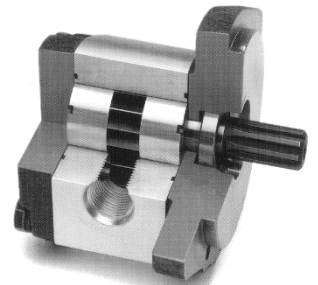




 *Hydraulic*
EXPRESS PROGRAM

ALUMINUM PUMP/MOTOR

WI-MK092



ENGINEERING YOUR SUCCESS.

PGP500 Series Quick Ship

- High Performance
- High Efficiency
- High Pressure Operation

PGP500 Series gear pumps are an advanced performance version of the international “bushing block” style pumps. PGP500 Series pumps offer superior performance, high efficiency and low noise operation at high operating pressures.




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**
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.
- **Easy conversion to multiple pump assemblies**
All pumps include an internal spline for assembly of multiple sections.

Characteristics

| Product Features | Description |
|---------------------|--|
| Pump Type | Heavy-duty, aluminum, external gear |
| Mounting | SAE 2-Bolt “A-A”, “A” and “B” |
| Ports | SAE straight thread on side |
| Shaft Style | SAE splined, keyed |
| Speed | 500 - 4000 rpm |
| 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. |
| Fluids | Mineral oil, fire resistant fluids: <ul style="list-style-type: none">- water-oil emulsions 60/40, HFB- water-glycol, HFC- phosphate-esters, HFD |

| Product Features | Description |
|---|---|
| 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. |
| Fluid Viscosity | Range of operating viscosity 8 to 1000 centistokes 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 |
| Direction of Rotation (looking at the driveshaft) | Clockwise |

 **WARNING:** This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov

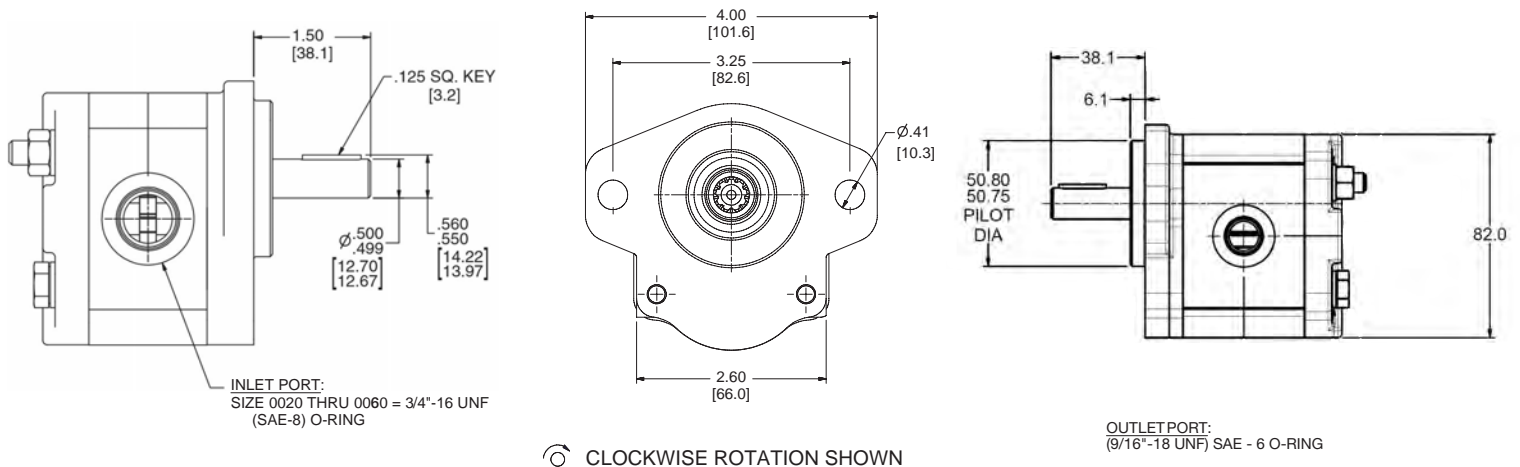


Parker Hannifin Corporation
Parker Canada Division
160 Chisholm Drive, Milton, ON

| PUMP DISPLACEMENT | CODE | 0020 | 0030 | 0040 | 0050 | 0060 |
|--|----------------------|------|------|------|------|------|
| | cm ³ /rev | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 |
| MAX. CONTINUOUS PRESSURE | BAR | 275 | 275 | 275 | 275 | 275 |
| | PSI | 3988 | 3988 | 3988 | 3988 | 3988 |
| MINIMUM SPEED @ Max. outlet pressure | RPM | 500 | 500 | 500 | 500 | 500 |
| MAXIMUM SPEED @ 0 Inlet & Max outlet pressure | RPM | 4000 | 4000 | 4000 | 4000 | 3600 |
| PUMP INPUT POWER @ Max. Pressure and 1500 RPM | KW | 1.5 | 2.3 | 3.0 | 3.8 | 4.5 |
| | HP | 2.0 | 3.1 | 4.0 | 5.1 | 6.0 |

- 2.0cc – 6.0cc DISPLACEMENTS
- 2 BOLT SAE AA MOUNT
- 1/2" KEYED SHAFT
- SAE PORTING
- CW ROTATION

| PART NO. | DESCRIPTION | DISPL (CC) | FLANGE | SHAFT | SIDE PORTS | ROTATION |
|------------|---------------------------|------------|---------|-----------------|--|----------|
| 3319110267 | PGP505A0020CJ1H1ND3D2B1B1 | 2.0 | SAE A-A | 1/2" x 1/8" KEY | SAE -8 (3/4"-16 UNF) x SAE -6 (9/16"-18 UNF) | CW |
| 3319110011 | PGP505A0030CJ1H1ND3D2B1B1 | 3.0 | SAE A-A | 1/2" x 1/8" KEY | SAE -8 (3/4"-16 UNF) x SAE -6 (9/16"-18 UNF) | CW |
| 3319110010 | PGP505A0040CJ1H1ND3D2B1B1 | 4.0 | SAE A-A | 1/2" x 1/8" KEY | SAE -8 (3/4"-16 UNF) x SAE -6 (9/16"-18 UNF) | CW |
| 3319110098 | PGP505A0050CJ1H1ND3D2B1B1 | 5.0 | SAE A-A | 1/2" x 1/8" KEY | SAE -8 (3/4"-16 UNF) x SAE -6 (9/16"-18 UNF) | CW |
| 3319110101 | PGP505A0060CJ1H1ND3D2B1B1 | 6.0 | SAE A-A | 1/2" x 1/8" KEY | SAE -8 (3/4"-16 UNF) x SAE -6 (9/16"-18 UNF) | CW |



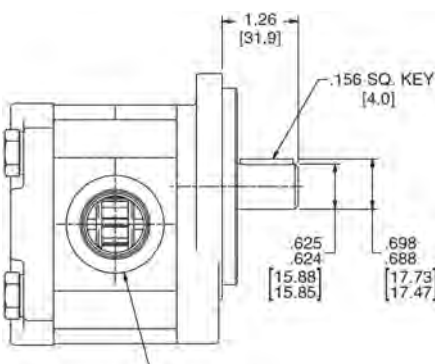
WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov



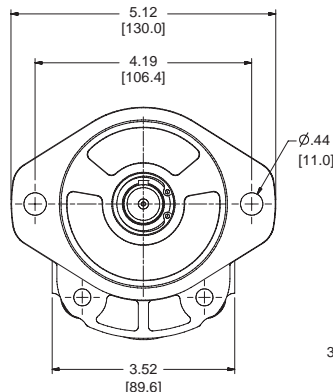
| PUMP DISPLACEMENT | CODE | 0060 | 0080 | 0110 | 0140 | 0160 | 0190 | 0230 | 0270 |
|--|----------------------|------|------|------|------|------|------|--------|------|
| | cm ³ /rev | 6.0 | 8.0 | 11.0 | 14.0 | 16.0 | 19.0 | 23.0 | 27.0 |
| MAX. CONTINUOUS PRESSURE | BAR | 250 | 250 | 250 | 250 | 250 | 250 | 225 | 190 |
| | PSI | 3625 | 3625 | 3625 | 3625 | 3625 | 3625 | 3262.5 | 2755 |
| MINIMUM SPEED @ Max. outlet pressure | RPM | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| MAXIMUM SPEED @ 0 Inlet & Max outlet pressure | RPM | 3500 | 3500 | 3500 | 3500 | 3500 | 3250 | 2750 | 2350 |
| 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 |
| | HP | 6.0 | 8.0 | 10.1 | 11.1 | 14.1 | 16.1 | 19.2 | 19.7 |

| PART NO. | DESCRIPTION | DISPL (CC) | FLANGE | SHAFT | SIDE PORTS | ROTATION |
|------------|---------------------------|------------|----------|-------------------|---|----------|
| 3349116035 | PGP511M0060CK1H2ND5D4B1B1 | 6.0 | SAE A 2B | 5/8" x 0.156" KEY | SAE -12 (1 1/16 - 12 UN) x SAE -10 (7/8"-14 UNF) | CW |
| 3349116036 | PGP511M0080CK1H2ND5D4B1B1 | 8.0 | SAE A 2B | 5/8" x 0.156" KEY | SAE -12 (1 1/16 - 12 UN) x SAE -10 (7/8"-14 UNF) | CW |
| 3349116031 | PGP511M0110CK1H2ND6D5B1B1 | 11.0 | SAE A 2B | 5/8" x 0.156" KEY | SAE -16 (1 5/16 - 12 UN) x SAE -12 (1 1/16 - 12 UN) | CW |
| 3349116032 | PGP511M0140CK1H2ND6D5B1B1 | 14.0 | SAE A 2B | 5/8" x 0.156" KEY | SAE -16 (1 5/16 - 12 UN) x SAE -12 (1 1/16 - 12 UN) | CW |
| 3349116033 | PGP511M0160CK1H2ND6D5B1B1 | 16.0 | SAE A 2B | 5/8" x 0.156" KEY | SAE -16 (1 5/16 - 12 UN) x SAE -12 (1 1/16 - 12 UN) | CW |
| 3349116473 | PGP511M0190CK1H2ND6D5B1B1 | 19.0 | SAE A 2B | 5/8" x 0.156" KEY | SAE -16 (1 5/16 - 12 UN) x SAE -12 (1 1/16 - 12 UN) | CW |
| 3349116038 | PGP511M0230CK1H2ND7D6B1B1 | 23.0 | SAE A 2B | 5/8" x 0.156" KEY | SAE -20 (1 5/8 - 12 UN) x SAE -16 (1 5/16 - 12 UN) | CW |
| 3349116039 | PGP511M0270CK1H2ND7D6B1B1 | 27.0 | SAE A 2B | 5/8" x 0.156" KEY | SAE -20 (1 5/8 - 12 UN) x SAE -16 (1 5/16 - 12 UN) | CW |

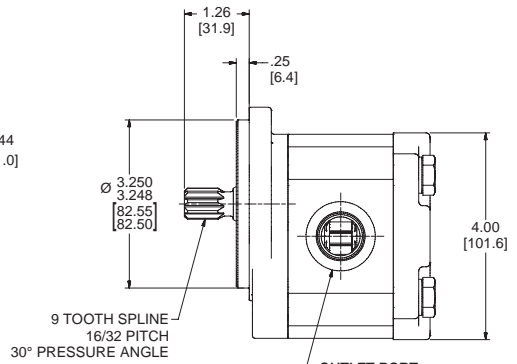
- 6.0cc – 27.0cc DISPLACEMENTS
- 2 BOLT SAE A MOUNT
- 5/8" KEYED SHAFT
- SAE PORTING
- CW ROTATION



INLET PORT:
 SIZE 0060 THRU 0080 = 1 1/16"-12 UN
 (SAE-12) O-RING
 SIZE 0110 THRU 0190 = 1 5/16"-12UN
 (SAE-16) O-RING
 SIZE 0230 THRU 0270 = (1 5/8" -12UN)
 (SAE -20) O-RING



CLOCKWISE ROTATION SHOWN



OUTLET PORT:
 SIZE 0060 THRU 0080 = 7/8"-14UNF
 (SAE-10) O-RING
 SIZE 0110 THRU 0190 = 1 1/16"-12" UNF
 (SAE-12) O-RING
 SIZE 0230 THRU 0270 = 1 5/16"-12" UNF
 (SAE -16) O-RING



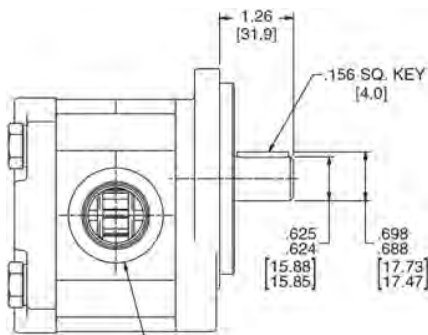
WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov



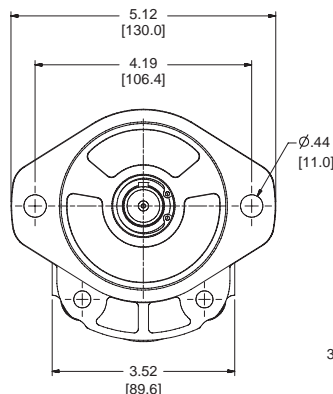
| PUMP DISPLACEMENT | CODE | 0060 | 0080 | 0110 | 0140 | 0160 | 0190 | 0230 | 0270 |
|--|----------------------|------|------|------|------|------|------|--------|------|
| | cm ³ /rev | 6.0 | 8.0 | 11.0 | 14.0 | 16.0 | 19.0 | 23.0 | 27.0 |
| MAX. CONTINUOUS PRESSURE | BAR | 250 | 250 | 250 | 250 | 250 | 250 | 225 | 190 |
| | PSI | 3625 | 3625 | 3625 | 3625 | 3625 | 3625 | 3262.5 | 2755 |
| MINIMUM SPEED @ Max. outlet pressure | RPM | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| MAXIMUM SPEED @ 0 Inlet & Max outlet pressure | RPM | 3500 | 3500 | 3500 | 3500 | 3500 | 3250 | 2750 | 2350 |
| 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 |
| | HP | 6.0 | 8.0 | 10.1 | 11.1 | 14.1 | 16.1 | 19.2 | 19.7 |

| PART NO. | DESCRIPTION | DISPL (CC) | FLANGE | SHAFT | SIDE PORTS | ROTATION |
|------------|---------------------------|------------|----------|--------------|---|----------|
| 3349111579 | PGP511M0060CA1H2MD5D4B1B1 | 6.0 | SAE A 2B | SAE A 9T SPL | SAE -12 (1 1/16 - 12 UN) x SAE -10 (7/8"-14 UNF) | CW |
| 3349111580 | PGP511M0080CA1H2MD5D4B1B1 | 8.0 | SAE A 2B | SAE A 9T SPL | SAE -12 (1 1/16 - 12 UN) x SAE -10 (7/8"-14 UNF) | CW |
| 3349111582 | PGP511M0110CA1H2MD6D5B1B1 | 11.0 | SAE A 2B | SAE A 9T SPL | SAE -16 (1 5/16 - 12 UN) x SAE -12 (1 1/16 - 12 UN) | CW |
| 3349111583 | PGP511M0140CA1H2MD6D5B1B1 | 14.0 | SAE A 2B | SAE A 9T SPL | SAE -16 (1 5/16 - 12 UN) x SAE -12 (1 1/16 - 12 UN) | CW |
| 3349111584 | PGP511M0160CA1H2MD6D5B1B1 | 16.0 | SAE A 2B | SAE A 9T SPL | SAE -16 (1 5/16 - 12 UN) x SAE -12 (1 1/16 - 12 UN) | CW |
| 3349111585 | PGP511M0190CA1H2MD7D6B1B1 | 19.0 | SAE A 2B | SAE A 9T SPL | SAE -20 (1 5/8 - 12 UN) x SAE -16 (1 5/16 - 12 UN) | CW |
| 3349111586 | PGP511M0230CA1H2MD7D6B1B1 | 23.0 | SAE A 2B | SAE A 9T SPL | SAE -20 (1 5/8 - 12 UN) x SAE -16 (1 5/16 - 12 UN) | CW |
| 3349111587 | PGP511M0270CA1H2MD7D6B1B1 | 27.0 | SAE A 2B | SAE A 9T SPL | SAE -20 (1 5/8 - 12 UN) x SAE -16 (1 5/16 - 12 UN) | CW |

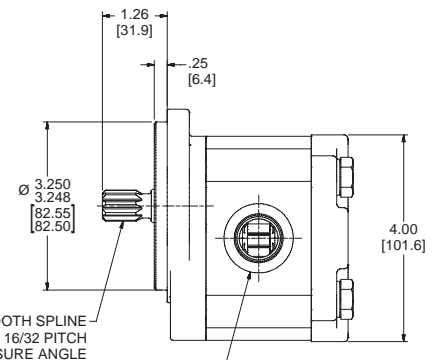
- 6.0cc – 27.0cc DISPLACEMENTS
- 2 BOLT SAE A MOUNT
- SAE A 9T SPLINE
- SAE PORTING
- CW ROTATION



INLET PORT:
 SIZE 0060 THRU 0080 = 1 1/16"-12 UN
 (SAE-12) O-RING
 SIZE 0110 THRU 0190 = 1 5/16"-12UN
 (SAE-16) O-RING
 SIZE 0230 THRU 0270 = (1 5/8" -12UN)
 (SAE -20) O-RING



CLOCKWISE ROTATION SHOWN



OUTLET PORT:
 SIZE 0060 THRU 0080 = 7/8"-14UNF
 (SAE-10) O-RING
 SIZE 0110 THRU 0190 = 1 1/16"-12" UNF
 (SAE-12) O-RING
 SIZE 0230 THRU 0270 = 1 5/16"-12" UNF
 (SAE -16) O-RING



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| MOTOR DISPLACEMENT | MGG2 | 0010 | 0016 | 0020 | 0025 | 0030 |
|--|----------------------|------|------|------|------|-------|
| | cm ³ /rev | 3.57 | 6.10 | 7.37 | 9.51 | 11.47 |
| MAX. CONTINUOUS PRESSURE | BAR | 138 | 138 | 138 | 138 | 104 |
| | PSI | 2000 | 2000 | 2000 | 2000 | 1500 |
| MAX. FLOW Theoretical @ max. 5000 rpm | GPM | 4.7 | 8.1 | 9.8 | 12.6 | 15.2 |
| MAXIMUM SPEED | RPM | 5000 | 5000 | 5000 | 5000 | 5000 |
| OUTPUT TORQUE Per 1000 PSI | IN-LBS | 35.0 | 59.0 | 72.0 | 92.0 | 111.0 |

| PART NO. | DESCRIPTION | DISPL (CC) | FLANGE | SHAFT | REAR PORTS | ROTATION |
|----------|----------------|------------|-----------|-------------|-------------------------------|----------|
| 900241 | MGG20010 BA1A3 | 3.57 | SAE AA 2B | 9/16" KEYED | SAE -8 (3/4"-16 UNF) | BI |
| 0900242 | MGG20016 BA1A3 | 6.10 | SAE AA 2B | 9/16" KEYED | SAE -8 (3/4"-16 UNF) | BI |
| 0900243 | MGG20020 BA1A3 | 7.37 | SAE AA 2B | 9/16" KEYED | SAE -8 (3/4"-16 UNF) | BI |
| 0900244 | MGG20025 BA1A3 | 9.51 | SAE AA 2B | 9/16" KEYED | SAE -10 (7/8"-14 UNF) | BI |
| 0900245 | MGG20030 BA1A3 | 11.74 | SAE AA 2B | 9/16" KEYED | SAE -10 (7/8"-14 UNF) | BI |
| 0900231 | MGG20010 BB1A3 | 3.57 | 4 BOLT | 9/16" KEYED | SAE -8 (3/4"-16 UNF) | BI |
| 0900232 | MGG20016 BB1A3 | 6.10 | 4 BOLT | 9/16" KEYED | SAE -8 (3/4"-16 UNF) | BI |
| 0900233 | MGG20020 BB1A3 | 7.37 | 4 BOLT | 9/16" KEYED | SAE -8 (3/4"-16 UNF) | BI |
| 0900234 | MGG20025 BB1A3 | 9.51 | 4 BOLT | 9/16" KEYED | SAE -10 (7/8"-14 UNF) | BI |
| 0900235 | MGG20030 BB1A3 | 11.74 | 4 BOLT | 9/16" KEYED | SAE -10 (7/8"-14 UNF) | BI |
| 900371 | MGG20010 BC1A3 | 3.57 | SAE A 2B | 9/16" KEYED | SAE -8 (3/4"-16 UNF) | BI |
| 900384 | MGG20025 BB1D3 | 9.51 | 4 BOLT | 9/16" KEYED | SIDE W/ SLOTTED BY-PASS VALVE | BI |

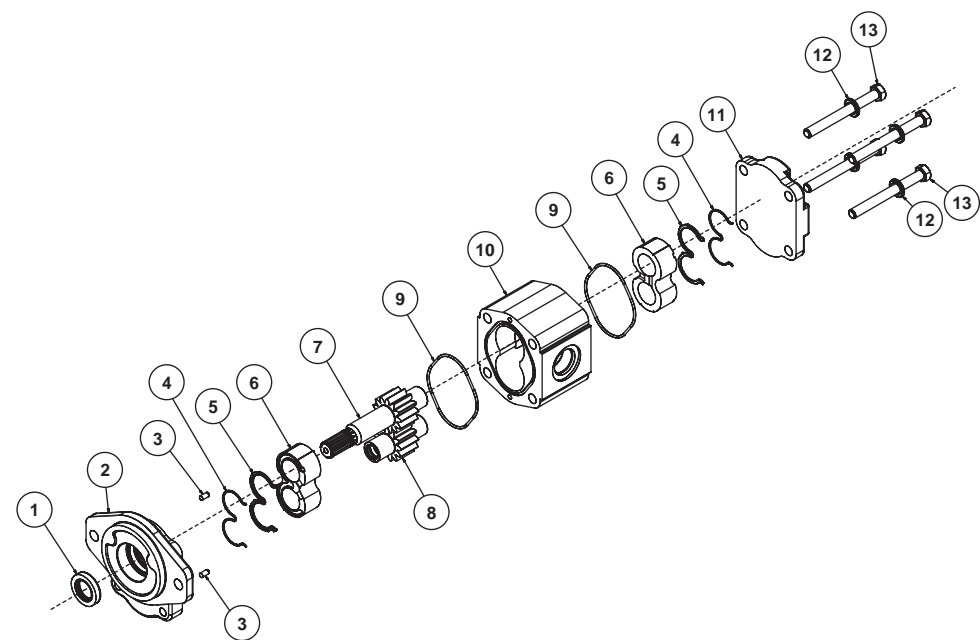
| PART NO. | DESCRIPTION | DISPL (CC) | FLANGE | SHAFT | SIDE PORTS | ROTATION |
|----------|----------------|------------|-----------|-------------|----------------------|----------|
| 900291 | MGG20010 BA1B3 | 3.57 | SAE AA 2B | 9/16" KEYED | SAE -8 (3/4"-16 UNF) | BI |
| 900293 | MGG20020 BA1B3 | 7.37 | SAE AA 2B | 9/16" KEYED | SAE -8 (3/4"-16 UNF) | BI |

- 3.57cc – 11.74cc DISPLACEMENTS
- 2 BOLT SAE A MOUNT, 4 BOLT MOUNT
- 9/16" KEYED SHAFT
- SAE REAR PORTING STANDARD
- BI DIRECTIONAL

 **WARNING:** This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov




Instructions: Change of Rotation



| Item | Description |
|------|---------------------|
| 13 | Cap screw |
| 12 | Washer |
| 11 | Rear Cover Housing |
| 10 | Gear Housing |
| 9 | O-Ring Seal |
| 8 | Driven Gear |
| 7 | Drive Gear |
| 6 | Thrust Block |
| 5 | Channel Seal |
| 4 | Back-up Seal |
| 3 | Dowel Pin |
| 2 | Front Cover Housing |
| 1 | Shaft Seal |

Disassembly Instructions:

1. Where applicable, remove the drive coupling from the drive shaft using a suitable puller. The coupling must not be levered or hammered as this may cause internal pump damage.
2. If the pump has a keyed shaft, remove the key from the shaft. Lightly stone any burrs that may be on the shaft to prevent any damage to the seal during disassembly.
3. Clamp the pump in a vise using the front cover housing (2), with the drive shaft pointing down. Do not clamp on the machined pilot ring.
4. Scribe a line across the front cover housing (2), gear housing, (10) and rear cover housing (11). This will ensure proper alignment during reassembly.
5. Remove all the cap screws (13) and washers (12) from the assembly.
6. Remove the rear cover housing (11).
7. Lift the gear housing (10) off of the front cover housing (2), tapping the housing with a soft mallet, if necessary.
8. Remove the thrust block (6) noting the orientation of the channel seal (5).
9. Carefully remove the gears by pushing up on the drive gear (7). Remove the thrust block (6) noting its orientation.

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Instructions: Change of Rotation (Continued)

Reassembly Instructions:

1. Rotate thrust block (6) 180° from original position and place on front cover housing (2). Make sure the back-up seals (4) and channel seals (5) are seated properly.
2. Seat seal O-rings (9) in the machined groove and rotate gear housing (10) 180° around the shaft axis and place onto shaft and cover (2). Readjust location dowel pins (3) if pulled out at disassembly.
Note from Disassembly Step 4 that the line on the gear housing (10) and front cover housing (2) should now be on opposite sides.
3. Slide the drive gear (7) through gear housing, bushing, and shaft seal. Be careful not to damage the shaft seal. Slide the driven gear (8) through the gear housing and into the bushing.
4. Rotate thrust block (6) 180° from original position and place on gears. Make sure the back-up seals (4) and channel seals (5) are seated properly.
5. From the original position, rotate the rear cover housing (11) 180° around the shaft axis and position it over the gear housing.
6. Replace the washers and bolts into the unit. Torque bolts in a diagonal pattern. Dry assembly torques are provided below. Do not over torque.
7. Rotate drive shaft with a small wrench to check for any binding.

| SERIES | PGP/PGM505 | PGP/PGM511 | PGP/PGM517 |
|-----------------|------------------------|------------------------|-------------------------|
| Assembly Torque | 300 in-lbs (25 ft-lbs) | 420 in-lbs (35 ft-lbs) | 1000 in-lbs (83 ft-lbs) |

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Parker Policy MI-WK092

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Supersedes: N/A

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