

3CP Plunger Pump

Models **3CP1120**
 3CP1130
 3CP1140

FEATURES

Superior Design

- Triplex plunger design gives smoother fluid flow.
- Hi-Pressure Seals are completely lubricated and cooled by the fluid being pumped.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- Lubricated Lo-Pressure Seal provides double protection against external leakage.
- Oil bath crankcase assures optimum lubrication.
- Close tolerance concentricity of the ceramic plunger maximizes seal life.

Quality Materials

- All stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- Forged brass manifold is strong and corrosion resistant.
- Special concentric, high density, polished, graphite impregnated, solid ceramic plungers are abrasion resistant and result in extended seal life.
- Specially formulated, CAT PUMP exclusive, Hi-Pressure Seals offer unmatched performance and seal life.
- Die cast 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 3CP1120 | | |
| Flow | 4.2 GPM | (16 L/M) |
| Discharge Pressure | 100 to 2200 PSI | (7 to 155 BAR) |
| RPM | 1725 RPM | (1725 RPM) |
| Stroke | 0.500" | (12.7 mm) |
| MODEL 3CP1120G — GEARBOX | | |
| Flow | 3.5 GPM | (13 L/M) |
| Discharge Pressure | 1500 PSI | (105 BAR) |
| RPM | 1420 RPM | (1420 RPM) |
| Stroke | 0.512" | (13 mm) |
| MODEL 3CP1130 | | |
| Flow | 2.4 GPM | (9 L/M) |
| Discharge Pressure | 100 to 2200 PSI | (7 to 155 BAR) |
| RPM | 1725 RPM | (1725 RPM) |
| Stroke | 0.276" | (7 mm) |
| MODEL 3CP1140 | | |
| Flow | 3.6 GPM | (13 L/M) |
| Discharge Pressure | 100 to 2200 PSI | (7 to 155 BAR) |
| RPM | 1725 RPM | (1725 RPM) |
| Stroke | 0.433" | (11 mm) |

COMMON SPECIFICATIONS

| | | |
|---------------------------------|----------------------|----------------------|
| Inlet Pressure | Flooded to 70 PSI | (Flooded to 4.9 BAR) |
| Bore | 0.709" | (18 mm) |
| Crankcase Capacity | 11.8 oz. | (0.35 L) |
| Maximum Fluid Temperature | 160°F | (71°C) |
| Inlet Ports (2) | 1/2" NPT | (1/2" NPT) |
| Outlet Ports (2) | 3/8" NPT | (3/8" NPT) |
| Pulley Mounting | Either Side | (Either Side) |
| Shaft Diameter | 0.650" | (16.5 mm) |
| Weight | 14.84 lbs. | (6.7 kg) |
| Dimensions | 9.1" x 8.77" x 5.47" | (231 x 223 x 139 mm) |

HORSEPOWER REQUIREMENTS

| MODEL | FLOW | | PRESSURE | | | | MOTOR PULLEY SIZE | |
|----------------|----------|-----|----------|----------|----------|----------|--|--------------|
| | | | PSI 1200 | PSI 1500 | PSI 2000 | PSI 2200 | Using 1750 RPM Motor 5.0" Pump Pulley O.D. | |
| | U.S. GPM | L/M | BAR 85 | BAR 105 | BAR 140 | BAR 155 | RPM | Pulley O.D. |
| 3CP1120 | 4.2 | 16 | 3.5 | 4.3 | 5.8 | 6.3 | 1725 | 5.0 |
| | 3.5 | 13 | 2.9 | 3.6 | 4.8 | 5.3 | 1531 | 4.4 |
| | 3.0 | 11 | 2.5 | 3.1 | 4.2 | 4.5 | 1313 | 3.8 |
| 3CP1130 | 2.4 | 9 | 1.9 | 2.4 | 3.2 | 3.6 | 1725 | Direct Drive |
| 3CP1140 | 3.6 | 13 | 3.0 | 3.7 | 5.0 | 5.4 | 1725 | Direct Drive |

See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

"Customer confidence is our greatest asset"

PARTS LIST

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|------|-------------|--|-----|
| | P/N MATL | | |
| 2 | 30047 STL | Key (M5) | 1 |
| 5 | 92519 STZP | Screw, Sems HHC, Bearing Cover (M6x16) | 8 |
| 8 | 46901 AL | Cover, Bearing | 2 |
| | 48259 AL | Cover, Blind - 3CP1120G | 1 |
| 10 | 14028 NBR | O-Ring, Bearing Cover | 2 |
| 11 | 43222 NBR | Seal, Oil, Crankshaft | 1/2 |
| 15 | 14480 STL | Bearing | 2 |
| 20 | 46829 ZZ | Rod, Connecting, Assembly | 3 |
| 25 | 46927 FCM | Crankshaft, Dual End - 3CP1120 | 1 |
| | 46994 FCM | Crankshaft, Dual End - 3CP1130 | 1 |
| | 46991 FCM | Crankshaft, Dual End - 3CP1140 | 1 |
| | 48257 FCM | Crankshaft, Single End - 3CP1120G | 1 |
| 31 | 828710 | Protector, Oil Cap | 1 |
| 32 | 45690 RTP | Cap, Oil Filler | 1 |
| 33 | 14179 NBR | O-Ring, Oil Filler Cap | 1 |
| 37 | 43987 | Gauge, Oil, Bubble | 1 |
| 38 | 44428 NBR | Gasket, Flat, Oil Gauge | 1 |
| 40 | 92519 STZP | Screw, Sems HHC, Crankcase Cover (M6x16) | 4 |
| 48 | 25625 BBP | Plug, Drain (1/4"x11) | 1 |
| 49 | 23170 NBR | O-Ring, Drain Plug | 1 |
| 50 | 46939 AL | Cover, Crankcase | 1 |
| 51 | 14041 NBR | O-Ring, Crankcase Cover | 1 |
| 53 | 46534 AL | Crankcase | 1 |
| 64 | 46615 S | Pin, Plunger Rod | 3 |
| 65 | 48459 BBNP | Rod, Plunger | 3 |
| 70 | 46839 NBR | Seal, Oil, Crankcase | 3 |
| 75 | 43900 S | Slinger, Barrier | 3 |
| 88 | 45697 S | Washer, Keyhole | 3 |
| 90 | 46976 CC | Plunger (M43) | 3 |
| 98 | 46730 NBR | Washer, Seal | 3 |
| | 48394 FPM | Washer, Seal | 3 |
| 99 | 48201 SS | Retainer, Plunger w/Stud (M6) | 3 |
| 100 | 46541 PVDF | Retainer, Seal | 3 |
| 106 | 43243 NBR | Seal, LPS w/Spring | 3 |
| | 44926 FPM | Seal, LPS w/Spring | 3 |
| | 46651 EPDM | Seal, LPS w/Spring | 3 |
| 120 | 46625 BB | Case, Seal | 3 |
| 121 | 13976 NBR | O-Ring, Seal Case | 3 |
| | 48522 FPM | O-Ring, Seal Case | 3 |
| 125 | 43245 NBR | Seal, HPS | 3 |
| | 44925 FPM | Seal, HPS | 3 |
| | 46652 HT | Seal, HPS | 3 |
| 139 | 22179 BBP | Plug, Inlet (1/2") | 1 |
| 163 | 17547 NBR | O-Ring, Seat - 85 | 6 |
| | 11685 FPM | O-Ring, Seat - 80 | 6 |
| | 46648 EPDM | O-Ring, Seat - 70 | 6 |
| 164 | 46658 S | Seat | 6 |
| 166 | 43723 S | Valve | 6 |
| 167 | 43750 S | Spring | 6 |
| 168 | 44565 PVDF | Retainer, Spring | 6 |
| 172 | 17615 NBR | O-Ring, Valve Plug - 75 | 6 |
| | 15855 FPM | O-Ring, Valve Plug | 6 |
| 174 | 46756 BB | Plug, Valve | 6 |
| 185 | 46616 FBB | Manifold, Head | 1 |
| 193 | 87870 STZP | Bolt, HSH, Manifold Head (M8x65) | 8 |
| 196 | 22187 BBP | Plug, Discharge (3/8") | 1 |
| 250 | 118672 STCP | Shaft Protector | 1 |
| 260 | 30612 STZP | Assy, Angle Rail (Incls: 26246, 30901, 30910, 30920) | 1 |
| 265 | 30651 | Kit, Complete Mounting (30612, 30032, 30047, 25130) | 1 |
| 270 | 30246 STL | Assy, Pulley & Key (Incls: 30032, 30047) | 1 |
| | | [See complete Drive Packages, Tech Bulletin 03] | |
| 283 | 34334 | Kit, Oil Drain | 1 |
| 299 | 814841 FBB | Head, Complete | 1 |
| 300 | 33983 NBR | Kit, Seal (Incls: 98, 106, 121, 125) | 1 |
| | 33257 FPM | Kit, Seal (Incls: 98, 106, 121, 125) | 1 |
| 310 | 33062 NBR | Kit, Valve (Incls: 163, 164, 166, 167, 168, 172) | 1 |
| | 33258 FPM | Kit, Valve (Incls: 163, 164, 166, 167, 168, 172) | 1 |
| 350 | 30696 STZP | Tool, Valve Seat Removal | 1 |
| 500 | 8075 | Gearbox (See Individual Data Sheet) | 1 |

Italics are optional items.

See Tech Bulletins 2, 3, 24, 36, 64, 74 and 77 for additional information.

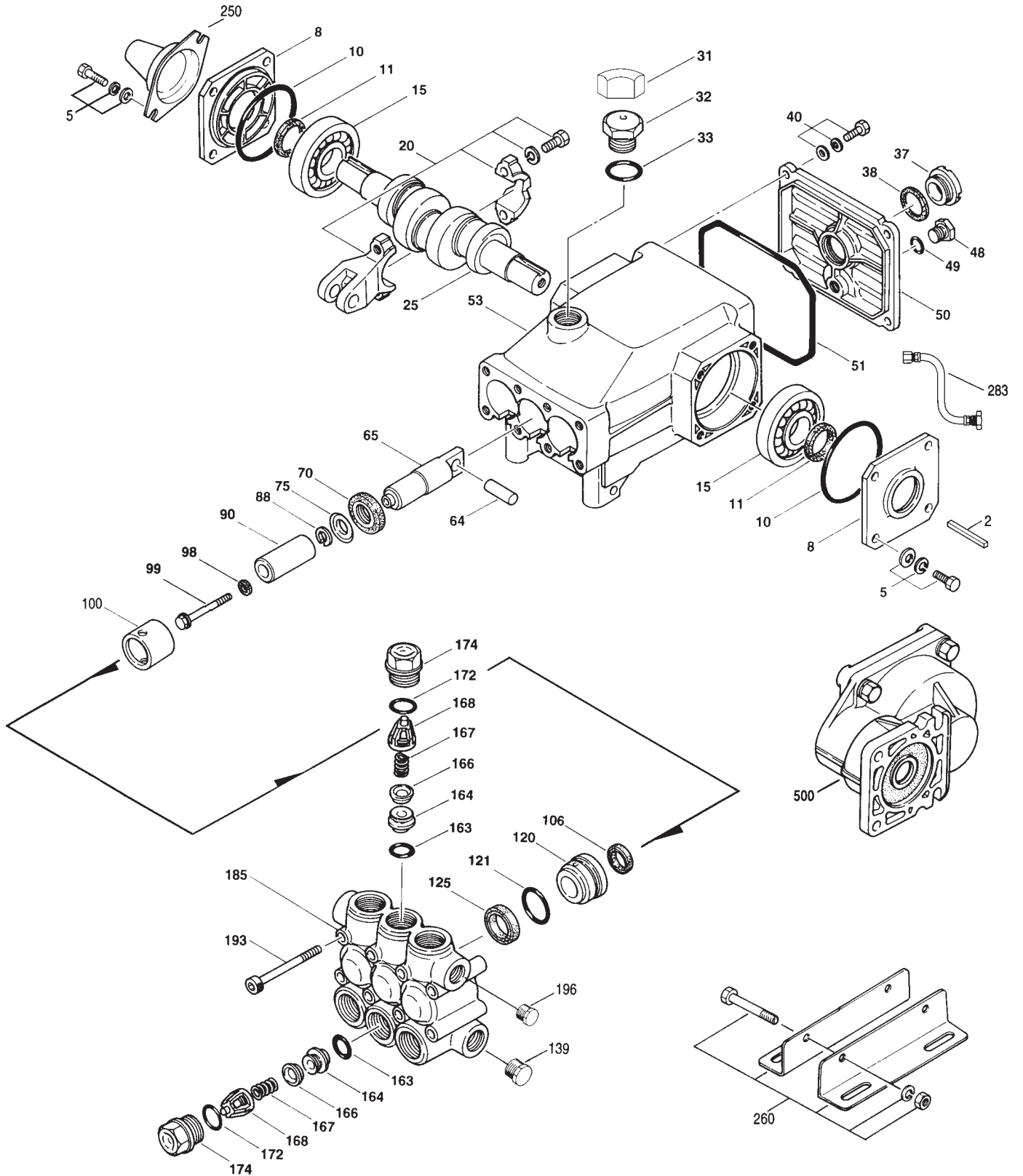
For motorized versions see BD motor data sheet. For Gearbox version see 8075 data sheet. Add .3 for 190°F Hi-Temp model.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic CP=Chromeplated EPDM=Ethylene Propylene Diene Monomer

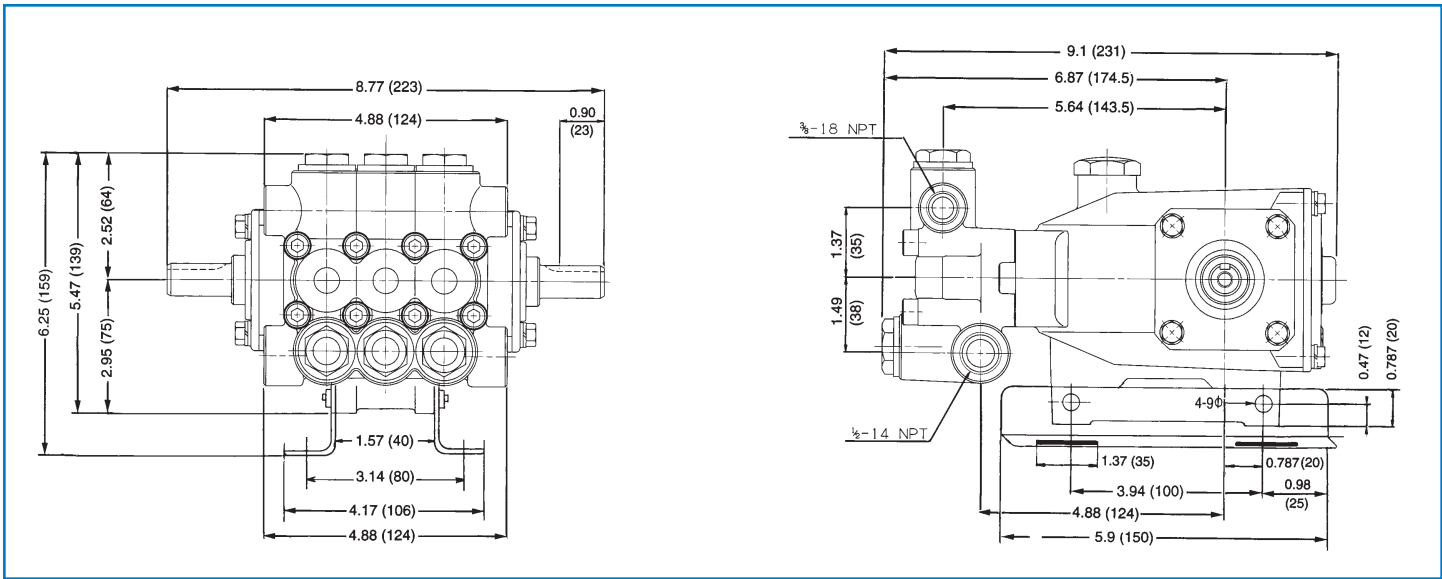
FBB=Forged Brass FCM=Forged Chrome-Moly FPM=Fluorocarbon (Viton®) HT=Hi-Temp (EPDM Alternative) NBR=Medium Nitrile (Buna-N)

NPBB=Nickel Plated Brass PVDF=Fluoroplastic (High Strength) RTP=Reinforced Composite S=304SS SS=316SS STL=Steel ZP=Zinc Plated ZZ=Zamack

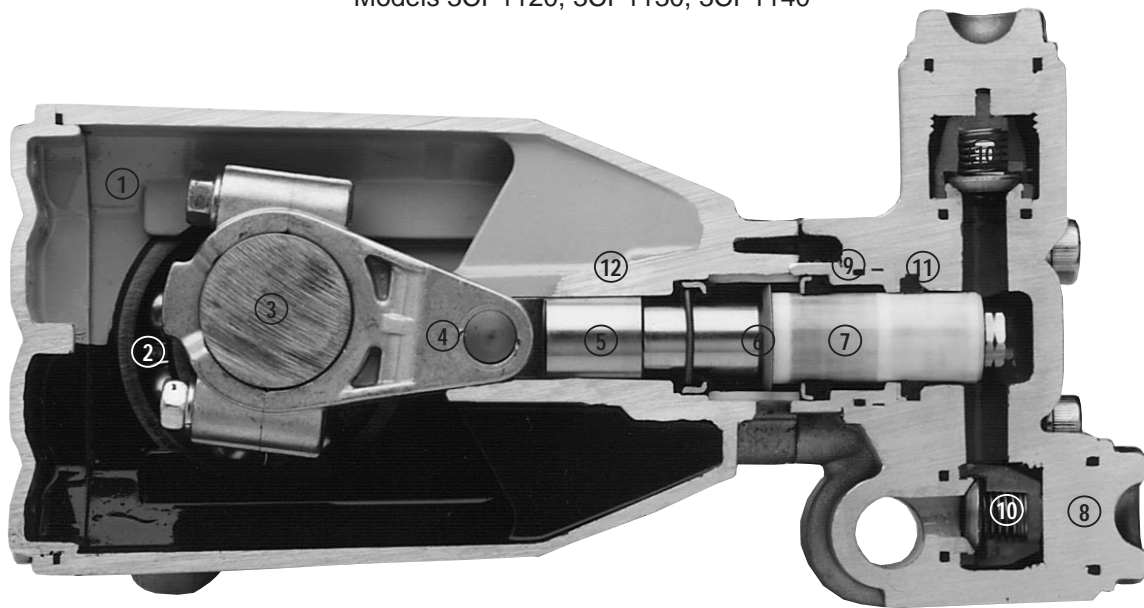
EXPLODED VIEW



Models
3CP1120, 3CP1130, 3CP1140
October 1998



Models 3CP1120, 3CP1130, 3CP1140



- 1 Die cast aluminum **crankcase** means high strength, lightweight, 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 high strength **connecting rods** noted for strength and superior bearing quality.
- 5 The **plunger rods** are hardened, surface plated for wear resistance, with high load capacity.
- 6 The stainless steel **slinger** provides back-up protection for the crankcase seal, keeping pumped fluids out of the crankcase.
- 7 Special concentric, high density, polished, graphite impregnated, solid ceramic **plungers** are abrasion resistant and result in extended seal life.
- 8 **Manifolds** are a high tensile strength forged brass for long term, continuous duty.
- 9 100% wet **seal** design adds to service life by allowing pumped fluids to cool and lubricate on both sides.
- 10 Stainless steel **valves, seats and springs** provide corrosion-resistance, positive seating and long life.
- 11 Specially formulated, **Hi-Pressure Seals** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.

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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