

Model 3545 Shown

35 Frame Plunger Pumps

Forged Brass Model

3545

Stainless Steel Model

3541

SS Flushed Model

3541C

NAB Flushed Model

3547C

FEATURES

Superior Design

- Triplex plunger design gives smoother liquid flow.
- V-Packings are completely lubricated and cooled by the liquid being pumped.
- Special Flushed Inlet Manifold permits external flush for added cooling with high temperature liquids and lubrication with low lubricity liquids.
- 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

- Precision design 304 and 316 stainless steel valves and seats are hardened and polished for ultimate seating and extended valve life.
- Forged brass, 316 stainless steel, duplex stainless steel or nickel aluminum bronze manifolds for strength and corrosion resistance.
- Special concentric, high-density, polished, solid ceramic plungers provide a true wear surface and 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 means longer bearing life.

Easy Maintenance

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

SPECIFICATIONS

| | U.S. Measure | Metric Measure |
|--|-----------------------|----------------------|
| Flow..... | 45 GPM | (170 L/M) |
| Pressure Range..... | 100 to 1000 PSI | (7 to 70 BAR) |
| Inlet Pressure Range | Flooded to 70 PSI | (Flooded to 4.9 BAR) |
| RPM | 765 RPM | (765 RPM) |
| Bore..... | 1.772" | (45 mm) |
| Stroke..... | 1.890" | (48 mm) |
| Crankcase Capacity..... | 4.2 Qts. | (4 L) |
| Maximum Liquid Temperature | 140°F | (60°C) |
| Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations. | | |
| Inlet Ports (2)..... | 1-1/2" NPTF | (1-1/2" NPTF) |
| Flushing Ports (2) (3541C, 3547C)..... | 1/4" NPTF | (1/4" NPTF) |
| Discharge Ports (2)..... | 1" NPTF | (1" NPTF) |
| Pulley Mounting | Either Side | (Either Side) |
| Shaft Diameter | 1.378" | (35 mm) |
| Weight..... | 139 lbs. | (63 kg) |
| Dimensions..... | 23.89 x 18.11 x 9.72" | (607 x 460 x 247 mm) |

ELECTRIC HORSEPOWER REQUIREMENTS

| FLOW | | PRESSURE | | | RPM |
|-------------|-----|------------|------------|-------------|-----|
| | | PSI 800 | PSI 900 | PSI 1000 | |
| U.S. GPM | L/M | BAR 55 | BAR 63 | BAR 70 | |
| 45 | 170 | 24.7 | 27.8 | 30.9 | 765 |
| 40 | 151 | 22.0 | 24.7 | 27.4 | 680 |
| 35 | 133 | 19.2 | 21.6 | 24.0 | 595 |

⚠ CAUTIONS AND WARNINGS

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

Read all CAUTIONS and WARNINGS before commencing service or operation of any high pressure system. The CAUTIONS and WARNINGS are included in each service manual and with each Accessory Data Sheet. CAUTIONS and WARNINGS can also be viewed online at www.catpumps.com/cautions-warnings or can be requested directly from CAT PUMPS.

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.

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

DETERMINING MOTOR PULLEY SIZE

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

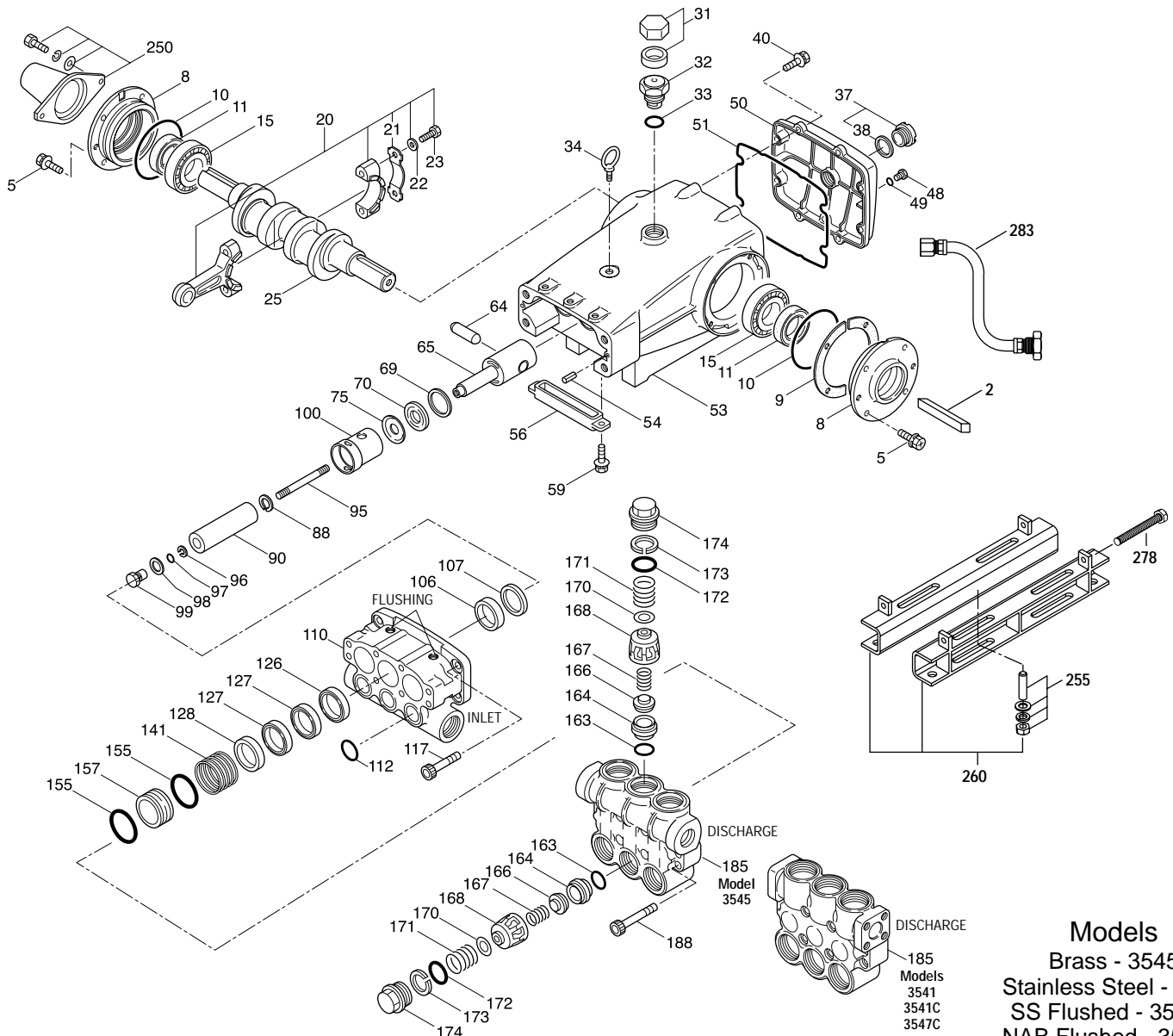
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003. Refer to pump **Service Manual** for repair procedure and additional technical information.

"Customer confidence is our greatest asset"

PARTS LIST

| ITEM | PART NUMBER | | | | DESCRIPTION | QTY | | |
|------|-------------|-------------|-------------|-------------|--------------|-------------|--|---|
| | 3545 | MATL | 3541 | MATL | 3547C | MATL | | |
| 2 | 34021 | STL | 34021 | STL | 34021 | STL | Key (M10x8x70) | 1 |
| 5 | 125753 | S | 125753 | S | 125753 | S | Screw, HH Sems (M8x25) | 8 |
| 8 | 44542 | AL | 44542 | AL | 44542 | AL | Cover, Bearing | 2 |
| 9 | 815279 | FBR | 815279 | FBR | 815279 | FBR | Shim, Split 2-PC | 4 |
| 10 | 12398 | NBR | 12398 | NBR | 12398 | NBR | O-Ring, Bearing Cover - 70D | 2 |
| 11 | 13296 | NBR | 13296 | NBR | 13296 | NBR | Seal, Oil, Crankshaft | 2 |
| 15 | 29326 | STL | 29326 | STL | 29326 | STL | Bearing, Roller | 2 |
| 20 | 121467 | TNM | 121467 | TNM | 121467 | TNM | Rod, Connecting Assembly (Incls: 21, 22, 23) [10/00] | 3 |
| 21 | 126749 | STCP R | 126749 | STCP R | 126749 | STCP R | Washer, Locking (M10) | 6 |
| 22 | 126574 | STZP R | 126574 | STZP R | 126574 | STZP R | Washer, Flat (M10) | 6 |
| 23 | 122045 | STZP | 122045 | STZP | 122045 | STZP | Screw, HH (M10x55) | 3 |
| 25 | 29325 | FCM | 29325 | FCM | 29325 | FCM | Crankshaft, Dual End | 1 |
| 31 | 828710 | — | 828710 | — | 828710 | — | Protector, Cap w/Foam Gasket | 1 |
| 32 | 43211 | ABS | 43211 | ABS | 43211 | ABS | Cap, Oil Filler | 1 |
| 33 | 14177 | NBR | 14177 | NBR | 14177 | NBR | O-Ring, Oil Filler Cap - 70D | 1 |
| 34 | 126743 | STCP R | 126743 | STCP R | 126743 | STCP R | Bolt, Eye (M12x1.75) (For Lifting Pump Only) | 1 |
| 37 | 92241 | — | 92241 | — | 92241 | — | Gauge, Oil, Bubble w/Gasket | 1 |
| 38 | 44428 | NBR | 44428 | NBR | 44428 | NBR | Gasket, Flat, Oil Gauge - 80D | 1 |
| 40 | 125753 | S | 125753 | S | 125753 | S | Screw, HH Sems (M8x25) | 8 |
| 48 | 25625 | STCP | 25625 | STCP | 25625 | STCP | Plug, Drain (1/4"x19 BSP) | 1 |
| 49 | 23170 | NBR | 23170 | NBR | 23170 | NBR | O-Ring, Drain Plug - 70D | 1 |
| 50 | 45936 | AL | 45936 | AL | 45936 | AL | Cover, Rear | 1 |
| 51 | 16612 | NBR | 16612 | NBR | 16612 | NBR | O-Ring, Crankcase Cover - 70D | 1 |
| 53 | 44487 | AL | 44487 | AL | 44487 | AL | Crankcase Assy (Incls: 34, 54) | 1 |
| 54 | 27488 | S | 27488 | S | 27488 | S | Pin, Guide | 2 |
| 56 | 27790 | POP | 27790 | POP | 27790 | POP | Pan, Oil | 1 |
| 59 | 92538 | S | 92538 | S | 92538 | S | Screw, HHC Sems (M6x16) | 2 |
| 64 | 43864 | CM | 43864 | CM | 43864 | CM | Pin, Crosshead | 3 |
| 65 | † 45116 | SSZZ | † 45116 | SSZZ | † 45116 | SSZZ | Rod, Plunger | 3 |
| 69 | 126587 | STCP R | 126587 | STCP R | 126587 | STCP R | Washer, Oil Seal | 3 |
| 70 | 100488 | NBRS | 100488 | NBRS | 100488 | NBRS | Seal, Oil, Crankcase | 3 |
| | 44739 | FPM | 44739 | FPM | 44739 | FPM | Seal, Oil, Crankcase | 3 |
| 75 | 43865 | S | 43865 | S | 43865 | S | Slinger, Barrier | 3 |
| 88 | 45676 | S | 45676 | S | 45676 | S | Washer, Keyhole (M16) | 3 |
| 90 | 46806 | CC | 46806 | CC | 46806 | CC | Plunger (M45x145) | 3 |
| 95 | † 89778 | SS | † 89778 | SS | † 89778 | SS | Stud, Plunger Retainer (M10x135) | 3 |
| 96 | 20189 | PTFE | 20189 | PTFE | 20189 | PTFE | Back-up-Ring, Plunger Retainer | 3 |
| 97 | 11345 | NBR | 11345 | NBR | 11345 | NBR | O-Ring, Plunger Retainer - 70D | 3 |
| | 11375 | FPM | 11375 | FPM | 11375 | FPM | O-Ring, Plunger Retainer | 3 |
| | ◆ 701490 | EPDM | ◆ 701490 | EPDM | ◆ 701490 | EPDM | O-Ring, Plunger Retainer | 3 |
| 98 | 44085 | SS | 44085 | SS | 44085 | SS | Gasket, Retainer | 3 |
| 99 | † 44084 | SS | † 44084 | SS | † 44084 | SS | Retainer, Plunger (M10) | 3 |
| 100 | 44119 | PPG | 44119 | PPG | 44119 | PPG | Retainer, Seal (See Tech Bulletin 105) | 3 |
| 106 | 46809 | NBR | — | — | — | — | Seal, LPS w/S-Spg | 3 |
| | — | — | 48384 | NBR | 48384 | NBR | Seal, LPS w/SS-Spg | 3 |
| | 702013 | SFTB* | 702013 | SFTB* | 702013 | SFTB* | Seal, LPS w/SS-Spg | 3 |
| | ◆ 46945 | EPDM | ◆ 46945 | EPDM | ◆ 46945 | EPDM | Seal, LPS w/SS-Spg | 3 |
| 107 | 46811 | BB | 48380 | D | 48380 | D | Spacer, LPS | 3 |
| 110 | 49482 | BBCP R | 48375 | SS | — | — | Manifold, Inlet | 1 |
| | — | — | 49304 | SS | 49308 | NAB | Manifold, Inlet, Flushed (1/4" Flush Port) | 1 |
| 112 | 18688 | NBR | 18688 | NBR | 18688 | NBR | O-Ring, Inlet Manifold - 70D | 3 |
| | 11739 | FPM | 11739 | FPM | 11739 | FPM | O-Ring, Inlet Manifold | 3 |
| | ◆ 701659 | EPDM | ◆ 701659 | EPDM | ◆ 701659 | EPDM | O-Ring, Inlet Manifold - 70D | 3 |
| 117 | 44585 | S | 44585 | S | 44585 | S | Screw, HSH (M14x40) | 4 |
| 126 | 46812 | BB | 48383 | D | 48383 | D | Adapter, Female | 3 |
| 127 | 46813 | STG* | 48313 | STG* | 46813 | STG* | V-Packing | 6 |
| 128 | 46814 | BB | 48386 | SS | 49319 | NAB | Adapter, Male | 3 |
| 141 | 49483 | SS | 49483 | SS | 49483 | SS | Spring, Coil, Large (See Tech Bulletin 107) | 3 |
| 155 | 17784 | NBR | 17784 | NBR | 17784 | NBR | O-Ring, V-Packing Spacer - 80D | 3 |
| | 20138 | FPM | 20138 | FPM | 20138 | FPM | O-Ring, V-Packing Spacer - 80D | 3 |
| | ◆ 701658 | EPDM | ◆ 701658 | EPDM | ◆ 701658 | EPDM | O-Ring, V-Packing Spacer - 80D | 3 |
| 157 | 49484 | BB | 49506 | SS | 49507 | NAB | Spacer, V-Packing (See Tech Bulletin 107) | 3 |
| 159 | 17784 | NBR | 17784 | NBR | 17784 | NBR | O-Ring, V-Packing Spacer - 80D | 3 |
| | 20138 | FPM | 20138 | FPM | 20138 | FPM | O-Ring, V-Packing Spacer - 80D | 3 |
| | ◆ 701658 | EDPM | ◆ 701658 | EDPM | ◆ 701658 | EDPM | O-Ring, V-Packing Spacer - 80D | 3 |
| 163 | 26143 | NBR | 26143 | NBR | 26143 | NBR | O-Ring, Seat - 80D | 6 |
| | 14331 | FPM | 14331 | FPM | 14331 | FPM | O-Ring, Seat - 70D | 6 |
| | ◆ 701660 | EPDM | ◆ 701660 | EPDM | ◆ 701660 | EPDM | O-Ring, Seat | 6 |
| 164 | 46822 | S | 48393 | SS | 48393 | SS | Seat | 6 |
| 166 | 43932 | S | 44108 | SS | 44108 | SS | Valve | 6 |
| 167 | 44109 | SS | 44109 | SS | 44109 | SS | Spring, Valve | 6 |
| 168 | 44728 | PVDF | 44728 | PVDF | 44728 | PVDF | Retainer, Spring | 6 |
| 170 | 44729 | SS | 44729 | SS | 44729 | SS | Washer, Spring Retainer | 6 |
| 171 | 44644 | SS | 44644 | SS | 44644 | SS | Coil Spring (70kg), Valve Plug | 6 |
| 172 | 89827 | NBR | 89827 | NBR | 89827 | NBR | O-Ring, Valve Plug - 90D | 6 |
| | 11747 | FPM | 11747 | FPM | 11747 | FPM | O-Ring, Valve Plug - 90D | 6 |
| | ◆ 701494 | EPDM | ◆ 701494 | EPDM | ◆ 701494 | EPDM | O-Ring, Valve Plug - 70D | 6 |
| 173 | 48364 | D | 48364 | D | 48364 | D | Back-up-Ring, Valve Plug | 6 |
| 174 | 46444 | FBB | 49300 | SSD | 49300 | SSD | Plug, Valve | 6 |
| 185 | 49486 | BBCP R | 49302 | SSD | 49309 | NAB | Manifold, Discharge | 1 |
| 188 | 89981 | S | 89981 | S | 89981 | S | Screw, HSH (M12x70) | 8 |
| 250 | 44516 | NY | 44516 | NY | 44516 | NY | Protector, Shaft w/2 Screws, Washers, Lockwashers | 1 |
| 255 | 34018 | STZP R | 34018 | STZP R | 34018 | STZP R | Kit, Direct Mount | 1 |
| | 34039 | S | 34039 | S | 34039 | S | Kit, Direct Mount | 1 |

EXPLODED VIEW



Models
 Brass - 3545
 Stainless Steel - 3541
 SS Flushed - 3541C
 NAB Flushed - 3547C

| | 3545 | MATL | 3541 | MATL | 3547C | MATL | | |
|-----|----------------|---------------|----------------|-------------|----------------|-------------|---|---|
| 260 | 92674 | STZP R | 92674 | STZP R | 92674 | STZP R | Mounting, Box Assy (Incls 34018) | 1 |
| 275 | 990013 | STL | 990013 | STL | 990013 | STL | Hub, 'B' 35mm w/Keyway [See Drive Packages Tech Bulletin 003] | 1 |
| 278 | 80540 | ZP | 80540 | ZP | 80540 | ZP | Screw, HH (M12x100) (Rail Adjusting Screw) | 1 |
| 283 | 34314 | — | 34314 | — | 34314 | — | Kit, Oil Drain (3/8" x 48") | 1 |
| 290 | 6124 | — | 6124 | — | 6124 | — | Gasket, Liquid (3 oz.) | 1 |
| 299 | 818428 | BBCP R | 818371 | SS | — | — | Head, Complete | 1 |
| 300 | 33234 | NBR* | 33834 | NBR* | 33834 | NBR* | Kit, Seal (Incls: 97, 106, 112, 127, 155, 159) | 1 |
| | 31261 | FPM | 31261 | FPM | 31261 | FPM | Kit, Seal (Incls: 97, 106, 112, 127, 155, 159) | 1 |
| | ◆ 33223 | EPDM* | ◆ 33223 | EPDM* | ◆ 33223 | EPDM* | Kit, Seal (Incls: 97, 106, 112, 127, 155, 159) | 1 |
| 310 | 33235 | NBR | 33835 | NBR | 33835 | NBR | Kit, Valve, Preassembled (Incls: 163, 164, 166, 167, 168, 170, 172, 173) | 2 |
| | 31262 | FPM | 31262 | FPM | 31262 | FPM | Kit, Valve, Preassembled (Incls: 163, 164, 166, 167, 168, 170, 172, 173) | 2 |
| | ◆ 31235 | EPDM | ◆ 31264 | EPDM | ◆ 31264 | EPDM | Kit, Valve, Preassembled (Incls: 163, 164, 166, 167, 168, 170, 172, 173) | 2 |
| 390 | 714500 | SS | 714500 | SS | 714500 | SS | C.A.T. (Inlet pressure stabilizer for RO and boosted inlet applications) | 1 |
| 391 | 714506 | SS | 714506 | SS | 714506 | SS | Adapter, (2 per C.A.T.) (See Data Sheet for complete selection) | 2 |
| 392 | 701828 | SS | 701828 | SS | 701828 | SS | Elbow Assy used with Adapter Assy 714506 | 1 |
| — | 819000 | F | 819000 | F | 819000 | F | Assy, Crankcase, Cast Iron Conversion | 1 |
| — | 6575 | — | 6575 | — | 6575 | — | Plunger Pump Service DVD | 1 |
| — | 6100 | — | 6100 | — | 6100 | — | Oil, Case (12 Bottles) ISO-68 Hydraulic (Fill to specified crankcase capacity prior to start-up) | 1 |
| — | — | — | 6119 | — | 6119 | — | Lubricant, Antisize (1 oz.) | 1 |

Bold print part numbers are unique to a particular pump model. Italics are optional items. [] Date of latest production change. ◆ Silicone oil/grease required.

† Production parts are different than repair parts. R Components comply with RoHS Directive. * Review individual parts in each kit for material code identification.

See Tech Bulletins 002, 003, 024, 036, 041, 043, 053, 074, 077, 083, 099, 105 and 107 for additional information.

Pressurized Inlet and C.A.T. highly recommended for Hi-Temp, R.O. and industrial applications.

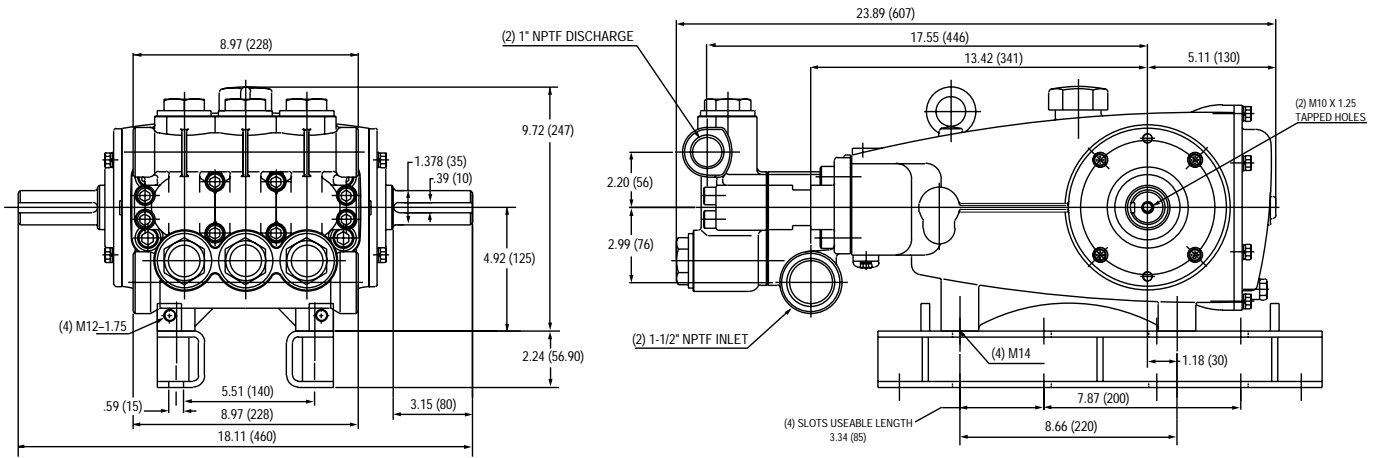
MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated CC=Ceramic CM=Chrome-Moly D=Acetal

EPDM=Ethylene Propylene Diene Monomer F=Cast Iron FBB=Forged Brass FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon

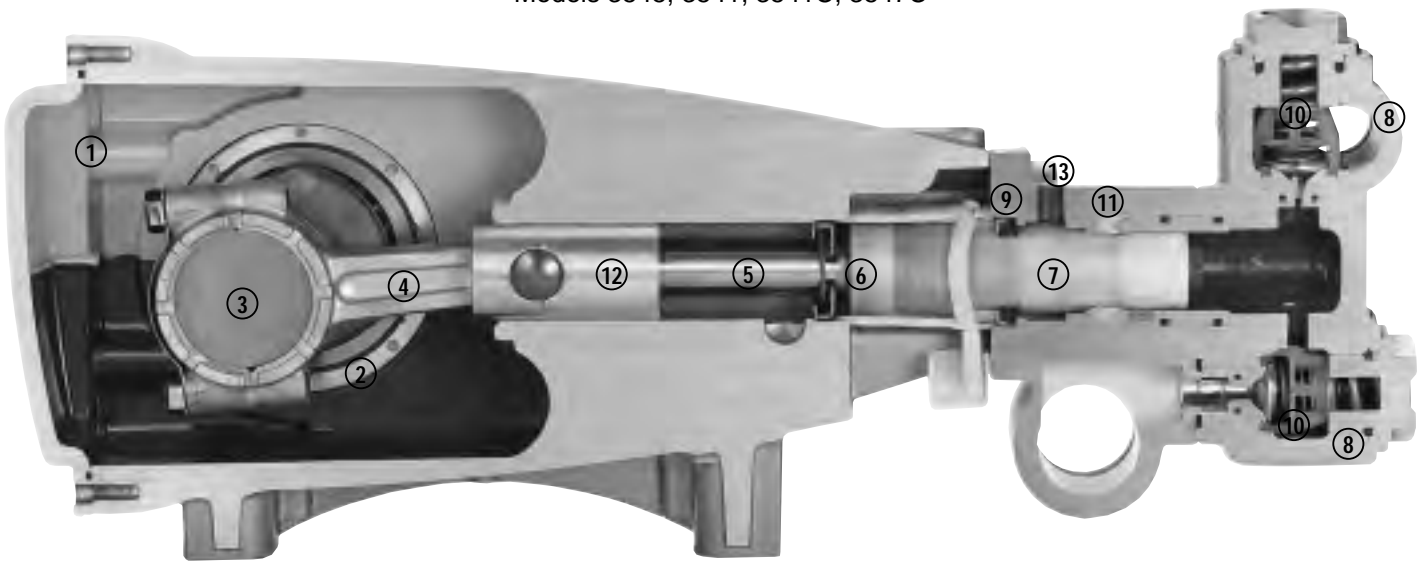
NBR=Medium Nitrile (Buna-N) NBRs=Buna, Silicone Free NY=Nylon PPG=Glass Filled Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride

S=304SS SS=316SS SFTB=Special Blend PTFE Black SSZZ=316SS/Zamak STG=Special Blend PTFE White STL=Steel

STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength ZP=Zinc Plated



Models 3545, 3541, 3541C, 3547C



- 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 TNM **connecting rods** noted for superior tensile strength and bearing quality.
- 5 Special stainless steel high strength **plunger rods** for high load bearing and longevity.
- 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, solid ceramic **plungers** provide a true wear surface and extended seal life.
- 8 **Manifolds** are a high tensile strength forged brass, 316 stainless steel, duplex 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, ultimate seating and extended life.
- 11 Specially formulated, CAT PUMP exclusive, **V-Packings** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.
- 13 Special **Flushed Inlet Manifold** permits external flush for added cooling with high temperature liquids and lubrication with low lubricity liquids.

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