

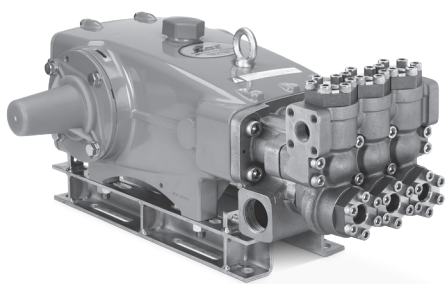
# DATA SHEET

## 35 FRAME PLUNGER PUMPS



**Nickel Aluminum**    **3517HS**  
**Bronze Model:**

**Flushed Model:**    **3517CHS**



Model 3517HS Shown  
 (Shaft protector included, mounting rails sold separately)

### FEATURES

- Triplex plunger design ensures high efficiency and low pulsation.
- Advanced connecting rod and plunger rod materials optimize drive-end operation for continuous-duty applications.
- V-packings and low-pressure seals are completely lubricated and cooled by pumped liquid, greatly increasing service life.
- Model 3517CHS offers an external flush for high-temperature or low-lubricity fluids.
- Pump comes standard with NBR seals. Alternative seal materials are available for higher temperature or chemical compatibility.

### SPECIFICATIONS

|                         | U.S. Measure      | Metric Measure     |
|-------------------------|-------------------|--------------------|
| Flow                    | 14 gpm            | 53 lpm             |
| Pressure Range          | 100–3000 psi      | 6.9–207 bar        |
| Pump RPM*               | 800 rpm           | 800 rpm            |
| Inlet Pressure Range    | Flooded to 70 psi | Flooded to 4.8 bar |
| Max. Liquid Temp. (NBR) | 160° F            | 71° C              |

Alternative seals available for higher temperature up to 200° F

|                     |                       |                    |
|---------------------|-----------------------|--------------------|
| Bore                | 0.984"                | 25 mm              |
| Stroke              | 1.890"                | 48 mm              |
| Crankcase Capacity  | 4.2 qts               | 4 l                |
| Inlet Ports (2)     | 1½" NPT(F)            | 1½" NPT(F)         |
| Flush Ports (2)     | ¼" NPT(F)             | ¼" NPT(F)          |
| Discharge Ports (2) | 1" NPT(F)             | 1" NPT(F)          |
| Shaft Diameter      | 1.378"                | 35 mm              |
| Pulley Mounting     | Either Side           | Either Side        |
| Weight              | 152 lbs               | 69 kg              |
| Dimensions          | 24.61 x 18.11 x 9.72" | 625 x 460 x 247 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) |
| FFKM     | .0770       | 200° F              | (93° C) |
| HT       | .3000       | 180° F              | (82° C) |
| STHT     | .3400       | 190° F              | (88° C) |

See **Tech Bulletin 002** for inlet conditions and RPM at higher temperatures.

#### 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           | MATL   | DESCRIPTION                                                             | QTY |
|------|-----------------------|--------|-------------------------------------------------------------------------|-----|
|      | <b>3517HS/3517CHS</b> |        |                                                                         |     |
| 5    | 96049                 | S      | Screw, HH Sems (M10x25) (See Tech Bulletin 074)                         | 8   |
| 8    | 134604                | ALE    | Cover, Bearing                                                          | 2   |
| 9    | 815279                | FBR    | Shim, Split, 2 Piece                                                    | 2   |
| 10   | 12398                 | NBR    | O-Ring, Bearing Cover-70D                                               | 2   |
| 11   | 13296                 | NBR    | Seal, Oil, Crankshaft                                                   | 2   |
| 12   | 855049                | S      | Shim, Split, 2 Piece                                                    | 0-2 |
| 15   | 29326                 | STL    | Bearing, Roller                                                         | 2   |
| 20   | 126725                | BZ     | Rod, Connecting Assembly (Includes: 21, 22, 23) (See Tech Bulletin 074) | 3   |
| 21   | 126749                | STCP R | Washer, Locking (M10)                                                   | 3   |
| 22   | 126593                | STCP R | Washer, Flat (M10)                                                      | 6   |
| 23   | 122045                | STZP   | Screw, HH (M10 x 55)                                                    | 6   |
| 25   | 29325                 | FCM    | Crankshaft, Dual End (M48)                                              | 1   |
| 31   | 828710                | PE     | Protector, Oil Cap with Foam Gasket                                     | 1   |
| 32   | 43211                 | ABS    | Cap, Oil Filler                                                         | 1   |
| 33   | 14177                 | NBR    | O-Ring, Oil Filler Cap-70D                                              | 1   |
| 34   | 126743                | STCP R | Bolt, Eye (M12 x 1.75) (For Lifting Pump Only)                          | 1   |
| 37   | 92241                 | PC     | Gauge, Bubble Oil with Gasket-80D (See Tech Bulletin 074)               | 1   |
| 38   | 44428                 | NBR    | Gasket, Flat Oil Gauge-80D                                              | 1   |
| 40   | 125753                | S      | Screw, HH Sems (M8 x 25) (See Tech Bulletin 074)                        | 8   |
| 48   | 25625                 | STCP   | Plug, Drain (1/4" x 19 BSP)                                             | 1   |
| 49   | 23170                 | NBR    | O-Ring, Drain Plug-70D                                                  | 1   |
| 50   | 45936                 | ALE    | Cover, Rear                                                             | 1   |
| 51   | 16612                 | NBR    | O-Ring, Cover-70D                                                       | 1   |
| 53   | 134784                | ALE    | Crankcase Assembly (Includes: 54)                                       | 1   |
| 54   | 27488                 | S      | Pin, Guide                                                              | 2   |
| 56   | 27790                 | POP    | Pan, Oil                                                                | 1   |
| 59   | 92538                 | S      | Screw, HHC Sems (M6 x 16)                                               | 2   |
| 64   | 43864                 | CM     | Pin, Crosshead                                                          | 3   |
| 65   | 49166                 | SSHB   | Rod, Plunger                                                            | 3   |
| 69   | 126587                | STCP R | Washer, Oil Seal                                                        | 3   |
| 70   | 100488                | NBR    | Seal, Oil, Crankcase                                                    | 3   |
| 75   | 43865                 | S      | Slinger, Barrier                                                        | 3   |
| 88   | 45676                 | S      | Washer, Keyhole                                                         | 3   |
| 90   | 43866                 | CC     | Plunger (M20 x 145)                                                     | 3   |
| 95   | 89778                 | SS     | Stud, Retainer (M10 x 135)                                              | 3   |
| 96   | 20189                 | PTFE   | Backup Ring, Plunger Retainer                                           | 3   |
| 97   | 11345                 | NBR    | O-Ring, Plunger Retainer-70D                                            | 3   |
| 98   | 44085                 | SS     | Gasket, Plunger Retainer (M10)                                          | 3   |
| 99   | 44084                 | SS     | Retainer, Plunger (M10) (See Tech Bulletin 074)                         | 3   |
| 100  | 814279                | PVDF   | Retainer, Seal                                                          | 3   |
| 101  | 44096                 | —      | Wick                                                                    | 3   |
| 104  | 43875                 | NBR    | O-Ring, Adapter-70D                                                     | 3   |
| 105  | 44088                 | NAB    | Adapter, Low-Pressure                                                   | 3   |
| 106  | 44086                 | NBR    | Seal, Low-Pressure with SS-Spring                                       | 3   |
| 107  | 44089                 | SS     | Washer, Low-Pressure Seal                                               | 3   |
| 110  | <b>44206</b>          | NAB    | Manifold, Inlet                                                         | 1   |
|      | <b>125970</b>         | NAB    | Manifold, Inlet, Flushed (Model 3517CHS)                                | 1   |
| 112  | 11379                 | NBR    | O-Ring, Inlet Manifold-70D                                              | 3   |
| 117  | 44585                 | S      | Screw, HSH (M14 x 40)                                                   | 4   |
| 123  | 12391                 | NBR    | O-Ring, V-Packing Cylinder-70D                                          | 3   |
| 124  | 44090                 | NAB    | Cylinder, V-Packing                                                     | 3   |
| 126  | 44091                 | NAB    | Adapter, Female                                                         | 3   |
| 127  | 44610                 | STG    | V-Packing                                                               | 6   |
| 128  | 44092                 | NAB    | Adapter, Male                                                           | 3   |
| 155  | 11379                 | NBR    | O-Ring, V-Packing Spacer                                                | 6   |
| 156  | 28243                 | PTFE   | Backup Ring, V-Packing Spacer                                           | 6   |
| 157  | 44093                 | NAB    | Spacer, V-Packing                                                       | 3   |
| 162  | 21985                 | PTFE   | Backup Ring, Seat                                                       | 6   |
| 163  | 26089                 | NBR    | O-Ring, Seat-80D                                                        | 6   |
| 164  | 44080                 | SS     | Seat                                                                    | 6   |
| 166  | 44081                 | SS     | Valve                                                                   | 6   |
| 167  | 44082                 | SS     | Spring                                                                  | 6   |
| 168  | 44735                 | PVDF   | Retainer, Spring                                                        | 6   |
| 170  | 44794                 | SS     | Washer, Spring Retainer                                                 | 6   |
| 171  | 44793                 | SS     | Spring, Coil, Valve Plug                                                | 6   |
| 172  | 15853                 | NBR    | O-Ring, Valve Plug-70D                                                  | 6   |
| 173  | 20224                 | PTFE   | Backup Ring, Valve Plug                                                 | 6   |
| 174  | 44795                 | NAB    | Plug, Valve                                                             | 6   |
| 175  | 87951                 | S      | Screw, HSH (M10 x 30) (See Tech Bulletin 074)                           | 36  |
| 185  | 46565                 | NAB    | Manifold, Discharge                                                     | 1   |
| 188  | 89981                 | S      | Screw, HSH (M12 x 70) (See Tech Bulletin 074)                           | 8   |
| 250  | 855042                | NY     | Protector, Shaft, with Two (2) Screws, Lockwashers and Washers          | 1   |

**Bold print part numbers are unique to a particular pump model. Italics are optional items.**

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): ABS=ABS Plastic ALE=Aluminum Epoxy BZ=Bronze CC=Ceramic CM=Chrome-Moly EPDM=Ethylene Propylene Diene Monomer

F=Cast Iron FBR=Fiber FCM=Forged Chrome-moly FFKM=Perfluoroelastomer FPM=Fluorocarbon NAB=Nickel Aluminum Bronze NBR=Medium Nitrile (Buna-N)

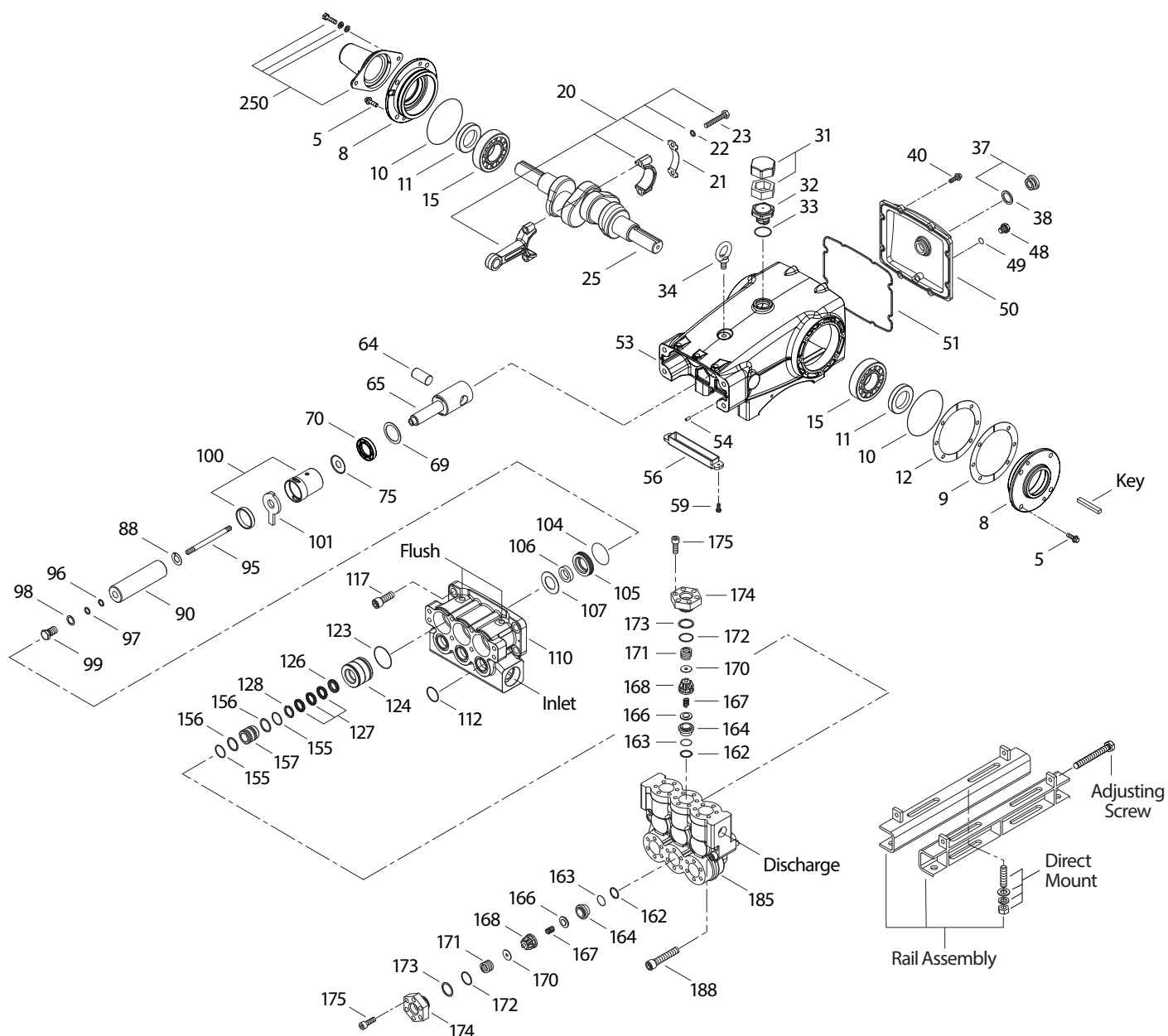
NBRs=Buna, Silicone Free NY=Nylon PC=Poly Carbonate PE=Polyethylene POP=Polypropylene PTFE=Pure Polytetrafluoroethylene

PVDF=Polyvinylidene Fluoride S=304SS SS=316SS STG=Special Blend PTFE White STL=Steel

STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated ZP=Zinc Plated

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

## EXPLODED VIEW



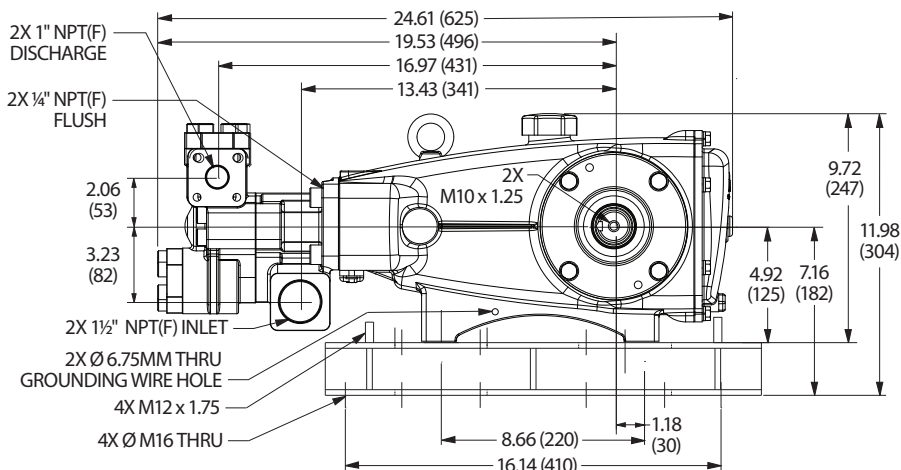
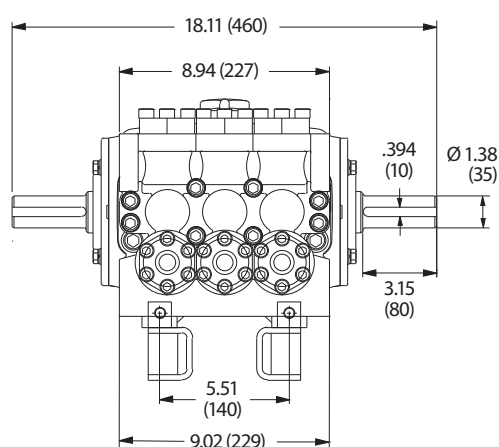
Models  
3517HS, 3517CHS  
September 2023

### OPTIONAL PARTS AND ACCESSORIES

| PART   | DESCRIPTION                                     | QTY |
|--------|-------------------------------------------------|-----|
| 34021  | Key (M10 x 8 x 70)                              | 1   |
| 92674  | Mount, Rail Assembly (STZP R) (Includes: 34018) | 1   |
| 34018  | Mount, Direct (STZP R)                          | 1   |
| 76514  | Mount, Rail Assembly (S) (Includes: 34039)      | 1   |
| 34039  | Mount, Direct (S)                               | 1   |
| 990013 | Hub, "B", 35 mm (STL)                           | 1   |
| 80540  | Screw, Adjusting (M12 x 100)                    | 2   |
| 30278  | Oiler (1 oz) (Not Shown)                        | 1   |
| 34314  | Kit, Oil Drain (3/8" x 48") (Not Shown)         | 1   |
| 76795  | Plug, Valve with 1/4" NPT(F) (Not Shown)        | 1   |
| 819000 | Assembly, Crankcase, Cast Iron Conversion       | 1   |

### SERVICE PARTS

| PART          | DESCRIPTION                                                                                                               | QTY |
|---------------|---------------------------------------------------------------------------------------------------------------------------|-----|
| <b>31038</b>  | Kit, Seal – Standard NBR                                                                                                  | 1   |
| <b>34151</b>  | Kit, Valve – Standard NBR                                                                                                 | 2   |
| 6100          | Oil, Case (12–21 oz bottles)<br>(Fill to Specified Crankcase Capacity Prior to Start-up)                                  | 1   |
| 6139          | Lubricant, Anti-Seize (8 oz) (See Tech Bulletin 095)                                                                      | 1   |
| 6124          | Gasket, Liquid (3 oz)                                                                                                     | 1   |
| 32273         | Crankcase Oil Seal Removal and Installation Kit (Not Shown)<br>(Includes: Oil Seals, Guide Tool, Screws, Washers, Driver) | 1   |
| 30696         | Reverse Pliers (Not Shown)                                                                                                | 1   |
| <b>816750</b> | Head, Complete with NBR Seals and O-Rings (Model 3517HS)                                                                  | 1   |



Models 3517HS, 3517CHS

## SEAL KITS One (1) seal kit required per pump

| PUMP MODELS     | NBR (STD)     | FPM (.0110)   | EPDM (.0220)◆ |
|-----------------|---------------|---------------|---------------|
| 3517HS, 3517CHS | <b>31038*</b> | <b>31266*</b> | <b>76138*</b> |

| ITEM (Included in Seal Kits) |       |       |        | DESCRIPTION                       | QTY |
|------------------------------|-------|-------|--------|-----------------------------------|-----|
| 97                           | 11345 | 11375 | 701490 | O-Ring, Plunger Retainer          | 3   |
| 104                          | 43875 | 44826 | 701656 | O-Ring, Adapter                   | 3   |
| 106                          | 44086 | 45846 | 49196  | Seal, Low-Pressure with SS-Spring | 3   |
| 112                          | 11379 | 14183 | 701491 | O-Ring, Inlet Manifold            | 3   |
| 123                          | 12391 | 13266 | 701657 | O-Ring, V-Packing Cylinder        | 3   |
| 127                          | 44610 | 44610 | 44610  | V-Packing                         | 6   |
| 155                          | 11379 | 14183 | 701491 | O-Ring, V-Packing Spacer          | 6   |
| 156                          | 28243 | 28243 | 28243  | Backup Ring, V-Packing Spacer     | 6   |

◆ Silicone oil/grease required \*Review material codes for individual items (STG generally may be used as alternative)

## VALVE KITS Two (2) valve kits required per pump

| PUMP MODELS     | NBR (STD)    | FPM (.0110)   | EPDM (.0220)◆ |
|-----------------|--------------|---------------|---------------|
| 3517HS, 3517CHS | <b>34151</b> | <b>701798</b> | <b>701799</b> |

| ITEM (Included in Valve Kits) |       |       |        | DESCRIPTION             | QTY |
|-------------------------------|-------|-------|--------|-------------------------|-----|
| 162                           | 21985 | 21985 | 21985  | Backup Ring, Valve Seat | 3   |
| 163                           | 26089 | 11377 | 46647  | O-Ring, Valve Seat      | 3   |
| 164                           | 44080 | 44080 | 44080  | Seat                    | 3   |
| 166                           | 44081 | 44081 | 44081  | Valve                   | 3   |
| 167                           | 44082 | 44082 | 44082  | Spring                  | 3   |
| 168                           | 44735 | 44735 | 44735  | Retainer, Spring        | 3   |
| 170                           | 44794 | 44794 | 44794  | Washer, Spring Retainer | 3   |
| 172                           | 15853 | 11720 | 701481 | O-Ring, Valve Plug      | 3   |
| 173                           | 20224 | 20224 | 20224  | 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)