8801-023-00N
	Split gear (Large size sh.)	8801-023-Q1N
	Split gear (FPM)	8801-023-00V
	Split gear tandem rear	8850-023-000
PGP517	Single	391 1822 071
	Single FPM	391 1832 772
	Tandem	391 1822 072
	Triple	391 1822 073
	FPM 517/517/511/511	391 1832 772
PGP517 / PGP505	Tandem	391 1822 254
PGP517 / PGP511	Tandem	391 1822 531

SERIES 600	Pump Series	TDN
PGP620	Single	8682-023-00N
	Tandem rear	8833-023-000
	Tandem	4070H-023-000
	Tandem (FPM)	3911822474
	Single (FPM)	8682-023-00V
	Triple Pump	3911832610
PGP620	...T2K5...	3911832635
PGP625	Single (M)	3911842351
PGP620/PGP511	Tandem	8766-023-00N
PGP620/PGP511	Tandem (FPM)	8766-023-00V
PGP625/PGP511	Tandem (M)	3911842352
PGP620/ PGP511/511	Triple (sealed)	3911832720
PGP620/620/ PGP511	Triple (FPM)	3911832716
PGP640	Single	3911832598
PGP640	Single FPM	3911832611
PGP640	Tandem (M)	3911832696
PGP640/PGP511	Tandem (M)	3911832798
PGP640/620/620	Triple Pump	3911832468

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

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

Series PGP 640 Single Unit

PG P	640	A	0550	C	E4	A4	N	T5	T3	B1	B1

PGP	Gear Design / Type	PARKER Gear Pump
640	Series	
A	Unit	Single Unit
0550	Displacement	55.0 cm³/rev.
C	Rotation Direction	Clockwise
E4	Shaft	SAE „C“ Spline, 14T, 16/32 DP
A4	Flange	Mounting Flange SAE 4 bolt „C“
N	Shaft Seal	Shaft Seal NBR
T5	Side Suction Port	SAE Metric Split Flange 1 1/2"
T3	Side Pressure Port	SAE Metric Split Flange 1"
B1	Rear Suction Port	No Port
B1	Rear Suction Port	No Port

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 cm³/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	Ø27 Diamond Flange
L2	Side Pressure Port	Ø19 Diamond Flange
B1	Rear Suction Port	No Port
B1	Rear Pressure 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 cm³/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 Pressure 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	J5	B1	B1

PGP	Gear Design / Type	PARKER Gear Pump
511	Series	
B	Unit	Single Unit
0100	Displacement	10.0 cm³/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
J5	Side Pressure Port	Ø - 15 mm European Flange
S	Section Connection	Separate Inlets
511	Series Second Section	
A	Unit	Single Unit
110	Displacement	11.0 cm³/rev.
X	Shaft Seal	No Seal
J7	Side Suction Port	Ø - 20 mm European Flange
J5	Side Pressure Port	Ø - 15 mm European Flange
B1	Rear Suction Port	No Port
B1	Rear Pressure Port	No Port