

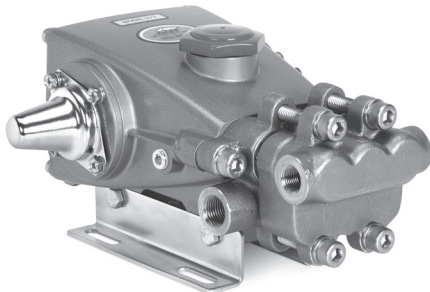
# DATA SHEET

## 3 FRAME PLUNGER PUMPS



**Stainless Steel Models: 231, 241, 271**

**Nickel Aluminum Bronze Models: 237, 247, 277**



Model 277 Shown  
(Mounting rails and shaft protector sold separately)

### FEATURES

- Triplex design offers high efficiency and low pulsation.
- Belt-driven option provides precision flow setting.
- Direct-drive option offers a compact footprint for electric motors with a NEMA or IEC, or SAE hydraulic motor with a bell housing/flexible coupler assembly.
- Nickel Aluminum Bronze and 316 Stainless Steel models available to suit a range of high-salinity sea water or chemicals.
- Pump comes standard with NBR seals. Alternative seal materials are available for higher temperature or chemical compatibility.

### COMMON SPECIFICATIONS

|   | U.S.                 | Metric             |
|---|----------------------|--------------------|
| Bore  | 0.709"               | 18 mm              |
| Inlet Pressure Range  | Flooded to 60 psi    | Flooded to 4.1 bar |
| Max. Liquid Temperature (NBR)   | 160° F               | 71° C              |
| <b>Alternative seals available for higher temperatures up to 200° F</b> |                      |                    |
| Crankcase Capacity  | 15 oz                | 0.44 l             |
| Inlet Ports (2)   | ½" NPT(F)            | ½" NPT(F)          |
| Discharge Ports (2)   | ⅜" NPT(F)            | ⅜" NPT(F)          |
| Shaft Diameter  | 0.650"               | 16.5 mm            |
| Pulley Mounting   | Either Side          | Either Side        |
| Weight  | 13.4 lbs             | 6.1 kg             |
| Dimensions  | 10.28 x 8.78 x 5.35" | 261 x 223 x 136 mm |

### SPECIFICATIONS

|                                 | U.S. Measure | Metric Measure |
|---------------------------------|--------------|----------------|
| <b>231, 237</b>                 |              |                |
| Flow                            | 2.3 gpm      | 8.7 lpm        |
| Pressure Range                  | 100–1500 psi | 6.9–103 bar    |
| Pump RPM*                       | 1725 rpm     | 1725 rpm       |
| Stroke                          | 0.287"       | 7.3 mm         |
| <b>241, 247</b>                 |              |                |
| Flow                            | 3.6 gpm      | 13.6 lpm       |
| Pressure Range                  | 100–1200 psi | 6.9–82 bar     |
| Pump RPM*                       | 1725 rpm     | 1725 rpm       |
| Stroke                          | 0.433"       | 11 mm          |
| <b>271, 277</b>                 |              |                |
| Flow                            | 3.5 gpm      | 13.2 lpm       |
| Pressure Range                  | 100–1500 psi | 6.9–103 bar    |
| Pump RPM*                       | 1420 rpm     | 1420 rpm       |
| Stroke                          | 0.500"       | 12.7 mm        |
| <b>ALTERNATE SPECIFICATIONS</b> |              |                |
| <b>271, 277</b>                 |              |                |
| Flow                            | 4.2 gpm      | 15.9 lpm       |
| Pressure Range                  | 100–1000 psi | 6.9–69 bar     |
| Pump RPM*                       | 1725 rpm     | 1725 rpm       |
| Stroke                          | 0.500"       | 12.7 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

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

### 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

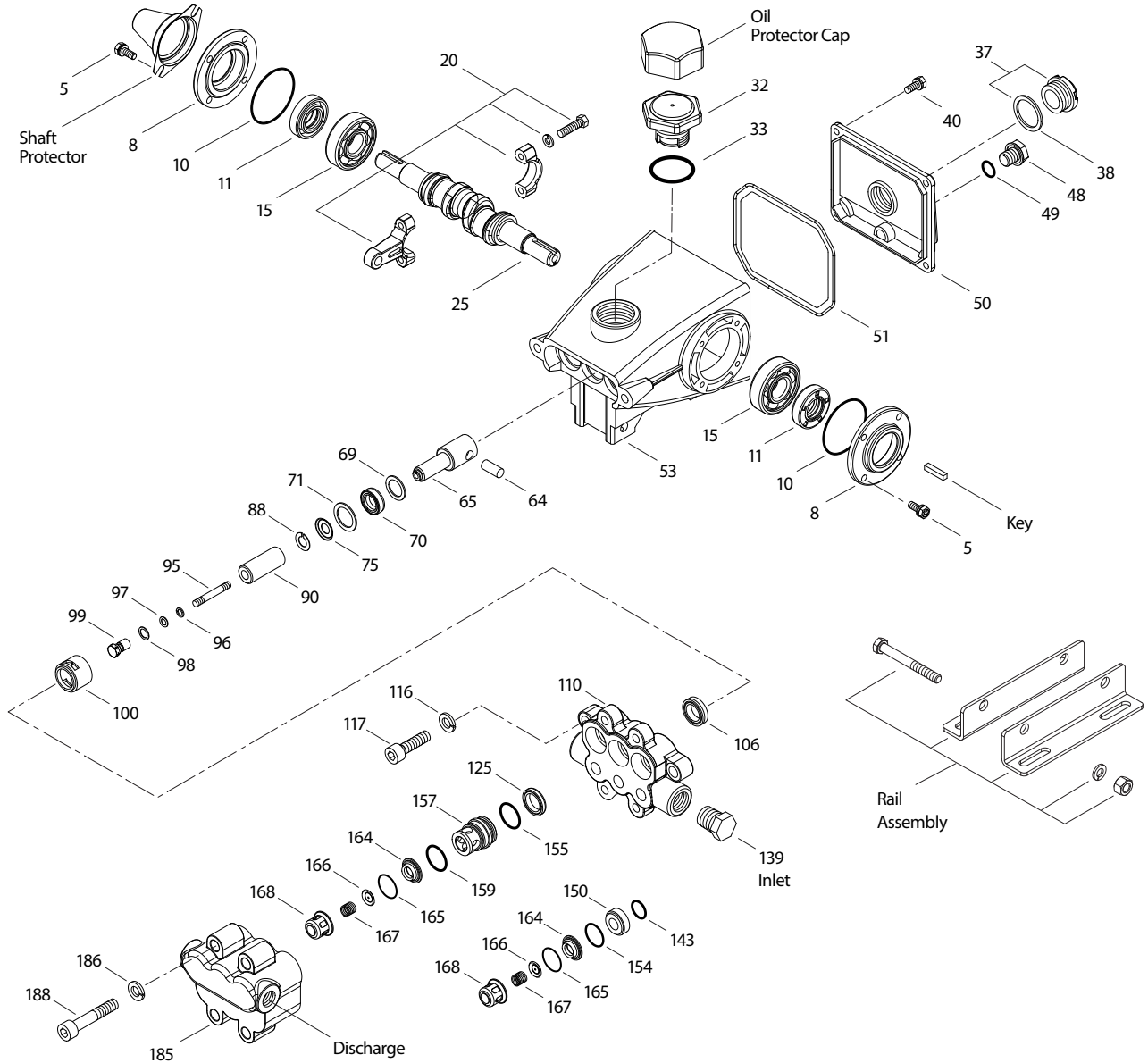
| ITEM | PART NUMBER<br>231, 241, 271 | MATL   | PART NUMBER<br>237, 247, 277 | MATL   | DESCRIPTION                                       | QTY |
|------|------------------------------|--------|------------------------------|--------|---|-----|
| 5    | 92538                        | S      | 92538                        | S      | Screw, HHC Sems (M6 x 16) (See Tech Bulletin 074) | 8   |
| 8    | 27950                        | AL     | 27950                        | AL     | Cover, Bearing                                    | 2   |
| 10   | 26536                        | NBR    | 26536                        | NBR    | O-Ring, Cover, Bearing                            | 2   |
| 11   | 24159                        | NBR    | 24159                        | NBR    | Seal, Oil   | 2   |
| 15   | 14487                        | STLR   | 14487                        | STLR   | Bearing, Ball                                     | 2   |
| 20   | 48867                        | TNM    | 48867                        | TNM    | Rod, Connecting Assembly (See Tech Bulletin 074)  | 3   |
| 25   | <b>46946</b>                 | FCM    | <b>46946</b>                 | FCM    | Crankshaft, Dual-End (M7.3) (Models: 231, 237)    | 1   |
|      | <b>46951</b>                 | FCM    | <b>46951</b>                 | FCM    | Crankshaft, Dual-End (M11) (Models: 241, 247)     | 1   |
|      | <b>108062</b>                | FCM    | <b>108062</b>                | FCM    | Crankshaft, Dual-End (M12.7) (Models: 271, 277)   | 1   |
| 32   | 43211                        | ABS    | 43211                        | ABS    | Cap, Oil Filler                                   | 1   |
| 33   | 14177                        | NBR    | 14177                        | NBR    | O-Ring, Oil Filler Cap                            | 1   |
| 37   | 92241                        | PC     | 92241                        | PC     | Gauge, Oil Bubble with Gasket                     | 1   |
| 38   | 44428                        | NBR    | 44428                        | NBR    | Gasket, Flat, Oil Gauge                           | 1   |
| 40   | 92542                        | S      | 92542                        | S      | Screw, HHC Sems (M6 x 20) (See Tech Bulletin 074) | 6   |
| 48   | 25625                        | STCP   | 25625                        | STCP   | Plug, Drain (1/4" x 19 BSP)                       | 1   |
| 49   | 23170                        | NBR    | 23170                        | NBR    | O-Ring, Drain Plug                                | 1   |
| 50   | 48772                        | AL     | 48772                        | AL     | Cover, Rear                                       | 1   |
| 51   | 48773                        | NBR    | 48773                        | NBR    | O-Ring, Rear Cover                                | 1   |
| 53   | 128354                       | AL     | 128354                       | AL     | Crankcase   | 1   |
| 64   | 16948                        | CM     | 16948                        | CM     | Pin, Crosshead                                    | 3   |
| 65   | 45114                        | SSZZ   | 45114                        | SSZZ   | Rod, Plunger                                      | 3   |
| 69   | 126259                       | STCP R | 126259                       | STCP R | Washer, Oil (M24)                                 | 3   |
| 70   | 25301                        | NBR    | 25301                        | NBR    | Seal, Oil   | 3   |
| 71   | 126189                       | STCP R | 126189                       | STCP R | Washer, Oil Seal                                  | 3   |
| 75   | 43900                        | S      | 43900                        | S      | Slinger, Barrier                                  | 3   |
| 88   | 45697                        | S      | 45697                        | S      | Washer, Keyhole (M18 x 10)                        | 3   |
| 90   | 43901                        | CC     | 43901                        | CC     | Plunger (M18 x 43)                                | 3   |
| 95   | 126550                       | STCP R | 126550                       | STCP R | Stud, Plunger Retainer (M6 x 43)                  | 3   |
| 96   | 43235                        | PTFE   | 43235                        | PTFE   | Backup Ring, Plunger Retainer                     | 3   |
| 97   | 17399                        | NBR    | 17399                        | NBR    | O-Ring, Plunger Retainer                          | 3   |
| 98   | 44041                        | SS     | 44041                        | SS     | Gasket, Plunger Retainer (M12.5)                  | 3   |
| 99   | 44031                        | SS     | 44031                        | SS     | Retainer, Plunger (M6) (See Tech Bulletin 074)    | 3   |
| 100  | 28597                        | PVDF   | 28597                        | PVDF   | Retainer, Seal                                    | 3   |
| 106  | 44053                        | NBR    | 44053                        | NBR    | Seal, Low-Pressure with SS-Spring                 | 3   |
| 110  | <b>46425</b>                 | SS     | <b>44052</b>                 | NAB    | Manifold, Inlet                                   | 1   |
| 116  | 15847                        | S      | 15847                        | S      | Lockwasher (M10)                                  | 2   |
| 117  | 87950                        | S      | 87950                        | S      | Screw, HSH (M10 x 35)                             | 2   |
| 125  | 44652                        | SNG    | 44652                        | SNG    | Seal, High-Pressure with SS-Support               | 3   |
| 139  | <b>45156</b>                 | SS     | <b>44563</b>                 | NAB    | Plug, Inlet [1/2" NPT(M)]                         | 1   |
| 143  | 17547                        | NBR    | 17547                        | NBR    | O-Ring, Inlet Valve Adapter, Rear                 | 3   |
| 150  | 44060                        | SS     | 44060                        | SS     | Adapter, Inlet Valve                              | 3   |
| 154  | 43893                        | NBR    | 43893                        | NBR    | O-Ring, Inlet Valve Adapter, Front                | 3   |
| 155  | 26089                        | NBR    | 26089                        | NBR    | O-Ring, Discharge Valve Adapter, Rear             | 3   |
| 157  | 44059                        | SS     | 44059                        | SS     | Adapter, Discharge Valve                          | 3   |
| 159  | 26089                        | NBR    | 26089                        | NBR    | O-Ring, Discharge Valve Adapter, Front            | 3   |
| 164  | 44058                        | SS     | 44058                        | SS     | Seat  | 6   |
| 165  | 44001                        | NBR    | 44001                        | NBR    | O-Ring, Seat                                      | 6   |
| 166  | 543669                       | SS     | 543669                       | SS     | Valve   | 6   |
| 167  | 44056                        | SS     | 44056                        | SS     | Spring  | 6   |
| 168  | 44055                        | SS     | 44055                        | SS     | Retainer, Spring                                  | 6   |
| 185  | <b>46427</b>                 | SS     | <b>44054</b>                 | NAB    | Manifold, Discharge                               | 1   |
| 186  | 15847                        | S      | 15847                        | S      | Lockwasher (M10)                                  | 4   |
| 188  | 87952                        | S      | 87952                        | S      | Screw, HSH (M10 x 55) (See Tech Bulletin 074)     | 4   |

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

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 AL=Aluminum CC=Ceramic CM=Chrome-Moly EPDM=Ethylene Propylene Diene Monomer FCM=Forged Chrome-moly  
 FFKM=Perfluoroelastomer FPM=Fluorocarbon HT=Hi-Temp Special PTFE (EPDM Alternative) NAB=Nickel Aluminum Bronze NBR=Medium Nitrile (Buna-N)  
 PC=Poly Carbonate PE=Polyethylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SFTA=Special Blend PTFE  
 SNG=Special Blend (Buna) SSZZ=316SS/Zamak ST2=Special PTFE2 ST4=Special PTFE4 STCP=Steel/Chrome Plated STL=Steel  
 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



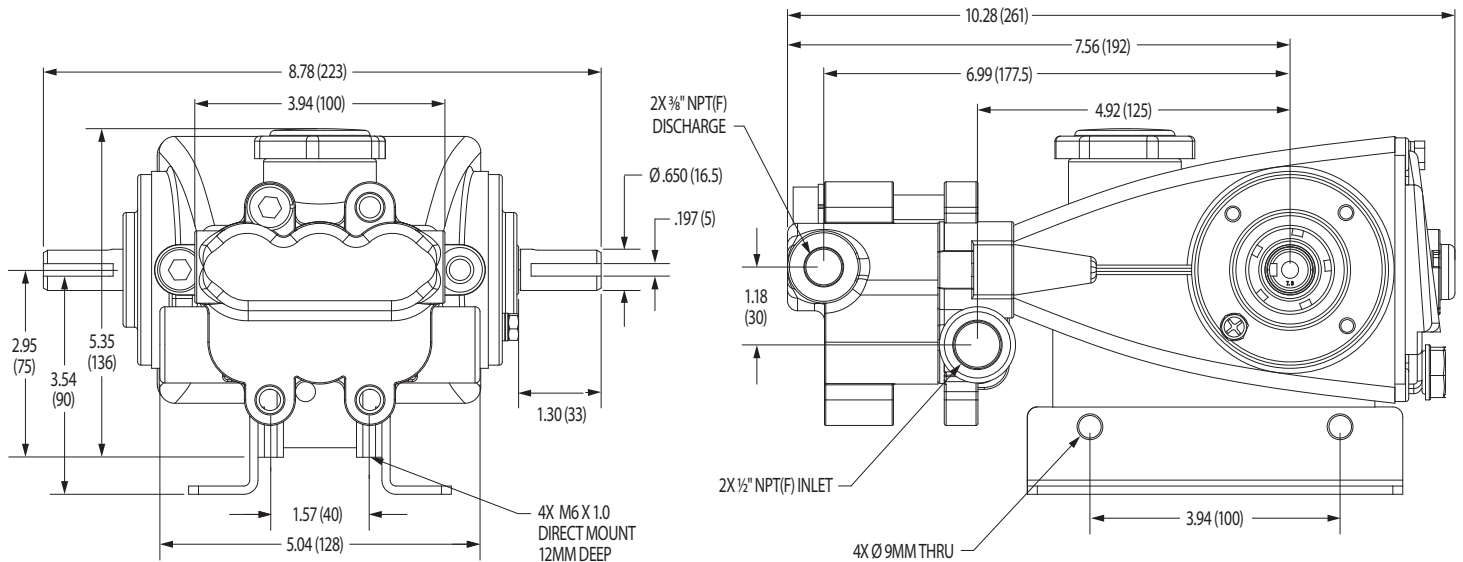
Models  
 Stainless Steel – 231, 241, 271  
 Nickel Aluminum Bronze – 237, 247, 277  
 March 2026

## OPTIONAL PARTS AND ACCESSORIES

| PART   | DESCRIPTION  | QTY |
|--------|--|-----|
| 30047  | Key (M5 x 5 x 24)                                    | 1   |
| 30612  | Assembly, Rail                                       | 1   |
| 32605  | Assembly, Mount (Includes: Rail, Pulley) (Not Shown) | 1   |
| 828710 | Protector, Oil Cap                                   | 1   |
| 25130  | Protector, Shaft                                     | 1   |
| 34334  | Kit, Oil Drain (3/8" x 24") (Not Shown)              | 1   |
| 32603  | Pulley (Includes: Key, Hub) (Not Shown)              | 1   |

## SERVICE PARTS

| PART          | DESCRIPTION   | QTY |
|---------------|---|-----|
| <b>30983</b>  | Kit, Seal – Standard NBR  | 1   |
| <b>30982</b>  | Kit, Valve – Standard NBR   | 1   |
| 6107          | Oil, Bottle (21 oz)<br>(Fill to Specified Crankcase Capacity Prior to Start-up) | 1   |
| 6124          | Gasket, Liquid (3 oz)   | 1   |
| 6139          | Lubricant, Anti-Seize (8 oz)  | 1   |
| <b>814823</b> | Head, Complete with NBR Seals & O-Rings (Models: 231, 241, 271)                 | 1   |
| <b>815262</b> | Head, Complete with NBR Seals & O-Rings (Models: 237, 247, 277)                 | 1   |



Models 231, 241, 271, 237, 247, 277

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

| PUMP MODELS                     | NBR (STD)    | FPM (.0110)  | EPDM (.0220) ◆ | FFKM (.0770)   | HT (.3000)   | STHT (.3400) |
|---------------------------------|--------------|--------------|----------------|----------------|--------------|--------------|
| 231, 237, 241,<br>247, 271, 277 | <b>30983</b> | <b>33609</b> | <b>33914 *</b> | <b>76660 *</b> | <b>33915</b> | <b>30735</b> |

| ITEM (Included in Seal Kits) |       |       |       |        |       |       | DESCRIPTION                            | QTY |
|------------------------------|-------|-------|-------|--------|-------|-------|--|-----|
| 97                           | 17399 | 14160 | 46204 | 701715 | 17399 | 17399 | O-Ring, Plunger Retainer               | 3   |
| 106                          | 44053 | 44926 | 46651 | 702390 | 44053 | 76243 | Seal, LPS with SS-Spring               | 3   |
| 125                          | 44652 | 44925 | 46652 | 701382 | 46652 | 46652 | Seal, High-Pressure                    | 3   |
| 143                          | 17547 | 11685 | 46648 | 703308 | 17547 | 17547 | O-Ring, Inlet Valve Adapter, Rear      | 3   |
| 154                          | 43893 | 44927 | 46649 | 703307 | 43893 | 43893 | O-Ring, Inlet Valve Adapter, Front     | 3   |
| 155                          | 26089 | 11377 | 46647 | 703244 | 26089 | 26089 | O-Ring, Discharge Valve Adapter, Rear  | 3   |
| 159                          | 26089 | 11377 | 46647 | 703244 | 26089 | 26089 | O-Ring, Discharge Valve Adapter, Front | 3   |
| 165                          | 44001 | 44928 | 46650 | 703309 | 44001 | 44001 | O-Ring, Seat                           | 6   |

\* Review material codes for individual items ( HT, SFTA, SNG, ST2 may be used as alternative)

◆ Silicone Oil/Grease required

### VALVE KITS One (1) valve kit required per pump

| PUMP MODELS                     | NBR (STD)    | FPM (0.0110) | EPDM (0.0220) ◆ | IPFE (.0770) | HT (.3000)   | STHT (.3400) |
|---------------------------------|--------------|--------------|-----------------|--------------|--------------|--------------|
| 231, 237, 241,<br>247, 271, 277 | <b>30982</b> | <b>31216</b> | <b>31217</b>    | <b>76690</b> | <b>30982</b> | <b>30982</b> |

| ITEM (Included in Valve Kits) |        |        |        |        |        |        | DESCRIPTION                           | QTY |
|-------------------------------|--------|--------|--------|--------|--------|--------|---------------------------------------|-----|
| 143                           | 17547  | 11685  | 46648  | 703308 | 17547  | 17547  | O-Ring, Inlet Valve Adapter, Rear     | 3   |
| 154                           | 43893  | 44927  | 46649  | 703307 | 43893  | 43893  | O-Ring, Inlet Valve Adapter, Front    | 3   |
| 155                           | 26089  | 11377  | 46647  | 703244 | 26089  | 26089  | O-Ring, Discharge Valve Adapter, Rear | 3   |
| 164                           | 44058  | 44058  | 44058  | 44058  | 44058  | 44058  | Seat                                  | 6   |
| 165                           | 44001  | 44928  | 46650  | 703309 | 44001  | 44001  | O-Ring, Seat                          | 6   |
| 166                           | 543669 | 543669 | 543669 | 543669 | 543669 | 543669 | Valve                                 | 6   |
| 167                           | 44056  | 44056  | 44056  | 44056  | 44056  | 44056  | Spring                                | 6   |
| 168                           | 44055  | 44055  | 44055  | 44055  | 44055  | 44055  | Retainer, Spring                      | 6   |

◆ 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)