

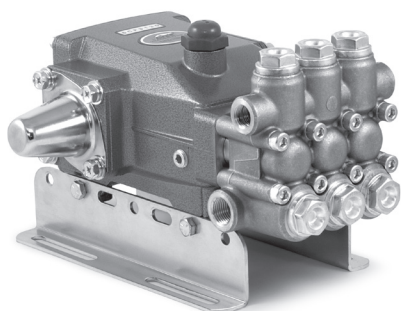
# DATA SHEET

## 5CP PLUNGER PUMPS



**Brass Models:** **5CP3120, 5CP3120CSS**

**Gearbox Model:** **5CP3120CSSG1**



Model 5CP3120 Shown  
(Mounting rails and shaft protector sold separately)

### FEATURES

- Triplex plunger design ensures high efficiency and low pulsation.
- Belt-driven option provide precise flow setting.
- Gearbox model available with 1" and 1½" hollow shafts fits a wide variety of engines.
- Direct-driven option offers a compact footprint for electric motor with a NEMA or IEC frame, or SAE hydraulic motor with a bell housing/flexible coupler assembly.
- Pump comes standard with NBR seals. Alternative seal materials are available for higher temperature or chemical compatibility.

### COMMON

| SPECIFICATIONS                                                          | U.S.           | Metric        |
|-------------------------------------------------------------------------|----------------|---------------|
| Inlet Pressure Range                                                    | -2.5 to 60 psi | -0.2 to 4 bar |
| Max. Liquid Temperature (NBR)                                           | 160° F         | 71° C         |
| <b>Alternative seals available for higher temperatures up to 190° F</b> |                |               |
| Bore                                                                    | 0.630"         | 16 mm         |
| Crankcase Capacity                                                      | 17 oz          | 0.50 l        |
| Inlet Ports (2)                                                         | ½" NPT(F)      | ½" NPT (F)    |
| Discharge Ports (2)                                                     | ⅜" NPT (F)     | ⅜" NPT (F)    |
| Shaft Diameter                                                          | 0.787"         | 20 mm         |

### SPECIFICATIONS

#### U.S. Measure

#### Metric Measure

#### MODELS 5CP3120, 5CP3120CSS

|                         |                      |                    |
|-------------------------|----------------------|--------------------|
| Flow                    | 4.5 gpm              | 17 lpm             |
| Pressure Range          | 100–3500 psi         | 6.9–241 bar        |
| Pump RPM*               | 1645 rpm             | 1645 rpm           |
| Stroke                  | 0.709"               | 18 mm              |
| Weight                  | 19.9 lbs             | 9 kg               |
| Dimensions (5CP3120)    | 10.90 x 10.0 x 5.75" | 277 x 254 x 146 mm |
| Dimensions (5CP3120CSS) | 10.90 x 8.90 x 5.75" | 277 x 226 x 146 mm |

### ALTERNATE SPECIFICATIONS

#### MODELS 5CP3120, 5CP3120CSS

|                |                      |                    |
|----------------|----------------------|--------------------|
| Flow           | 4.8 gpm              | 18 lpm             |
| Pressure Range | 100–3000 psi         | 6.9–207 bar        |
| Pump RPM*      | 1750 rpm             | 1750 rpm           |
| Stroke         | 0.709"               | 18 mm              |
| Weight         | 19.9 lbs             | 9 kg               |
| Dimensions     | 10.89 x 10.0 x 5.78" | 277 x 254 x 147 mm |

#### MODEL 5CP3120CSSG1

|                |                       |                    |
|----------------|-----------------------|--------------------|
| Flow           | 4.5 gpm               | 17 lpm             |
| Pressure Range | 100–3500 psi          | 6.9–241 bar        |
| Engine RPM     | 3353 rpm              | 3353 rpm           |
| Stroke         | 0.709"                | 18 mm              |
| Weight         | 26.5 lbs              | 12 kg              |
| Dimensions     | 11.18 x 11.48 x 6.42" | 284 x 291 x 163 mm |

\*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) |
| STHT     | .3400       | 190° F              | (88° C) |

See **Tech Bulletin 002** for inlet conditions and RPM at high temperature.

### DETERMINING THE PUMP RPM

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

### DETERMINING THE REQUIRED HP

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

### DETERMINING MOTOR PULLEY SIZE

$$\frac{\text{Motor Pulley OD}}{\text{Pump rpm}} = \frac{\text{Pump Pulley OD}}{\text{Motor rpm}}$$

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

## PARTS LIST

| ITEM | PART NUMBER  |        |                            |        | DESCRIPTION                                                     | QTY   |
|------|--------------|--------|----------------------------|--------|-----------------------------------------------------------------|-------|
|      | 5CP3120      | MATL   | 5CP3120CSS<br>5CP3120CSSG1 | MATL   |                                                                 |       |
| 5    | 126542       | STCP R | 126542                     | STCP R | Screw, HHC, Sems (M8 x 16) (See Tech Bulletin 074)              | 8–8–4 |
| 8    | 46910        | AL     | 46910                      | AL     | Cover, Bearing                                                  | 2–1–0 |
| 10   | 14028        | NBR    | 14028                      | NBR    | O-Ring, Bearing Cover                                           | 2–2–1 |
| 11   | 43222        | NBR    | 43222                      | NBR    | Seal, Oil, Crankshaft                                           | 2–1–0 |
| 15   | 14480        | STL    | 14480                      | STL    | Bearing, Ball                                                   | 2–2–2 |
| 20   | 48742        | TNM    | 48742                      | TNM    | Rod, Connecting Assembly (See Tech Bulletin 074)                | 3     |
| 25   | <b>46928</b> | FCM    | —                          | —      | Crankshaft, Dual-End (M18) (Model: 5CP3120)                     | 1     |
|      | —            | —      | <b>48233</b>               | FCM    | Crankshaft, Single-End (M18) (Models: 5CP3120CSS, 5CP3120CSSG1) | 1     |
| 30   | —            | —      | <b>49776</b>               | AL     | Cover, Bearing (Models: 5CP3120CSS, 5CP3120CSSG1)               | 1     |
| 32   | 46798        | —      | 46798                      | —      | Cap, Oil Filler, Domed                                          | 1     |
| 33   | 14179        | NBR    | 14179                      | NBR    | O-Ring, Oil Filler Cap                                          | 1     |
| 37   | 92241        | PC     | 92241                      | PC     | Gauge, Oil, Bubble with Gasket (See Tech Bulletin 074)          | 1–2–2 |
| 38   | 44428        | NBR    | 44428                      | NBR    | Gasket, Flat, Oil Gauge                                         | 1–2–2 |
| 40   | 125824       | STCP R | 125824                     | STCP R | Screw, HHC, Sems (M6 x 16) (See Tech Bulletin 074)              | 4     |
| 48   | 25625        | STCP   | 25625                      | STCP   | Plug, Drain (¼" x 19BSP)                                        | 1     |
| 49   | 23170        | NBR    | 23170                      | NBR    | O-Ring, Drain Plug                                              | 1     |
| 50   | 46940        | AL     | 46940                      | AL     | Cover, Rear                                                     | 1     |
| 51   | 14044        | NBR    | 14044                      | NBR    | O-Ring, Rear Cover                                              | 1     |
| 53   | 48617        | AL     | 48617                      | AL     | Crankcase                                                       | 1     |
| 64   | 46746        | CM     | 46746                      | CM     | Pin, Crosshead                                                  | 3     |
| 65   | 48458        | BBNP   | 48458                      | BBNP   | Rod, Plunger                                                    | 3     |
| 70   | 46838        | NBR    | 46838                      | NBR    | Seal, Oil, Crankcase                                            | 3     |
| 75   | 43900        | S      | 43900                      | S      | Slinger, Barrier                                                | 3     |
| 88   | 45697        | S      | 45697                      | S      | Washer, Keyhole (M18 x 10)                                      | 3     |
| 90   | 46884        | CC     | 46884                      | CC     | Plunger (M16 x 50)                                              | 3     |
| 98   | 46730        | NBR    | 46730                      | NBR    | Washer, Seal                                                    | 3     |
| 99   | † 48201      | SS     | † 48201                    | SS     | Retainer, Plunger with Stud (M6) (See Tech Bulletin 074)        | 3     |
| 100  | 46749        | PVDF   | 46749                      | PVDF   | Retainer, Seal                                                  | 3     |
| 106  | 43316        | NBR    | 43316                      | NBR    | Seal, Low-Pressure with S-Spring                                | 3     |
| 120  | 46888        | BB     | 46888                      | BB     | Case, Seal (Press-in-Style)                                     | 3     |
| 121  | 13978        | NBR    | 13978                      | NBR    | O-Ring, Seal Case                                               | 3     |
| 127  | 43319        | SNG    | 43319                      | SNG    | V-Packing                                                       | 6     |
| 128  | 46618        | NY     | 46618                      | NY     | Adapter, Male                                                   | 3     |
| 163  | 17547        | NBR    | 17547                      | NBR    | O-Ring, Seat                                                    | 6     |
| 164  | 45790        | S      | 45790                      | S      | Seat                                                            | 6     |
| 166  | 46429        | S      | 46429                      | S      | Valve                                                           | 6     |
| 167  | 43750        | S      | 43750                      | S      | Spring                                                          | 6     |
| 168  | † 44565      | PVDF   | † 44565                    | PVDF   | Retainer, Spring                                                | 6     |
| 172  | 142807       | NBR    | 142807                     | NBR    | O-Ring, Valve Plug                                              | 6     |
| 173  | 48365        | D      | 48365                      | D      | Backup Ring, Valve Plug                                         | 6     |
| 174  | 45900        | BB     | 45900                      | BB     | Plug, Valve (See Tech Bulletin 074)                             | 6     |
| 185  | 46886        | FBB    | 46886                      | FBB    | Manifold, Head                                                  | 1     |
| 188  | 126513       | STCP R | 126513                     | STCP R | Screw, HSH (M8 x 70) (See Tech Bulletin 074)                    | 8     |
| 500  | —            | —      | <b>8076</b>                | —      | Gearbox, 1" (See Individual Data Sheet)                         | 1     |

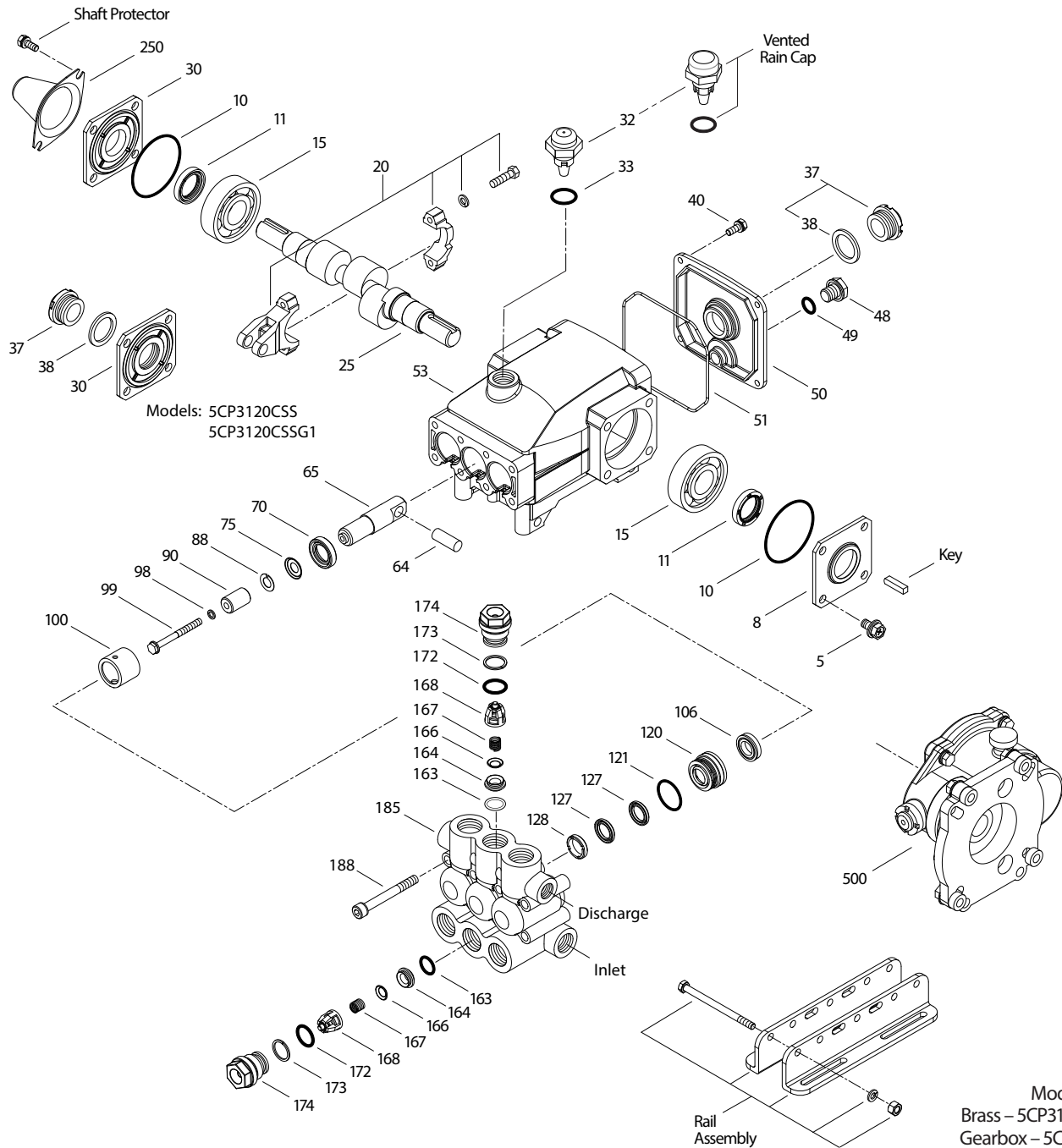
**Bold print part numbers are unique to a particular pump model.** † Production parts are different than repair parts.

R Components comply with RoHS Directive. For additional technical information see [www.catpumps.com/literature/tech-bulletins](http://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 D=Acetal EPDM=Ethylene Propylene Diene Monomer FBB=Forged Brass FCM=Forged Chrome-moly FPM=Fluorocarbon  
 HT=Hi-Temp (EPDM Alternative) NBR=Medium Nitrile (Buna-N) NY=Nylon PC=Polycarbonate PVDF=Polyvinylidene Fluoride S=304SS  
 SS=316SS SNG=Special Blend (Buna) ST2=Special Blend PTFE STHT=Special PTFE High Temp STL=Steel  
 STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength

**Optional Parts and Accessories and Service parts listed on page 3. Standard and Optional Seal and Valve Kits listed on page 4.**

## EXPLODED VIEW

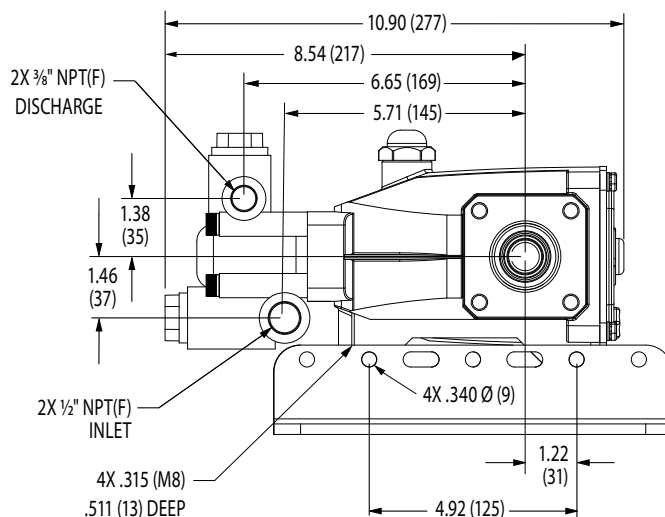
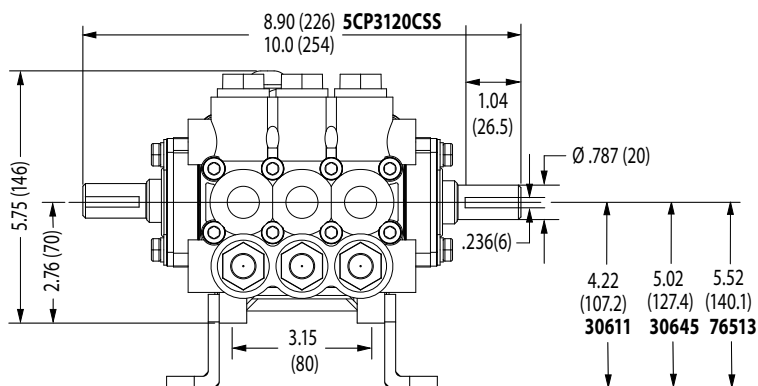


### OPTIONAL PARTS AND ACCESSORIES

| PART   | DESCRIPTION                                              | QTY |
|--------|----------------------------------------------------------|-----|
| 30057  | Key (M6 x 6 x 25)                                        | 1   |
| 30611  | Assembly, Rail (4.22" See Dimensional Drawing)           | 1   |
| 30645  | Assembly, Rail (5.02" See Dimensional Drawing)           | 1   |
| 76513  | Assembly, Rail (5.52" See Dimensional Drawing)           | 1   |
| 30637  | Mount, Rail Assembly (Retro Fit - See Tech Bulletin 078) | 1   |
| 30243  | Mount, Direct                                            | 1   |
| 118672 | Protector, Shaft                                         | 1   |
| 127409 | Cap, Vented with O-Ring (Rain Cap)                       | 1   |
| 34334  | Kit, Oil Drain (3/8" x 24") (Not Shown)                  | 1   |
| 22179  | Plug, Inlet (1/2" NPT[M]) (Not Shown)                    | 1   |
| 22187  | Plug, Discharge (3/8" NPT[M]) (Not Shown)                | 1   |

### SERVICE PARTS

| PART         | DESCRIPTION                                                                                      | QTY |
|--------------|--------------------------------------------------------------------------------------------------|-----|
| <b>33629</b> | Kit, Seal - Standard NBR                                                                         | 1   |
| <b>33060</b> | Kit, Valve - Standard NBR                                                                        | 2   |
| 6107         | Oil, Bottle (21 oz) ISO 68 Hydraulic<br>(Fill to Specified Crankcase Capacity Prior to Start-up) | 1   |
| 6124         | Gasket, Liquid (3 oz)                                                                            | 1   |
| 30696        | Reverse Pliers (Not Shown)                                                                       | 1   |
| 814843       | Head, Complete with NBR Seals & O-Rings                                                          | 1   |



Models 5CP3120, 5CP3120CSS

## SEAL KITS

One (1) seal kit required per pump

| PUMP MODELS                         | NBR (STD)    | FPM (.0110)    | EPDM (.0220) ♦ | HT (.3000)   | STHT (.3400) |
|-------------------------------------|--------------|----------------|----------------|--------------|--------------|
| 5CP3120, 5CP3120CSS<br>5CP3120CSSG1 | <b>33629</b> | <b>31340 *</b> | <b>31730 *</b> | <b>31665</b> | <b>76556</b> |

| ITEM (Included in Seal Kits) |       |        |       |       |       | DESCRIPTION                      | QTY |
|------------------------------|-------|--------|-------|-------|-------|----------------------------------|-----|
| 98                           | 46730 | 48394  | 48432 | 46730 | 46730 | Washer, Seal                     | 3   |
| 106                          | 43316 | 106660 | 49134 | 43316 | 76316 | Seal, Low-Pressure with S-Spring | 3   |
| 120                          |       |        |       |       | 46888 | Case, Seal                       | 3   |
| 121                          | 13978 | 14329  | 48904 | 13978 | 13978 | O-Ring, Seal Case                | 3   |
| 127                          | 43319 | 46287  | 46287 | 46287 | 46287 | V-Packing                        | 6   |
| 128                          | 46618 | 46618  | 46618 | 46618 | 46618 | Adapter, Male                    | 3   |

\* Review material codes for individual items (HT, SNG may be used as an alternative)

♦ Silicone oil/grease required

## VALVE KITS

Two (2) valve kits required per pump

| PUMP MODELS                         | NBR (STD)    | FPM (.0110)  | EPDM (.0220) ♦ | HT (.3000)   | STHT (.3400) |
|-------------------------------------|--------------|--------------|----------------|--------------|--------------|
| 5CP3120, 5CP3120CSS<br>5CP3120CSSG1 | <b>33060</b> | <b>31345</b> | <b>31735</b>   | <b>33060</b> | <b>33060</b> |

| ITEM (Included in Valve Kits) |        |       |       |        |        | DESCRIPTION             | QTY |
|-------------------------------|--------|-------|-------|--------|--------|-------------------------|-----|
| 163                           | 17547  | 11685 | 46648 | 17547  | 17547  | O-Ring, Seat            | 3   |
| 164                           | 45790  | 45790 | 45790 | 45790  | 45790  | Seat                    | 3   |
| 166                           | 46429  | 46429 | 46429 | 46429  | 46429  | Valve                   | 3   |
| 167                           | 43750  | 43750 | 43750 | 43750  | 43750  | Spring                  | 3   |
| 168                           | 44565  | 44565 | 44565 | 44565  | 44565  | Retainer, Spring        | 3   |
| 172                           | 142807 | 26996 | 49133 | 142807 | 142807 | O-Ring, Valve Plug      | 3   |
| 173                           | 48365  | 48365 | 48365 | 48365  | 48365  | Backup Ring, Valve Plug | 3   |

♦ Silicone oil/grease required

## CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (e.g. regulator, unloader) and a secondary pressure relief device (e.g. 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/dynamic-literature/cautions-and-warnings](http://www.catpumps.com/dynamic-literature/cautions-and-warnings) or can be requested directly from Cat Pumps.

## WARRANTY

View the Limited Warranty online at [www.catpumps.com/literature/cat-pumps-limited-warranty](http://www.catpumps.com/literature/cat-pumps-limited-warranty)