

DATA SHEET

SLEEVED DIRECT DRIVE PLUNGER PUMP

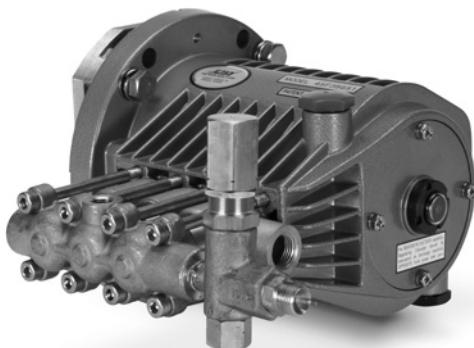


**Brass Electric
Models:**

4SF40ELS, 4SF45ELS, 4SF50ELS

**Brass Gas
Models:**

4SF35GS1, 4SF40GS1, 4SF45GS1, 4SF50GS1



Model 4SF40GS1 Shown
(Unloader included with pump)

FEATURES

- Triplex design provides smoother liquid flow.
- Unique spring loaded inlet valves and the flow through ceramic plungers allow excellent suction capabilities.
- Compact, hollow shafted pump for direct mounting to either gas or electric motor, eliminates the need for pulleys, belts, gearboxes.
- Regulating Unloader mounts directly on each pump to assure system pressure control and pump protection.
- Convenient multiple porting provides installation flexibility.
- Mounting Flange: SAE J609, Flange B, Extension 4 (1"Ø), Shaft Length = 3 1/4" Pilot Ø = 5 3/4", B.C. Ø = 6 1/2", Thread = 3/8"-16 UNC TAP

COMMON SPECIFICATIONS

| | U.S. | Metric |
|---------------------------------|-----------------------|---------------------|
| Inlet Pressure Range (Electric) | -2 to 75 psi | -0.14 to 5.17 bar |
| Inlet Pressure Range (Gas) | Flooded to 75 psi | Flooded to 5.17 bar |
| Std. Operating Temperature* | 160°F | 71°C |
| Bore | 0.787" | 20 mm |
| Crankcase Capacity | 23.66 oz. | 0.70 l |
| Inlet Port (1) | 1/2" NPT(F) | 1/2" NPT(F) |
| By-Pass Port (1) | 3/8" NPT(F) | 3/8" NPT(F) |
| Discharge Ports (2) | 3/8" NPT(F) | 3/8" NPT(F) |
| Auxiliary Port (1) | 1/4" NPT(F) | 1/4" NPT(F) |
| Weight (Pump only) | 24.31 lbs. | 11.0 kg |
| Dimensions (Pump only) | 8.23 x 11.20 x 12.33" | 209 x 284 x 313 mm |

*Above 130°F call Cat Pumps for inlet conditions and elastomer recommendations.

| SPECIFICATIONS | | U.S. Measure | Metric Measure |
|----------------------------------|----------|--------------|----------------|
| 4SF40ELS - Electric Model | | | |
| Flow | 4.0 gpm | 15 lpm | |
| Max. Discharge Pressure | 3500 psi | 241 bar | |
| Max. RPM | 1725 rpm | 1725 rpm | |
| Stroke | 0.382" | 9.7 mm | |
| 4SF45ELS - Electric Model | | | |
| Flow | 4.5 gpm | 17 lpm | |
| Max. Discharge Pressure | 3000 psi | 207 bar | |
| Max. RPM | 1725 rpm | 1725 rpm | |
| Stroke | 0.437" | 11.1 mm | |
| 4SF50ELS - Electric Model | | | |
| Flow | 5.0 gpm | 19 lpm | |
| Max. Discharge Pressure | 3000 psi | 207 bar | |
| Max. RPM | 1725 rpm | 1725 rpm | |
| Stroke | 0.453" | 11.5 mm | |
| 4SF35GS1 - Gas Model | | | |
| Flow | 3.5 gpm | 13.2 lpm | |
| Max. Discharge Pressure | 3500 psi | 241 bar | |
| Max. RPM | 3200 rpm | 3200 rpm | |
| Stroke | 0.197" | 5.0 mm | |
| 4SF40GS1 - Gas Model | | | |
| Flow | 4.0 gpm | 15 lpm | |
| Max. Discharge Pressure | 3500 psi | 241 bar | |
| Max. RPM | 3200 rpm | 3200 rpm | |
| Stroke | 0.224" | 5.7 mm | |
| 4SF45GS1 - Gas Model | | | |
| Flow | 4.5 gpm | 17 lpm | |
| Max. Discharge Pressure | 3000 psi | 207 bar | |
| Max. RPM | 3200 rpm | 3200 rpm | |
| Stroke | 0.256" | 6.5 mm | |
| 4SF50GS1 - Gas Model | | | |
| Flow | 5.0 gpm | 19 lpm | |
| Max. Discharge Pressure | 3000 psi | 207 bar | |
| Max. RPM | 3200 rpm | 3200 rpm | |
| Stroke | 0.276" | 7.0 mm | |

ELS = Electric 1-1/8" hollow shaft with bolt mount
GS1 = Gas 1" hollow shaft with bolt and adapter mount

PARTS LIST

| ITEM | PART NUMBER | MATL | DESCRIPTION | MODEL USED | QTY |
|------|--------------|--------|---|----------------------------|-----|
| 4 | 125824 | STCP R | Screw, HHC Sems (M6x16) | All Models | 4 |
| 5 | 126541 | STCP R | Screw, HHC Sems (M6x20) | All Models | 4 |
| 6 | 150810 | NBR | Washer, Seal (M6) | All Models | 4 |
| 7 | 45707 | AL | Cover, Bearing (Outer) | All Models | 1 |
| 8 | 45172 | AL | Case, Bearing (Inner) | All Models | 1 |
| 9 | 127026 | STCP R | Washer, Bearing | All Models | 1 |
| 10 | 89811 | NBR | O-Ring, Bearing Cover | All Models | 1 |
| 11 | 141852 | NBR | Seal, Oil | All Models | 1 |
| 12 | 14037 | NBR | O-Ring, Bearing Cover | All Models | 1 |
| 14 | 45174 | STL | Bearing, Ball (Inner) | All Models | 1 |
| 15 | 45175 | STL | Bearing, Ball (Outer) | All Models | 1 |
| 20 | 45572 | HS | Rod, Connecting | All Models | 3 |
| 25 | 46161 | FCM | Crankshaft (5.0mm) | 35GS1 | 1 |
| | 45575 | FCM | Crankshaft (5.7mm) | 40GS1 | 1 |
| | 45574 | FCM | Crankshaft (6.5mm) | 45GS1 | 1 |
| | 45571 | FCM | Crankshaft (9.7mm) | 40ELS | 1 |
| | 45570 | FCM | Crankshaft (11.1mm) | 45ELS | 1 |
| | 45741 | FCM | Crankshaft (11.5mm) | 50ELS | 1 |
| | 46315 | FCM | Crankshaft (7.0mm) | 50GS1 | 1 |
| 32 | 45690 | RTP | Cap, Oil Filler | All Models | 1 |
| 33 | 14179 | NBR | O-Ring, Oil Filler Cap - 70D | All Models | 1 |
| 37 | 92241 | — | Gauge, Bubble Oil w/Gasket - 80D | All Models | 1 |
| 38 | 44428 | NBR | Gasket, Flat Flex - 80D | All Models | 1 |
| 48 | 44842 | NY | Plug, Drain | All Models | 1 |
| 49 | 14179 | NBR | O-Ring, Drain Plug - 70D | All Models | 1 |
| 53 | 45168 | AL | Crankcase | All Models except 35GS1 | 1 |
| | 48285 | AL | Crankcase (2-set Screw) | 4SF35GS1 | 1 |
| 64 | 45179 | CM | Pin, Crosshead | All Models | 3 |
| 65 | 46644 | SHS | Rod, Sleeved, Plunger | All Models | 3 |
| 69 | 126585 | STCP R | Washer, Seal | All Models | 3 |
| 70 | 27339 | NBR | Seal, Oil | All Models | 3 |
| 75 | 43568 | S | Slinger, Barrier | All Models | 3 |
| 77 | 25392 | NBR | O-Ring, Sleeve - 70D | All Models | 3 |
| 80 | 46646 | SS | Sleeve | All Models | 3 |
| 81 | 29003 | PTFE | Back-up-Ring, Sleeve | All Models | 3 |
| 90 | 45848 | CC | Plunger (M20x24) | All Models | 3 |
| 100 | 45183 | PVDF | Retainer, Seal | All Models | 3 |
| 106 | 45188 | NBR | Seal, LPS w/S-Spg | All Models | 3 |
| 110 | 45187 | BB | Manifold, Inlet | All Models | 1 |
| 126 | 45190 | BB | Adapter, Female | All Models | 3 |
| 127 | 45191 | SNG | V-Packing | All Models | 6 |
| 134 | 45845 | S | Valve, Inlet | All Models | 3 |
| 135 | 549520 | S | Spacer, Inlet | All Models | 3 |
| 136 | 45186 | S | Spring, Inlet Valve | All Models | 3 |
| 137 | 88575 | S | Washer, Conical (M6) | All Models | 3 |
| 138 | 27000 | S | Nut, Slotted (M6) | All Models | 3 |
| 139 | 14158 | S | Cotterpin (M1.6x10) | All Models | 3 |
| 152 | 43781 | NBR | O-Ring, Adapter - 75D | All Models | 6 |
| 153 | 21986 | PTFE | Back-up-Ring, Adapter | All Models | 6 |
| 157 | 45192 | BB | Adapter | All Models | 3 |
| 164 | 45194 | S | Seat | All Models | 3 |
| 166 | 43721 | S | Valve | All Models | 3 |
| 167 | 43751 | S | Spring | All Models | 3 |
| 168 | 44564 | PVDF | Retainer, Spring | All Models | 3 |
| 185 | 45193 | BB | Manifold, Discharge | All Models | 1 |
| 188 | 127027 | STCP R | Screw, HSH (M8x100) | All Models | 8 |
| 197 | 941517 | BB | Assembly, Garden Hose 1/2" (Not Shown) | All Models | 1 |
| 249 | 30972 | — | Assy, Adapter Mount, | Gas Models Only | 1 |
| 255 | 30518 | STZP | Assy, Bolt Mount, Gas | 40GS1, 45GS1, 50GS1 | 1 |
| | 30511 | STZP | Assy, Bolt Mount, 2-set Screw | 35GS1 | 1 |
| | 30513 | STZP | Assy, Bolt Mount, Electric | 40ELS, 45ELS, 50ELS | 1 |
| | 30974 | — | *Assy, Bolt Mount (Short Shaft) | 35GS1, 40GS1, 45GS1, 50GS1 | 1 |
| 285 | 80228 | STL | Screw (M8-1.25x80), Engine Removal | All Models | 2 |
| 300 | 34054 | NBR | Kit, Seal (Incls: 106, 127, 139, 152) | All Models | 1 |
| 305 | 34063 | NBR | Kit, Sleeve & Seal (Incls: 75, 77, 80, 81, 106, 127, 139, 152) | All Models | 1 |
| 310 | 34055 | NBR | Kit, Discharge Valve (Incls: 152, 153, 164, 166, 167, 168) | All Models | 1 |
| 311 | 34770 | NBR | Kit, Inlet Valve (Incls: 134-139, 152) | All Models | 1 |
| 400 | 76005 | BB | Unloader, Regulating | All Models | 1 |
| — | 6107 | — | Oil, Bottle (21 oz.) ISO-68 Hydraulic (Fill to specified crankcase capacity prior to start-up) | All Models | 1 |

Bold part numbers are unique to a particular pump model. Italics are optional items. R Components comply with RoHS Directive.

See Tech Bulletins 002, 036, 043, 055, 057, 064, 065, 070, 074, 075 and 083 for additional information.

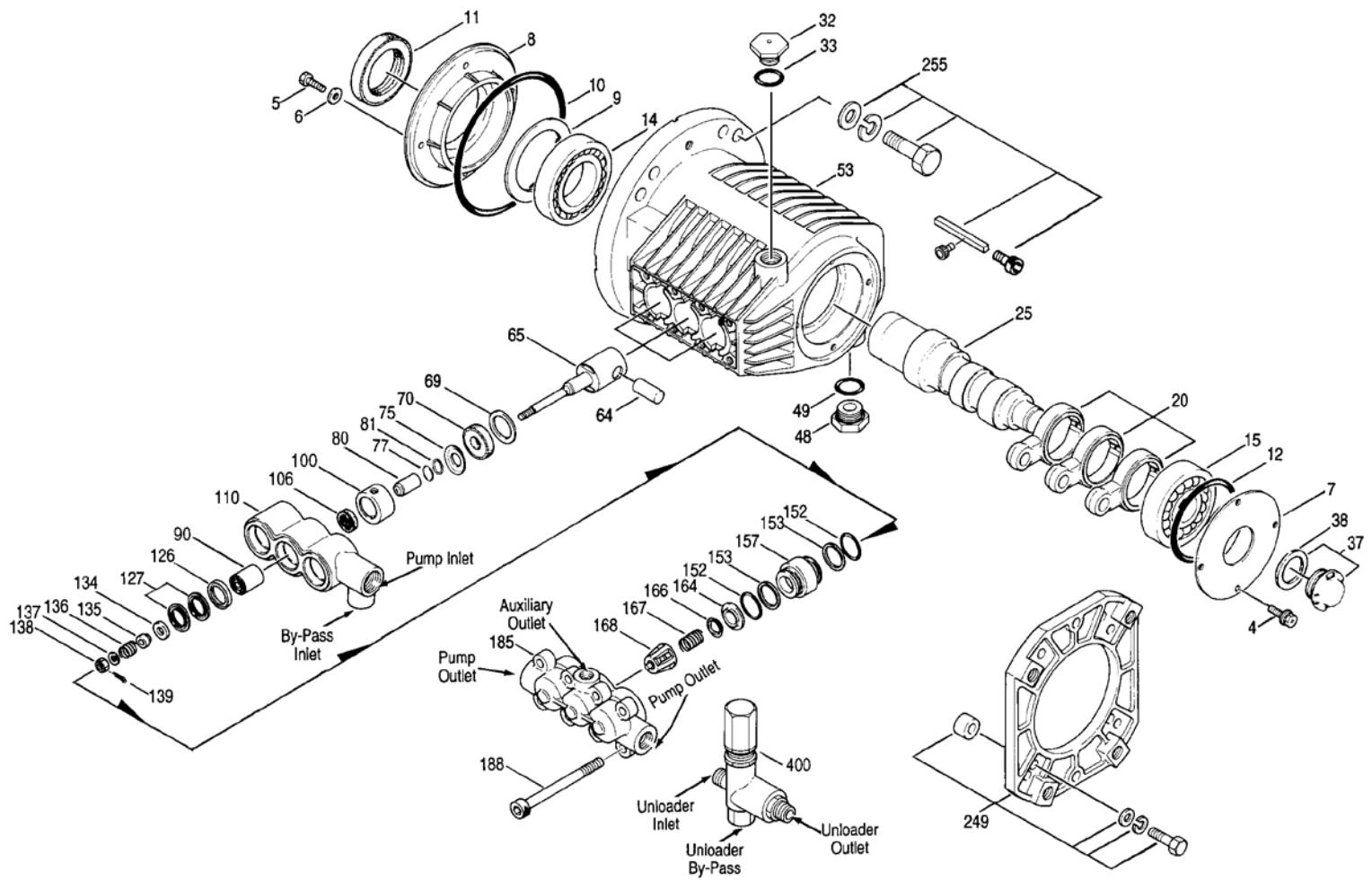
MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic CM=Chrome-moly FCM=Forged Chrome-moly HS=High Strength
NBR=Medium Nitrile (Buna-N) NY=Nylon PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride RTP=Reinforced Composite S=304SS SHS=304SS/High Strength

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

*Substitute special BS Bolt Kit when Briggs-Stratton engine is used. Installation of a shaft retaining bolt, flat washer and lockwasher is also recommended when using the Briggs-Stratton engine to secure key.

EXPLODED VIEW

Electric Models
4SF40ELS, 4SF45ELS,
4SF50ELS
Gas Models
4SF35GS1, 4SF40GS1
4SF45GS1, 4SF50GS1



UNLOADER SPECIFICATIONS

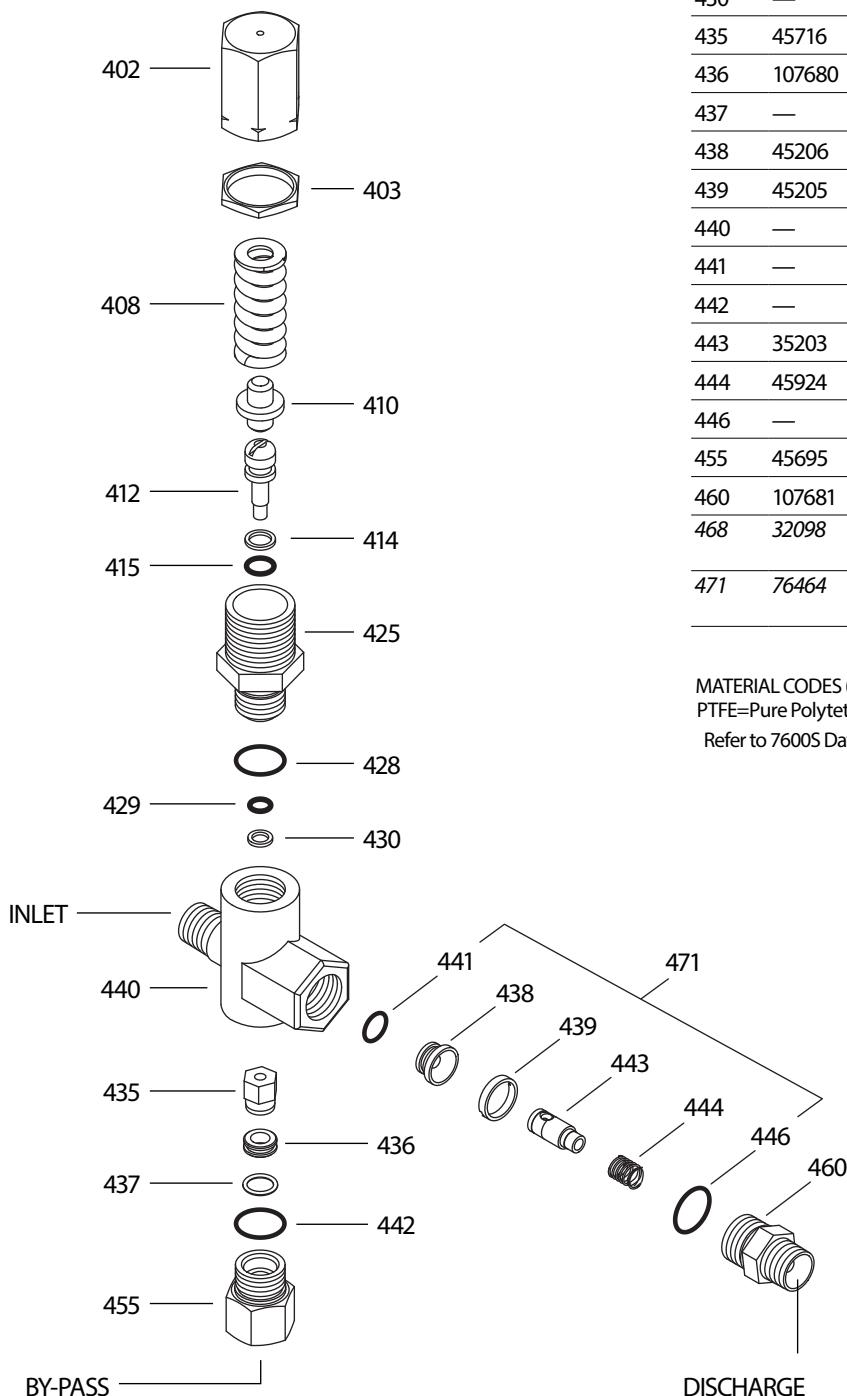
| MODEL 7600S | U.S. | METRIC |
|------------------------|-------------------|------------------|
| Flow | 2.0 - 5.0 gpm | 7.6 - 19 lpm |
| Pressure Range | 700 - 3500 psi | 50 - 241 bar |
| Inlet Port - Rear | 3/8" NPT(M) | 3/8" NPT(M) |
| Discharge Port - Front | 3/8" NPT(M) | 3/8" NPT(M) |
| By-Pass Port - Bottom | 3/8" NPT(F) | 3/8" NPT(F) |
| Weight | 21.6 oz. | 0.61 kg |
| Dimensions | 3.25 x 1.0 x 5.0" | 82 x 25 x 127 mm |

PARTS LIST

| ITEM | PN | MATL | DESCRIPTION | QTY |
|------|--------|------|--|-----|
| 402 | 45197 | BB | Cap, Hex Adjusting | 1 |
| 403 | 45201 | BB | Nut, Lock (M25x1) | 1 |
| 408 | 45198 | ZP | Spring, Pressure | 1 |
| 410 | 45199 | STZP | Retainer, Spring | 1 |
| 412 | 45694 | S | Stem, Piston (M5) | 1 |
| 414 | — | PTFE | Back-up-Ring, Piston Stem | 1 |
| 415 | — | NBR | O-Ring, Piston Stem - 70D | 1 |
| 425 | 45200 | BB | Retainer, Piston | 1 |
| 428 | — | NBR | O-Ring, Piston Guide - 80D | 1 |
| 429 | — | NBR | O-Ring, Body | 1 |
| 430 | — | PTFE | Back-up-Ring, Body | 1 |
| 435 | 45716 | S | Valve and Ball Assembly (M5) | 1 |
| 436 | 107680 | S | Seat | 1 |
| 437 | — | NBR | O-Ring, Seat | 1 |
| 438 | 45206 | S | Seat, Check Valve | 1 |
| 439 | 45205 | BB | Collar | 1 |
| 440 | — | BB | Body | 1 |
| 441 | — | NBR | O-Ring, Check Valve Seat - 70D | 1 |
| 442 | — | NBR | O-Ring, Adapter - 80D | 1 |
| 443 | 35203 | BB | Valve, Check w/O-Ring | 1 |
| 444 | 45924 | S | Spring, Check Valve | 1 |
| 446 | — | NBR | O-Ring, Discharge Fitting - 80D | 1 |
| 455 | 45695 | BB | Fitting, By-Pass [3/8" NPT(F)] | 1 |
| 460 | 107681 | BB | Fitting, Discharge [3/8" NPT(M)] | 1 |
| 468 | 32098 | NBR | Kit, O-Ring (Incls: 414, 415, 428, 429, 430, 437, 441, 442, 446) | 1 |
| 471 | 76464 | NBR | Kit, Check Valve (Incls: 438, 439, 441, 443, 444, 446) | 1 |

Italics are optional items.

MATERIAL CODES (Not Part of Part Number): BB=Brass NBR=Medium Nitrile (Buna-N)
 PTFE=Pure Polytetrafluoroethylene S=304SS STZP=Steel/Zinc Plated ZP=Zinc Plated
 Refer to 7600S Data Sheet for repair procedure and additional technical information.



UNLOADER TYPE

Each pump comes with a pressure sensitive regulating unloader. This unloader will set system pressure. While in by-pass the line pressure will drop to a low pressure mode and then quickly build up to set system pressure when the system is back to full use.

INSTALLATION AND START-UP

Install a pressure gauge close to the manifold head of the pump to assist in setting system pressure and to periodically monitor system pressure. By-pass line can be directed to the ground, or to a reservoir or be redirected to the 3/8" NPT(F) port on bottom side of inlet manifold. If routing to pump inlet use a 3/8" flexible hose and thermo valve.

NOTE: If not using a thermo valve **DO NOT EXCEED 6 MINUTES** in by-pass.

Pump should be purged of air before commencing with operation. Liquid must flow through the pump without discharge restriction to assure full system pressure is reached.

Setting and adjusting the unloader pressure must be done with the system turned on. Start the system with the unloader backed off to the lowest pressure setting (counterclockwise direction). Squeeze the trigger and read the pressure on the gauge at the pump. Do not read pressure at the gun or nozzle. If more pressure is desired, release the trigger, turn adjusting cap one quarter turn in a clockwise direction. Squeeze the trigger and read the pressure. Repeat this process until the desired system pressure is reached. Thread locking nut up to adjusting cap.

NOTE: Pressure is not set at the factory.

SERVICE

The unloader should be serviced on the same schedule as the seals in the pump. Refer to SF Plunger Pump Service Manual for start-up, servicing of seals and valves, torque requirements and diagnosis and maintenance chart.

NOTE: For maximum suction capability, regulating unloader should be remounted on discharge manifold, opposite from inlet port.

CHEMICAL INJECTOR PERFORMANCE CHART

| Desired Pump Flow | Injector Orifice Size | Injector Model | Lo-Pressure Nozzle (Maximum injecting pressure less hose friction loss) | Max. Chem. Draw (0 PSI) (Downstream) | Hi-Press Nozzle "Deduction" (Press. drop across inj.) |
|-------------------|-----------------------|----------------|---|--------------------------------------|---|
| 3.5 | 2.1 mm | 7193 | 300 PSI | 50 oz/min | 200 PSI |
| 3.5 | 2.3 mm | 7194 | 185 PSI | 56 oz/min | 175 PSI |
| 4.0 | 2.1 mm | 7193 | 375 PSI | 54 oz/min | 250 PSI |
| 4.0 | 2.3 mm | 7194 | 225 PSI | 50 oz/min | 225 PSI |
| 4.5 | 2.1 mm | 7193 | 485 PSI | 54 oz/min | 325 PSI |
| 4.5 | 2.3 mm | 7194 | 260 PSI | 50 oz/min | 285 PSI |
| 5.0 | 2.3 mm | 7194 | 300 PSI | 50 oz/min | 350 PSI |

Optimum performance of chemical injector occurs with a 35 ft. high pressure hose and a minimum 3/8" I.D. The type of hose, extended lengths, reduced I.D. and fittings may create back pressures in excess of the low pressure nozzle rating and prevent the injector from drawing chemical. Deduct hose friction loss from above low PSI Nozzle.

CHEMICAL INJECTOR SPECIFICATIONS

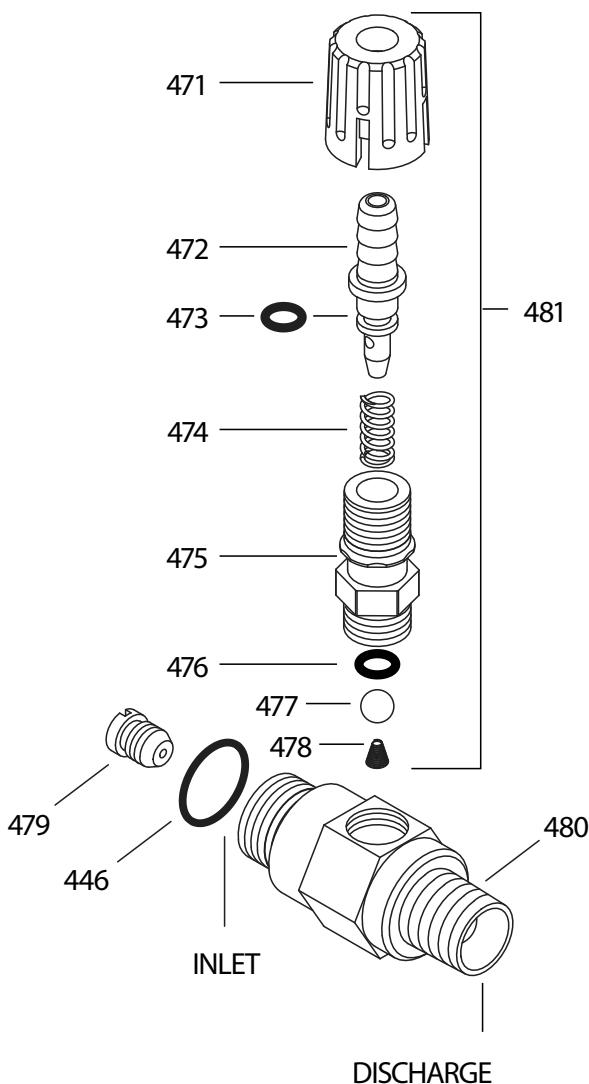
| MODEL | 7194 | 7193 |
|----------------|-------------|-------------|
| Flow | 4 - 5 gpm | 3 - 4 gpm |
| Nozzle Orifice | 2.3 mm | 2.1mm |
| Hose Barb | 1/4" | 1/4" |
| Inlet Port | M18 x 1.0 | M18 x 1.0 |
| Discharge Port | 3/8" NPT(M) | 3/8" NPT(M) |
| Weight | 6.3 oz. | 6.3 oz. |
| Dimensions | 2 x 1 x 3" | 2 x 1 x 3" |

PARTS LIST

| ITEM | PN | MATL | DESCRIPTION | MODEL USED | QTY |
|------|-------|------|---|------------|-----|
| 446 | 26133 | NBR | O-Ring, Body - 80D | All Models | 1 |
| 471 | 33949 | NY | Handle, Adjustment | All Models | 1 |
| 472 | — | BB | Barb, Adjustable | All Models | 1 |
| 473 | — | NBR | O-Ring, Hose Barb | All Models | 1 |
| 474 | — | S | Spring | All Models | 1 |
| 475 | — | BB | Retainer, Ball Seat | All Models | 1 |
| 476 | — | FPM | O-Ring, Retainer | All Models | 1 |
| 477 | — | SS | Ball | All Models | 1 |
| 478 | — | SS | Spring, Tapered | All Models | 1 |
| 479 | 32374 | S | Orifice, Injector (2.3 mm) <i>Standard</i> | 7194 | 1 |
| | 32373 | S | Orifice, Injector (2.1mm) | 7193 | 1 |
| 480 | — | BB | Body | All Models | 1 |
| 481 | 33481 | BBNY | Barb Assembly, Adjustable <i>(Incls: 471, 472, 473, 474, 475, 476, 477, 478)</i> | All Models | 1 |

Italics are optional items.

MATERIAL CODES (Not Part of Part Number): BB=Brass FPM=Fluorocarbon
NBR=Medium Nitrile (Buna-N) NY=Nylon S=304SS SS=316SS



ELECTRIC MOTOR SPECIFICATIONS

Model 999839

| | |
|----------------|---------------|
| Horsepower | 3.0 |
| Shaft Diameter | 1-1/8" |
| Maximum Volts | 208-230/460 |
| Full Load Amps | 14.7-13.6/6.8 |
| RPM | 1750 |
| Weight | 99 lbs. |
| Phase | Single |
| Frame Size | 184TC |
| Service Factor | 1.15 |

Model 999809

| | |
|----------------|----------------|
| Horsepower | 3.0 |
| Shaft Diameter | 1-1/8" |
| Maximum Volts | 208-230/460 |
| Full Load Amps | 8.4-7.6/3.8 |
| RPM | 1750 |
| Weight | 100 lbs. |
| Phase | Three |
| Frame Size | 182/184TC TEFC |
| Service Factor | 1.15** |

** Service Factor at 208V = 1.00

Model 997634

| | |
|----------------|----------------|
| Horsepower | 5.0 |
| Shaft Diameter | 1-1/8" |
| Maximum Volts | 208-230/460 |
| Full Load Amps | 22.5-21.4/10.7 |
| RPM | 1750 |
| Weight | 113 lbs. |
| Phase | Single |
| Frame Size | 184TC |
| Service Factor | 1.15** |

** Service Factor at 208V = 1.00

Model 996543

| | |
|----------------|----------------|
| Horsepower | 5.0 |
| Shaft Diameter | 1-1/8" |
| Maximum Volts | 208-230/460 |
| Full Load Amps | 14.3-12.9/6.45 |
| RPM | 1750 |
| Weight | 104 lbs. |
| Phase | Three |
| Frame Size | 182/184TC TEFC |
| Service Factor | 1.25** |

** Service Factor at 208V = 1.15

Model 998517

| | |
|----------------|----------------|
| Horsepower | 7.5 |
| Shaft Diameter | 1-1/8" |
| Maximum Volts | 208-230/460 |
| Full Load Amps | 32.0-30.6/15.3 |
| RPM | 1750 |
| Weight | 180 lbs. |
| Phase | Single |
| Frame Size | 213/215TCZ* |
| Service Factor | 1.15** |

* Frame size - 213/215TC w/ 184C Face ** Service Factor at 208V = 1.00

Model 999800

| | |
|----------------|----------------|
| Horsepower | 7.5 |
| Shaft Diameter | 1-1/8" |
| Maximum Volts | 208-230/460 |
| Full Load Amps | 19.9-18.4/9.18 |
| RPM | 1750 |
| Weight | 168 lbs. |
| Phase | Three |
| Frame Size | 213/215TCZ* |
| Service Factor | 1.25** |

* Frame size - 213/215TC w/ 184C Face ** Service Factor at 208V = 1.15

Model 8046

| | |
|----------------|----------------|
| Horsepower | 10.0 H.P. |
| Shaft Diameter | 1-1/8" |
| Maximum Volts | 208-230/460 V |
| Full Load Amps | 28/26/13 AMPS. |
| RPM | 1725 |
| Weight | 140.1 lbs. |
| Phase | Three |
| Frame Size | 215 TCZ TEFC* |
| Service Factor | 1.15 |

* Frame size - 213/215TCZ w/ 184C Face

Common Motor Specifications

| | |
|--------------------------|-------|
| Max. Ambient Temperature | 104°F |
| Hertz | 60 Hz |
| Capacitor Start | Yes |

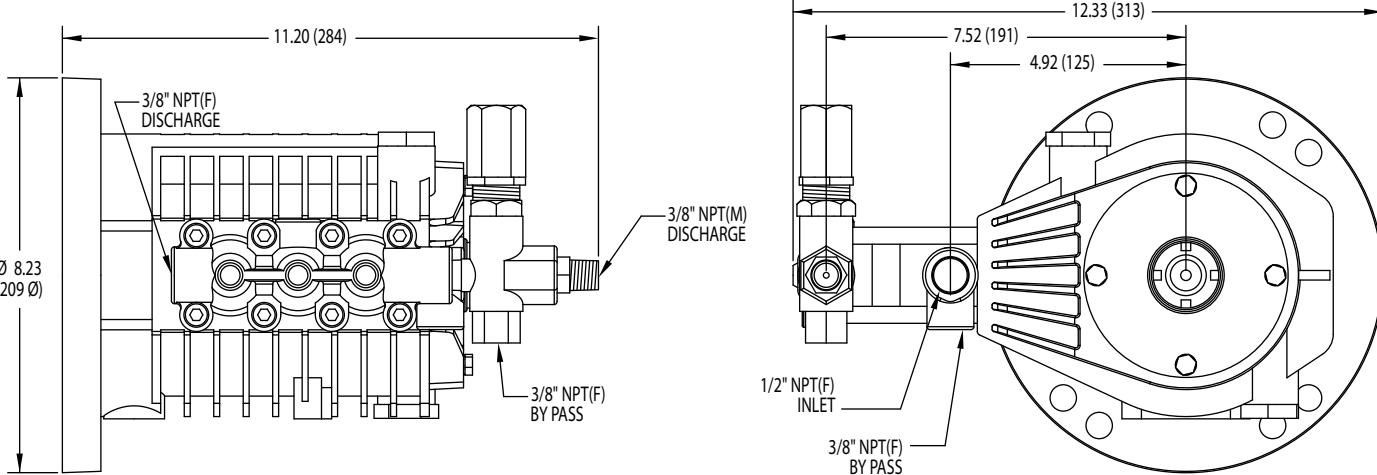
Note: Motor Start-Up AMPS may vary, then settle within FULL LOAD AMPS rating after initial run in time.

Before mounting pump on motor, apply P.N. 6106 Antiseize Lubricant to pump shaft.

Refer to Tech Bulletin 055 for instructions on removing pump from electric motor.

DETERMINING THE REQUIRED H.P.

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



⚠ 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.



CAT PUMPS

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