

DATA SHEET

5CP PLUNGER PUMPS



The Pumps with Nine Lives

Brass Models: 5CP6180CSS, 5CP6190

Gearbox Model: 5CP6180CSSG1, 5CP6190G1



Model 5CP6190 Shown
(Rails and shaft protector sold separately)

FEATURES

- Industrial triplex design offers reliability and versatility.
- Compact direct-drive mount to motor using bell housing and flexible coupling (NEMA or IEC available).
- Gearbox model available with 1" and 1-1/8" hollow shaft to fit a wide variety of engines.
- Optional belt-drive for precision flow setting.
- Press-in seal cases and interchangeable valve assemblies for easy servicing.
- Standard NBR seals with alternative options for temperature and chemical compatibility.

COMMON SPECIFICATIONS

| | U.S. | Metric |
|--|----------------------|----------------------|
| Inlet Pressure Range | Flooded to 60 psi | Flooded to 4.1 bar |
| Max. Liquid Temp. (NBR) | 160° F | 71° C |
| Alternative seals available for high temp up to 180° F | | |
| Bore | 0.866" | 22 mm |
| Crankcase Capacity | 17 oz. | 0.50 l |
| Inlet Ports (2) | 1/2" NPT(F) | 1/2" NPT(F) |
| Discharge Ports (2) | 3/8" NPT(F) | 3/8" NPT(F) |
| Shaft Diameter | 0.787" | 20 mm |
| Weight (5CP6180CSS,6190) | 20.5 lbs. | 9.3 kg |
| Weight (5CP6180CSSG1,6190G1) | 26.5 lbs. | 12 kg |
| Dimensions (5CP6180CSS) | 10.79 x 8.92 x 5.79" | 274 x 226.5 x 147 mm |
| Dimensions (5CP6190) | 10.79 x 10.0 x 5.79" | 274 x 254 x 147 mm |
| Dimensions (w/ Gearbox) | 11.0 x 12.4 x 6.40" | 279 x 315 x 162 mm |

SPECIFICATIONS

| | U.S. Measure | Metric Measure |
|-------------------|----------------|----------------|
| 5CP6180CSS | | |
| Flow | 8.2 gpm | 31 lpm |
| Pressure Range | 100 - 1500 psi | 6.9 - 103 bar |
| Pump RPM* | 1750 rpm | 1750 rpm |
| Stroke | 0.650" | 16.5 mm |
| 5CP6190 | | |
| Flow | 10.0 gpm | 38 lpm |
| Pressure Range | 100 - 1200 psi | 6.9 - 83 bar |
| Pump RPM* | 1750 rpm | 1750 rpm |
| Stroke | 0.787" | 20 mm |

ALTERNATE SPECIFICATIONS

| | | |
|---------------------|----------------|---------------|
| 5CP6190 | | |
| Flow | 8.0 gpm | 30.3 lpm |
| Pressure Range | 100 - 1450 psi | 6.9 - 100 bar |
| Pump RPM* | 1450 rpm | 1450 rpm |
| 5CP6180CSSG1 | | |
| Flow | 8.0 gpm | 30.3 lpm |
| Pressure Range | 100 - 1500 psi | 6.9 - 103 bar |
| Engine RPM | 3450 rpm | 3450 rpm |

| | | |
|------------------|----------------|--------------|
| 5CP6190G1 | | |
| Flow | 9.7 gpm | 36.7 lpm |
| Pressure Range | 100 - 1200 psi | 6.9 - 83 bar |
| Engine RPM | 3450 rpm | 3450 rpm |

*Pump minimum is 100 RPM.

ALTERNATIVE SEAL CONFIGURATION

| MATERIAL | SUFFIX CODE | MAXIMUM TEMPERATURE |
|----------|-------------|---------------------|
| NBR | — | 160° F (71° C) |
| FPM | .0110 | 180° F (82° C) |
| EPDM | .0220 | 160° F (71° C) |
| HT | .3000 | 180° F (82° C) |

See Reference Document 99TCH002 for inlet conditions and RPM at high temperature.

DETERMINING THE PUMP R.P.M.

$$\frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{"Desired" gpm}}{\text{"Desired" rpm}}$$

DETERMINING THE REQUIRED H.P.

$$\frac{\text{Hp (Electric Brake)}}{1460} = \frac{\text{gpm x psi}}{1460}$$

DETERMINING MOTOR PULLEY SIZE

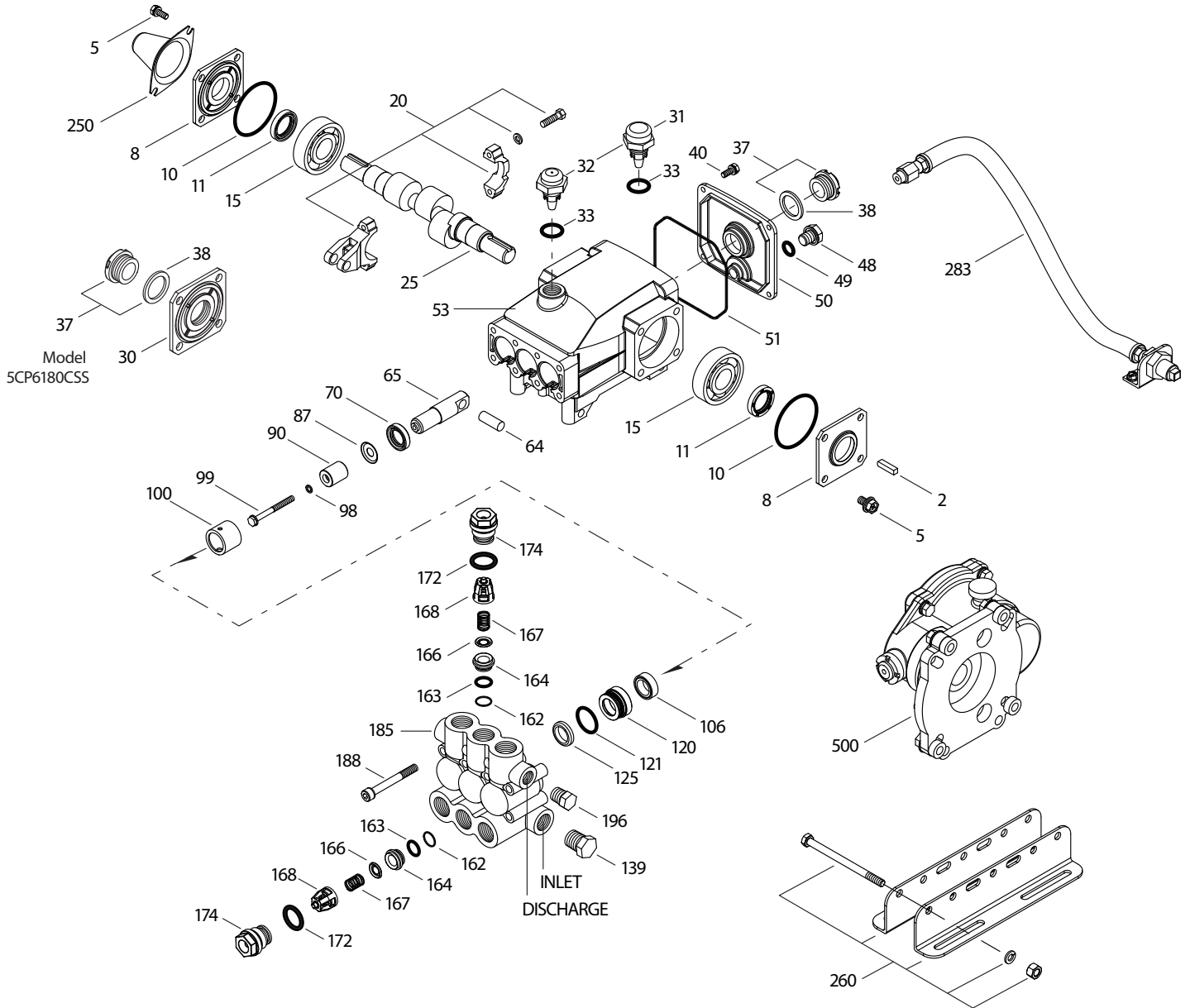
$$\frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$$

Refer to pump **Service Manual** for repair procedure and additional technical information.

PARTS LIST

| ITEM | PART NUMBERS | MATL | DESCRIPTION | QTY |
|------|--------------|--------|--|-------|
| 2 | 30057 | STL | Key (M6x6x25) | 1 |
| 5 | 126542 | STCP R | Screw, HHC, Sems (M8x16) | 8 |
| 8 | 46910 | AL | Cover, Bearing | 2 - 1 |
| 10 | 14028 | NBR | O-Ring, Bearing Cover - 70D | 2 |
| 11 | 43222 | NBR | Seal, Oil, Crankshaft - 70D | 2 - 1 |
| 15 | 14480 | STL | Bearing, Ball | 2 |
| 20 | 48742 | TNM | Rod, Connecting Assy [10/01] | 3 |
| 25 | 48646 | FCM | Crankshaft, Dual End M20 - 5CP6190, 5CP6190G1 | 1 |
| | 48368 | FCM | Crankshaft, Single End M16.5 - 5CP6180CSS, 5CP6180CSSG1 | 1 |
| 30 | 49776 | AL | Cover, Cover Bearing - 5CP6180CSS | 1 |
| 31 | 127409 | — | Cap, Vented w/O-Ring (Rain Cap) | 1 |
| 32 | 46798 | — | Cap, Oil Filler, Domed | 1 |
| 33 | 14179 | NBR | O-Ring, Oil Filler Cap - 70D | 1 |
| 37 | 92241 | PC | Gauge, Oil, Bubble w/Gasket - 80D | 1-2 |
| 38 | 44428 | NBR | Gasket, Flat, Oil Gauge - 80D | 1-2 |
| 40 | 125824 | STCP R | Screw, HHC, Sems (M6x16) | 4 |
| 48 | 25625 | STCP | Plug, Drain (1/4"x19BSP) | 1 |
| 49 | 23170 | NBR | O-Ring, Drain Plug - 70D | 1 |
| 50 | 46940 | AL | Cover, Rear | 1 |
| 51 | 14044 | NBR | O-Ring, Rear Cover | 1 |
| 53 | 48617 | AL | Crankcase | 1 |
| 64 | 46746 | CM | Pin, Crosshead | 3 |
| 65 | 48647 | BBNP | Rod, Plunger | 3 |
| 70 | 46838 | NBR | Seal, Oil, Crankcase - 70D | 3 |
| 87 | 48648 | S | Washer, Flat (M10x24) | 3 |
| 90 | 121391 | CC | Plunger (M22x50) | 3 |
| 98 | 46730 | NBR | Washer, Seal - 90D | 3 |
| | 48394 | FPM | Washer, Seal - 90D | 3 |
| | ◆ 48432 | EPDM | Washer, Seal | 3 |
| 99 | † 48201 | SS | Retainer, Plunger w/Stud (M6) | 3 |
| 100 | 46749 | PVDF | Retainer, Seal | 3 |
| 106 | 49644 | NBR | Seal, LPS w/SS-Spg | 3 |
| | 49704 | FPM | Seal, LPS w/SS-Spg | 3 |
| | ◆ 48650 | EPDM | Seal, LPS w/SS-Spg | 3 |
| | 76704 | ST | Seal, LPS w/S-Spg | 3 |
| 120 | 121394 | BB | Case, Seal | 3 |
| 121 | 13980 | NBR | O-Ring, Seal Case-70D | 3 |
| | 14330 | FPM | O-Ring, Seal Case-70D | 3 |
| | ◆ 49731 | EPDM | O-Ring, Seal Case | 3 |
| 125 | 121395 | SNG | Seal, HPS w/S | 3 |
| | 122188 | STG | Seal, HPS w/S | 3 |
| 139 | 22179 | BBCP | Plug, Inlet [1/2" NPT(M)] | 1 |
| 162 | 43248 | PTFE | Back-up-Ring, Seat | 6 |
| 163 | 43249 | NBR | O-Ring, Seat - 80D | 6 |
| | 44383 | FPM | O-Ring, Seat -70D | 6 |
| | ◆ 46206 | EPDM | O-Ring, Seat - 70D | 6 |
| 164 | 44718 | S | Seat | 6 |
| 166 | 43721 | S | Valve | 6 |
| 167 | 43751 | S | Spring | 6 |
| 168 | 44564 | PVDF | Retainer, Spring | 6 |
| 172 | 17617 | NBR | O-Ring, Valve Plug -90D | 6 |
| | 11691 | FPM | O-Ring, Valve Plug - 90D | 6 |
| | ◆ 46207 | EPDM | O-Ring, Valve Plug -70D | 6 |
| 174 | 125214 | BBCP | Plug, Valve | 6 |
| 185 | 49760 | BBCP | Manifold, Head | 1 |
| 188 | 126513 | STCP R | Screw, HSH (M8x70) | 8 |
| 196 | 22187 | BBCP | Plug, Discharge [3/8" NPT(M)] | 1 |
| 250 | 118672 | STCP | Protector, Shaft | 1 |
| 255 | 30243 | STZP | Mount, Direct | 1 |
| 260 | 30611 | STZP R | Mount, Rail, Assy | 1 |
| | 30637 | STZP | Mount, Angle Assy-Retro Fit (See Tech Bulletin 078) | 1 |
| 265 | — | — | Kit, Complete Mounting (Incls: 30611, 30633, 118672) (Belt Drive Only) | 1 |
| 275 | 30944 | STL | Assembly, Hub & Key (Incls. 30945, 30057) | 1 |
| 283 | 34334 | — | Kit, Oil Drain (3/8" x 24") (See Individual Data Sheet) | 1 |
| 299 | 818460 | BBCP | Head, Complete w/NBR Seals and O-Rings | 1 |

EXPLODED VIEW



MODELS
5CP6180CSS, 5CP6190
5CP6180CSSG1, 5CP6190G1
December 2019

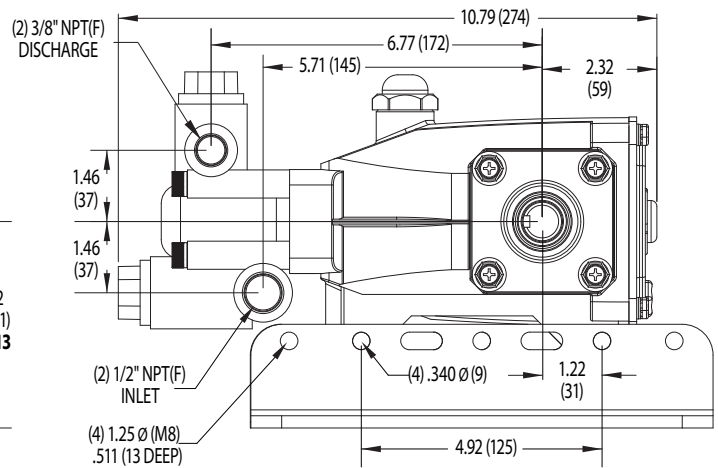
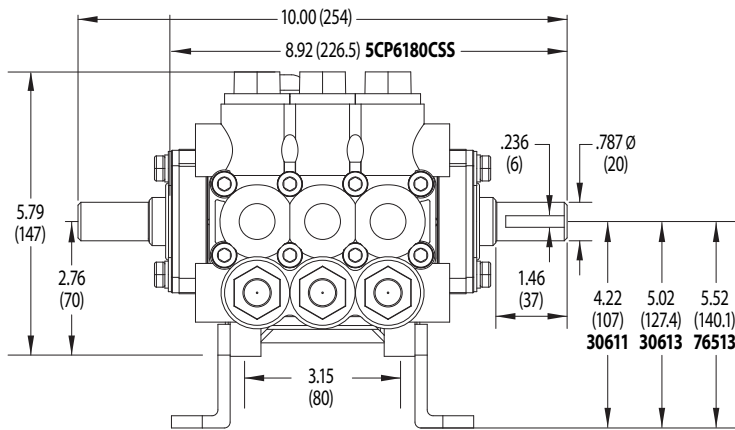
| ITEM | PART NUMBERS | MATL | DESCRIPTION | QTY |
|------|--------------|------|--|-----|
| 300 | 76620 | NBR | Kit, Seal (Incls: 98,106,121,125) Standard | 1 |
| | 76610 | FPM | Kit, Seal (Incls: 98,106,121,125) .0110 | 1 |
| | ◆ 76650 | EPDM | Kit, Seal (Incls: 98,106,121,125) .0220 | 1 |
| | 76616 | HT | Kit, Seal (Incls: 98, 106, 121, 125) .3000 | 1 |
| 310 | 34920 | NBR | Kit, Valve Preassembled (Incls: 162,163,164,166-168,172) Standard, .3000 | 2 |
| | 31256 | FPM | Kit, Valve Preassembled (Incls: 162,163,164,166-168,172) .0110 | 2 |
| | ◆ 31253 | EPDM | Kit, Valve Preassembled (Incls: 162,163,164,166-168,172) .0220 | 2 |
| 350 | 30696 | STZP | Pliers, Reverse | 1 |
| 500 | 8076 | — | Gearbox (See Individual Data Sheet) | 1 |
| — | 6107 | — | Oil, Bottle (21 oz.) ISO 68 Hydraulic (Fill to specified crankcase capacity prior to start-up) | 1 |

Bold print part numbers are unique to a particular pump model. *Italics are optional items.* [] Date of latest production change.

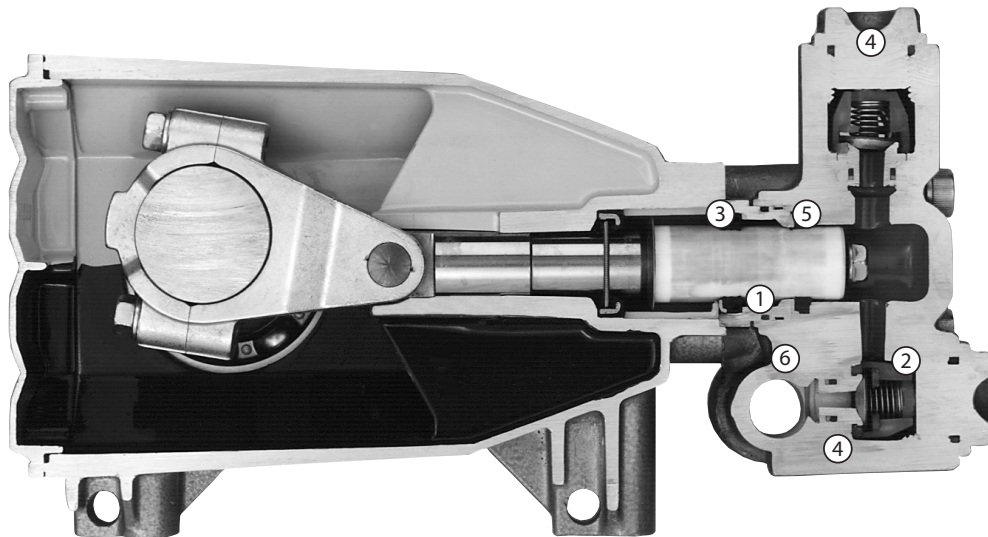
◆ Silicone oil/grease required. † Production parts are different than repair parts. R Components comply with RoHS Directive.

For additional technical information see www.catpumps.com/literature/tech-bulletins.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated BBNP=Brass/Nickel Plated CC=Ceramic CM=Chrome-moly
EPDM=Ethylene Propylene Diene Monomer FCM=Forged Chrome-moly FPM=Fluorocarbon HT=High Temp NBR=Medium Nitrile (Buna-N) PC=Poly Carbonate
PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SNG=Special Blend (Buna) ST=Special PTFE STG= Special Blend PTFE White STL=Steel
STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength



Model 5CP6190



1. Special concentric, high density, polished, solid ceramic plungers provide a true wear surface and extended seal life.
2. Manifold is a high tensile strength chrome plated forged brass for long term, continuous duty.
3. 100% wet seal design adds to service life by allowing pumped liquids to cool and lubricate on both sides of the seals.

4. Stainless steel valves, seats and springs provide corrosion-resistance, ultimate seating and extended life.
5. Specially formulated, Cat Pump exclusive, Lo-Pressure and Hi-Pressure Seals offer unmatched performance and seal life.
6. Press-in style seal case offers alignment and support for seals and "no tools" servicing.

⚠ CAUTIONS AND WARNINGS

All High-Pressure Systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. pop-off valve, relief valve). Failure to install such relief devices could result in personal injury or damage to pump or property. Cat Pumps does not assume any liability or responsibility for the operation of a customer's high-pressure system.

Read all CAUTIONS and WARNINGS before commencing service or operation of any high-pressure system. The CAUTIONS and WARNINGS are included in each Service Manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at www.catpumps.com/cautions-warnings or can be requested directly from Cat Pumps.

WARRANTY

View the Limited Warranty on-line at www.catpumps.com/warranty.