

3 Frame Plunger Pump

Models **230**
240, 270

FEATURES

Superior Design

- Triplex plunger design gives smoother fluid flow.
- High pressure seals are completely lubricated and cooled by the fluid being pumped.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- Lubricated low pressure seal provides double protection against external leakage.
- Oil bath crankcase assures optimum lubrication.
- Close tolerance concentricity of the ceramic plunger maximizes seal life.
- Optional Belt Drive, Motorized or Gearbox versions offer system flexibility.

Quality Materials

- All stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- Brass manifold is strong and corrosion resistant.
- Special hardened, polished surface of solid ceramic plunger is abrasion resistant and results in extended seal life.
- Specially formulated, CAT PUMP exclusive, Hi-Pressure Seals offer unmatched performance and seal life.
- Diecast aluminum crankcase provides high strength, minimum weight and precision tolerance control.
- Chrome-moly crankshaft gives unmatched strength and surface hardness.
- Oversized crankshaft bearings with greater capacity mean longer bearing life.

Easy Maintenance

- Wet end is easily serviced without entering crankcase, requiring less time and effort.
- Valve assemblies are accessible without disturbing piping, for quick service.
- Preset packings mean no packing gland adjustment is necessary, reducing maintenance costs.

DETERMINING THE PUMP R.P.M. $\frac{\text{Rated G.P.M.}}{\text{Rated R.P.M.}} = \frac{\text{"Desired" G.P.M.}}{\text{"Desired" R.P.M.}}$

DETERMINING THE REQUIRED H.P. $\frac{\text{GPM} \times \text{PSI}}{1460} = \text{Electric Brake H. P. Required}$

DETERMINING MOTOR PULLEY SIZE $\frac{\text{Motor Pulley O.D.}}{\text{Pump R.P.M.}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor R.P.M.}}$

Note: Consult engine manufacturer when using gas or diesel engine. Refer to pump Service Manual for important Inlet Condition Check-List, Start-up Procedure, Tech Bulletins and Pump Maintenance information.

SPECIFICATIONS

| | U.S. Measure | Metric Measure |
|---|-----------------|----------------|
| MODEL 230 | | |
| Volume | 2.3 GPM | (9 L/M) |
| Discharge Pressure | 100 to 1500 PSI | (7 to 105 BAR) |
| RPM | 1725 RPM | (1725 RPM) |
| Stroke | 0.276" | (7 mm) |
| MODEL 240 | | |
| Volume | 3.6 GPM | (13 L/M) |
| Discharge Pressure | 100 to 1200 PSI | (7 to 85 BAR) |
| RPM | 1725 RPM | (1725 RPM) |
| Stroke | 0.433" | (11 mm) |
| MODEL 270 Standard | | |
| Volume | 3.5 GPM | (13 L/M) |
| Discharge Pressure | 100 to 1500 PSI | (7 to 105 BAR) |
| RPM | 1420 RPM | (1420 RPM) |
| Stroke | 0.512" | (13 mm) |
| MODEL 270 Alternate | | |
| Volume | ★ 4.2 GPM | (16 L/M) |
| Discharge Pressure | 100 to 1000 PSI | (7 to 70 BAR) |
| RPM | 1725 RPM | (1725 RPM) |
| Stroke | 0.512" | (13 mm) |
| ★ This specification for intermittent, freshwater duty. | | |

COMMON SPECIFICATIONS

| | | |
|---------------------------------|------------------------|----------------------|
| Bore | 0.709" | (18 mm) |
| Max. Inlet Pressure | Flooded to 60 PSI | (Flooded to 4 BAR) |
| Crankcase Capacity | 10 oz. | (3 L) |
| Maximum Fluid Temperature | 160°F | (71°C) |
| Inlet Ports (2) | 1/2" NPT | (1/2" NPT) |
| Discharge Ports (2) | 3/8" NPT | (3/8" NPT) |
| Pulley Mounting | Either Side | (Either Side) |
| Shaft Diameter | 0.650" | (16.5 mm) |
| Weight | 14.4 lbs. | (6.5 kg) |
| Dimensions | 10.24" x 8.79" x 5.35" | (260 x 223 x 136 mm) |

HORSEPOWER REQUIREMENTS

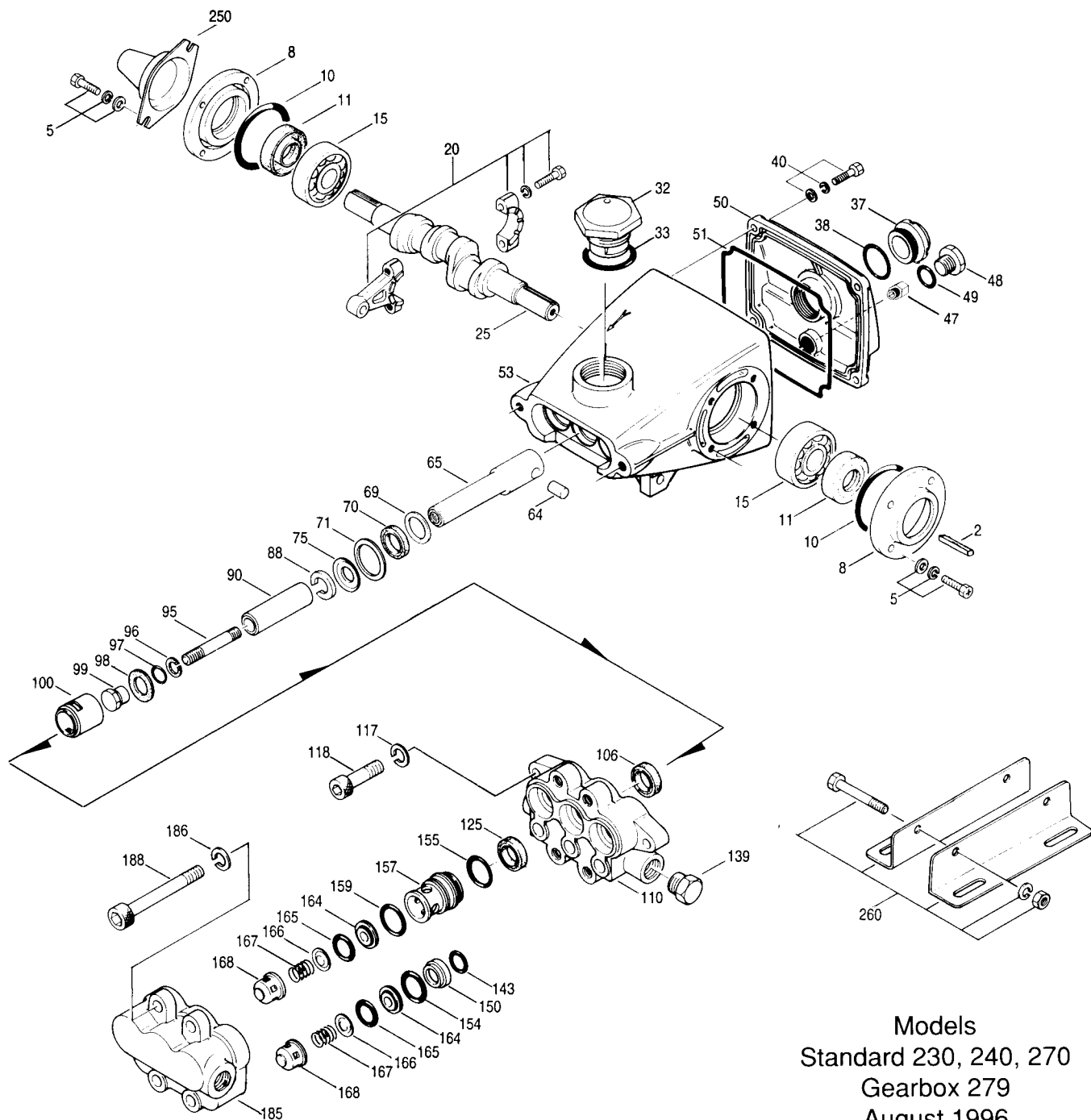
| MODEL | FLOW | | PRESSURE | | | MOTOR PULLEY SIZE | |
|-------|----------|-----|----------|----------|----------|---|--------------|
| | U.S. GPM | L/M | PSI 1000 | PSI 1200 | PSI 1500 | Using 1725 RPM Motor & Std. 5.0" Pump Pulley O.D. | |
| | | | BAR 70 | BAR 85 | BAR 105 | RPM | Pulley O.D. |
| 270 | 4.0 | 15 | 2.8 | N/A | N/A | 1625 | 4.7 |
| | 3.5 | 13 | 2.4 | 2.9 | 3.6 | 1420 | 4.1 |
| | 3.0 | 11 | 2.1 | 2.5 | 3.1 | 1217 | 3.5 |
| 230 | 2.3 | 9 | 1.6 | 1.9 | 2.4 | 1725 | Direct Drive |
| 240 | 3.6 | 15 | 2.5 | 3.0 | N/A | 1725 | Direct Drive |

"Customer confidence is our greatest asset"

PARTS LIST

| ITEM | PART NUMBER | | | | DESCRIPTION | QTY |
|------|--------------|--------------|--------------|--------------|--|-----|
| | Model 230 | Model 240 | Model 270 | Model 279 | | |
| 2 | 30047 | 30047 | 30047 | 30047 | Key (M5) | 1 |
| 5 | 92519 A | 92519 A | 92519 A | 92519 A | Screw, Sems Comb. Head (M6x16) | 8 |
| 8 | 27950 A | 27950 A | 27950 A | 27950 | Bearing Case | 2 |
| | | | | 44972 | Blind Bearing Shaft Cover | 1 |
| 10 | 26536 B | 26536 B | 26536 B | 26536 B | O-Ring, Oil Seal Case | 2 |
| 11 | 24159 B | 24159 B | 24159 B | 24159 B | Oil Seal - (270,230,240-2) (279-1) | 1-2 |
| 15 | 14487 | 14487 | 14487 | 14487 | Bearing | 2 |
| 20 | 101799 ZZ | 101799 ZZ | 101799 ZZ | 101799 ZZ | Connecting Rod Assy | 3 |
| 25 | 44917 | 44193 | 43897 | — | Crankshaft - Dual End | 1 |
| | | | | 44973 | Crankshaft - Single End | 1 |
| 32 | 43211 | 43211 | 43211 | 43211 | Oil Filler Cap | 1 |
| 33 | 14177 B | 14177 B | 14177 B | 14177 B | O-Ring, Oil Filler Cap | 1 |
| 37 | 43987 | 43987 | 43987 | 43987 | Oil Gauge, Bubble | 1 |
| 38 | 44428 B | 44428 B | 44428 B | 44428 B | Gasket, Flat - Oil Gauge | 1 |
| 40 | 92520 Z | 92520 Z | 92520 Z | 92520 Z | Screw, Sems Comb. Head (M6x20) | 6 |
| 47 | 25144 Z | 25144 Z | 25144 Z | 25144 Z | Adapter, Drain Plug (1/4" NPT) (For Optional Drain Hose) | 1 |
| 48 | 25625 | 25625 | 25625 | 25625 | Drain Plug | 1 |
| 49 | 23170 B | 23170 B | 23170 B | 23170 B | O-Ring, Drain Plug | 1 |
| 50 | 43339 A | 43339 A | 43339 A | 43339 A | Crankcase Cover | 1 |
| 51 | 43340 B | 43340 B | 43340 B | 43340 B | O-Ring, Crankcase Cover | 1 |
| 53 | 44657 A | 44657 A | 44657 A | 44657 A | Crankcase (4 Screw, Large Cap) | 1 |
| 64 | 16948 S | 16948 S | 16948 S | 16948 S | Pin, Plunger Rod | 3 |
| 65 | 45114 SS | 45114 SS | 45114 SS | 45114 SS | Plunger Rod | 3 |
| 69 | 20017 S | 20017 S | 20017 S | 20017 S | Washer, Oil Seal | 3 |
| 70 | 25301 B | 25301 B | 25301 B | 25301 B | Oil Seal | 3 |
| 71 | 26854 S | 26854 S | 26854 S | 26854 S | Washer, Oil Seal | 3 |
| 75 | 43900 S | 43900 S | 43900 S | 43900 S | Barrier Slinger | 3 |
| 88 | 45697 SS | 45697 SS | 45697 SS | 45697 SS | Washer, Keyhole (M18) | 3 |
| 90 | 43901 CC | 43901 CC | 43901 CC | 43901 CC | Plunger (M43) | 3 |
| 95 | 89652 SS | 89652 SS | 89652 SS | 89652 SS | Stud, Plunger Retainer (M6x40) | 3 |
| 96 | 43235 T | 43235 T | 43235 T | 43235 T | Back-up Ring, Plunger Retainer | 3 |
| 97 | 17399 B | 17399 B | 17399 B | 17399 B | O-Ring, Plunger Retainer | 3 |
| | 14160 V | 14160 V | 14160 V | 14160 V | O-Ring, Plunger Retainer | 3 |
| | 46204 E | 46204 E | 46204 E | 46204 E | O-Ring, Plunger Retainer | 3 |
| 98 | 45891 CU | 45891 CU | 45891 CU | 45891 CU | Gasket (M12.5) | 3 |
| 99 | 43234 BB | 43234 BB | 43234 BB | 43234 BB | Plunger Retainer | 3 |
| 100 | 28597 P | 28597 P | 28597 P | 28597 P | Seal Retainer | 3 |
| 106 | 43243 BS | 43243 BS | 43243 BS | 43243 BS | Lo-Pressure Seal | 3 |
| | 44926 VS | 44926 VS | 44926 VS | 44926 VS | Lo-Pressure Seal | 3 |
| | 46651 E | 46651 E | 46651 E | 46651 E | Lo-Pressure Seal | 3 |
| 110 | 43902 BB | 43902 BB | 43902 BB | 43902 BB | Manifold, Inlet | 1 |
| 117 | 12503 Z | 12503 Z | 12503 Z | 12503 Z | Washer, Split (M10) | 2 |
| 118 | 87931 Z | 87931 Z | 87931 Z | 87931 Z | Bolt, Socket Head (M10x35) | 2 |
| 125 | 43245 BTS | 43245 BTS | 43245 BTS | 43245 BTS | Hi-Pressure Seal | 3 |
| | 44925 VS | 44925 VS | 44925 VS | 44925 VS | Hi-Pressure Seal | 3 |
| | 46652 HE | 46652 HE | 46652 HE | 46652 HE | Hi-Pressure Seal - Hi-Temp | 3 |
| 139 | 22179 CBB | 22179 CBB | 22179 CBB | 22179 CBB | Plug, Inlet - 1/2" | 1 |
| 143 | 17547 B | 17547 B | 17547 B | 17547 B | O-Ring, Adapter (inner) | 3 |
| | 11685 V | 11685 V | 11685 V | 11685 V | O-Ring, Adapter (inner) | 3 |
| | 46648 E | 46648 E | 46648 E | 46648 E | O-Ring, Adapter (inner) | 3 |
| 150 | 43904 BB | 43904 BB | 43904 BB | 43904 BB | Inlet Valve Adapter | 3 |
| 154 | 43893 B | 43893 B | 43893 B | 43893 B | O-Ring, Adapter (outer) | 3 |
| | 44927 V | 44927 V | 44927 V | 44927 V | O-Ring, Adapter (outer) | 3 |
| | 46649 E | 46649 E | 46649 E | 46649 E | O-Ring, Adapter (outer) | 3 |
| 155 | 26089 B | 26089 B | 26089 B | 26089 B | O-Ring, Spacer | 3 |
| | 11377 V | 11377 V | 11377 V | 11377 V | O-Ring, Spacer | 3 |
| | 46647 E | 46647 E | 46647 E | 46647 E | O-Ring, Spacer | 3 |
| 157 | 43905 BB | 43905 BB | 43905 BB | 43905 BB | Discharge Valve Spacer | 3 |
| 159 | 26089 B | 26089 B | 26089 B | 26089 B | O-Ring, Spacer | 3 |
| | 11377 V | 11377 V | 11377 V | 11377 V | O-Ring, Spacer | 3 |
| | 46647 E | 46647 E | 46647 E | 46647 E | O-Ring, Spacer | 3 |
| 164 | 44002 S | 44002 S | 44002 S | 44002 S | Valve Seat | 6 |
| 165 | 44001 B | 44001 B | 44001 B | 44001 B | O-Ring, Valve Seat, | 6 |
| | 44928 V | 44928 V | 44928 V | 44928 V | O-Ring, Valve Seat | 6 |
| | 46650 E | 46650 E | 46650 E | 46650 E | O-Ring, Valve Seat | 6 |
| 166 | 43723 S | 43723 S | 43723 S | 43723 S | Valve | 6 |
| 167 | 43750 S | 43750 S | 43750 S | 43750 S | Valve Spring | 6 |
| 168 | 43907 P | 43907 P | 43907 P | 43907 P | Retainer, Spring | 6 |
| 185 | 43903 BB | 43903 BB | 43903 BB | 43903 BB | Manifold, Discharge | 1 |
| 186 | 12503 Z | 12503 Z | 12503 Z | 12503 Z | Washer, Split Lock | 3/3 |
| 188 | 87933 Z | 87933 Z | 87933 Z | 87933 Z | Bolt, Socket Head (M10x55) | 4 |

EXPLODED VIEW



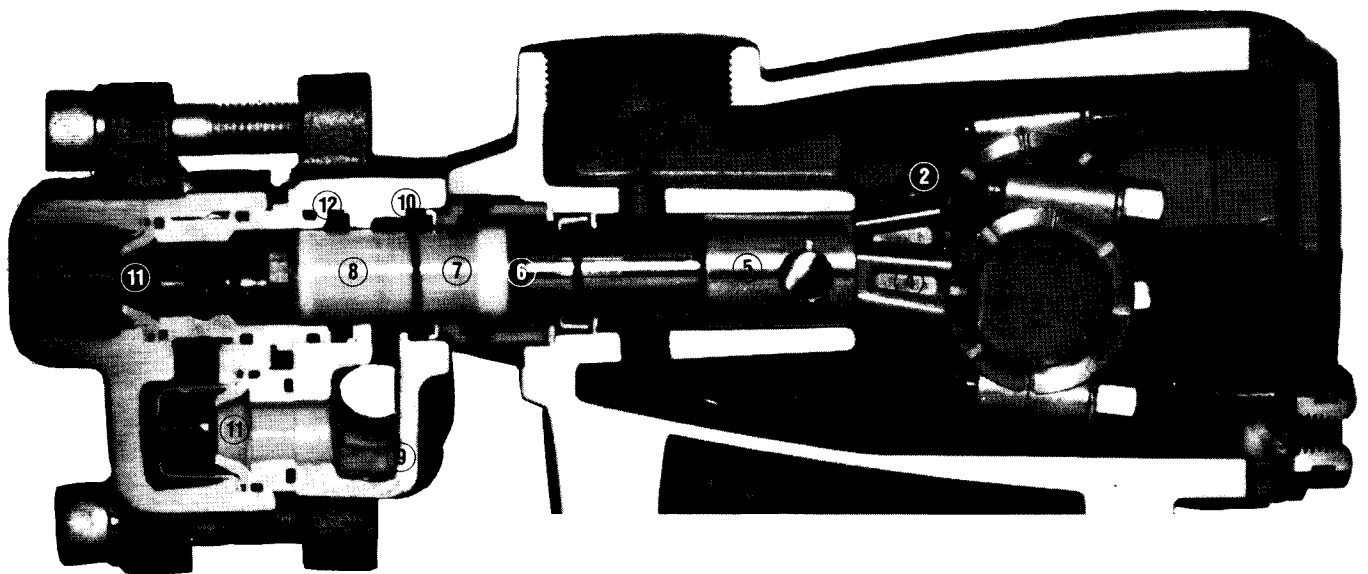
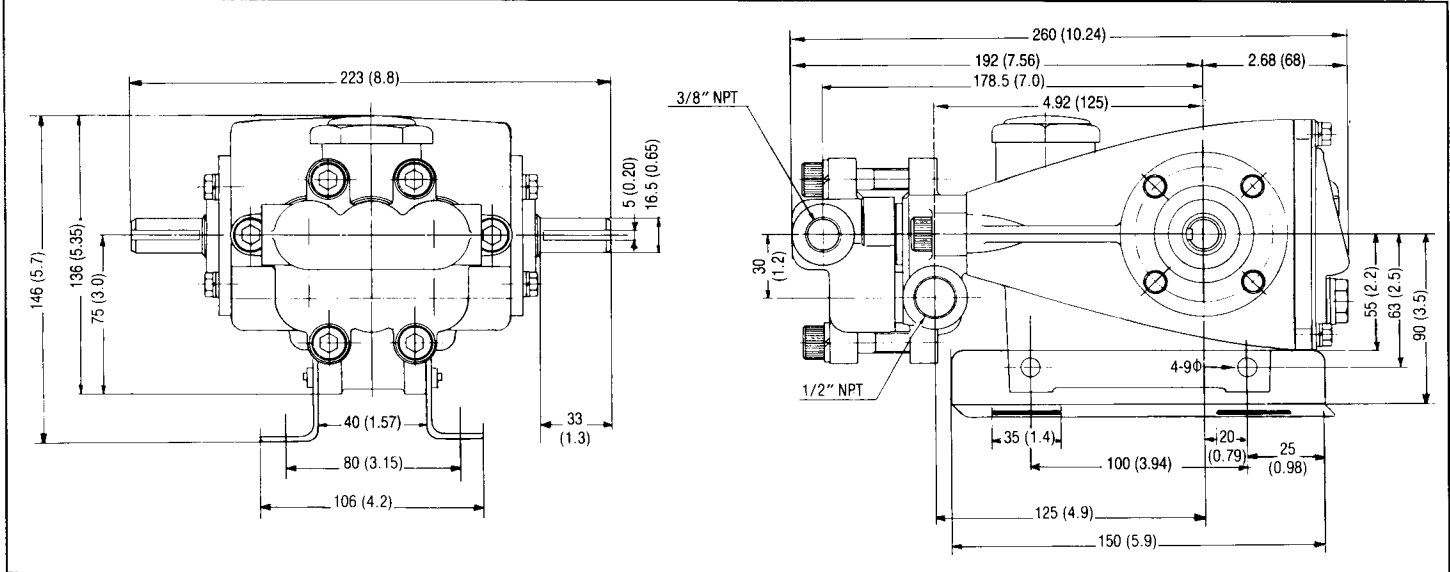
Models
Standard 230, 240, 270
Gearbox 279
August 1996

| | | | | | | |
|-----|---------|---------|---------|---------|--|---|
| 250 | 25130 | 25130 | 25130 | 25130 | Shaft Protector | 1 |
| 260 | 30612 | 30612 | 30612 | 30612 | Angle Rail Assy (Incls: 26246,30901,30910,30920) | 1 |
| 265 | 30651 | 30651 | 30651 | 30651 | Complete Mounting Kit (30612,30032,30047,25130) | 1 |
| 270 | 30246 | 30246 | 30246 | 30246 | Pulley & Key Assy (Incls: 30032,30047) | 1 |
| 277 | 34121 | 34121 | 34121 | — | Bell Housing Assy (56C-145FR, 1.5 HP) | 1 |
| | 34126 | 34126 | 34126 | — | Bell Housing Assy (182TC-1284TC, 3.0 HP) | 1 |
| 278 | 30632 | 30632 | 30632 | — | Flexible Coupling Assy (M16.5 to 5/8") | 1 |
| | 34032 | 34032 | 34032 | — | Flexible Coupling Assy (M16.5 to 1-1/8") | 1 |
| 306 | 30914 B | 30914 B | 30914 B | 30914 B | Seal Kit (Incls: 97,106,125,143,154,155,159,165) | 1 |
| | 33915 H | 33915 H | 33915 H | 33915 H | Seal Kit (Incls: 97,106,125,143,154,155,159,165) Hi-Temp | 1 |
| | 33914 E | 33914 E | 33914 E | 33914 E | Seal Kit (Incls: 97,106,125,143,154,155,159,165) | 1 |
| 310 | 30915 | 30915 | 30915 | 30915 | Valve Kit (Incls: 143,154,155,164,165,166,167,168) | 1 |
| 350 | 30696 | 30696 | 30696 | 30696 | Valve Seat Removal Tool | 1 |
| 351 | 43257 | 43257 | 43257 | 43257 | Seal Case Removal Tool | 1 |

All printed part numbers are standard and unique to a particular pump model. Italics are optional items.
See Tech Bulletins 33, 43, 47 and 52 for additional information. See 8010, 8011 data sheet for Gearbox servicing.

MATERIAL CODES (Not Part of Part Number) A=Aluminum B=Buna-N BB=Brass

C=Chrome CC=Ceramic CU=Copper E=EPDM H=Hi-Temp P=PVDF S=304SS SS=316SS T=Teflon V=Viton Z=Zinc Plated ZZ=Zamac



- 1 Diecast aluminum **crankcase** means high strength, light weight, and excellent tolerance control.
- 2 Oversized crankshaft **bearings** provide extended bearing life and pump performance.
- 3 Chrome-moly **crankshaft** provides unmatched strength and surface hardness for long life.
- 4 Matched oversized **connecting rods** are made of Zamak, a material noted for strength and superior bearing quality.
- 5 The **plunger rods** are high tensile strength stainless steel with zamak crossheads.
- 6 The stainless steel **slinger** provides back-up protection for the crankcase seal, keeping pumped fluids out of the crankcase.
- 7 Precision-polished solid ceramic **plungers** provide maximum resistance to corrosion and abrasion.
- 8 The close tolerance concentricity of the ceramic **plunger** maximizes seal life.
- 9 **Manifolds** are a high tensile strength forged brass for long term, continuous duty.
- 10 100% wet **seal** design adds to service life by allowing pumped fluids to cool and lubricate on both sides.
- 11 Stainless steel **valves, seats and springs** provide corrosion-resistance, positive seating and long life.
- 12 Specially formulated, CAT PUMP exclusive, **Hi-Pressure Seals** offer unmatched performance and seal life.

Products described hereon are covered by one or more of the following U.S. patents 3558244, 3652188, 3809508, 3920356, 3930756 and 5035580

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