

Optional Oilers Shown

## FEATURES

### Superior Design

- Triplex Uniflow design provides continuous forward liquid flow for smooth operation.
- Wetted cups and floating pistons are lubricated and cooled by pumped liquid for long cup life.
- Mechanically actuated inlet valves give strong lift and easy prime.
- 304 stainless steel discharge valves for wear resistance.
- Oil bath crankcase assures optimum lubrication.

### Quality Materials

- Cylinder and sleeve wear surfaces are hard chrome plated 304 stainless steel for maximum durability and abrasion resistance.
- Chrome plated, brass manifolds and optional 316 stainless steel manifolds are strong and corrosion resistant.
- Chrome-moly crankshaft gives unmatched strength and surface hardness.
- Oversized crankshaft bearings with greater loading capacity mean longer bearing life.
- Die cast aluminum crankcase provides high strength, minimum weight and precision tolerance control.

### Easy Maintenance

- Stepped stainless steel piston rod with chrome-plated stainless steel sleeve allows easy replacement from front of pump.
- All wet-end wear parts are easily serviced without entering crankcase, requiring less time and effort.
- Wear parts are available in convenient kits.

### **⚠ 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.

## 60 Frame Piston Pump

### Models

# 6024 6044

### SPECIFICATIONS

U.S. Measure

Metric Measure

#### MODEL 6024

Flow .....12 GPM (45 L/M)  
 Pressure Range.....100 to 5000 PSI (7 to 345 BAR)  
 RPM .....500 RPM (500 RPM)  
 Bore.....1.5" (38 mm)

#### MODEL 6044

Flow .....20 GPM (76 L/M)  
 Pressure Range.....100 to 3000 PSI (7 to 210 BAR)  
 RPM .....500 RPM (500 RPM)  
 Bore.....1.85" (47 mm)

### COMMON SPECIFICATIONS

Stroke.....2.480" (63 mm)  
 Crankcase Capacity.....10 Qts. (9.46 L)  
 Maximum Liquid Temperature .....140°F (60°C)  
 Inlet Pressure Range .....-8.5 to +40 PSI (-0.6 to +2.8 BAR)  
 Inlet Ports (1) .....2" NPTF (2" NPTF)  
 Discharge Ports (3).....1" NPTF (1" NPTF)  
 Pulley Mounting .....Either Side (Either Side)  
 Shaft Diameter .....1.772" (45 mm)  
 Weight.....265 lbs. (120 kg)  
 Dimensions.....35.2 x 24.0 x 17.1" (895 x 610 x 434 mm)

### HORSEPOWER REQUIREMENTS

| Model | FLOW     |     | PRESSURE |          |          |          |          | RPM  | DRIVE |   |
|-------|----------|-----|----------|----------|----------|----------|----------|------|-------|---|
|       | U.S. GPM | L/M | PSI 2000 | PSI 2500 | PSI 3000 | PSI 4000 | PSI 4500 |      |       | PSI 5000  |
| 6024  | 12       | 45  | N/A      | N/A      | N/A      | 32.9     | 37.1     | 41.1 | 500   | Consult CAT PUMPS for Pump and Motor Pulley Sizes |
|       | 11       | 42  | N/A      | N/A      | N/A      | 30.1     | 34.0     | 37.7 | 458   |   |
|       | 10       | 38  | N/A      | N/A      | N/A      | 27.4     | 30.9     | 34.2 | 417   |   |
| 6044  | 20       | 76  | 27.4     | 34.2     | 41.1     | N/A      | N/A      | N/A  | 500   |   |
|       | 18       | 68  | 24.7     | 30.9     | 36.9     | N/A      | N/A      | N/A  | 450   |   |
|       | 16       | 61  | 22.0     | 27.5     | 33.0     | N/A      | N/A      | N/A  | 400   |   |

**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**

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

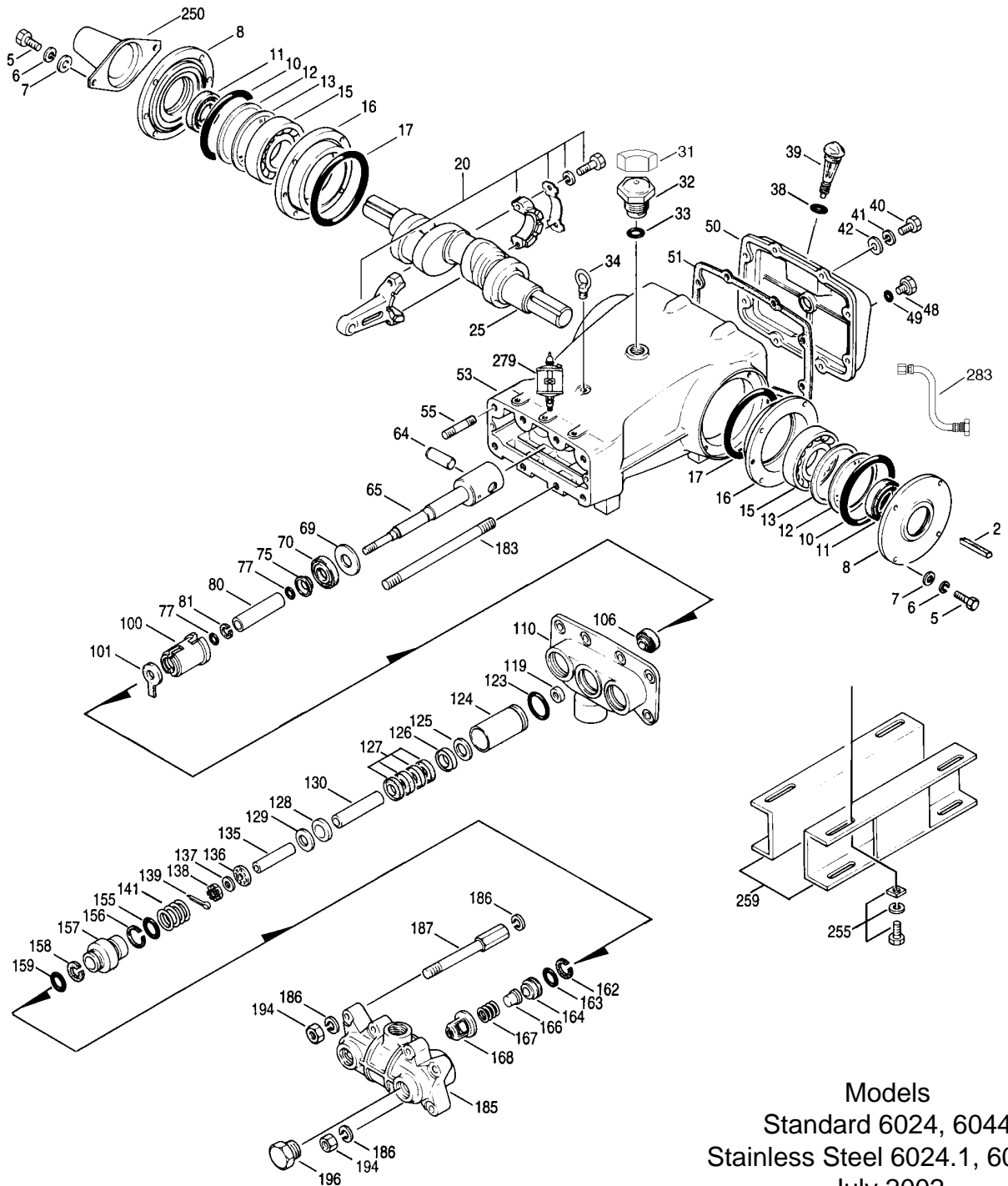
See complete Drive Packages [Includes: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.  
 Refer to pump Service Manual for repair procedure and additional technical information.

*"Customer confidence is our greatest asset"*

# PARTS LIST

| ITEM  | PART NUMBER |      | DESCRIPTION | QTY  |   |    |   |
|-------|-------------|------|-------------|------|---|----|---|
|       | 6024        | MATL | 6044        | MATL |   |    |   |
| • 2   | 43048       | STL  | 43048       | STL  | Key (M14x9x90)  | 1  | • |
| 5     | 80296       | STZP | 80296       | STZP | Screw, HH (M10x40)  | 8  |   |
| 6     | 12503       | STZP | 12503       | STZP | Lockwasher (M10)  | 8  |   |
| 7     | 12490       | STZP | 12490       | STZP | Washer (M10)  | 8  |   |
| 8     | 29443       | AL   | 29443       | AL   | Cover, Bearing  | 2  |   |
| 10    | 29444       | NBR  | 29444       | NBR  | O-Ring, Bearing Cover   | 2  |   |
| 11    | 11443       | NBR  | 11443       | NBR  | Seal, Oil - 70D   | 2  |   |
| 12    | 43642       | S    | 43642       | S    | Washer, Shim  | 2  |   |
| 13    | 43643       | S    | 43643       | S    | Washer, Shim  | 2  |   |
| 15    | 29441       | STL  | 29441       | STL  | Bearing, Roller   | 2  |   |
| 16    | 29442       | STL  | 29442       | STL  | Cover, Bearing  | 2  |   |
| 17    | 29444       | NBR  | 29444       | NBR  | O-Ring, Bearing Cover   | 2  |   |
| 20    | 115983      | HS   | 115983      | HS   | Rod, Connecting   | 3  |   |
| 21    | 44941       | STZP | 44941       | STZP | Washer, Locking   | 3  |   |
| 22    | 43641       | STZP | 43641       | STZP | Washer, Shim (M10.5x1.5) <span style="border: 1px solid black; padding: 2px;"> </span> Replace as a set | 6  |   |
| 25    | 29440       | FCM  | 29440       | FCM  | Crankshaft  | 1  |   |
| 31    | 828710      |      | 828710      |      | Protector, Oil Cap  | 1  |   |
| 32    | 43211       | ABS  | 43211       | ABS  | Cap, Oil Filler   | 1  |   |
| 33    | 14177       | NBR  | 14177       | NBR  | O-Ring, Filler Cap - 70D  | 1  |   |
| 34    | 44319       | STZP | 44319       | STZP | Bolt, Eye   | 1  |   |
| 38    | 11338       | NBR  | 11338       | NBR  | O-Ring, Dip Stick - 70D   | 1  |   |
| 39    | 27769       | ABS  | 27769       | ABS  | Stick, Dip  | 1  |   |
| 40    | 80288       | STZP | 80288       | STZP | Screw, HH (M10x30)  | 6  |   |
| 41    | 12503       | STZP | 12503       | STZP | Lockwasher  | 6  |   |
| 42    | 12490       | STZP | 12490       | STZP | Washer (M10)  | 6  |   |
| 48    | 25625       | STCP | 25625       | STCP | Plug, Drain (1/4"x19BSP)  | 1  |   |
| 49    | 23170       | NBR  | 23170       | NBR  | O-Ring, Drain Plug - 70D  | 1  |   |
| 50    | 29438       | AL   | 29438       | AL   | Cover, Rear   | 1  |   |
| 51    | 29439       | NBR  | 29439       | NBR  | Gasket, Rear Cover  | 1  |   |
| • 53  | 43284       | AL   | 43284       | AL   | Crankcase   | 1  | • |
| 55    | 85449       | STZP | 85449       | STZP | Stud (M16x72)   | 4  |   |
| 64    | 29481       | CM   | 29481       | CM   | Pin, Crosshead  | 3  |   |
| 65    | 43002       | SZZ  | 43002       | SZZ  | Rod, Piston   | 3  |   |
| 69    | 29453       | STZP | 29453       | STZP | Washer, Oil Seal  | 3  |   |
| 70    | 29454       | NBR  | 29454       | NBR  | Seal, Oil, Crankcase - 80D  | 3  |   |
| 75    | 29340       | S    | 29340       | S    | Slinger, Barrier  | 3  |   |
| 77    | 11345       | NBR  | 11345       | NBR  | O-Ring, Sleeve - 70D  | 6  |   |
|       | 11375       | FPM  | 11375       | FPM  | O-Ring, Sleeve  | 6  |   |
| 80    | 43129       | SCP  | 43129       | SCP  | Sleeve (M25)  | 3  |   |
|       | 43271       | S    | 43271       | S    | Sleeve (M25)  | 3  |   |
| 81    | 20189       | PTFE | 20189       | PTFE | Back-up-Ring, Sleeve  | 3  |   |
| 100   | 29456       | PVDF | 29456       | PVDF | Retainer, Seal  | 3  |   |
| 101   | 43136       |      | 43136       |      | Wick, Oil (M25)   | 3  |   |
| 106   | 43130       | NBR  | 43130       | NBR  | Seal, LPS, Ungreased (M25)  | 3  |   |
|       | 43132       | FPM  | 43132       | FPM  | Seal, LPS, Ungreased (M25)  | 3  |   |
| 110   | 43283       | BBCP | 43283       | BBCP | Manifold, Inlet   | 1  |   |
|       | 29805       | SS   | 29805       | SS   | Manifold, Inlet   | 1  | • |
| • 119 | 43010       | S    | 43029       | S    | Valve, Inlet  | 3  | • |
| 123   | 12392       | NBR  | 12392       | NBR  | O-Ring, Cylinder - 70D  | 3  |   |
|       | 13279       | FPM  | 13279       | FPM  | O-Ring, Cylinder - 70D  | 3  |   |
| 124   | 43004       | BBCP | 43021       | BBCP | Cylinder  | 3  |   |
|       | 43118       | S    | 43119       | S    | Cylinder  | 3  |   |
| 125   | 43005       | BB   | 43022       | BB   | Spacer, Female Adapter  | 3  |   |
|       | 43127       | S    | —           |      | Spacer, Female Adapter  | 3  |   |
| 126   | 43006       | PTFE | 43023       | PTFE | Adapter, Female   | 3  |   |
| 127   | 26592       | PTFE | 43024       | PTFE | V-Packing   | 12 |   |
| 128   | 26589       | PTFE | 43025       | PTFE | Adapter, Male   | 3  |   |
| 129   | 27828       | BB   | 43026       | BB   | Spacer, Male Adapter  | 3  |   |
|       | 43120       | S    | 43121       | S    | Spacer, Male Adapter  | 3  |   |
| 130   | 43011       | SCP  | 43030       | SCP  | Piston (Sleeve-Type)  | 3  |   |
|       | 30788       | S    | 30768       | S    | Piston (Sleeve-Type)  | 3  |   |
| 135   | 43012       | S    | 43012       | S    | Spacer (Sleeve-Type), Piston  | 3  |   |
| 136   | 43013       | S    | 43031       | S    | Retainer, Piston  | 3  |   |
| 137   | 88579       | S    | 88579       | S    | Washer, Conical (M10)   | 3  |   |
| 138   | 29505       | S    | 29505       | S    | Nut, Slotted (M10)  | 3  |   |
| 139   | 29354       | S    | 29354       | S    | Cotterpin   | 3  |   |
| 141   | 43007       | S    | 43027       | S    | Spring, V-Packing   | 3  |   |
| 155   | 13429       | NBR  | 25495       | NBR  | O-Ring, Adapter, Inner  | 3  |   |
|       | 28773       | FPM  | 11748       | FPM  | O-Ring, Adapter, Inner  | 3  |   |
| 156   | 43008       | PTFE | 48371       | D    | Back-up-Ring, Adapter, Inner  | 3  |   |
| 157   | 43009       | S    | 43028       | S    | Adapter   | 3  |   |
| 158   | 43008       | PTFE | 43008       | PTFE | Back-up-Ring, Adapter, Outer  | 3  |   |
| 159   | 13429       | NBR  | 13429       | NBR  | O-Ring, Adapter, Outer  | 3  |   |
|       | 28773       | FPM  | 28773       | FPM  | O-Ring, Adapter, Outer  | 3  |   |
| 162   | 43064       | PTFE | 43064       | PTFE | Back-up-Ring, Seat  | 3  |   |
| 163   | 43015       | NBR  | 43015       | NBR  | O-Ring, Seat - 70D  | 3  |   |
|       | 43194       | FPM  | 43194       | FPM  | O-Ring, Seat - 70D  | 3  |   |
| 164   | 43014       | S    | 43014       | S    | Seat  | 3  |   |
| 166   | 19393       | S    | 19393       | S    | Valve   | 3  |   |
| 167   | 43016       | S    | 43016       | S    | Spring  | 3  |   |
| 168   | 43117       | S    | 43117       | S    | Retainer, Spring  | 3  |   |
| 183   | 88901       | STZP | 88901       | STZP | Stud (M16x385)  | 4  |   |
| • 185 | 43017       | SS   | 43017       | SS   | Manifold, Discharge   | 1  | • |
| 186   | 12504       | STZP | 12504       | STZP | Washer, Lock (M16)  | 12 |   |
| 187   | 43018       | STZP | 43018       | STZP | Bolt, Cylinder (M16)  | 4  |   |
| 194   | 88853       | STCP | 88853       | STCP | Nut, Hex  | 8  |   |
| 196   | 27807       | BBCP | 27807       | BBCP | Plug (1" NPT)   | 1  |   |
| • 250 | 29445       | AL   | 29445       | AL   | Protector, Shaft (Incl. w/Pump)   | 1  | • |
| • 255 | 33243       | STZP | 33243       | STZP | Mount, Direct (Incl. w/Pump)  | 1  | • |
| • 259 | 29477       | STZP | 29477       | STZP | Mounting Rail (Incl. w/Pump)  | 1  | • |

# EXPLODED VIEW



Models  
Standard 6024, 6044  
Stainless Steel 6024.1, 6044.1  
July 2002

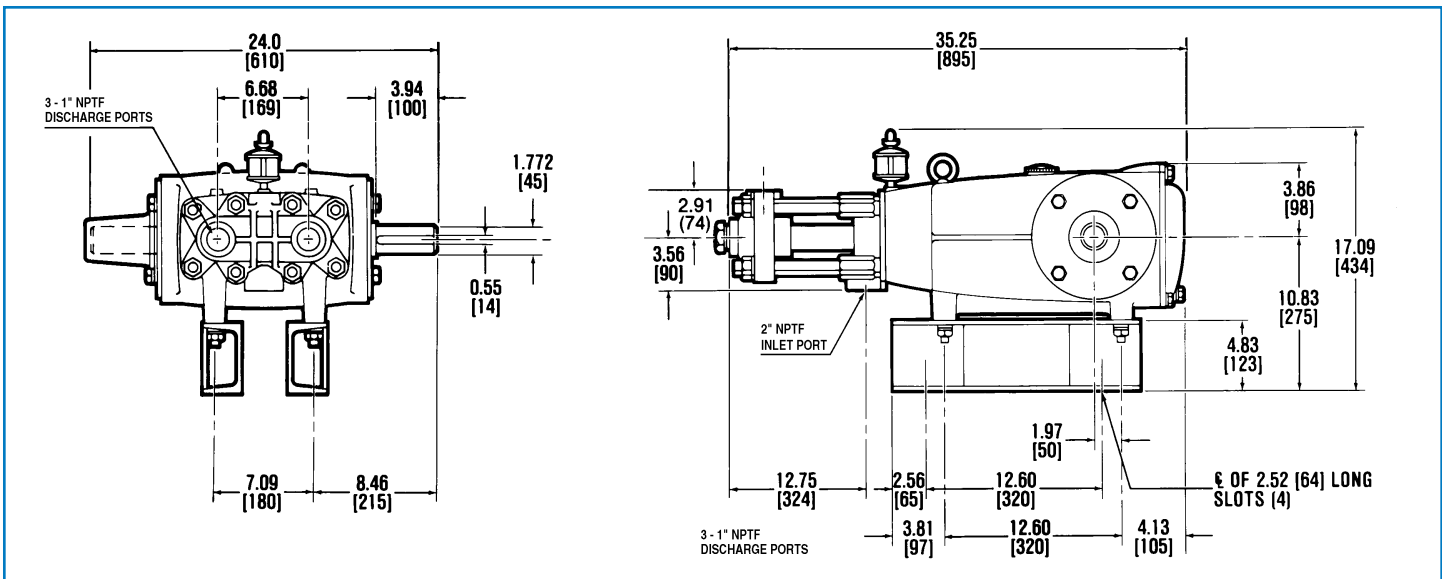
|       | 6024   | MATL | 6044   | MATL |   |     |
|-------|--------|------|--------|------|---|-----|
| 275   | —      | —    | —      | —    | Hub & Key Assy [See Drive Packages, Tech Bulletin 003]  | 1   |
| ● 279 | 30429  | STZP | 30429  | STZP | Oilers (10 oz.)   | 3 ● |
| 280   | 30969  | —    | 30969  | —    | Oilers, Glass (10 oz.)  | 3   |
| 281   | 10070  | NBR  | 10070  | NBR  | Gasket, Oiler (10 oz.)  | 3   |
| ● 283 | 34334  | —    | 34334  | —    | Kit, Oil Drain  | 1 ● |
| 302   | —      | —    | —      | —    | Kit, V-Packing (Select: 126, 127, 128, 139, 155, 156, 159)  | 1   |
| 306   | 30484  | NBR  | 30484  | NBR  | Kit, Seal (Incls: 101, 106, 139)  | 1   |
| 310   | —      | —    | —      | —    | Kit, Valve (Select: 155, 159, 162, 163, 164, 166, 167, 168)   | 1   |
| ● —   | 714500 | SS   | 714500 | SS   | C.A.T. (Captive Acceleration Tube)  | 1   |
| ● —   | 714508 | SS   | 714508 | SS   | Adapter (2 per C.A.T.) (See Data Sheet for complete selection)  | 2   |
| —     | 6100   | —    | 6100   | —    | Oil, Case (12 Bottles) ISO 68 Multi-viscosity Hydraulic<br>(Fill to specified crankcase capacity prior to start-up) | 1   |

● Industrial discount. **Bold print part numbers are unique to a particular pump model.** *Italics are optional items.*

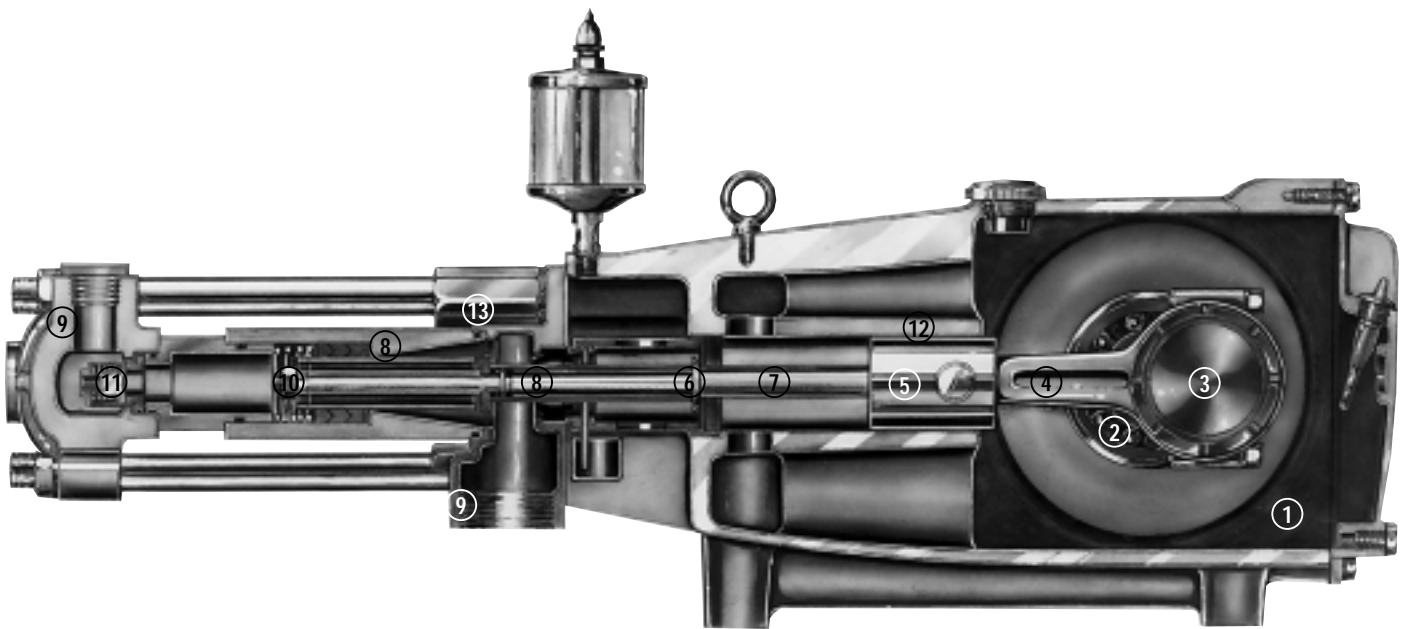
**C.A.T. highly recommended for pressurized inlet, R.O. and Industrial applications.**

See Tech Bulletins 002, 003, 012, 024, 034, 036, 064, 074, 077, 083 and 084 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated CM=Chrome-moly D=Delrin® FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®) HS=High Strength NBR=Medium Nitrile (Buna-N) PTFE=Pure Teflon® PVDF=Fluoroplastic (High Strength) S=304SS SCP=304SS/Chrome Plated SS=316SS STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated SZZ=304SS/Zamak



Models 6024, 6044



- 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 oversized high strength **connecting rods** are noted for superior strength and bearing quality.
- 5 The **piston rods** are high tensile strength 316 stainless steel with Zamak crossheads.
- 6 The stainless steel **slinger** provides back-up protection for the crankcase seal, keeping pumped liquids out of the crankcase.
- 7 The **patented stepped piston rod** with stainless steel **sleeves** provides a durable wear surface and easy wet-end servicing.
- 8 The **cylinder** and **sleeve** wear surfaces are hard chrome-plated 304 stainless steel for longer service life.
- 9 **Manifolds** are of high tensile strength chrome-plated brass or 316 stainless steel for special corrosion resistance.
- 10 100% wet **seal** design adds to service life by allowing pumped liquids to cool and lubricate the elastomers on both sides.
- 11 304 stainless steel **valves, seats, and springs** provide corrosion-resistance, positive seating and long life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.
- 13 Mechanically actuated **inlet valves** provide strong lift and easy prime.

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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