



PGP/PGM300 Series

Cast Iron Bushing Design

Catalog HY09-0300/US



PGP/PGM315 Series Coding

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------------------|------|--|--|--|--|--|--|--|--|
| | | | | | | | | | | Tandem: Repeat if Necessary | | | | | | | | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (6) | (7) | (10) | | | | | | | | |
| P | G | | 3 | 1 | 5 | | | | | | | | | | | | | | |

| 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

Tandem: Repeat if Necessary

| | | | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (6) | (7) | (10) |
| P | G | | 3 | 1 | 5 | | | | | | |

Gear Width (7)

| | Gear Width | in. ³ /rev. | cm ³ /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

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----------------------------|--|--|--|--|--|--|--|--|--|--|--|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | Tandem: Repeat if Necessary | | | | | | | | | | | |
| P | G | 3 | 3 | 0 | | | | | | | | | | | | | | | |

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

Tandem: Repeat if Necessary

| | | | | | | | | | | | | | | | | | | | |
|---|---|-----|---|---|-----|-----|-----|-----|-----|-----|-----|------------------|--|--|--|--|--|--|--|
| | | (1) | | | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) (6) (7) (10) | | | | | | | |
| P | G | | 3 | 3 | 0 | | | | | | | | | | | | | | |

| Gear Width (7) | | | | |
|----------------|------------|------------------------|-----------------------|-------------------|
| | Gear Width | in. ³ /rev. | cm ³ /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) | | | | | (Single Outlet - Pump Only) | | | | |
| Outlets: for clockwise porting the top port number comes first; for counter-clockwise porting the bottom port number comes first. | | | | | Outlet for front section. | | | | |
| IN | OUT | CW CCW | | | IN | OUT | CW CCW | | |
| • | • | • | • | • | • | • | • | • | • |
| SAE Split Flange | | | | | SAE Split Flange | | | | |
| 2" | 1-1/4" | 1-1/4" | AM | MA | 2" | 1-1/2" | HB | BH | |
| 2" | 1-1/4" | 1" | AN | NA | 2" | 1-1/4" | HC | CH | |
| 2" | 1" | 1" | AP | PA | 2" | 1" | HF | FH | |
| 1-1/2" | 1-1/4" | 1-1/4" | AT | TA | 1-1/2" | 1-1/2" | HL | LH | |
| 1-1/2" | 1-1/4" | 1" | AU | UA | 1-1/2" | 1-1/4" | HM | MH | |
| 1-1/2" | 1" | 1" | AV | VA | 1-1/2" | 1" | HN | NH | |
| 1-1/4" | 1-1/4" | 1-1/4" | AW | WA | 1-1/4" | 1-1/4" | HO | OH | |
| 1-1/4" | 1-1/4" | 1" | AX | XA | 1-1/4" | 1" | HP | PH | |
| *1-1/4" | 1" | 1" | AY | YA | 1" | 1" | HQ | QH | |
| 1" | 1" | 1" | AZ | ZA | 1-1/4" | 1" | RS | SR | |
| OD Tube Porting | | | | | OD Tube Porting | | | | |
| 1-1/2" | 1" | 1" | GV | VG | 1 1/2" | 1 1/4" | - | KM | MK |
| 1-1/4" | 1" | 1" | GY | YG | 1 1/2" | 1" | - | KN | NK |
| 1" | 1" | 1" | GZ | ZG | 1 1/4" | 1 1/4" | - | KO | OK |
| | | | | | 1 1/4" | 1" | - | KP | PK |
| | | | | | 1" | 1" | - | KQ | QK |
| | | | | | 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 | |

| Connecting Shaft (10) | |
|------------------------------|------------------|
| For connecting tandem units. | |
| 1 | Connecting Shaft |

* Outlet port for rear section.

PGP/PGM350 Series Coding

| | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | Tandem: Repeat if Necessary | | | | | | | | | | | | |
| P | G | 3 | 5 | 0 | | | | | | | | | | | | | | | | |

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

Gear Housing (6)

| | |
|----|-------|
| AB | Pump |
| EB | Motor |

PGP/PGM350 Series Coding

Tandem: Repeat if Necessary

| | | | | | | | | | | | | | |
|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (6) | (7) | (10) |
| P | G | | 3 | 5 | 0 | | | | | | | | |

Gear Width (7)

| | Gear Width | in. ³ /rev. | cm ³ /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

Connecting Shaft (10)

For connecting tandem units.

- 1 Connecting Shaft

* Outlet port for rear section.

PGP/PGM365 Series Coding

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----------------------------|--|--|--|--|--|--|--|--|--|--|--|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | Tandem: Repeat if Necessary | | | | | | | | | | | |
| P | G | 3 | 6 | 5 | | | | | | | | | | | | | | | |

| 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) | | (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 |

| Gear Housing (6) | |
|------------------|-------|
| AB | Pump |
| EB | Motor |

| (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 | | |

PGP/PGM365 Series Coding

Tandem: Repeat if Necessary

| | | | | | | | | | | | | | |
|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (6) | (7) | (10) |
| P | G | | 3 | 6 | 5 | | | | | | | | |

Gear Width (7)

| | Gear Width | in. ³ /rev. | cm ³ /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

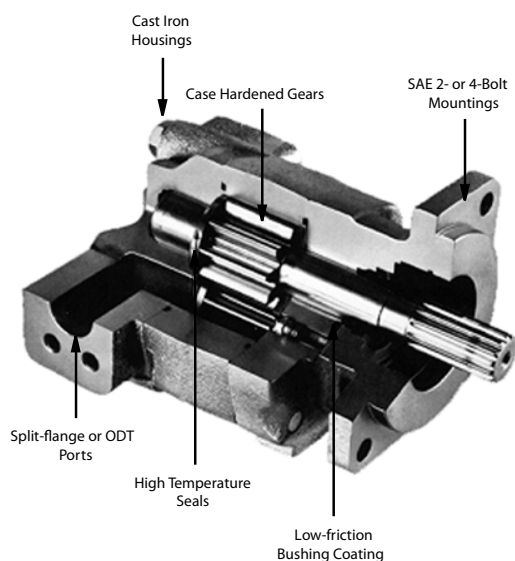
PL Factor

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.

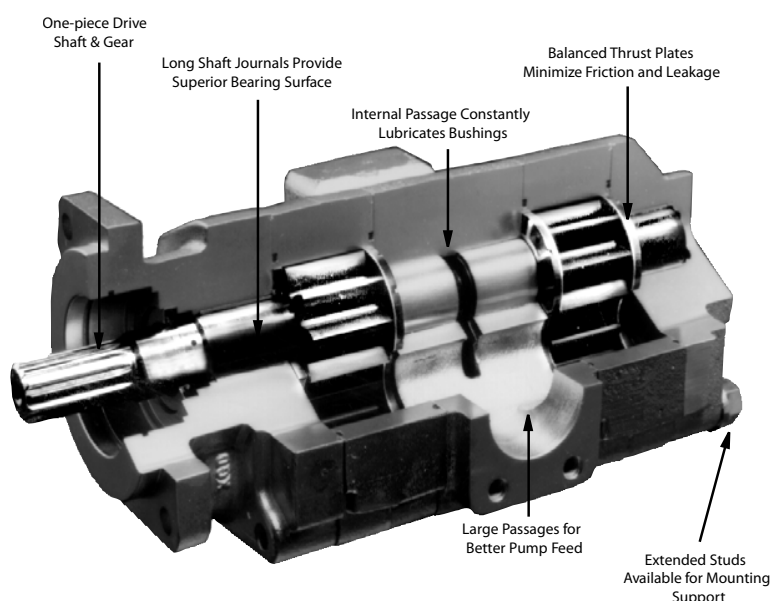
In multiple units the "PL" must be calculated for the first connecting shaft as well as the drive shaft. Each style or type of shaft has a unique "PL" factor as noted in the table to the right.

$$\text{Pressure X Total Gear Width} = \text{PL}$$

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 |





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(07) 3390 7188

sales@hydratorque.com.au

www.hydratorque.com.au

Fluid Power Solutions