DATA SHEET DIRECT DRIVE PLUNGER PUMPS



Brass Electric 2SF10ES, 2SF20ES, 2SF22ELS,

Models: 2SF29ELS, 2SF30ES, 2SF35ES

Brass Gas Models: 2SF30GS, 2SF35GS



Model 2SF10ES Shown (Unloader included with pump)

FEATURES

- Available in two configurations: hollow-shaft pump for direct mounting to gas engine or electric motor, or as motorized units.
- Includes regulating unloader to ensure system pressure control and pump protection.
- 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 (Standard) | Flooded to 75 psi | Flooded to 5.2 bar |
| Inlet Pressure Range (High-Temp) | 30-75 psi | 2.1–5.2 bar |
| Max. Liquid Temperature (NBR) | 160° F | 71°C |
| Alternate seals available for high | er temperatures up | to 180° F |
| Bore | 0.708" | 18 mm |
| Crankcase Capacity | 10.1 oz | 0.31 |
| Inlet Port (1) | 3/8" NPT(F) | 3/8" NPT(F) |
| Discharge Port (1) | 3/8" NPT(F) | 3/8" NPT(F) |
| Discharge Port (1) | 3/8" NPT(M) | 3/8" NPT(M) |
| Bypass Port (1) | 1/4" NPT(F) | 1/4" NPT(F) |
| Weight (Pump Only) | 10.6 lbs | 4.8 kg |
| Dimensions (Pump Only) | 9.13 x 6.65 x 6.50" | 232 x 169 x 165 mm |

| SPECIFICATIONS | U.S. Measure | Metric Measure | U.S. Measure | Metric Measure |
|-------------------------|-----------------|-------------------|-----------------|-------------------|
| | 2SF | 10ES | 2SF2 | 20ES |
| Flow | 1.0 gpm | 3.8 lpm | 2.0 gpm | 7.6 lpm |
| Max. Discharge Pressure | 2000 psi | 138 bar | 2000 psi | 138 bar |
| Pump RPM | 3450 rpm | 3450 rpm | 3450 rpm | 3450 rpm |
| Stroke | 0.071" | 1.8 mm | 0.122" | 3.1 mm |
| | 2SF2 | 2ELS | 2SF2 | 22ES |
| Flow | 2.2 gpm | 8.3 lpm | 2.2 gpm | 8.3 lpm |
| Max. Discharge Pressure | 2000 psi | 138 bar | 2000 psi | 138 bar |
| Pump RPM | 1725 rpm | 1725 rpm | 3450 rpm | 3450 rpm |
| Stroke | 0.248" | 6.3 mm | 0.132" | 3.35 mm |
| | 2SF2 | 9ELS | 2SF30ES | |
| Flow | 2.85 gpm | 10.8 lpm | 3.0 gpm | 11.4 lpm |
| Max. Discharge Pressure | 1500 psi | 103 bar | 1500 psi | 103 bar |
| Pump RPM | 1725 rpm | 1725 rpm | 3450 rpm | 3450 rpm |
| Stroke | 0.335" | 8.5 mm | 0.181" | 4.6 mm |
| | 2SF3 | BOGS | | , |
| Flow | 3.0 gpm | 11.4 lpm | | |
| Max. Discharge Pressure | 2000 psi | 138 bar | | |
| Pump RPM | 3450 rpm | 3450 rpm | | |
| Stroke | 0.189" | 4.8 mm | | |
| | 2SF35ES | | 2SF3 | B5GS |
| Flow | 3.5 gpm | 13.2 lpm | 3.5 gpm | 13.2 lpm |
| Max. Discharge Pressure | 1500 psi | 103 bar | 2000 psi | 138 bar |
| Pump RPM | 3450 rpm | 3450 rpm | 3450 rpm | 3450 rpm |
| Stroke | 0.220" | 5.6 mm | 0.220" | 5.6 mm |

ES = **Electric** 5/8" hollow shaft with bolt mount, NEMA 56C

 $GS = Gas \frac{3}{4}$ " hollow shaft with bolt mount and adapter.

Gas Mounting Flange: SAE J609, Flange A, Extension 3 (3/4" Ø)

Shaft Length = 2.296, Pilot Ø = $1\frac{5}{8}$ ", B.C. Ø = $3\frac{5}{8}$ ", Thread = $\frac{5}{16}$ " -24 UNC Tap

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

ALTERNATIVE SEAL CONFIGURATION

| MATERIAL | NATERIAL 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) | | |

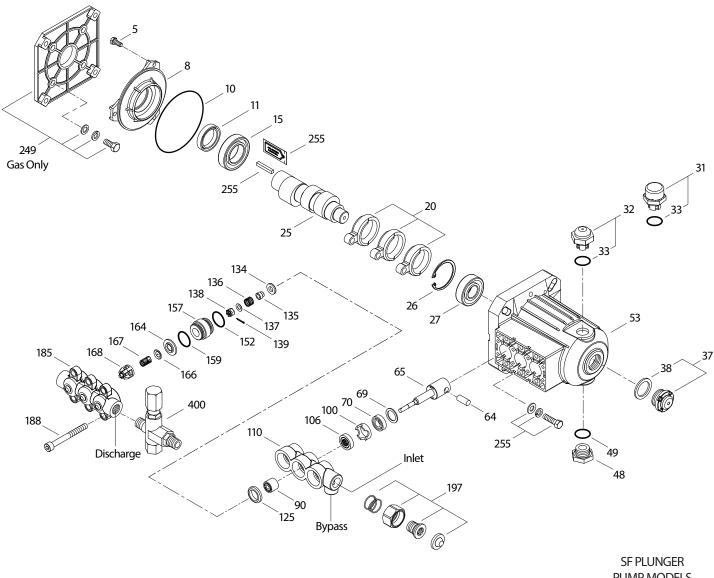
See **Tech Bulletin 002** for inlet conditions and RPM at high-temperature.

Click here for the Cat Pump # 2SF22ELS Web Page

PARTS LIST

| ITEM | NUMBER | MATL | DESCRIPTION | MODEL USED | QTY |
|----------|-----------------|------------|---|----------------------------|--------|
| 5 | 549360 | STCP R | Screw, HH (M6 x 14) (See Tech Bulletins 074, 092) | All Models | 3 |
| 8 | 547153 | AL | Cover, Bearing, Inner (See Tech Bulletin 092) | All Models | 1 |
| 10 | 14041 | NBR | O-Ring, Bearing Cover–70D (See Tech Bulletin 092) | All Models | 1 |
| 11 | 55337 | NBR | Seal, Oil (See Tech Bulletin 092) | All Models | 1 |
| 15 | 14488 | STL | Bearing Inner, Ball | All Models | 1 |
| 20 | 547046 | TNM | Rod, Connecting | All Models | 3 |
| 25 | 831987 | CM | Crankshaft, 3450 RPM, 5/" (1.8mm) | 2SF10ES | 1 |
| | 46109 | CM | Crankshaft, 3450 RPM, %" (3.1mm) | 2SF20ES | 1 |
| | 45962 | CM | Crankshaft, 3450 RPM, %" (3.35mm) | 2SF22ES | 1 |
| | 546334 | CM | Crankshaft, 3450 RPM, ¾" (4.8mm) | 2SF30GS | 1 |
| | 832644 | CM | Crankshaft, 3450 RPM, 5/" (4.6mm) | 2SF30ES | 1 |
| | 46119 | CM | Crankshaft, 3450 RPM, 5/8" (5.6mm) | 2SF35ES | 1 |
| | 46017 | CM | Crankshaft, 3450 RPM, 34" (5.6mm) | 2SF35GS | 1 |
| | 45160 | CM | Crankshaft, 1725 RPM, 5/" (6.3mm) | 2SF22ELS | 1 |
| 26 | 45914 | CM | Crankshaft, 1725 RPM, 5%" (8.5mm) | 2SF29ELS | 1 |
| 26 27 | 12385 | STL | Ring, Retaining | All Models | 1 1 |
| 27 31 | 15710 | STL | Bearing Outer, Ball Can Vented with O Ring (Rain Can) | All Models | 1 |
| | 549726 | DTD | Cap, Vented with O-Ring (Rain Cap) | All Models All Models | |
| 32 33 | 547961 14179 | RTP NBR | Cap, Oil Filler with O-Ring O-Ring, Oil Filler Cap–70D | All Models | 1 |
| 33 37 | 92241 | PC | Gauge, Bubble Oil with Gasket–80D (See Tech Bulletin 074) | All Models All Models | 1 |
| 38 | 44428 | NBR | Gasket, Flat Flexible, Oil Gauge–80D | All Models | 1 |
| 48 | 44842 | NY | Plug, Drain (½" NPT[F]) | All Models | 1 |
| 49 49 | 14179 | NBR | O-Ring, Drain Plug–70D | All Models | 1 |
| 53 | 547285 | AL | Crankcase (See Tech Bulletin 092) | All Models | 1 |
| 64 | 16948 | CM | Pin, Crosshead | All Models | 3 |
| 65 | 44865 | SCP | Rod, Plunger | All Models except 2SF29ELS | 3 |
| 03 | 45427 | SZZ | Rod, Plunger | 2SF29ELS | 3 |
| 69 | 126259 | STCP R | Washer (M24) | All Models | 3 |
| 70 | 25461 | NBR | Seal, Oil | All Models | 3 |
| 90 | 45847 | CC | Plunger (M18 x 14) | All Models except 2SF29ELS | 3 |
| 50 | 45429 | CC | Plunger (M18 x 16) | 2SF29ELS | 3 |
| 100 | 44869 | PVDF | Retainer, Seal | All Models | 3 |
| 106 | 44876 | NBR | Seal, Low-Pressure with SS–Spring | All Models | 3 |
| 100 | 545192 | FPM | Seal, Low-Pressure with SS—Spring | All Models | 3 |
| | ◆ 546507 | EPDM | Seal, Low-Pressure with SS—Spring | All Models | 3 |
| 110 | 44874 | BB | Manifold, Inlet | All Models | 1 |
| 125 | 43245 | SNG | Seal, High-Pressure with Support | All Models | 3 |
| 123 | 46652 | HT | Seal, High-Pressure High-Temperature 2-Piece with S-Support (See Tech Bulletin 073) | All Models | 3 |
| | 76052 | ST4 | Seal, High-Pressure with Support | All Models | 3 |
| 134 | 45854 | S | Valve, Inlet | All Models | 3 |
| | 33873 | D | Valve, Inlet, High-Temperature | All Models | 3 |
| 135 | 549520 | S | Spacer, Inlet | All Models | 3 |
| 136 | 44872 | S | Spring, Inlet Valve | All Models | 3 |
| 137 | 88575 | S | Washer, Conical (M6) | All Models | 3 |
| 138 | 27000 | S | Nut, Slotted (M6) (See Tech Bulletin 074) | All Models | 3 |
| 139 | 14158 | S | Cotterpin (M1.6 x 10) | All Models | 3 |
| 152 | 26089 | NBR | O-Ring, Adapter, Inner–80D | All Models | 3 |
| | 11377 | FPM | O-Ring, Adapter, Inner–80D | All Models | 3 |
| | ♦ 46647 | EPDM | O-Ring, Adapter, Inner–80D | All Models | 3 |
| 157 | 44878 | BB | Discharge Valve Adapter | All Models except 2SF29ELS | 3 |
| | 45430 | BB | Discharge Valve Adapter | 2SF29ELS | 3 |
| 159 | 26089 | NBR | O-Ring, Adapter, Outer–80D | All Models | 3 |
| | 11377 | FPM | O-Ring, Adapter, Outer–80D | All Models | 3 |
| | ♦ 46647 | EPDM | O-Ring, Adapter, Outer–80D | All Models | 3 |
| 164 | 44881 | S | Seat | All Models | 3 |
| 166 | 43723 | S | Valve | All Models | 3 |
| 167 | 541062 | S | Spring | All Models | 3 |
| 168 | 44565 | PVDF | Retainer, Spring | All Models | 3 |
| 185 | 44879 | BB | Manifold, Discharge | All Models | 1 |
| 188 | 126762 | STCP R | Screw, HSH (M8 x 75) (See Tech Bulletin 074) | All Models | 6 |
| 197 | 941516 | ВВ | GH Assembly, (%"NPT[M] x ¾"GH[F]) | All Models | 1 |
| 249 | 30520 | _ | Assembly, Adapter Mount, Gas | 2SF30GS, 2SF35GS | 1 |
| | | | Assembly, Bolt Mount | | |

EXPLODED VIEW



PUMP MODELS February 2024

| ITEM | PART NUMBER | MATL | DESCRIPTION | MODEL USED | QTY |
|------|----------------|-------|--|------------|-----|
| 285 | 80228 | STL | Screw (M8 1.25 x 80) (Not Shown) | All Models | 2 |
| 300 | 34053 | NBR | Kit, Seal (Includes: 106, 125, 139, 152, 159) Standard | All Models | 1 |
| | 33953 | HT | Kit, Seal High-Temperature (Includes: 106, 125, 134, 139, 152, 159) .3000 (See Tech Bulletin 073) | All Models | 1 |
| | 33453 | FPM | Kit, Seal (Includes: 106, 125, 139, 152, 159) .0110 | All Models | 1 |
| | ♦ 30536 | EPDM* | Kit, Seal (Includes: 106, 125, 139, 152, 159) .0220 | All Models | 1 |
| 310 | 34052 | NBR | Kit, Discharge Valve (Includes: 152, 159, 164, 166, 167, 168) Standard, .3000 | All Models | 1 |
| 311 | 34668 | NBR | Kit, Inlet Valve (Includes: 134–139, 152, 159) Standard | All Models | 1 |
| 400 | 7500S | BB | Unloader, Regulating | All Models | 1 |
| _ | 6107 | _ | Oil, Bottle (21 oz) Fill to Specified Crankcase Capacity Prior to Start-Up) | All Models | 1 |

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

R Components comply with RoHS Directive. *Review individual parts in each kit for material code identification

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic CM=Chrome-Moly D=Acetal EPDM=Ethylene Propylene Diene Monomer FPM=Fluorocarbon HT=Hi-Temp (EPDM Alternative) NBR=Medium Nitrile (Buna-N) NY=Nylon PC=Poly Carbonate PVDF=Polyvinylidene Fluoride RTP=Reinforced Composite S=304SS SCP=304SS/Chrome Plated SNG=Special Blend (Buna) ST4=Special PTFE4 STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated SZZ=304SS/Zamak TNM=Special High Strength

[◆] Silicone Oil /Grease Required. For additional technical information see www.catpumps.com/literature/tech-bulletins. NOTE: Discard Key which may come standard with most motors and engines and **use only the key included in this kit.**

EXPLODED VIEW

7500S UNLOADER SPECIFICATIONS

| SPECIFICATIONS | U.S. | Metric |
|-----------------------|-------------------|----------------------|
| Flow Range | 0.5-6.0 gpm | 1.89-23 lpm |
| Pressure Range | 100–2000 psi | 6.9–138 bar |
| Inlet Port, Rear | 3/8" NPT(M) | 3/8" NPT(M) |
| Discharge Port, Front | 3/8" NPT(M) | 3/8" NPT(M) |
| Bypass Port, Bottom | 3/8" NPT(F) | 3/8" NPT(F) |
| Weight | 14.4 oz | 0.41 kg |
| Dimensions | 3.0 x 1.0 x 4.25" | 76.2 x 25.4 x 108 mm |

PARTS LIST

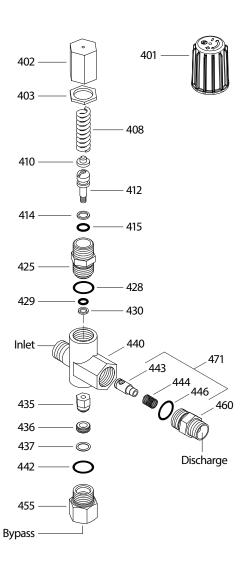
| ITEM | P/N | MATL | DESCRIPTION | QTY |
|------|---------|--------|---|-----|
| 401 | 32088 | NY | Handle, Black | 1 |
| 402 | 540081 | BB | Cap, Hex Adjusting | 1 |
| 403 | 31047 | ВВ | Nut, Lock | 1 |
| 408 | 32094 | STZP R | Spring, Pressure | 1 |
| 410 | 107672 | BB | Retainer, Spring | 1 |
| 412 | 45694 | S | Stem, Piston (M5) | 1 |
| 414 | _ | PTFE | Backup Ring, Piston Stem | 1 |
| 415 | _ | NBR | O-Ring, Piston Stem–70D | 1 |
| 425 | 107673 | BB | Retainer, Piston | 1 |
| 428 | _ | NBR | O-Ring, Piston Retainer–70D | 1 |
| 429 | _ | NBR | O-Ring, Body | 1 |
| 430 | _ | PTFE | Backup Ring, Body | 1 |
| 435 | 45696 | BB | Valve and Ball Assembly (M5) | 1 |
| 436 | 107680 | S | Seat | 1 |
| 437 | _ | NBR | O-Ring, Seat–70D | 1 |
| 440 | _ | BB | Body | 1 |
| 442 | _ | NBR | O-Ring, Bypass Fitting–70D | 1 |
| 443 | 541060 | BB | Valve, Check with NBR O-Ring | 1 |
| | 549468 | SS | Valve, Check with FPM O-Ring | 1 |
| | 831515 | SS | Valve, Check with EPDM O-Ring | 1 |
| 444 | 45924 | S | Spring, Check valve | 1 |
| 446 | _ | NBR | O-Ring, Discharge Fitting–70D | 1 |
| 455 | 45695 | BB | Fitting, Bypass (3/8" NPT[F]) | 1 |
| 460 | 107681 | BB | Fitting, Discharge (3/8" NPT[M]) | 1 |
| 465 | 7090 | ВВ | Bypass Hose (15" x 3/8") (Not Shown) | 1 |
| 466 | 7090.40 | ВВ | Bypass Hose with Thermo Valve (Not Shown) | 1 |
| 468 | 32097 | NBR | Kit, O-Ring (Includes: 414, 415, 428, 429, 430, 437, 442, 446) Standard, .3000 | 1 |
| | 31627 | FPM | Kit, O-Ring (Includes: 414, 415, 428, 429, 430, 437, 442, 446) .0110 | 1 |
| • | ♦ 31959 | EPDM | Kit, O-Ring (Includes: 414, 415, 428, 429, 430, 437, 442, 446) .0220 | 1 |
| 471 | 32176 | NBR | Kit, Check Valve (Includes: 443, 444, 446) | 1 |

Italics are optional items. R Components comply with RoHS Directive.

◆ Silicone Oil /Grease Required. MATERIAL CODES (Not Part of Part Number):
BB=Brass EPDM=Ethylene Propylene Diene Monomer FPM=Fluorocarbon
NBR=Medium Nitrile (Buna-N) NY=Nylon PTFE=Pure Polytetrafluoroethylene
S=304SS SS=316SS STZP=Steel/Zinc Plated

Refer to 7500S Data Sheet for repair procedures and additional technical information.

 $\mbox{\bf Note:}$ By removing the check valve and spring, this unloader can function as a regulator.

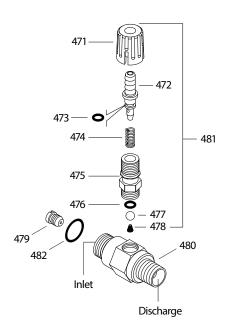


OPTIONAL CHEMICAL INJECTORS

7192, 7193, 7194 ADJUSTABLE, DOWNSTREAM

| SPECIFICATIO | NS | U.S. | Metric |
|---------------------|---------|------------------|-----------------------|
| Flow Range | 7192 | 2–4 gpm | 7.6–15 lpm |
| | 7193 | 3–5 gpm | 11.4–19 lpm |
| | 7194 | 3–6 gpm | 11.4-23 lpm |
| Orifice Size | 7192 | 1.8 mm | 1.8 mm |
| | 7193 | 2.1 mm | 2.1 mm |
| | 7194 | 2.3 mm | 2.3 mm |
| Maximum Pressu | ıre | 4050 psi | 279 bar |
| Maximum Temp | erature | 195° F | 90° C |
| Inlet Port | | M18 x 1.0 | M18 x 1.0 |
| Discharge Port | | 3/8" NPT(M) | 3/8" NPT(M) |
| Hose Barb | | 1/4" | 1/4" |
| Weight | | 5.7 oz | 0.16 kg |
| Dimensions | | 2.0 x 1.0 x 3.0" | 50.8 x 25.4 x 76.2 mm |

EXPLODED VIEW



CHEMICAL INJECTOR PERFORMANCE CHART

| Model | Pump Flow | Orifice Size | Maximum Injecting Pressure | Maximum Chemical Draw | Pressure Drop Across Orifice |
|-------|--------------|-----------------|----------------------------------|-----------------------------|------------------------------------|
| 7192 | 2 gpm | 1.8 | 225 psi | 60 | 150 |
| 7192 | 3 gpm | 1.8 | 275 psi | 60 | 300 |
| 7192 | 4 gpm | 1.8 | 450 psi | 60 | 500 |
| 7193 | 3 gpm | 2.1 | 225 psi | 54 | 150 |
| 7193 | 4 gpm | 2.1 | 375 psi | 54 | 250 |
| 7193 | 5 gpm | 2.1 | 600 psi | 54 | 400 |
| 7194 | 3 gpm | 2.3 | 150 psi | 50 | 125 |
| 7194 | 4 gpm | 2.3 | 225 psi | 50 | 220 |

Optimum performance of chemical injector occurs with a 35 ft high-pressure hose with a minimum %" ID The type of hose, extended lengths, reduced ID and fittings may create additional back pressures above the maximum injecting pressure rating of the injector and prevent it from drawing chemical.

TROUBLESHOOTING

| Low-pressure nozzle sized for too high-pressure |
|---|
| Air leak in suction line |
| Worn injector orifice |
| Worn O-ring |
| Foreign material in injector |
| |

PARTS LIST

| ITEM | P/N | MATL | DESCRIPTION | MODEL USED | QTY |
|------|-------|------|--|---------------|-----|
| 471 | 33949 | NY | Handle, Adjustment | All | 1 |
| 472 | 32941 | BB | Barb, Adjustable | All | 1 |
| 473 | _ | NBR | O-Ring, Hose Barb | All | 1 |
| 474 | 33500 | S | Spring, Retainer | All | 1 |
| 475 | 33946 | BB | Retainer, Ball/Seat | All | 1 |
| 476 | 33504 | FPM | O-Ring, Retainer | All | 1 |
| 477 | 34620 | SS | Ball, Seat (1/4") | All | 1 |
| 478 | 33501 | SS | Spring, Ball | All | 1 |
| 479 | 32372 | S | Injector Orifice (1.8 mm) | 7192 | 1 |
| | 32373 | S | Injector Orifice (2.1 mm) | 7193 | 1 |
| | 32374 | S | Injector Orifice (2.3 mm) | 7194 | 1 |
| 480 | _ | BB | Body | All | 1 |
| 481 | 33481 | BBNY | Barb Assembly, Adjustable (Includes: 471, 472, 473, 474, 475, 476, 477, 478) | All | 1 |
| 482 | 13969 | NBR | O-Ring, Body–70D | All | 1 |

Italics are optional items.

Material Codes (Not Part of Part No.): BB=Brass FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) NY=Nylon S=304SS SS=316SS

ELECTRIC MOTOR SPECIFICATIONS (60 hz, 1 ph)

Contact Cat Pumps for additional motor options including the 3 ph, 50 hz, frame sizes, etc.

Note: Use a 1750 RPM motor to reduce the flow rate of a 3450 RPM pump by 50%

Model 8054

| Horsepower | 1.5 |
|----------------|----------|
| Shaft Diameter | 5%" |
| Maximum Volts | 115/230 |
| Full Load Amps | 12.1 |
| RPM | 3450 |
| Weight | 32.1 lbs |
| Phase | Single |
| Frame Size | 56C TEFC |
| Service Factor | 1.15 |
| | |

Motor has thermal overload manual reset.

Model 999943

| Model 2222 | |
|----------------|--------------|
| Horsepower | 2.0 |
| Shaft Diameter | 5%" |
| Maximum Volts | 115/230 |
| Full Load Amps | 17.0/9.2–8.5 |
| RPM | 3450 |
| Weight | 32.5 lbs |
| Phase | Single |
| Frame Size | 56C TEFC |
| Service Factor | 1.15 |

Model 8126

Motor has thermal overload manual reset.

| 60 | 50 | | |
|-------------------|--|--|--|
| 2.5 | 2.5 | | |
| 5/8" | 5/8" | | |
| 208-230/460 | 190-220/380-415 | | |
| 7.9–7.12/3.56 | 8.2-7.6/4.08-4.01 | | |
| 1750 | 1450 | | |
| 63 lbs | 63 lbs | | |
| Three | Three | | |
| 56C TEFC | 56C TEFC | | |
| rvice Factor 1.15 | | | |
| | 2.5 5/8" 208–230/460 7.9–7.12/3.56 1750 63 lbs Three 56C TEFC | | |

Model 8057

| Horsepower | 5.0 |
|----------------|---------------|
| Shaft Diameter | 3/4" |
| Maximum Volts | 230 |
| Full Load Amps | 22.0 |
| RPM | 3450 |
| Weight | 40 lbs |
| Phase | Single |
| Frame Size | 56C Open Drip |
| Service Factor | 1.15 |
| | |

Motor has thermal overload manual reset.

Model 8115

| Hertz | 60 | 50 |
|----------------|----------------|-----------|
| Horsepower | 1.5 | 1.5 |
| Shaft Diameter | 5/8" | 5/8" |
| Maximum Volts | 115/208–230 | 110/220 |
| Full Load Amps | 13.8/7.63-6.90 | 17.8/8.90 |
| RPM | 1750 | 1450 |
| Weight | 53.8 lbs | 53.8 lbs |
| Phase | Single | Single |
| Frame Size | 56C TEFC | 56C TEFC |
| Service Factor | 1.85 | 1.65 |

Model 8120

| 60 | 50 |
|----------------|--|
| 2.0 | 2.0 |
| 5%" | 5/8" |
| 115/208–230 | 110/220 |
| 17.2/9.53-8.62 | 20.8/10.4 |
| 1750 | 1450 |
| 53.8 lbs | 53.8 lbs |
| Single | Single |
| 56C TEFC | 56C TEFC |
| 1.40 | 1.25 |
| | 2.0 5/8" 115/208–230 17.2/9.53–8.62 1750 53.8 lbs Single 56C TEFC |

Models 8125/8125W

| Hertz | 60 | 50 | | |
|----------------|-----------|-----------|--|--|
| Horsepower | 2.5 | 2.2 | | |
| Shaft Diameter | 5/8" | 5/8" | | |
| Maximum Volts | 115/230 | 110/220 | | |
| Full Load Amps | 20.8/10.4 | 22/11 | | |
| RPM | 1750 | 1450 | | |
| Weight | 53.8 lbs | 53.8 lbs | | |
| Phase | Single | Single | | |
| Frame Size | 56HC TEFC | 56HC TEFC | | |
| Service Factor | 1.15 | 1.15 | | |

Common Motor Specifications

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

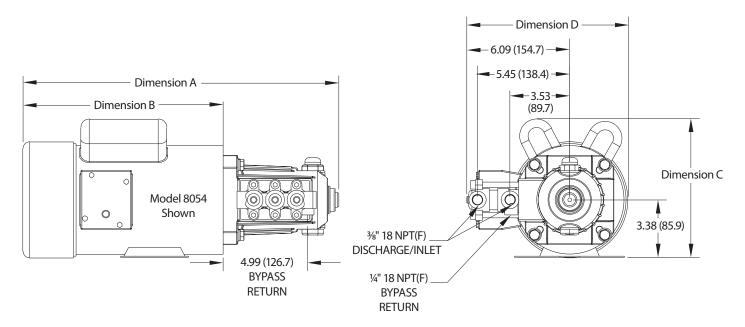
Note: Motor start-up AMPS may vary, then settle within FULL LOAD AMPS rating after initial run-in time.

Before mounting pump on motor, apply PN 6106 Anti-Seize lubricant to pump shaft.

Refer to $\bf Tech\,Bulletin\,055$ for instructions on removing pump from gas engine or electric motor.

Click here for the Cat Pump # 2SF22ELS Web Page

MOTOR DIMENSIONS



| MODEL | 8054 | 999943 | 8057 | 8115 | 8120 | 8125/W | 8126 |
|-------------|------------|------------|------------|------------|------------|------------|------------|
| Dimension A | 18.2 (462) | 18.2 (462) | 18.7 (475) | 19.3 (490) | 19.3 (490) | 19.3 (490) | 20.7 (525) |
| Dimension B | 11.3 (287) | 11.3 (287) | 11.8 (300) | 12.4 (315) | 12.4 (315) | 12.4 (315) | 13.8 (350) |
| Dimension C | 8.4 (213) | 8.4 (213) | 9.0 (228) | 9.7 (246) | 9.7 (246) | 9.7 (246) | 7.3 (185) |
| Dimension D | 9.5 (241) | 9.5 (241) | 9.5 (241) | 9.7 (246) | 9.7 (246) | 9.7 (246) | 9.7 (246) |

| DETERMINING | hp | _ | gpm x psi | hp | _ | gpm x psi |
|-----------------|------------------|---|-----------|-------------|---|-----------|
| THE REQUIRED HP | (Electric Brake) | _ | 1460 | (Gas Brake) | _ | 1140 |

For proper gas or diesel engine selection consult your engine supplier

ELECTRIC HORSEPOWER REQUIREMENTS

| FLO | W | PRESSURE | | | | | | | | | PUMP RPM | | |
|------|------|----------|-----|--------|----------------------|--------|---------------|--------|--------|---------------|----------|-----------|------|
| GPM | LPM | PSI | BAR | PSI | BAR | PSI | BAR | PSI | BAR | PSI | BAR | | |
| | | 700 | 48 | 1000 | 69 | 1200 | 83 | 1500 | 103 | 2000 | 138 | | |
| 1.0 | 3.8 | .48 | hp | .68 hp | | .82 hp | | 1.0 hp | | 1.4 hp | | 3450 | |
| 2.2 | 8.3 | 1.1 | hp | 1.5 hp | | 1.8 hp | | 2.3 | hp | 3.0 | hp | 1725/3450 | |
| 2.85 | 10.8 | 1.36 | hp | 2.0 | 2.0 hp | | 2.0 hp 2.3 hp | | 2.9 hp | | N/A | | 1725 |
| 3.0 | 11.4 | 1.4 | hp | 2.1 hp | | 2.5 hp | | 3.1 hp | | 3.1 hp 4.1 hp | | 3450 | |
| 3.5 | 13.2 | 1.7 | hp | 2.4 | hp 2.9 hp 3.6 hp N/A | | 2.9 hp | | 3.6 hp | | /A | 3450 | |

Click here for the Cat Pump # 2SF22ELS Web Page

UNLOADER TYPE

Each pump comes with a pressure-sensitive regulating unloader. This unloader will set system pressure. While in bypass 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. Bypass line can be directed to the ground, a reservoir, redirected to the $\frac{1}{4}$ " NPT(F) port on bottom side of inlet manifold. If routing to pump inlet, use a $\frac{3}{4}$ " flexible hose and thermal valve.

Note: If not using a thermal valve, **DO NOT EXCEED 6 MINUTES** in bypass. **Note:** For high-temperature seal pumps, **DO NOT USE THERMAL VALVE.** Use optional dual pressure switches and mechanical relays.

Pump should be purged of air before commencing with operation. Liquid must flow through the pump without discharge restriction to ensure 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, diagnosis and maintenance chart.

△ 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 or can be requested directly from Cat Pumps.

WARRANTY

View the Limited Warranty online at www.catpumps.com/literature/cat-pumps-limited-warranty