



15 Frame Plunger Pump

Standard Brass Model

1050

Stainless Steel Model

1051

Nickel Aluminum Bronze Model

1057

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.
- Lubricated Lo-Pressure Seals provide 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.
- Brass, Stainless Steel or 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 offers 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.

CAUTION

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

STANDARD SPECIFICATIONS

| | | |
|----------------------------------|-----------------|------------------|
| Flow | 10 GPM | (38 L/M) |
| Pressure Range..... | 100 to 2200 PSI | (7 to 155 BAR) |
| RPM | 958 RPM | (958 RPM) |
| Inlet Pressure Range | -5 to 60 PSI | (-0.35 to 4 BAR) |
| Maximum Liquid Temperature | 160°F | (71°C) |

ALTERNATE SPECIFICATIONS

| | | |
|--|-------------------|----------------|
| Flow | ★ 12 GPM | (45 L/M) |
| Pressure Range | ★ 100 to 1800 PSI | (7 to 125 BAR) |
| RPM | ★ 1150 RPM | (1150 RPM) |
| Inlet Pressure Range - ★ C.A.T. Required | ★ 20 to 60 PSI | (1.4 to 4 BAR) |
| Maximum Liquid Temperature..... | ★ 100°F | (38°C) |

COMMON SPECIFICATIONS

| | | |
|--------------------------|-----------------------|----------------------------|
| Bore..... | 0.945" | (24 mm) |
| Stroke..... | 1.180" | (30 mm) |
| Crankcase Capacity | 42 oz. | (1.26 L) |
| Inlet Ports (2) | 3/4" NPTF | (3/4" NPTF) |
| Discharge Ports (2)..... | 1/2" NPTF | (1/2" NPTF) |
| Pulley Mounting | Either Side | (Either Side) |
| Shaft Diameter | 1.181" | (30 mm) |
| Weight..... | 44 lbs. | (19.9 kg) |
| Dimensions | 16.28 x 12.99 x 6.44" | (413.50 x 330 x 163.50 mm) |

HORSEPOWER REQUIREMENTS

| FLOW | | PRESSURE | | | MOTOR PULLEY SIZE | |
|-------------|-----|-------------|-------------|-------------|--|----------------|
| | | PSI 1800 | PSI 2000 | PSI 2200 | Using 1725 RPM Motor & Std. 10" Pump Pulley | |
| U.S. GPM | L/M | BAR 125 | BAR 140 | BAR 155 | RPM | Pulley O.D. |
| 12.0 | 45 | 14.8 | N/A | N/A | 1150 | 6.5 |
| 10.0 | 38 | 12.4 | 13.7 | 15.1 | 958 | 5.4 |
| 9.0 | 34 | 11.1 | 12.4 | 13.6 | 836 | 4.9 |

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

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

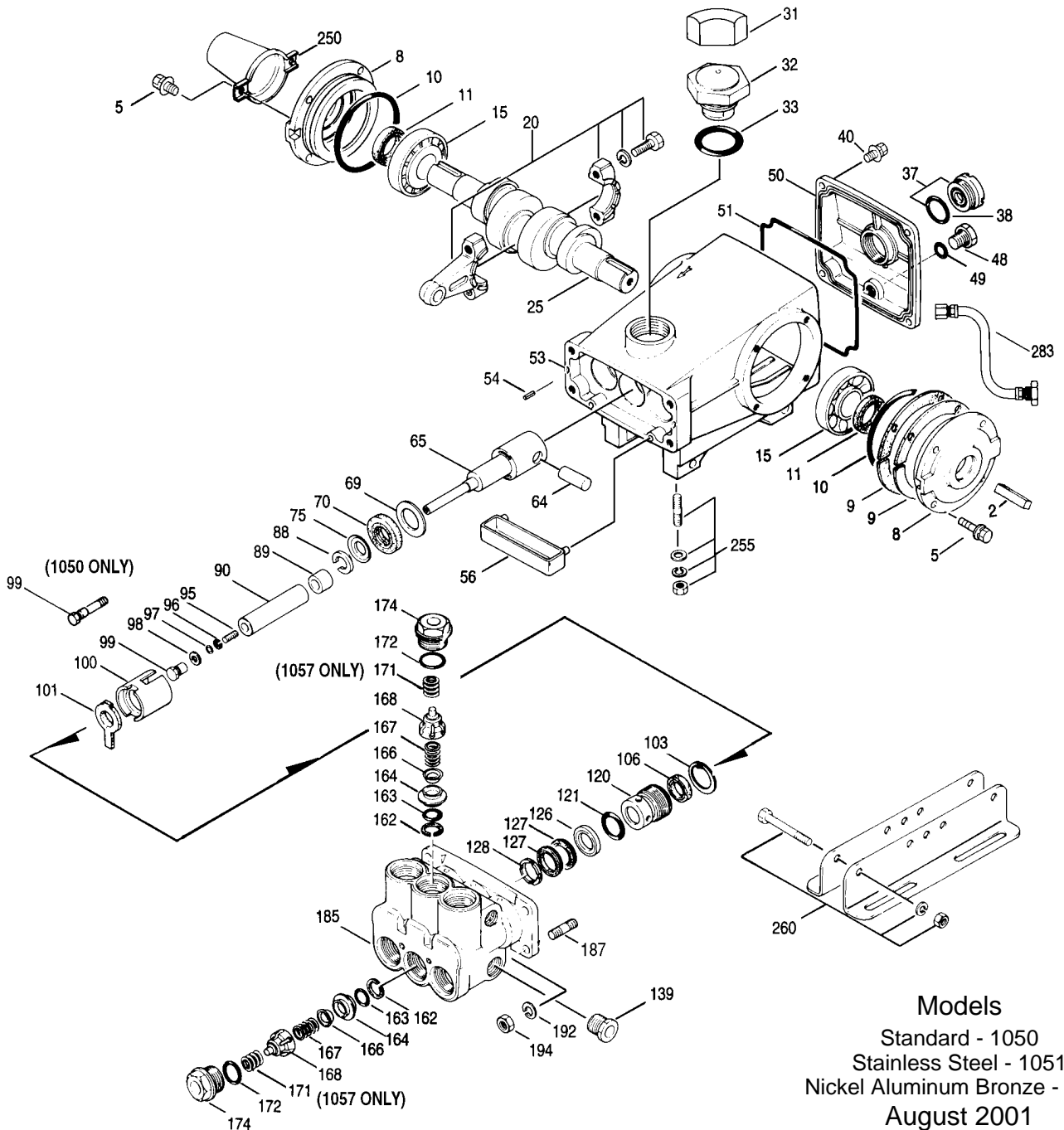
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.
Refer to pump Service Manual for repair procedure and additional technical information.

"Customer confidence is our greatest asset"

PARTS LIST

| ITEM | 1050 | MATL | 1051 | MATL | 1057 | MATL | DESCRIPTION | QTY |
|-------|---------|------|---------|------|---------|------|---|-----|
| ● 2 | 30067 | STL | 30067 | STL | 30067 | STL | Key (M8x7.5x25)) | 1 ● |
| 5 | 92519 | STZP | 92538 | S | 92538 | S | Screw, HHC Sems (M6x16) | 8 |
| 8 | 43496 | AL | 43496 | AL | 43496 | AL | Cover, Bearing | 2 |
| 9 | 43520 | FBR | 43520 | FBR | 43520 | FBR | Shim, Bearing Cover | 2/4 |
| | 45387 | S | 45387 | S | 45387 | S | Shim, Split 2-Pc | 0/4 |
| 10 | 11340 | NBR | 11340 | NBR | 11340 | NBR | O-Ring, Bearing Cover | 2 |
| 11 | 43495 | NBR | 43495 | NBR | 43495 | NBR | Seal, Oil, Crankshaft | 2 |
| 15 | 39060 | STL | 39060 | STL | 39060 | STL | Bearing, Roller | 2 |
| 20 | 48600 | TNM | 48600 | TNM | 48600 | TNM | Rod, Connecting Assembly [10/01] | 3 |
| 25 | 43494 | FCM | 43494 | FCM | 43494 | FCM | Crankshaft, Dual End | 1 |
| 31 | 828710 | | 828710 | | 828710 | | Protector, Oil Cap | 1 |
| 32 | 43211 | ABS | 43211 | ABS | 43211 | ABS | Cap, Oil Filler | 1 |
| 33 | 14177 | NBR | 14177 | NBR | 14177 | NBR | O-Ring, Filler Cap - 70D | 1 |
| 37 | 92241 | | 92241 | | 92241 | | Gauge, Oil, Bubble w/Gasket - 80D | 1 |
| 38 | 44428 | NBR | 44428 | NBR | 44428 | NBR | Gasket, Flat, Oil Gauge - 80D | 1 |
| 40 | 92520 | STZP | 92542 | S | 92542 | S | Screw, HHC Sems (M6x20) | 4 |
| 48 | 25625 | STCP | 25625 | STCP | 25625 | STCP | Plug, Drain (1/4"x19BSP) | 1 |
| 49 | 23170 | NBR | 23170 | NBR | 23170 | NBR | O-Ring, Drain Plug - 70D | 1 |
| 50 | 43491 | AL | 43491 | AL | 43491 | AL | Cover, Rear | 1 |
| 51 | 44834 | NBR | 44834 | NBR | 44834 | NBR | O-Ring, Rear Cover - 70D | 1 |
| ● 53 | 43488 | AL | 43488 | AL | 43488 | AL | Crankcase w/Guide Pins | 1 ● |
| 54 | 27488 | S | 27488 | S | 27488 | S | Pin, Guide | 2 |
| 56 | 44664 | POP | 44664 | POP | 44664 | POP | Pan, Oil, w/Screws | 1 |
| 64 | 43507 | CM | 43507 | CM | 43507 | CM | Pin, Crosshead | 3 |
| 65 | 43501 | SZZ | 45258 | SSZZ | 45258 | SSZZ | Rod, Plunger | 3 |
| 69 | 43504 | STZP | 43504 | STZP | 43504 | STZP | Washer, Oil Seal | 3 |
| 70 | 43500 | NBR | 43500 | NBR | 43500 | NBR | Seal, Oil, Crankcase | 3 |
| 75 | 43506 | S | 43506 | S | 43506 | S | Slinger, Barrier | 3 |
| 88 | 45675 | SS | 45675 | SS | 45675 | SS | Washer, Keyhole | 3 |
| 89 | 43553 | BB | 45879 | SS | 45879 | SS | Collar, Spacer | 3 |
| 90 | 43552 | CC | 43552 | CC | 43552 | CC | Plunger (M24x77) | 3 |
| 95 | — | SS | 89651 | SS | 89651 | SS | Stud, Plunger Retainer (M6x70) | 3 |
| 96 | 43235 | PTFE | 43235 | PTFE | 43235 | PTFE | Back-up-Ring, Plunger Retainer | 3 |
| 97 | 17399 | NBR | 17399 | NBR | 17399 | NBR | O-Ring, Plunger Retainer - 80D | 3 |
| | 14160 | FPM | 14160 | FPM | 14160 | FPM | O-Ring, Plunger Retainer - 80D | 3 |
| | ◆ 46204 | EPDM | ◆ 46204 | EPDM | ◆ 46204 | EPDM | O-Ring, Plunger Retainer - 80D | 3 |
| 98 | 44041 | SS | 44041 | SS | 44041 | SS | Gasket, Plunger Retainer | 3 |
| 99 | — | | 44031 | SS | 44031 | SS | Retainer, Plunger | 3 |
| | 104360 | S | — | | — | | Retainer w/Stud | 3 |
| 100 | 43509 | POP | 43509 | POP | 43509 | POP | Retainer, Seal | 3 |
| 101 | 43554 | | 43554 | | 43554 | | Wick, Long Tab | 3 |
| 103 | 44036 | S | 44036 | S | 44036 | S | Ring, Retaining | 3 |
| 106 | 44035 | NBR | 44035 | NBR | 44035 | NBR | Seal, LPS w/SS-Spg | 3 |
| | 44388 | FPM | 44388 | FPM | 44388 | FPM | Seal, LPS w/SS-Spg | 3 |
| | ◆ 46208 | EPDM | ◆ 46208 | EPDM | ◆ 46208 | EPDM | Seal, LPS w/SS-Spg | 3 |
| 120 | 43555 | BB | 48464 | SSNP | 48464 | SSNP | Case, Seal | 3 |
| 121 | 14762 | NBR | 14762 | NBR | 14762 | NBR | O-Ring, Seal Case | 3 |
| | 11737 | FPM | 11737 | FPM | 11737 | FPM | O-Ring, Seal Case - 75D | 3 |
| | ◆ 46205 | EPDM | ◆ 46205 | EPDM | ◆ 46205 | EPDM | O-Ring, Seal Case | 3 |
| 126 | 43558 | BB | 48389 | D | 48389 | D | Adapter, Female | 3 |
| 127 | 43559 | SNG | 103692 | STG* | 103692 | STG* | V-Packing | 6 |
| 128 | 43560 | BB | 45074 | SSL | 45074 | SSL | Adapter, Male | 3 |
| 139 | 20326 | BBCP | 44382 | SS | 44562 | NAB | Plug, Inlet (3/4" NPT) | 1 |
| 162 | 43248 | PTFE | 43248 | PTFE | 43248 | PTFE | Back-up-Ring, Valve Seat | 6 |
| 163 | 43249 | NBR | 43249 | NBR | 43249 | NBR | O-Ring, Seat - 70D | 6 |
| | 44383 | FPM | 44383 | FPM | 44383 | FPM | O-Ring, Seat - 70D | 6 |
| | ◆ 46206 | EPDM | ◆ 46206 | EPDM | ◆ 46206 | EPDM | O-Ring, Seat - 70D | 6 |
| 164 | 44718 | S | 44037 | SS | 44037 | SS | Seat | 6 |
| 166 | 43721 | S | 44038 | SS | 44038 | SS | Valve | 6 |
| 167 | 43751 | S | 44039 | SS | 44039 | SS | Spring, Valve | 6 |
| 168 | 44564 | PVDF | 44564 | PVDF | 44564 | PVDF | Retainer, Spring | 6 |
| 171 | — | | — | | 44832 | S | Coil Spring, Valve Plug | 6 |
| 172 | 17617 | NBR | 17617 | NBR | 17617 | NBR | O-Ring, Valve Plug - 90D | 6 |
| | 11691 | FPM | 11691 | FPM | 11691 | FPM | O-Ring, Valve Plug - 90D | 6 |
| | ◆ 46207 | EPDM | ◆ 46207 | EPDM | ◆ 46207 | EPDM | O-Ring, Valve Plug - 90D | 6 |
| 174 | 43851 | BBCP | 48463 | SSNP | 44831 | NAB | Plug, Valve | 6 |
| ● 185 | 46704 | BBCP | 48726 | SS | 46706 | NAB | Head, Manifold [9/00] | 1 ● |
| 187 | 14050 | STZP | 44005 | S | 44005 | S | Stud, Manifold (M10x45) | 4 |
| 192 | 12503 | STZP | 15847 | S | 15847 | S | Lockwasher (M10) | 4 |
| 194 | 81048 | STZP | 81258 | S | 81258 | S | Nut, Hex (M10) | 4 |
| 250 | 30764 | NY | 30764 | NY | 30764 | NY | Protector, Shaft w/2 Screws | 1 |
| 255 | 30264 | STZP | 30264 | STZP | 30264 | STZP | Mounting, Direct (Incls: 12490, 12503, 14050, 81048) | 1 |
| 260 | 30613 | STZP | 30613 | STZP | 30613 | STZP | Rail, Angle Assy, A (Incls: 30635, 30903, 30921, 30912) | 1 |
| 265 | 30661 | | 30661 | | 30661 | | Kit, Complete Mounting, U.S. (Incls: 30613, 30206, 30059, 30067, 30764) | 1 |
| ● 269 | 30206 | F | 30206 | F | 30206 | F | Pulley (10") AB [See Drive Packages, Tech Bulletin 03] | 1 ● |
| ● 274 | 30059 | STL | 30059 | STL | 30059 | STL | Hub, "H", M30 (Keyway M8) [See Drive Packages, Tech Bulletin 03] | 1 ● |

EXPLODED VIEW



Models
 Standard - 1050
 Stainless Steel - 1051
 Nickel Aluminum Bronze - 1057
 August 2001

| | 1050 | MATL | 1051 | MATL | 1057 | MATL | | |
|-------|----------------|-------------|----------------|-------------|----------------|-------------|---|-----|
| ● 283 | 34334 | | 34334 | | 34334 | | Kit, Oil Drain | 1 ● |
| ● 290 | — | | 6104 | | 6104 | | Gasket, Liquid (1 oz.) | 1 ● |
| ● 299 | 814560 | BBCP | 816771 | SS | 815261 | NAB | Head, Complete [9/00] | 1 ● |
| 300 | 30913 | NBR | 33916 | NBR* | 33916 | NBR* | Kit, Seal (Incls: 97, 103, 106, 121, 127) | 1 |
| | 30986 | FPM* | 30986 | FPM* | 30986 | FPM* | Kit, Seal (Incls: 97, 103, 106, 121, 127) | 1 |
| | ◆ 33913 | EPDM* | ◆ 33913 | EPDM* | ◆ 33913 | EPDM* | Kit, Seal (Incls: 97, 103, 106, 121, 127) | 1 |
| 310 | 34920 | NBR | 34387 | NBR | 34387 | NBR | Kit, Valve (Incls: 162, 163, 164, 166, 167, 168, 172) | 2 |
| | 31256 | FPM | 30987 | FPM | 30987 | FPM | Kit, Valve (Incls: 162, 163, 164, 166, 167, 168, 172) | 2 |
| | ◆ 31253 | EPDM | ◆ 31258 | EPDM | ◆ 31258 | EPDM | Kit, Valve (Incls: 162, 163, 164, 166, 167, 168, 172) | 2 |
| 350 | 30696 | STZP | 30696 | STZP | 30696 | STZP | Plier, Reverse | 1 |
| 351 | 43523 | STZP | 43523 | STZP | 43523 | STZP | Tool, Seal Case Removal | 1 |
| — | 6565.1 | | 6565.1 | | 6565.1 | | Service Video | 1 |

● Industrial discount. **Bold print part numbers are unique to a particular pump model.** *Italics are optional items.* ◆ Silicone oil/grease required.

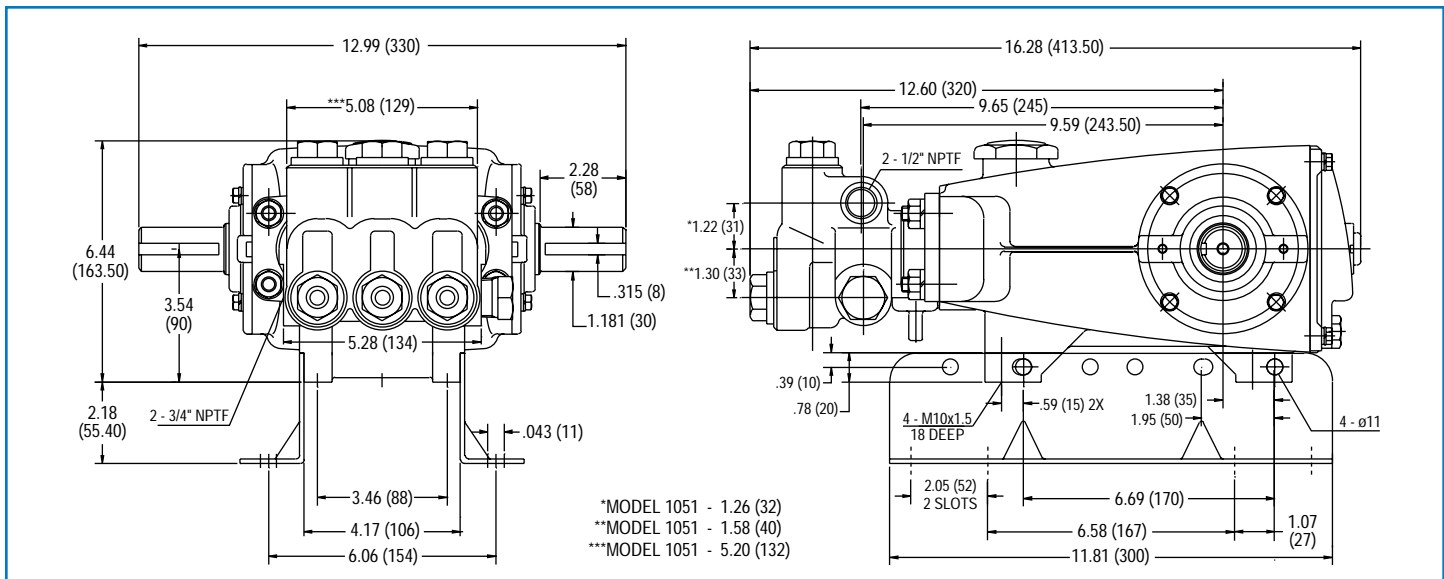
[] Date of latest production change. *Review material codes for individual items (STG generally may be used as an alternate).

See Tech Bulletins 02, 03, 24, 27, 35, 36, 43, 45, 46, 48, 49, 52, 53, 72, 74, 77, 83, 87 and 89 for additional information.

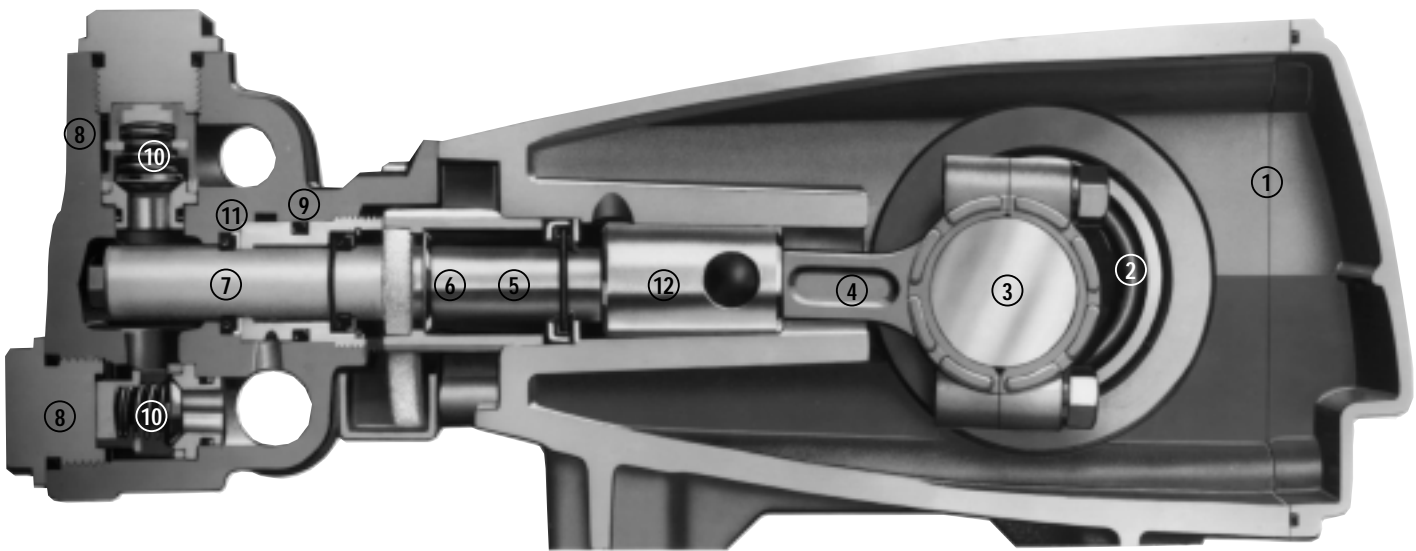
MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated CC=Ceramic CM=Chrome-moly D=Delrin® EPDM=Ethylene Propylene Diene Monomer F=Cast Iron FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®)

NAB=Nickel Aluminum Bronze NBR=Medium Nitrile (Buna-N) NY=Nylon POP=Polypropylene PTFE=Pure Teflon® PVDF=Fluoroplastic (High Strength)

S=304SS SNG=Special Blend (Buna) STG=Special Blend (Teflon®) White SS=316SS SSL=316SS/Low Carbon SSZZ=316SS/Zamak STCP=Steel/Chrome Plated SSNP=316SS/Nickel Plated STL=Steel STZP=Steel/Zinc Plated SZZ=304SS/Zamak TNM=Special High Strength



Models 1050, 1051, 1057



- 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 **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 liquids 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, stainless steel or nickel aluminum bronze for long term, continuous duty.
- 9 100% wet **seal** design adds to service life by allowing pumped liquids 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, CAT PUMP exclusive, **V-Packings** 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

World Headquarters
CAT PUMPS
 1681 - 94th Lane N.E. Minneapolis, MN 55449-4324
 Phone (763) 780-5440 — FAX (763) 780-2958
 e-mail: sales@catpumps.com
 www.catpumps.com
International Inquiries
 FAX (763) 785-4329
 e-mail: intlsales@catpumps.com



CAT PUMPS (U.K.) LTD.
 1 Fleet Business Park, Sandy Lane, Church Crookham, Fleet
 Hampshire GU52 8BF, England
 Phone Fleet 44 1252-622031 — Fax 44 1252-626655
 e-mail: sales@catpumps.co.uk
N.V. CAT PUMPS INTERNATIONAL S.A.
 Heiveldekens 6A, 2550 Kontich, Belgium
 Phone 32-3-450.71.50 — Fax 32-3-450.71.51
 e-mail: cpi@catpumps.be www.catpumps.be
CAT PUMPS DEUTSCHLAND GmbH
 Buchwiese 2, D-65510 Idstein, Germany
 Phone 49 6126-9303 0 — Fax 49 6126-9303 33
 e-mail: catpumps@t-online.de www.catpumps.de