

# DATA SHEET

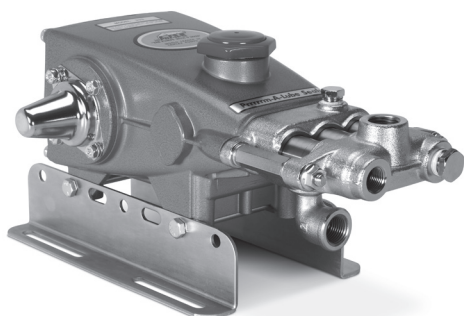
## 4 FRAME PISTON PUMPS



### Brass Models **333, 430**

### Stainless Steel Models **331, 431**

### Pulse Pump Models **335, 435**



Model 333 Shown  
(Shaft protector and mounting rails sold separately)

| SPECIFICATIONS              | U.S. Measure | Metric Measure |
|-----------------------------|--------------|----------------|
| <b>Models 333, 331, 335</b> |              |                |
| Flow                        | 4.0 gpm      | 15 lpm         |
| Pressure Range              | 100–1200 psi | 6.9–83 bar     |
| Pump RPM*                   | 1070 rpm     | 1070 rpm       |
| Bore                        | 0.709"       | 18 mm          |
| <b>Models 430, 431, 435</b> |              |                |
| Flow                        | 5.0 gpm      | 19 lpm         |
| Pressure Range              | 100–1000 psi | 6.9–69 bar     |
| Pump RPM*                   | 1040 rpm     | 1040 rpm       |
| Bore                        | 0.787"       | 20 mm          |

\*Pump minimum is 100 rpm

### FEATURES

- Triplex Uniflow design provides continuous forward liquid promoting smooth operation.
- Hard chrome-plated 304S cylinders and sleeves provide long life with mild liquids within a range of 5–9 Ph.
- Optional 316 stainless steel manifolds provide added strength and corrosion resistance.
- Pump comes standard with NBR seals. Alternative seal materials are available for higher temperature or chemical compatibility.

### COMMON

| SPECIFICATIONS                                                          | U.S.                 | Metric               |
|-------------------------------------------------------------------------|----------------------|----------------------|
| Stroke                                                                  | 0.768"               | 19.5 mm              |
| Crankcase Capacity                                                      | 21 oz                | 0.6 l                |
| Max. Liquid Temperature (NBR)                                           | 160° F               | 71° C                |
| <b>Alternative seals available for higher temperatures up to 180° F</b> |                      |                      |
| Inlet Pressure Range                                                    | -8.5 to +40 psi      | -0.6 to +2.8 bar     |
| Inlet Port (1)                                                          | ½" NPT(F)            | ½" NPT(F)            |
| Auxiliary Port (1)                                                      | ¼" NPT(F)            | ¼" NPT(F)            |
| Top Discharge Port (1)                                                  | ½" NPT(F)            | ½" NPT(F)            |
| Front Discharge Ports (2)                                               | ⅜" NPT(F)            | ⅜" NPT(F)            |
| Pulley Mounting                                                         | Either Side          | Either Side          |
| Shaft Diameter                                                          | 0.650"               | 16.5 mm              |
| Weight                                                                  | 17.7 lbs             | 8.0 kg               |
| Dimensions                                                              | 12.56 x 8.80 x 5.33" | 319 x 223 x 135.5 mm |

### ALTERNATIVE SEAL CONFIGURATION

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

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

|                                          |                  |   |                |
|------------------------------------------|------------------|---|----------------|
| <b>DETERMINING<br/>THE PUMP RPM</b>      | Rated gpm        | = | Desired gpm    |
|                                          | Rated rpm        | = | Desired rpm    |
| <b>DETERMINING<br/>THE REQUIRED HP</b>   | hp               | = | gpm x psi      |
|                                          | (Electric Brake) | = | 1460           |
| <b>DETERMINING<br/>MOTOR PULLEY SIZE</b> | Motor Pulley OD  | = | Pump Pulley OD |
|                                          | Pump rpm         | = | Motor rpm      |

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

## PARTS LIST

| ITEM | PART NUMBER   |        |              | DESCRIPTION | QTY                                                   |      |
|------|---------------|--------|--------------|-------------|-------------------------------------------------------|------|
|      | 333, 331, 335 | MATL   | 430,431, 435 |             |                                                       | MATL |
| 5    | 125824        | STCP R | 125824       | STCP R      | 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, Bearing Cover                                 | 2    |
| 11   | 24159         | NBR    | 24159        | NBR         | Seal, Oil                                             | 2    |
| 15   | 14487         | STL R  | 14487        | STL R       | Bearing, Ball                                         | 2    |
| 20   | 48734         | TNM    | 48734        | TNM         | Rod, Connecting, Assembly (See Tech Bulletin 074)     | 3    |
| 25   | 43163         | FCM    | 43163        | FCM         | Crankshaft, Dual End, Tapped (M8 x 1.25)              | 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 (See Tech Bulletin 074) | 1    |
| 38   | 44428         | NBR    | 44428        | NBR         | Gasket, Flat, Oil Gauge                               | 1    |
| 40   | 126541        | STCP R | 126541       | STCP R      | Screw, HHC Sems (M6 x 20) (See Tech Bulletin 074)     | 4    |
| 48   | 25625         | STCP   | 25625        | STCP        | Plug, Drain (¼" 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, Cover                                         | 1    |
| 53   | 76953         | AL     | 76953        | AL          | Crankcase with Guide Pins                             | 1    |
| 55   | 126546        | STCP R | 126546       | STCP R      | Stud (M8 x 41.4)                                      | 4    |
| 56   | 27712         | POP    | 27712        | POP         | Pan, Oil (Use with Blue Dot Seals and Wick)           | 1    |
| 64   | 16948         | CM     | 16948        | CM          | Pin, Crosshead                                        | 3    |
| 65   | 27981         | SZZ    | 27981        | SZZ         | Rod, Piston, Stepped                                  | 3    |
| 69   | 126259        | STCP R | 126259       | STCP R      | Washer, Oil Seal                                      | 3    |
| 70   | 25301         | NBR    | 25301        | NBR         | Seal, Oil, Crankcase                                  | 3    |
| 71   | 126189        | STCP R | 126189       | STCP R      | Washer, Oil Seal                                      | 3    |
| 75   | 25327         | S      | 25327        | S           | Slinger, Barrier                                      | 3    |
| 77   | 25392         | NBR    | 25392        | NBR         | O-Ring, Sleeve                                        | 6    |
| 80   | 25299         | SCP    | 25299        | SCP         | Sleeve                                                | 3    |
|      | 28460         | S      | 28460        | S           | Sleeve (Unchromed)                                    | 3    |
| 100  | 27710         | PVDF   | 27710        | PVDF        | Retainer, Seal                                        | 3    |
| 101  | 27711         | —      | 27711        | —           | Wick, Long Tab (Use with Blue Dot Seals and Oil Pan)  | 3    |
| 106  | 30315         | NBR    | 30315        | NBR         | Seal, Low-Pressure, (Greased)                         | 3    |
| 109  | 22177         | BBCP   | 22177        | BBCP        | Plug, [¼" NPT(M)]                                     | 1    |
| 110  | 25128         | BBCP   | 25128        | BBCP        | Manifold, Inlet (Models 333, 430)                     | 1    |
|      | 25635         | SS     | 25635        | SS          | Manifold, Inlet (Models 331, 431)                     | 1    |
| 118  | 22160         | BBCP   | 22160        | BBCP        | Elbow, Street [½" NPT(M)]                             | 3    |
| 119  | 28339         | S      | 27004        | S           | Valve, Inlet                                          | 3    |
| 130  | —             | —      | 22021        | S           | Piston                                                | 3    |
| 133  | 28955         | NBR    | 43172        | FPM         | Cup, Piston (Machined Cup—Models 331, 333)            | 3    |
| 135  | 27983         | S      | 27983        | S           | Spacer, Piston                                        | 3    |
| 136  | 27002         | S      | 27002        | S           | Retainer, Piston                                      | 3    |
| 137  | 27006         | S      | 27006        | S           | Washer, Conical (M6)                                  | 3    |
| 138  | 27000         | S      | 27000        | S           | Nut, Slotted (M6) (See Tech Bulletin 074)             | 3    |
| 139  | 14158         | S      | 14158        | S           | Cotterpin (M1.6 x 10)                                 | 3    |
| 143  | 23172         | NBR    | 23172        | NBR         | O-Ring, Cylinder                                      | 6    |
| 150  | 25660         | SCP    | 24285        | SCP         | Cylinder                                              | 3    |
|      | —             | —      | 29044        | S           | Cylinder (Unchromed)                                  | 3    |
| 153  | 21985         | PTFE   | —            | —           | Backup Ring, Cylinder                                 | 3    |
| 164  | 43434         | S      | 43434        | S           | Seat                                                  | 3    |
| 166  | 43723         | S      | 43723        | S           | Valve                                                 | 3    |
| 167  | 43360         | S      | 43360        | S           | Spring                                                | 3    |
| 168  | 43442         | S      | 43442        | S           | Retainer, Spring                                      | 3    |
| 185  | 24459         | BBCP   | 24459        | BBCP        | Manifold, Discharge (Models 333, 430)                 | 1    |
|      | 25634         | SS     | 25634        | SS          | Manifold, Discharge (Models 331, 431)                 | 1    |
|      | 6400          | BB     | 6400         | BB          | Manifold, Pulse Pump (Models 335, 435)                | 1    |
| 186  | 126232        | STCP R | 126232       | STCP R      | Lockwasher (M8)                                       | 2    |
| 187  | 126564        | STCP R | 126564       | STCP R      | Bolt, Cylinder (M8)                                   | 2    |
| 188  | 126591        | STCP R | 126591       | STCP R      | Washer, Shim (M8 x 2 x 13)                            | 2–4  |
| 189  | 126813        | STCP R | 126813       | STCP R      | Washer, Shim (M8 x 1 x 13)                            | 2–4  |
| 190  | 126576        | STCP R | 126576       | STCP R      | Washer, Shim (M8 x .5 x 13)                           | 2–4  |
| 191  | 126590        | STZP   | 126590       | STZP        | Washer, Shim (M8 x .3 x 13)                           | 2–4  |
| 192  | 26676         | S      | 26676        | S           | Retainer, Shim (M8)                                   | 2    |
| 194  | 126201        | STCP R | 126201       | STCP R      | Nut, Hex Flange (M8) (See Tech Bulletin 074)          | 2    |
| 196  | 22187         | BBCP   | 22187        | BBCP        | Plug [¾" NPT(M)]                                      | 1    |

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

R Components comply with RoHS Directive. For additional technical information see [www.catpumps.com/literature/tech-bulletins](http://www.catpumps.com/literature/tech-bulletins).

When replacing Low-Pressure Seals with Blue-Dot Seals, wick must be installed. MATERIAL CODES (Not Part of Part Number):

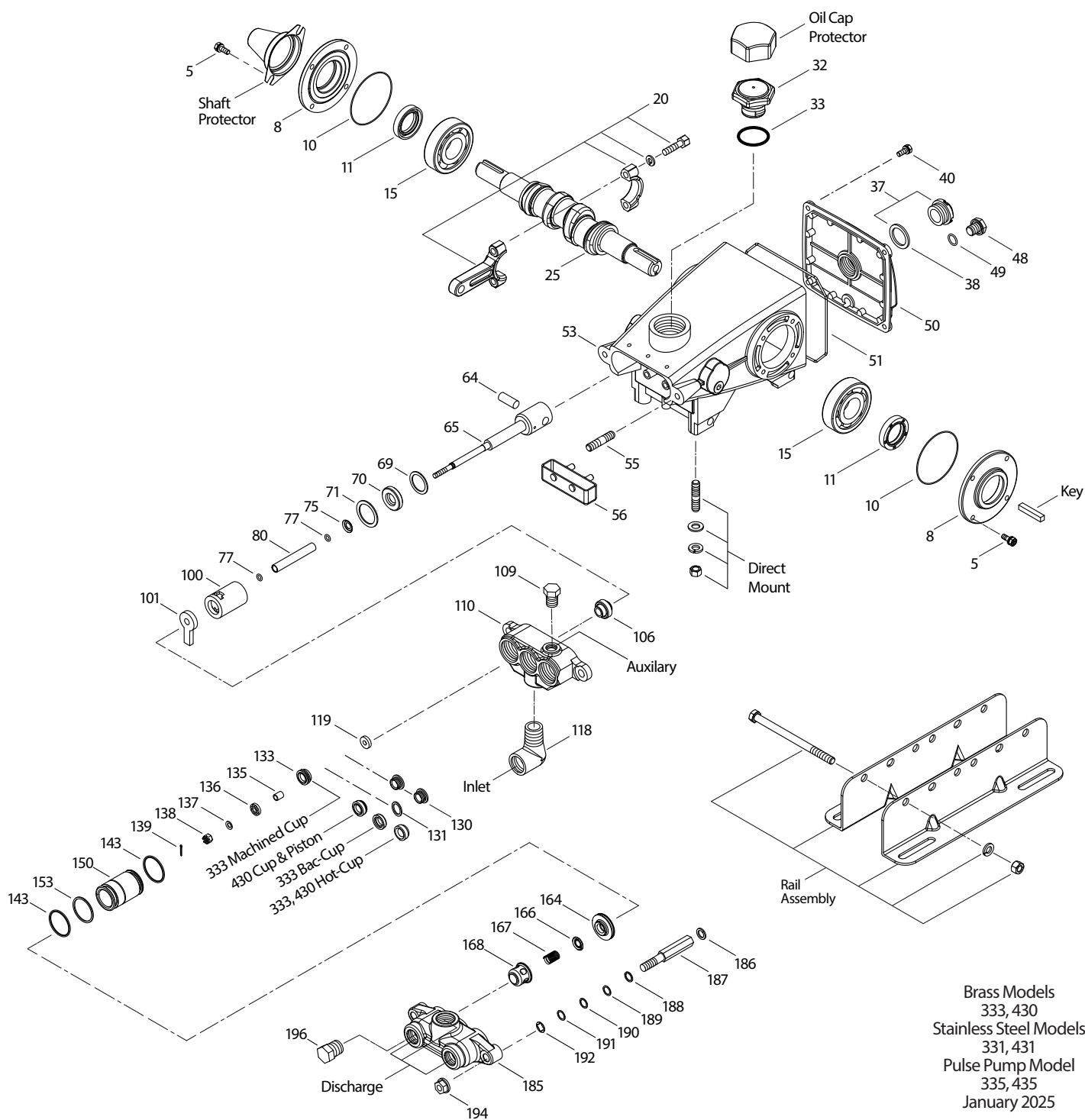
ABS=ABS Plastic AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated CM=Chrome-Moly F=Cast Iron FCM=Forged Chrome-moly FPM=Fluorocarbon

NBR=Medium Nitrile (Buna-N) NY=Nylon PC=Poly Carbonate POP=Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride

S=304SS SCP=304SS/Chrome Plated SNG=Special Blend (Buna) SS=316SS STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated

SZZ=304SS/Zamark ST4=Special PTFE 4 TNM=Special High Strength

## EXPLODED VIEW



Brass Models  
333, 430  
Stainless Steel Models  
331, 431  
Pulse Pump Model  
335, 435  
January 2025

## OPTIONAL PARTS AND ACCESSORIES

| PART   | DESCRIPTION                                    | QTY |
|--------|------------------------------------------------|-----|
| 30047  | Key (M5 x 5 x 24)                              | 1   |
| 30611  | Assembly, Rail                                 | 1   |
| 30652  | Assembly, Mount (Not Shown)                    | 1   |
| 30243  | Mount, Direct                                  | 1   |
| 828710 | Protector, Oil Cap                             | 1   |
| 25130  | Protector, Shaft                               | 1   |
| 34334  | Kit, Oil Drain (3/8" x 24") (Not Shown)        | 1   |
| 30244  | Pulley and Key Assembly (Not Shown)            | 1   |
| 6340   | Pump, Pulse (Not Shown)                        | 1   |
| 991616 | Nipple (1/2" NPT[M] x 1/4" NPT[M]) (Not Shown) | 1   |

## SERVICE PARTS

| PART         | DESCRIPTION                                                                                   | QTY |
|--------------|-----------------------------------------------------------------------------------------------|-----|
| <b>30305</b> | Kit, Seal – Standard NBR                                                                      | 1   |
| <b>30686</b> | Kit, Valve – Standard NBR (All Models Less 435)                                               | 1   |
| 6107         | Oil, Bottle (21 oz) ISO 68 Hydraulic (Fill to Specified Crankcase Capacity Prior to Start-up) | 1   |
| 6124         | Gasket, Liquid (3 oz)                                                                         | 1   |
| 6139         | Lubricant, Anti-Seize (8 oz) (Models 331, 431)                                                | 1   |

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

| PUMP MODELS                  | NBR (STD) | Blue Dot*   |                    |   |
|------------------------------|-----------|-------------|--------------------|---|
| 333, 331, 335, 430, 431, 435 | 30305     | 30229       |                    |   |
| ITEM (Included in Seal Kits) |           | DESCRIPTION | QTY                |   |
| 101                          | NA        | 27711       | Wick               | 3 |
| 106                          | 30315**   | 25153       | Seal, Low-Pressure | 3 |
| 139                          | 14158     | 14158       | Cotterpin          | 3 |

\*Use with oil pan PN 27712

\*\*Use PN 30325 for FPM (Greased)

## SLEEVE AND SEAL KIT One (1) sleeve and seal kit required per pump

| PUMP MODELS                             | NBR (STD)   | Blue Dot* |                    |   |
|-----------------------------------------|-------------|-----------|--------------------|---|
| 333, 331, 335, 430, 431, 435            | 30312       | 30230     |                    |   |
| ITEM (Included in Sleeve and Seal Kits) | DESCRIPTION |           | QTY                |   |
| 75                                      | 25327       | 25327     | Slinger, Barrier   | 3 |
| 77                                      | 25392**     | 25392**   | O-Ring, Sleeve     | 6 |
| 80                                      | 25299       | 25299     | Sleeve             | 3 |
| 101                                     | NA          | 27711     | Wick               | 3 |
| 106                                     | 30315***    | 25153     | Seal, Low-Pressure | 3 |
| 139                                     | 14158       | 14158     | Cotterpin          | 3 |

\*Use with oil pan PN 27712, \*\*Use PN 28771 for FPM or PN 702026 for PTFE

\*\*\*Use PN 30325 for FPM (Greased)

## CUP KITS One (1) cup kit required per pump

| Pump Models                 | 331,333, 335 | 331,333, 335 | 331,333, 335  | 331,333, 335  | 430, 431, 435 | 430, 431, 435 | 430, 431, 435 |                       |     |
|-----------------------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|-----------------------|-----|
|                             | NBR (STD)    | NBR (HOT)    | NBR (BAC-CUP) | NBR (ST4-CUP) | NBR (STD)     | NBR (HOT)     | FPM (ST4-CUP) |                       |     |
|                             | 30239        | 32391        | 30841         | 32383         | 30023         | 30272         | 701443        |                       |     |
| ITEM (Included in Cup Kits) |              |              |               |               |               |               |               | DESCRIPTION           | QTY |
| 133                         | 28955        | 29088        | 43717         | 76019*        | 43172         | 29089         | 76515*        | Cup                   | 3   |
| 139                         | 14158        | 14158        | 14158         | 14158         | 14158         | 14158         | 14158         | Cotterpin             | 3   |
| 143                         | 23172**      | 23172**      | 23172**       | 23172**       | 23172**       | 23172**       | 11377         | O-Ring, Cylinder      | 6   |
| 153                         | 21985        | 21985        | 21985         | 21985         | —             | —             | —             | Backup Ring, Cylinder | 3   |
| 355                         | —            | —            | 43749         | —             | 22130         | —             | —             | Insertor, Cup         | 1   |

\*76019 and 76515 Cups include a FPM O-ring

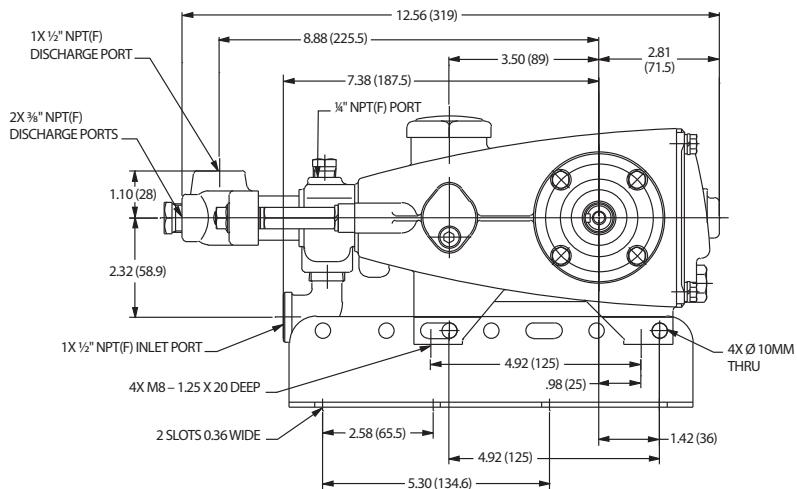
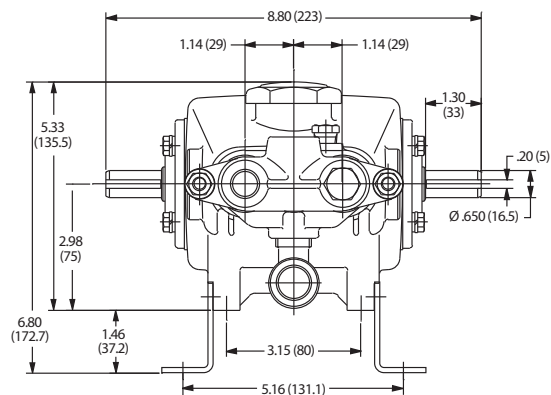
\*\*Use PN 11377 for FPM or PN 703244 for FFKM

## PISTON KITS One (1) piston kit required per pump

| PUMP MODELS                    | 331, 333, 335 | 331, 333, 335 | 430, 431, 435 |                       |     |
|--------------------------------|---------------|---------------|---------------|-----------------------|-----|
|                                | NBR (STD)     | FPM (BAC-CUP) | NBR (STD)     |                       |     |
|                                | 30240         | 30842         | 30210         |                       |     |
| ITEM (Included in Piston Kits) |               |               |               | DESCRIPTION           | QTY |
| 119                            | 28339         | 28339         | 27004         | Valve, Inlet          | 3   |
| 130                            | —             | 43784         | 22021         | Piston                | 3   |
| 131                            | —             | 43719         | —             | Bac-Cup Ring          | 3   |
| 133                            | 28955         | 43717         | 43172         | Cup                   | 3   |
| 135                            | 27983         | 27983         | 27983         | Spacer, Piston        | 3   |
| 136                            | 27002         | 27002         | 27002         | Retainer, Piston      | 3   |
| 137                            | 27006         | 27006         | 27006         | Washer, Conical       | 3   |
| 138                            | 27000         | 27000         | 27000         | Nut, Slotted          | 3   |
| 139                            | 14158         | 14158         | 14158         | Cotterpin             | 3   |
| 143                            | 23172         | 23172         | 23172         | O-Ring, Cylinder      | 6   |
| 153                            | 21985         | 21985         | —             | Backup Ring, Cylinder | 3   |
| 355                            | —             | —             | 22130         | Insertor, Cup         | 1   |

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

| PUMP MODELS                   | NBR (QUIET) | NBR (FLAT) | NBR (PULSE) |                                     |   |
|-------------------------------|-------------|------------|-------------|-------------------------------------|---|
| 331, 333, 430, 431            | 30686       | 30024      | —           |                                     |   |
| 335, 435 for Pulse Pump 6400  | —           | —          | 30103       |                                     |   |
| ITEM (Included in Valve Kits) |             |            | DESCRIPTION | QTY                                 |   |
| 143                           | 23172       | 23172      | 23172       | O-Ring, Cylinder                    | 6 |
| 153                           | —           | —          | —           | Backup Ring, Cylinder               | 3 |
| 164                           | 43434       | 29487      | 29487       | Seat                                | 3 |
| 166                           | 43723       | 22842      | 22842       | Valve                               | 3 |
| 167                           | 43360       | 22031      | 22031       | Spring                              | 3 |
| 168                           | 43442       | 22841      | 22841       | Retainer, Spring (Qty: 2 for 30103) | 3 |
|                               | —           | —          | 30497       | Washer, Seal                        | 3 |
|                               | —           | —          | 28419       | Spring (Flat)                       | 1 |
|                               | —           | —          | 26886       | Retainer, Spring                    | 1 |



## Models 333, 430

## 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)