

60 Frame Plunger Pump

Nickel Aluminum
Bronze Model

6747

FEATURES

Superior Design

- Triplex plunger design gives smoother liquid flow.
- V-Packings are completely lubricated and cooled by the liquid being pumped.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- Oil bath crankcase assures optimum lubrication.
- Close tolerance concentricity of the ceramic plunger maximizes seal life.

Quality Materials

- 316 stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- Cast Nickel Aluminum Bronze manifolds for strength and corrosion resistance.
- Special concentric, high density, polished, graphite impregnated, solid ceramic plungers are abrasion resistant and result in extended seal life.
- Specially formulated, CAT PUMP exclusive, V-Packings 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 loading 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.

⚠ WARNING

All systems require both a primary pressure regulating device (i.e., regulator, unloader) and a secondary pressure safety relief device (i.e., pop-off valve, safety valve). Failure to install such relief devices could result in personal injury or damage to the pump or to system components. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

SPECIFICATIONS

| | U.S. Measure | Metric Measure |
|--|------------------------|----------------------|
| Flow..... | 48 GPM | (182 L/M) |
| Pressure Range..... | 100 to 2000 PSI | (7 to 140 BAR) |
| RPM | 615 RPM | (615 RPM) |
| Inlet Pressure Range* | Flooded to 50 PSI | (Flooded to 3.5 BAR) |
| Bore..... | 1.772" | (45 mm) |
| Stroke..... | 2.579" | (65.5 mm) |
| Crankcase Capacity..... | 10 Qts. | (9.46 L) |
| Maximum Liquid Temperature | 140°F | (60°C) |
| Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations. | | |
| Inlet Ports (2)*..... | 2" NPTF | (2" NPTF) |
| Discharge Ports (2)..... | 1-1/4" NPTF | (1-1/4" NPTF) |
| Shaft Diameter | 1.772" | (45 mm) |
| Weight..... | 335 lbs. | (151.95 kg) |
| Dimensions | 31.14 x 24.37 x 12.87" | (791 x 619 x 327 mm) |

*A 2-1/2" inlet line is recommended for alternate performance.

HORSEPOWER REQUIREMENTS

| FLOW | | PRESSURE | | | | RPM |
|-------------|-----|------------|-------------|-------------|-------------|-----|
| | | PSI 900 | PSI 1000 | PSI 1200 | PSI 2000 | |
| U.S. GPM | L/M | BAR 60 | BAR 70 | BAR 85 | BAR 140 | 615 |
| 48 | 182 | 29.6 | 32.9 | 39.4 | 65.8 | |

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

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

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

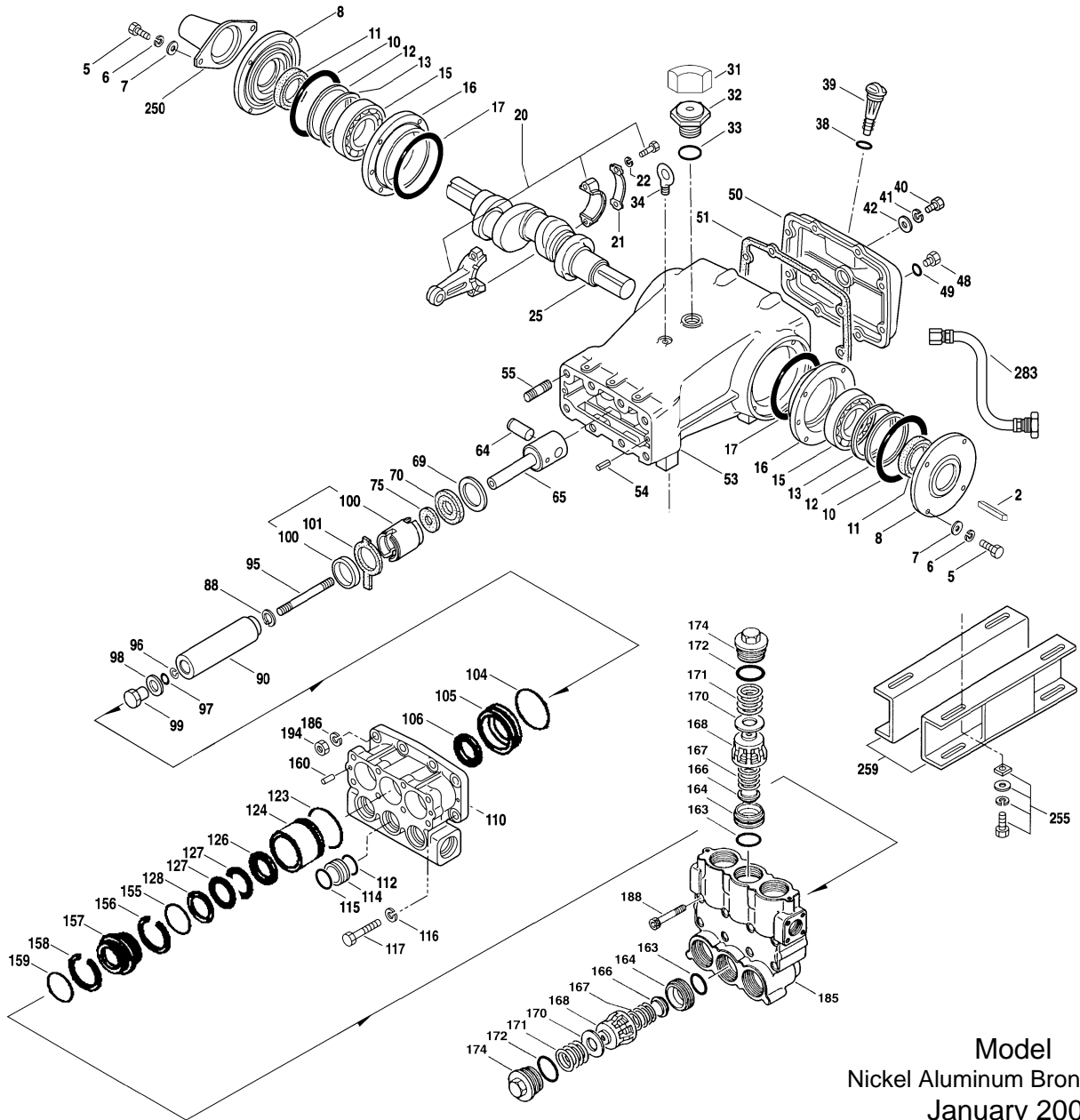
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.
Refer to pump Service Manual for repair procedure and additional technical information.

"Customer confidence is our greatest asset"

PARTS LIST

| ITEM | P/N | MATL | DESCRIPTION | QTY |
|------|--------|-------|---|-----|
| 2 | 43048 | STL | Key (M14x9x90) | 1 |
| 5 | 89728 | S | Screw, HH (M10 x 40) | 8 |
| 6 | 15847 | S | Lockwasher, Split (M10) | 8 |
| 7 | 19934 | S | Washer, Flat (M10) | 8 |
| 8 | 29443 | AL | Cover, Bearing, Outer | 2 |
| 10 | 29444 | NBR | O-Ring, Bearing Case | 2 |
| 11 | 11443 | NBR | Seal, Oil, Crankshaft - 70D | 2 |
| 12 | 43642 | S | Washer, Shim (M120 x 0.3), Bearing, Inner | 0-2 |
| 13 | 43643 | S | Washer, Shim (M120 x 0.5), Bearing, Inner | 0-2 |
| 15 | 29441 | STL | Bearing, Roller | 2 |
| 16 | 29442 | STL | Cover, Bearing, Inner | 2 |
| 17 | 29444 | NBR | O-Ring, Bearing Case | 2 |
| 20 | 115983 | HS | Rod, Connecting | 3 |
| 21 | 44941 | STZP | Washer, Locking | 3 |
| 22 | 43641 | STZP | Washer, Shim (M10.5 x 1.5) | 6 |
| 25 | 29440 | FCM | Crankshaft, Dual End | 1 |
| 31 | 828710 | — | Protector, Oil Cap | 1 |
| 32 | 43211 | ABS | Cap, Oil Filler | 1 |
| 33 | 14177 | NBR | O-Ring, Oil Filler Cap - 70D | 1 |
| 34 | 44319 | STZP | Bolt, Eye (M12) [1/00] | 1 |
| 38 | 11338 | NBR | O-Ring, Dip Stick - 70D | 1 |
| 39 | 27769 | ABS | Stick, Dip | 1 |
| 40 | 89627 | S | Screw, HH (M10 x 30) | 8 |
| 41 | 15847 | S | Lockwasher, Split (M10) | 8 |
| 42 | 19934 | S | Washer, Flat (M10) | 8 |
| 48 | 25625 | STCP | Plug, Drain (1/4 x 19BSP) | 1 |
| 49 | 23170 | NBR | O-Ring, Drain Plug - 70D | 1 |
| 50 | 29438 | AL | Cover, Rear | 1 |
| 51 | 29439 | NBR | Gasket, Rear Cover | 1 |
| 53 | 43284 | AL | Crankcase w/Guide Pins [1/00] | 1 |
| 54 | 43282 | S | Pin, Guide | 2 |
| 55 | 89615 | S | Stud (M16 x 70) | 2 |
| 64 | 29481 | CM | Pin, Crosshead | 3 |
| 65 | 45384 | SSZZ | Rod, Plunger | 3 |
| 69 | 29453 | STZP | Washer, Oil Seal | 3 |
| 70 | 29454 | NBR | Seal, Oil - 80D | 3 |
| 75 | 44752 | NBR | Slinger, Barrier | 3 |
| 88 | 45677 | SS | Washers, Keyhole (M14) | 3 |
| 90 | 45672 | CC | Plunger (M45 x 185) | 3 |
| 95 | 44748 | SS | Stud, Plunger Retainer (M14 x 147) | 3 |
| 96 | 20214 | PTFE | Back-up-Ring, Plunger Retainer | 3 |
| 97 | 17616 | NBR | O-Ring, Plunger Retainer - 80D | 3 |
| | 11686 | FPM | O-Ring, Plunger Retainer - 80D | 3 |
| 98 | 44751 | SS | Gasket, Plunger Retainer | 3 |
| 99 | 44750 | SS | Retainer, Plunger (M14) | 3 |
| 100 | 702014 | PVDF | Retainer, Seal, Rear | 3 |
| | 701580 | D | Retainer, Seal, Front | 3 |
| 104 | 18178 | NBR | O-Ring, Inlet Adapter - 80D | 3 |
| | 13338 | FPM | O-Ring, Inlet Adapter - 70D | 3 |
| 105 | 701355 | SS | Adapter, LPS | 3 |
| 106 | 106147 | NBR | Seal, LPS w/SS-Spg | 3 |
| | 701752 | SFTA* | Seal, LPS w/SS-Spg | 3 |
| 110 | 44754 | NAB | Manifold, Inlet | 1 |
| 112 | 18175 | NBR | O-Ring, Spacer, Inner - 80D | 3 |
| | 13266 | FPM | O-Ring, Spacer, Inner - 70D | 3 |
| 114 | 44767 | SS | Spacer, Inlet Manifold | 3 |
| 115 | 18175 | NBR | O-Ring, Spacer, Outer - 80D | 3 |
| | 13266 | FPM | O-Ring, Spacer, Outer - 70D | 3 |
| 116 | 19086 | S | Lockwasher, Split (M16) | 4 |
| 117 | 89729 | S | Screw, HH (M16 x 55) | 4 |
| 123 | 18178 | NBR | O-Ring, Cylinder V/P - 80D | 3 |
| | 13338 | FPM | O-Ring, Cylinder V/P - 70D | 3 |
| 124 | 701357 | SSL | Cylinder, V/P | 3 |
| 126 | 701358 | SS | Adapter, Female | 3 |
| 127 | 104450 | STG* | V-Packing | 6 |
| 128 | 701359 | SS | Adapter, Male | 3 |
| 155 | 701978 | NBR | O-Ring, Spacer - 80D | 3 |
| | 701360 | FPM | O-Ring, Spacer - 70D | 3 |
| 156 | 701361 | PTFE | Back-up Ring, Inner | 3 |
| 157 | 701362 | SS | Spacer, V-Packing w/Coil Springs | 3 |
| 158 | 701363 | PTFE | Back-up Ring, Outer | 3 |
| 159 | 18178 | NBR | O-Ring, Spacer - 80D | 3 |
| | 13338 | FPM | O-Ring, Spacer - 70D | 3 |
| 160 | 44756 | S | Pin, Guide | 2 |
| 163 | 18176 | NBR | O-Ring, Seat | 6 |
| | 13278 | FPM | O-Ring, Seat | 6 |
| 164 | 44772 | SS | Seat | 6 |
| 166 | 44774 | SS | Valve | 6 |
| 167 | 44773 | SS | Spring | 6 |
| 168 | 44775 | PVDF | Retainer, Spring | 6 |
| 170 | 44776 | SS | Washer, Retainer | 6 |
| 171 | 44780 | SS | Spring, Coil, Valve Plug | 6 |
| 172 | 18177 | NBR | O-Ring, Valve Plug - 80D | 6 |
| | 13279 | FPM | O-Ring, Valve Plug - 70D | 6 |
| 174 | 44778 | NAB | Plug, Valve [3/00] | 1 |
| 185 | 44769 | NAB | Manifold, Discharge [3/00] | 1 |
| 186 | 19086 | S | Lockwasher, Split (M16) | 2 |
| 188 | 89694 | S | Screw, HSH (M16 x 110) | 8 |
| 194 | 81291 | S | Nut, Hex (M16) | 2 |

EXPLODED VIEW



Model
Nickel Aluminum Bronze - 6747
January 2004

| ITEM | P/N | MATL | DESCRIPTION | QTY |
|------|--------|------|--|-----|
| 250 | 29445 | AL | Protector, Shaft | 1 |
| 255 | 33243 | STZP | Kit, Mount (Included w/Pump) | 1 |
| 259 | 29477 | STZP | Rail (Included w/Pump) (Two per pump required) | 2 |
| 275 | 990014 | STL | Hub, 45mm (M14x9 Keyway) [See Drive Packages, Tech Bulletin 003] | 1 |
| 279 | 30429 | STZP | Oiler (10 oz.) | 3 |
| 281 | 30969 | — | Oiler, Glass (10 oz.) | 3 |
| 282 | 10070 | NBR | Gasket, Oiler | 3 |
| 283 | 34334 | — | Kit, Oil Drain | 1 |
| 290 | 6104 | — | Gasket, Liquid (1.0 oz.) | 1 |
| 299 | 702348 | NAB | Head, Complete | 1 |
| 300 | 702349 | NBR* | Kit, Seal (Incls: 97,106,112,115,123,127,155,156,158,159) | 1 |
| | 702350 | FPM* | Kit, Seal (Incls: 97,106,112,115,123,127,155,156,158,159) | 1 |
| 310 | 34092 | NBR | Kit, Valve (Incls: 163,164,166,167,168,170,172) | 2 |
| | 31273 | FPM | Kit, Valve (Incls: 163,164,166,167,168,170,172) | 2 |
| — | 819010 | F | Assy, Crankcase, Cast Iron Conversion | 1 |
| — | 88902 | STZP | Stud (M16x277) (For removing D.M., I.M.) | 2 |
| — | — | — | C.A.T. (For R.O. or Industrial Applications) | 1 |
| — | — | — | Adapters (2 per C.A.T.) (See Data Sheet for complete selection) | 2 |
| — | 6105 | — | Oil, Twin Pack (Two 2.5 Gal) ISO 68 Multi-viscosity Hydraulic (Fill to specified crankcase capacity prior to start-up) | 1 |

Italics are optional items. [] Date of latest production change. *Review material codes for individual items (STG and SFTA generally may be used as alternate).

C.A.T. highly recommended for pressurized inlet, R.O. and Industrial applications.

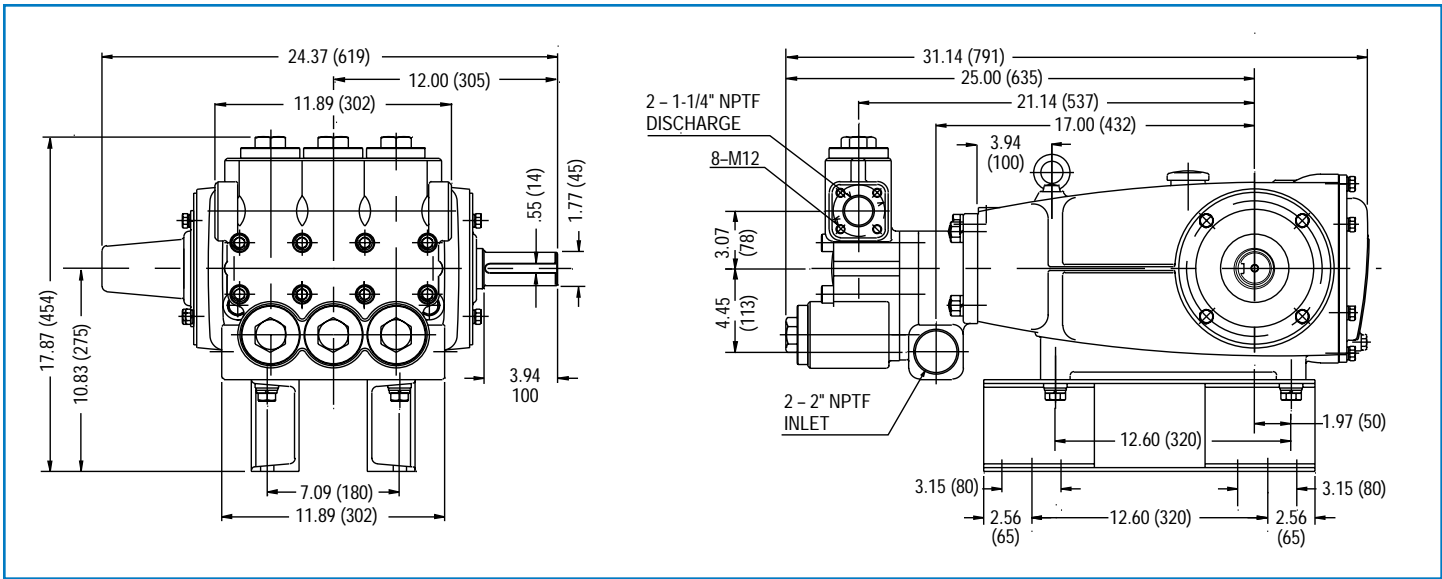
See Tech Bulletins 003, 024, 036, 043, 052, 053, 054, 064, 074, 077, 082, 083 and 084 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum CC=Ceramic CM=Chrome-Moly D=Acetal

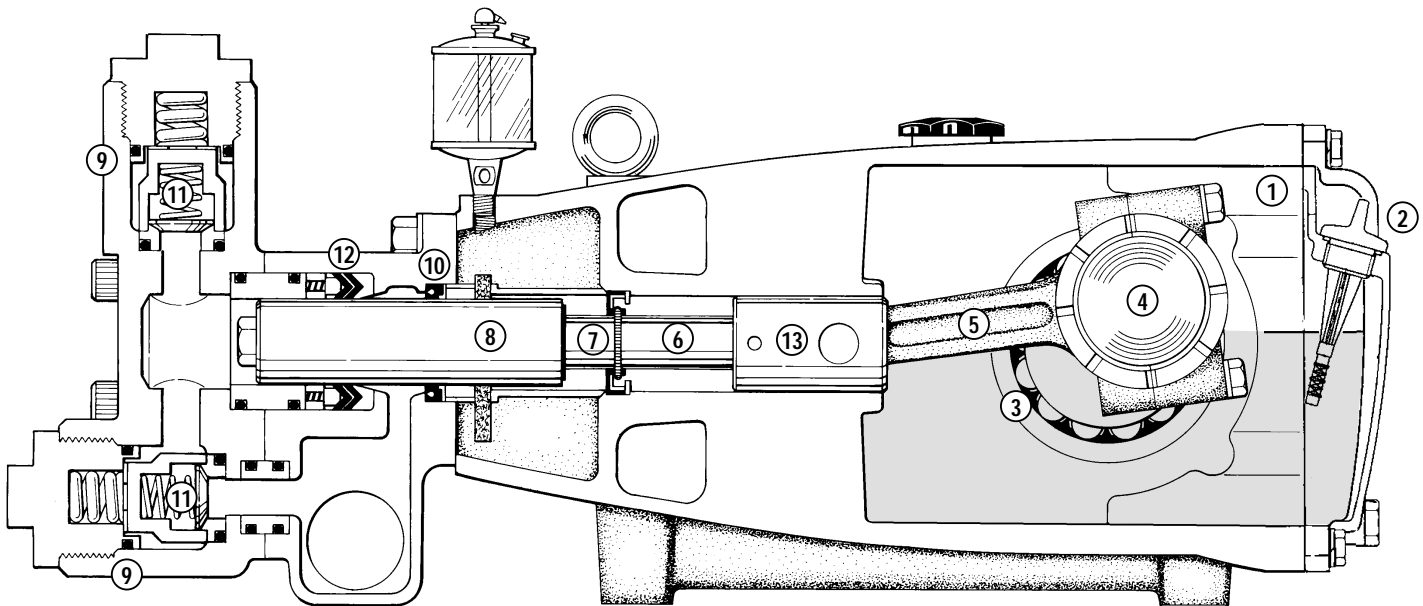
FCM=Forged Chrome-moly FPM=Fluorocarbon NAB=Nickel Aluminum Bronze NBR=Medium Nitrile (Buna-N)

PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SFTA=Special Blend PTFE Tan SS=316SS SSL=316SS/Low Carbon

SSZZ=316SS/Zamak STCP=Steel/Chrome Plated STG=Special Blend PTFE White STL=Steel STZP=Steel/Zinc Plated



Model 6747



- 1 Die cast aluminum **crankcase** means high strength, lightweight, and excellent tolerance control.
- 2 **Dipstick** offers convenient top access for easy oil level check.
- 3 Oversized crankshaft **bearings** provide extended bearing life and pump performance.
- 4 Chrome-moly **crankshaft** provides unmatched strength and surface hardness for long life.
- 5 Matched oversized high strength **connecting rods** are noted for superior strength and bearing quality.
- 6 The **plunger rods** are high tensile strength stainless steel with Zamak crossheads.
- 7 The stainless steel **slinger** provides back-up protection for the crankcase seal, keeping pumped liquids out of the crankcase.
- 8 Special concentric, high density, polished, graphite impregnated, solid ceramic **plungers** are abrasion resistant and result in extended seal life.
- 9 **Manifolds** are a high tensile strength nickel aluminum bronze for long term, continuous duty.
- 10 100% wet **seal** design adds to service life by allowing pumped liquids 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, **V-Packings** offer unmatched performance and seal life.
- 13 **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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