

DATA SHEET

5CP PLUNGER PUMPS



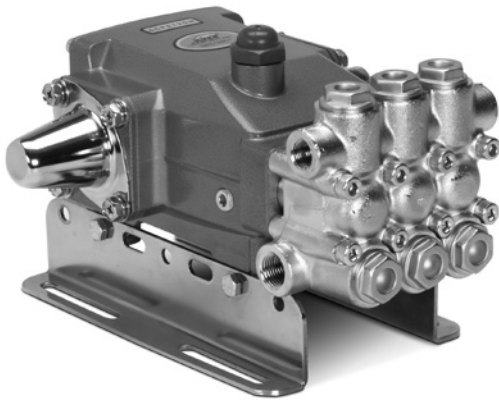
The Pumps with Nine Lives

Brass Models:

5CP2120W, 5CP2140WCS, 5CP2150W

Special Brass Models:

5CP2120B, 5CP2140BCS, 5CP2150B



Model 5CP2120W Shown
(Rails and shaft protector sold separately)

FEATURES

- Triplex design offers high efficiency and low pulsation.
- Durable high pressure seals are lubricated and cooled by pumped liquid.
- Pre-set Lo-Pressure Seals provide secondary protection against external leaks and require no packing adjustment.
- Standard NBR seals with alternative options for temperature and chemical compatibility.
 - FPM – .0110
 - EPDM – .0220
 - High Temp, 190°F – .3000
 - High Temp, 200°F, – .3400 (Intermittent Run Dry)

COMMON SPECIFICATIONS

| | U.S. | Metric |
|---|-----------------------|------------------|
| Inlet Pressure Range (950 rpm) | -5 to 60 psi | -0.35 to 4.1 bar |
| Inlet Pressure Range (1725 rpm) | Flooded to 60 psi | Flooded to 4 bar |
| Crankcase Capacity | 17 oz. | 0.51 l |
| Standard Liquid Temperature | 160° F | 71° C |
| Above 130° F call Cat Pumps for inlet conditions and elastomer recommendations. | | |
| 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 | 19.14 lbs. | 8.7 kg |
| Dimensions | 10.35 x 10.00 x 5.78" | 263 x 254 x 147 |

SPECIFICATIONS

U.S. Measure

Metric Measure

Models 5CP2120W and 5CP2120B

| | U.S. Measure | Metric Measure |
|----------------|----------------|----------------|
| Flow | 4.0 gpm | 15 lpm |
| Pressure Range | 100 - 2500 psi | 6.9 - 172 bar |
| Pump RPM* | 950 rpm | 950 rpm |
| Bore | 0.787" | 20 mm |
| Stroke | 0.709" | 18 mm |

Models 5CP2140WCS and 5CP2140BCS

| | U.S. Measure | Metric Measure |
|----------------|----------------|----------------|
| Flow | 4.0 gpm | 15 lpm |
| Pressure Range | 100 - 2500 psi | 6.9 - 172 bar |
| Pump RPM* | 1725 rpm | 1725 rpm |
| Bore | 0.787" | 20 mm |
| Stroke | 0.394" | 10 mm |

Models 5CP2150W and 5CP2150B

| | U.S. Measure | Metric Measure |
|----------------|----------------|----------------|
| Flow | 5.0 gpm | 19 lpm |
| Pressure Range | 100 - 2000 psi | 6.9 - 138 bar |
| Pump RPM* | 1725 rpm | 1725 rpm |
| Bore | 0.787" | 20 mm |
| Stroke | 0.472" | 12 mm |

*Pump minimum is 100 RPM.

ELECTRIC HORSEPOWER REQUIREMENTS

| MODELS | FLOW | | PRESSURE | | | | RPM |
|------------|------|-----|----------|----------|----------|----------|------|
| | | | psi 1200 | psi 1500 | psi 2000 | psi 2500 | |
| | gpm | lpm | bar 83 | bar 103 | bar 138 | bar 172 | |
| 5CP2120W | 4.0 | 15 | 3.3 | 4.1 | 5.5 | 6.9 | 950 |
| Alternate | 5.0 | 19 | 4.1 | 5.1 | 6.9 | N/A | 1188 |
| 5CP2140WCS | 4.0 | 15 | 3.3 | 4.1 | 5.5 | 6.9 | 1725 |
| 5CP2150W | 5.0 | 19 | 4.1 | 5.1 | 6.9 | N/A | 1725 |

DETERMINING THE PUMP R.P.M.

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

$$\text{"Desired" rpm}$$

DETERMINING THE REQUIRED H.P.

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

DETERMINING MOTOR PULLEY SIZE

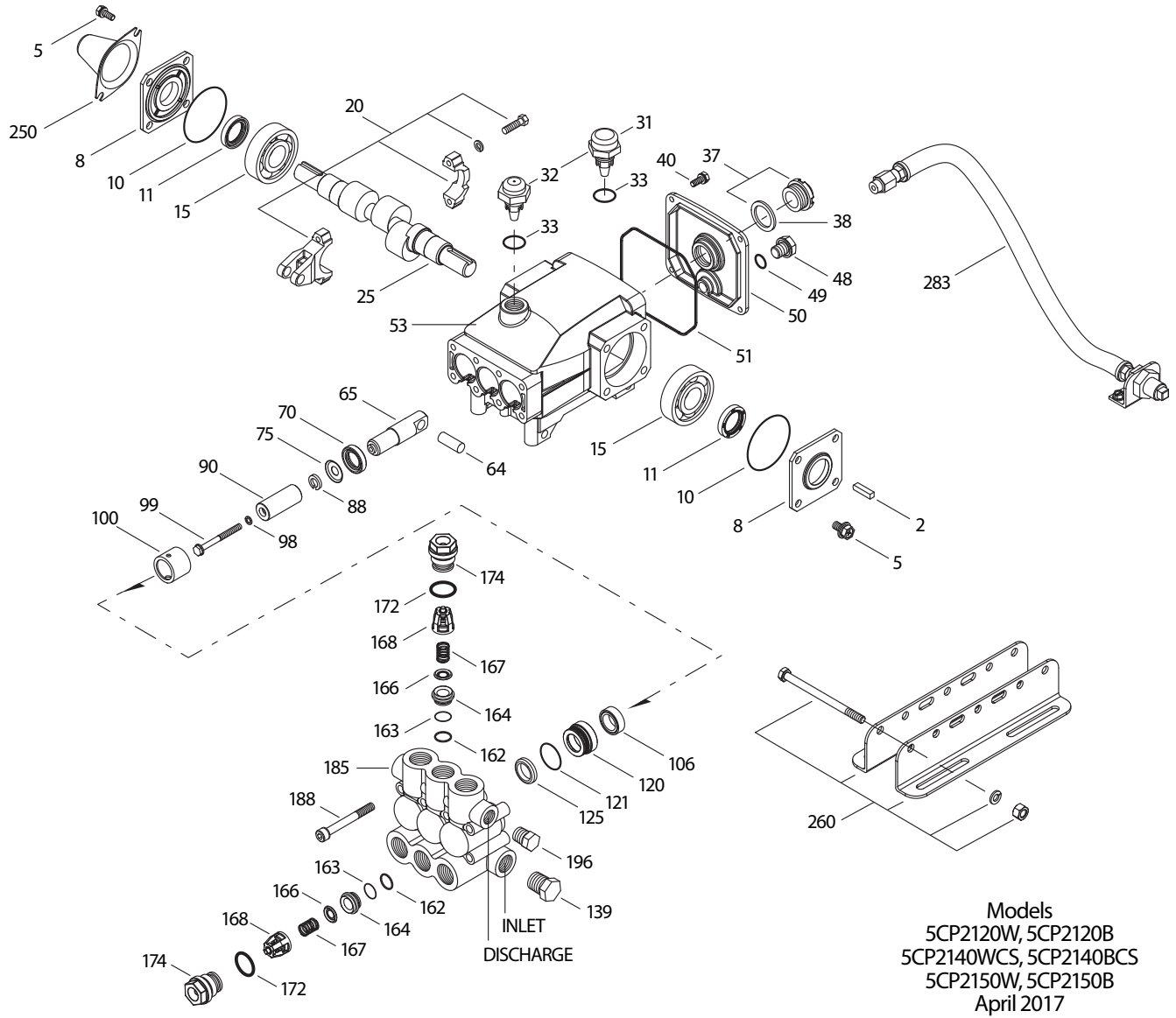
$$\frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$$

See complete Drive Packages [Includes: pulleys, belts, hubs, key] Tech Bulletin 003. Refer to pump **Service Manual** for repair procedure and additional technical information.

PARTS LIST

| ITEM | PART NUMBER | MATL | PART NUMBER | MATL | PART NUMBER | MATL | DESCRIPTION | QTY |
|------|-----------------|--------|-------------------|--------|-----------------|--------|---|-------|
| | 5CP2120W | | 5CP2140WCS | | 5CP2150W | | | |
| | 5CP2120B | | 5CP2140BCS | | 5CP2150B | | | |
| 2 | 30057 | STL | 30057 | STL | 30057 | STL | Key (M6x6x25) | 1 |
| 5 | 126542 | STCP R | 126542 | STCP R | 126542 | STCP R | Screw, Sems HHC (M8x16) | 8 |
| 8 | 46910 | AL | 46910 | AL | 46910 | AL | Cover, Bearing | 2/1/2 |
| 10 | 14028 | NBR | 14028 | NBR | 14028 | NBR | O-Ring, Bearing Cover - 70D | 2 |
| 11 | 43222 | NBR | 43222 | NBR | 43222 | NBR | Seal, Oil, Crankshaft - 70D | 2/1/2 |
| 15 | 14480 | STL | 14480 | STL | 14480 | STL | Bearing, Ball | 2 |
| 20 | 48742 | TNM | 48742 | TNM | 48742 | TNM | Rod, Connecting Assy [10/01] | 3 |
| 25 | 46928 | FCM | — | — | 46982 | FCM | Crankshaft, Dual End | 1 |
| | — | — | 48203 | FCM | — | — | Crankshaft, Single End | 1 |
| 30 | — | — | 48224 | AL | — | — | Cover, Bearing Blind | 1 |
| 32 | 46798 | — | 46798 | — | 46798 | — | Cap, Oil Filler, Domed | 1 |
| 33 | 14179 | NBR | 14179 | NBR | 14179 | NBR | O-Ring, Oil Filler Cap - 70D | 1 |
| 37 | 92241 | — | 92241 | — | 92241 | — | Gauge, Oil, Bubble w/Gasket - 80D | 1 |
| 38 | 44428 | NBR | 44428 | NBR | 44428 | NBR | Gasket, Flat, Oil Gauge - 80D | 1 |
| 40 | 125824 | STCP R | 125824 | STCP R | 125824 | STCP R | Screw, Sems HHC (M6x16) | 4 |
| 48 | 25625 | STCP | 25625 | STCP | 25625 | STCP | Plug, Drain (1/4"x19BSP) | 1 |
| 49 | 23170 | NBR | 23170 | NBR | 23170 | NBR | O-Ring, Drain Plug - 70D | 1 |
| 50 | 46940 | AL | 46940 | AL | 46940 | AL | Cover, Rear | 1 |
| 51 | 14044 | NBR | 14044 | NBR | 14044 | NBR | O-Ring, Rear Cover | 1 |
| 53 | 48617 | AL | 48617 | AL | 48617 | AL | Crankcase | 1 |
| 64 | 46746 | CM | 46746 | CM | 46746 | CM | Pin, Crosshead | 3 |
| 65 | 48458 | BBNP | 48458 | BBNP | 48458 | BBNP | Rod, Plunger | 3 |
| 70 | 46838 | NBR | 46838 | NBR | 46838 | NBR | Seal, Oil, Crankcase - 70D | 3 |
| 75 | 43328 | S | 43328 | S | 43328 | S | Slinger, Barrier | 3 |
| 88 | 45697 | S | 45697 | S | 45697 | S | Washer, Keyhole (M18 x 10) | 3 |
| 90 | 46841 | CC | 46841 | CC | 46841 | CC | Plunger (M20x50) | 3 |
| 98 | 46730 | NBR | 46730 | NBR | 46730 | NBR | Washer, Seal - 90D | 3 |
| | 48394 | FPM | 48394 | FPM | 48394 | FPM | Washer, Seal - 90D | 3 |
| | ◆ 48432 | EPDM | ◆ 48432 | EPDM | ◆ 48432 | EPDM | Washer, Seal | 3 |
| 99 | † 48201 | SS | † 48201 | SS | † 48201 | SS | Retainer, Plunger w/Stud (M6) | 3 |
| 100 | 46749 | PVDF | 46749 | PVDF | 46749 | PVDF | Retainer, Seal | 3 |
| 106 | 43305 | NBR | 43305 | NBR | 43305 | NBR | Seal, LPS w/S-Spg | 3 |
| | 45153 | FPM | 45153 | FPM | 45153 | FPM | Seal, LPS w/SS-Spg | 3 |
| | ◆ 48429 | EPDM | ◆ 48429 | EPDM | ◆ 48429 | EPDM | Seal, LPS w/SS-Spg | 3 |
| | 76305 | ST2 | 76305 | ST2 | 76305 | ST2 | Seal, LPS w/SS-Spg | 3 |
| 120 | 46843 | BB | 46843 | BB | 46843 | BB | Case, Seal (Press-in-style) | 3 |
| | 49436 | BB | 49436 | BB | 49436 | BB | Case, Seal (Use w/76305,13978) | 3 |
| 121 | 13978 | NBR | 13978 | NBR | 13978 | NBR | O-Ring, Seal Case - 70D | 3 |
| | 14329 | FPM | 14329 | FPM | 14329 | FPM | O-Ring, Seal Case | 3 |
| | ◆ 48904 | EPDM | ◆ 48904 | EPDM | ◆ 48904 | EPDM | O-Ring, Seal Case | 3 |
| 125 | 43307 | SNG | 43307 | SNG | 43307 | SNG | Seal, HPS w/S | 3 |
| | 44936 | FPM | 44936 | FPM | 44936 | FPM | Seal, HPS w/SS | 3 |
| | 46667 | HT | 46667 | HT | 46667 | HT | Seal, HPS 2-Pc w/S-Support | 3 |
| 139 | 22179 | BBCP | 22179 | BBCP | 22179 | BBCP | Plug, Inlet [1/2"NPT(M)] | 1 |
| 162 | 48361 | D | 48361 | D | 48361 | D | Back-up-Ring, Seat | 6 |
| 163 | 43358 | NBR | 43358 | NBR | 43358 | NBR | O-Ring, Seat - 70D | 6 |
| | 44938 | FPM | 44938 | FPM | 44938 | FPM | O-Ring, Seat - 70D | 6 |
| | ◆ 48908 | EPDM | ◆ 48908 | EPDM | ◆ 48908 | EPDM | O-Ring, Seat | 6 |
| 164 | 43725 | S | 43725 | S | 43725 | S | Seat | 6 |
| 166 | 43723 | S | 43723 | S | 43723 | S | Valve | 6 |
| 167 | 43750 | S | 43750 | S | 43750 | S | Spring | 6 |
| 168 | 44565 | PVDF | 44565 | PVDF | 44565 | PVDF | Retainer, Spring | 6 |
| 172 | 17615 | NBR | 17615 | NBR | 17615 | NBR | O-Ring, Valve Plug - 75D | 6 |
| | 15855 | FPM | 15855 | FPM | 15855 | FPM | O-Ring, Valve Plug - 70D | 6 |
| | ◆ 48431 | EPDM | ◆ 48431 | EPDM | ◆ 48431 | EPDM | O-Ring, Valve Plug - 75D | 6 |
| 174 | 43849 | BBCP | 43849 | BBCP | 43849 | BBCP | Plug, Valve | 6 |
| 185 | 48245 | W770 | 48245 | W770 | 48245 | W770 | Manifold, Head - W770 | 1 |
| | 49716 | SBCP | 49716 | SBCP | 49716 | SBCP | Manifold, Head - Special Brass | 1 |
| 188 | 126513 | STCP R | 126513 | STCP R | 126513 | STCP R | Screw, HSH (M8x70) | 8 |
| 196 | 22187 | BBCP | 22187 | BBCP | 22187 | BBCP | Plug, Discharge [3/8"NPT(M)] | 1 |
| 250 | 118672 | STCP | — | — | 118672 | STCP | Protector, Shaft | 1 |
| 255 | 30243 | STZP | 30243 | STZP | 30243 | STZP | Mount, Direct (Not Shown) | 1 |
| 260 | 30611 | STZP R | 30611 | STZP R | 30611 | STZP R | Mounting, Angle Rail (Belt Drive Only) | 1 |
| | 30637 | STZP | 30637 | STZP | 30637 | STZP | Mount, Angle Assy-Retro Fit (See Tech Bulletin 078) | 1 |
| 265 | 30659 | — | 30659 | — | 30659 | — | Mount, Assy (Incls: 30611, 30633, 118672) | 1 |
| 275 | 30944 | STL | 30944 | STL | 30944 | STL | Assy, Hub & Key (Incls: 30057, 30945) | 1 |
| 283 | 34334 | — | 34334 | — | 34334 | — | Kit, Oil Drain (3/8" x 24") (see Individual Data Sht) | 1 |
| | 76334 | — | 76334 | — | 76334 | — | Kit, Oil Level Indicator (3/8" x 24") (see Individual Data Sht) | 1 |

EXPLODED VIEW



Models
 5CP2120W, 5CP2120B
 5CP2140WCS, 5CP2140BCS
 5CP2150W, 5CP2150B
 April 2017

| ITEM | PART NUMBER | MATL | PART NUMBER | MATL | PART NUMBER | MATL | DESCRIPTION | QTY |
|------|-----------------|-------|-------------------|-------|-----------------|-------|--|-----|
| | 5CP2120W | | 5CP2140WCS | | 5CP2150W | | | |
| | 5CP2120B | | 5CP2140BCS | | 5CP2150B | | | |
| 299 | 816650 | W770 | 816650 | W770 | 816650 | W770 | Head, Complete - W770 w/NBR Seals & O-Rings | 1 |
| | 818472 | SBCP | 818472 | SBCP | 818472 | SBCP | Head, Complete - Special Brass w/NBR Seals & O-Rings | 1 |
| 300 | 33628 | NBR | 33628 | NBR | 33628 | NBR | Kit, Seal (Incls: 98, 106, 121, 125) Standard | 1 |
| | 31628 | FPM | 31628 | FPM | 31628 | FPM | Kit, Seal (Incls: 98, 106, 121, 125) .0110 | 1 |
| | ◆ 31648 | EPDM* | ◆ 31648 | EPDM* | ◆ 31648 | EPDM* | Kit, Seal (Incls: 98, 106, 121, 125) .0220 | 1 |
| | 31638 | HT | 31638 | HT | 31638 | HT | Kit, Seal (Incls: 98, 106, 121, 125) .3000 | 1 |
| | 76536 | STHT | 76536 | STHT | 76536 | STHT | Kit, Seal (Incls: 98, 106, 120, 121, 125) .3400 | 1 |
| 310 | 30821 | NBR | 30821 | NBR | 30821 | NBR | Kit, Valve, Preassembled (Incls: 162 - 164, 166 - 168, 172) Standard, .3000, .3400 | 2 |
| | 31821 | FPM | 31821 | FPM | 31821 | FPM | Kit, Valve, Preassembled (Incls: 162 - 164, 166 - 168, 172) .0110 | 2 |
| | ◆ 31162 | EPDM | ◆ 31162 | EPDM | ◆ 31162 | EPDM | Kit, Valve, Preassembled (Incls: 162 - 164, 166 - 168, 172) .0220 | 2 |
| — | 6107 | — | 6107 | — | 6107 | — | Oil, Bottle (21 oz) ISO-68 Hydraulic (Fill to specified crankcase capacity prior to start-up) | 1 |

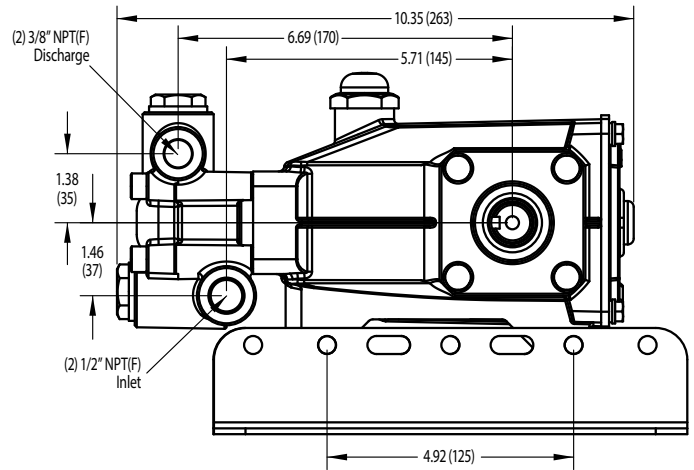
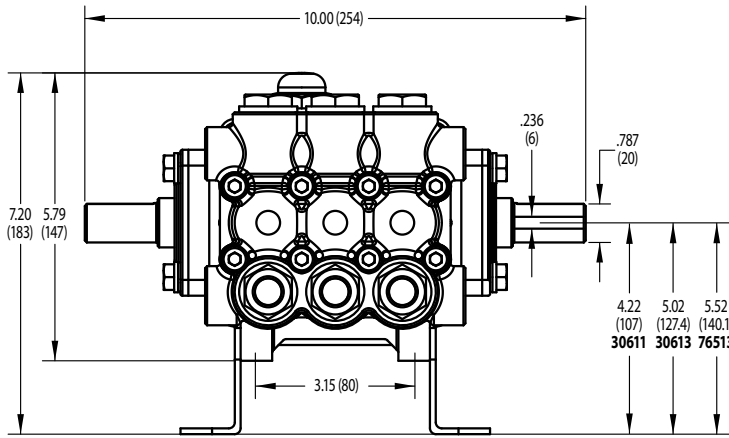
Bold print part numbers are unique to a particular pump model. *Italics are optional items.* ◆ Silicone oil/grease required. † Production parts are different than repair parts.
 R Components comply with RoHS Directive. [] Date of latest production change. W770 effective with 97 production.

*Review individual parts in each kit for material code identification.

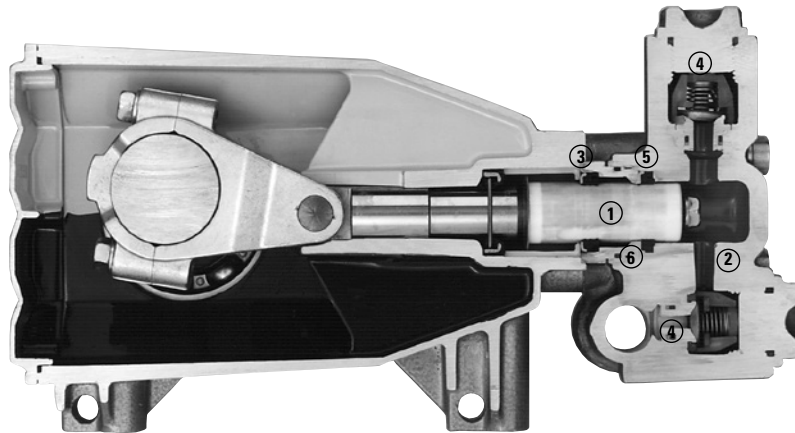
Review Tech Bulletins 002, 003, 024, 036, 043, 053, 060, 061, 064, 073, 074, 078, 083 and 103 for additional information.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated BBNP=Brass/Nickel Plated CC=Ceramic CM=Chrome-moly D=Acetal
 EPDM=Ethylene Propylene Diene Monomer FCM=Forged Chrome-moly FPM=Fluorocarbon HT=Hi-Temp (EPDM Alternative) NBR=Medium Nitrile (Buna-N)

PVDF=Polyvinylidene Fluoride S=304SS SBCP=Special Brass/Chrome Plated SS=316SS SNG=Special Blend (Buna) ST 2=Special PTFE 2 STL=Steel STHT=Special PTFE High Temp
 STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength W770=Special Alloy



Models 5CP2120W, 5CP2120B, 5CP2140WCS, 5CP2140BCS, 5CP2150W, 5CP2150B



- 1 Special concentric, high-density, polished, solid ceramic **plungers** provide a true wear surface and extended seal life.
- 2 **Manifolds** are a high tensile strength forged W770 alloy or special 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.
- 4 Stainless steel **valves, seats and springs** provide corrosion-resistance, ultimate seating and extended life.
- 5 Specially formulated, Cat Pumps 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.



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