

# DATA SHEET

## 35 FRAME PLUNGER PUMP



**Forged  
Brass**

**Stainless  
Steel**

**Stainless  
Steel Flushed**

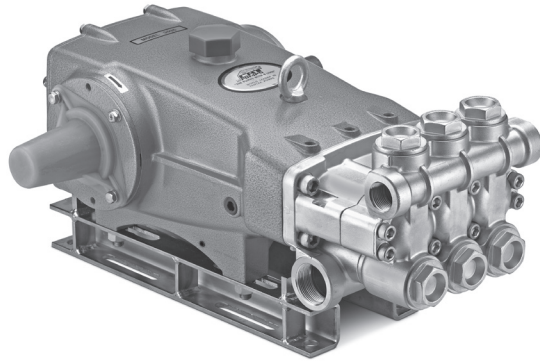
**Nickel Aluminum  
Bronze**

**3545**

**3541D**

**3541C**

**3547**



Model 3545 Shown  
(Shaft protector included, mounting rails  
sold separately)

### FEATURES

- Triplex design delivers high efficiency and low pulsation.
- Durable dual V-Packings are lubricated and cooled by pumped liquid.
- Pre-set Lo-Pressure Seals provide secondary protection against external leaks and require no packing adjustments.
- Special flushed inlet manifold on model 3541C permits external flush for added cooling with high temperature liquids and lubrication with low lubricity liquids.
- Standard NBR seals with alternative options for temperature and chemical compatibility.

### SPECIFICATIONS

|   | U.S. Measure          | Metric Measure     |
|---|-----------------------|--------------------|
| Flow  | 45 gpm                | 170 lpm            |
| Pressure Range  | 100 to 1000 psi       | 6.9 to 69 bar      |
| Pump RPM*   | 765 rpm               | 765 rpm            |
| Inlet Pressure Range  | Flooded to 70 psi     | Flooded to 4.8 bar |
| Max. Liquid Temp. (NBR)                                       | 140° F                | 60° C              |
| <b>Alternative seals available for high temp up to 200° F</b> |                       |                    |
| Bore  | 1.772"                | 45 mm              |
| Stroke  | 1.890"                | 48 mm              |
| Crankcase Capacity  | 4.2 Qts.              | 4 l                |
| Inlet Ports (2)   | 1-1/2" NPT(F)         | 1-1/2" NPT(F)      |
| Flush Ports (2) (C - only)                                    | 1/4" NPT(F)           | 1/4" NPT(F)        |
| Discharge Ports (2)   | 1" NPT(F)             | 1" NPT(F)          |
| Shaft Diameter  | 1.378"                | 35 mm              |
| Pulley Mounting   | Either Side           | Either Side        |
| Weight  | 139 lbs.              | 63 kg              |
| Dimensions (3545)   | 23.86 x 18.11 x 9.72" | 606 x 460 x 247 mm |
| Dimensions (3541D, 3541C, 3547)                               | 24.33 x 18.11 x 9.72" | 618 x 460 x 247 mm |

\*Pump minimum is 100 RPM.

### ALTERNATIVE SEAL CONFIGURATION

| MATERIAL | SUFFIX CODE | MAXIMUM TEMPERATURE |
|----------|-------------|---------------------|
| NBR      | —           | 140° F (60° C)      |
| FPM      | .0110       | 180° F (82° C)      |
| EPDM     | .0220       | 160° F (71° C)      |
| IPFE     | .0770       | 200° F (93° C)      |
| STHT     | .3400       | 190° F (88° C)      |

See Reference Document 99REF017 for inlet conditions and RPM at high temperature.

|  |  |   |   |
|--|--|---|---|
| <b>DETERMINING<br/>THE PUMP R.P.M.</b>   | $\frac{\text{Rated gpm}}{\text{Rated rpm}}$        | = | $\frac{\text{"Desired" gpm}}{\text{"Desired" rpm}}$ |
| <b>DETERMINING<br/>THE REQUIRED H.P.</b> | $\frac{\text{Hp (Electric Brake)}}{1460}$          | = | $\frac{\text{gpm x psi}}{1460}$                     |
| <b>DETERMINING<br/>MOTOR PULLEY SIZE</b> | $\frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}}$ | = | $\frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$  |

Refer to pump **Service Manual** for repair procedure and additional technical information.

# PARTS LIST

| ITEM | PART NUMBER  | MATL   | PART NUMBER  | MATL   | PART NUMBER  | MATL   | DESCRIPTION  | QTY |
|------|--------------|--------|--------------|--------|--------------|--------|--|-----|
|      | <b>3545</b>  |        | <b>3541C</b> |        | <b>3547</b>  |        |  |     |
|      |              |        | <b>3541D</b> |        |              |        |  |     |
| 5    | 96049        | S      | 96049        | S      | 96049        | S      | Screw, HH Sems (M10x25) (See Tech Bulletin 125) [06/18]                  | 8   |
| 8    | 134604       | ALE    | 134604       | ALE    | 134604       | ALE    | Cover, Bearing (See Tech Bulletin 118, 125) [06/18]                      | 2   |
| 9    | 815279       | FBR    | 815279       | FBR    | 815279       | FBR    | Shim, Split 2-PC (See Tech Bulletin 125) [06/18]                         | 2   |
| 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   | 126593       | STCP R | 126593       | STCP R | 126593       | STCP R | Washer, Flat (M10)   | 6   |
| 23   | 122045       | STZP   | 122045       | STZP   | 122045       | STZP   | Screw, HH (M10x55)   | 6   |
| 25   | 29325        | FCM    | 29325        | FCM    | 29325        | FCM    | Crankshaft, Dual End   | 1   |
| 31   | 828710       | PE     | 828710       | PE     | 828710       | PE     | 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        | PC     | 92241        | PC     | 92241        | PC     | 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        | ALE    | 45936        | ALE    | 45936        | ALE    | Cover, Rear (See Tech Bulletin 118)                                      | 1   |
| 51   | 16612        | NBR    | 16612        | NBR    | 16612        | NBR    | O-Ring, Crankcase Cover - 70D  | 1   |
| 53   | 134784       | ALE    | 134784       | ALE    | 134784       | ALE    | Crankcase Assy (Incls: 34, 54) (See Tech Bulletin 118, 125, 127) [06/18] | 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   |
| 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   |
| 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  | <b>46809</b> | NBR    | —            | —      | —            | —      | Seal, LPS w/S-Spg  | 3   |
|      | —            | —      | <b>48384</b> | NBR    | <b>48384</b> | NBR    | Seal, LPS w/SS-Spg   | 3   |
| 107  | <b>46811</b> | BB     | <b>48380</b> | D      | <b>48380</b> | D      | Spacer, LPS  | 3   |
| 110  | <b>49482</b> | BBCP R | <b>48375</b> | SS     | <b>49994</b> | NAB    | Manifold, Inlet  | 1   |
|      | —            | —      | <b>49304</b> | SS     | —            | —      | Manifold, Inlet, Flushed (1/4" Flush Port)                               | 1   |
| 112  | 18688        | NBR    | 18688        | NBR    | 18688        | NBR    | O-Ring, Inlet Manifold - 70D   | 3   |
| 117  | 44585        | S      | 44585        | S      | 44585        | S      | Screw, HSH (M14x40)  | 4   |
| 126  | <b>46812</b> | BB     | <b>48383</b> | D      | <b>48383</b> | D      | Adapter, Female  | 3   |
| 127  | 46813        | STGS   | 46813        | STGS   | 46813        | STGS   | V-Packing  | 6   |
| 128  | <b>46814</b> | BB     | <b>48386</b> | SS     | <b>49319</b> | 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   |
| 157  | <b>49484</b> | BB     | <b>49506</b> | SS     | <b>49507</b> | NAB    | Spacer, V-Packing (See Tech Bulletin 107)                                | 3   |
| 159  | 17784        | NBR    | 17784        | NBR    | 17784        | NBR    | O-Ring, V-Packing Spacer - 80D   | 3   |
| 163  | 26143        | NBR    | 26143        | NBR    | 26143        | NBR    | O-Ring, Seat - 80D   | 6   |
| 164  | <b>46822</b> | S      | <b>48393</b> | SS     | <b>48393</b> | SS     | Seat   | 6   |
| 166  | <b>43932</b> | S      | <b>44108</b> | SS     | <b>44108</b> | 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   |
| 173  | 48364        | D      | 48364        | D      | 48364        | D      | Back-up-Ring, Valve Plug   | 6   |
| 174  | <b>46444</b> | FBB    | <b>49300</b> | SSD    | <b>44643</b> | NAB    | Plug, Valve  | 6   |
| 185  | <b>49486</b> | BBCP R | <b>49302</b> | SSD    | <b>49309</b> | NAB    | Manifold, Discharge (See Tech Bulletin 127 - 3541C, 3541D)               | 1   |
| 188  | 89981        | S      | 89981        | S      | 89981        | S      | Screw, HSH (M12x70)  | 8   |
| 250  | 855042       | NY     | 855042       | NY     | 855042       | NY     | Protector, Shaft w/2 Screws. Lockwashers and Washers                     | 1   |

**Bold print part numbers are unique to a particular pump model. Italics are optional items. [ ]** Date of latest production change.

† 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 024, 036, 041, 043, 053, 074, 083, 099, 105, 107, 109, 118, 125, and 127 for additional information. MATERIAL CODES (Not Part of Part Number):

ABS=ABS Plastic ALE=Aluminum Epoxy BB=Brass BBCP=Brass/Chrome Plated CC=Ceramic CM=Chrome-Moly D=Acetal EPDM=Ethylene Propylene Diene Monomer F=Cast Iron

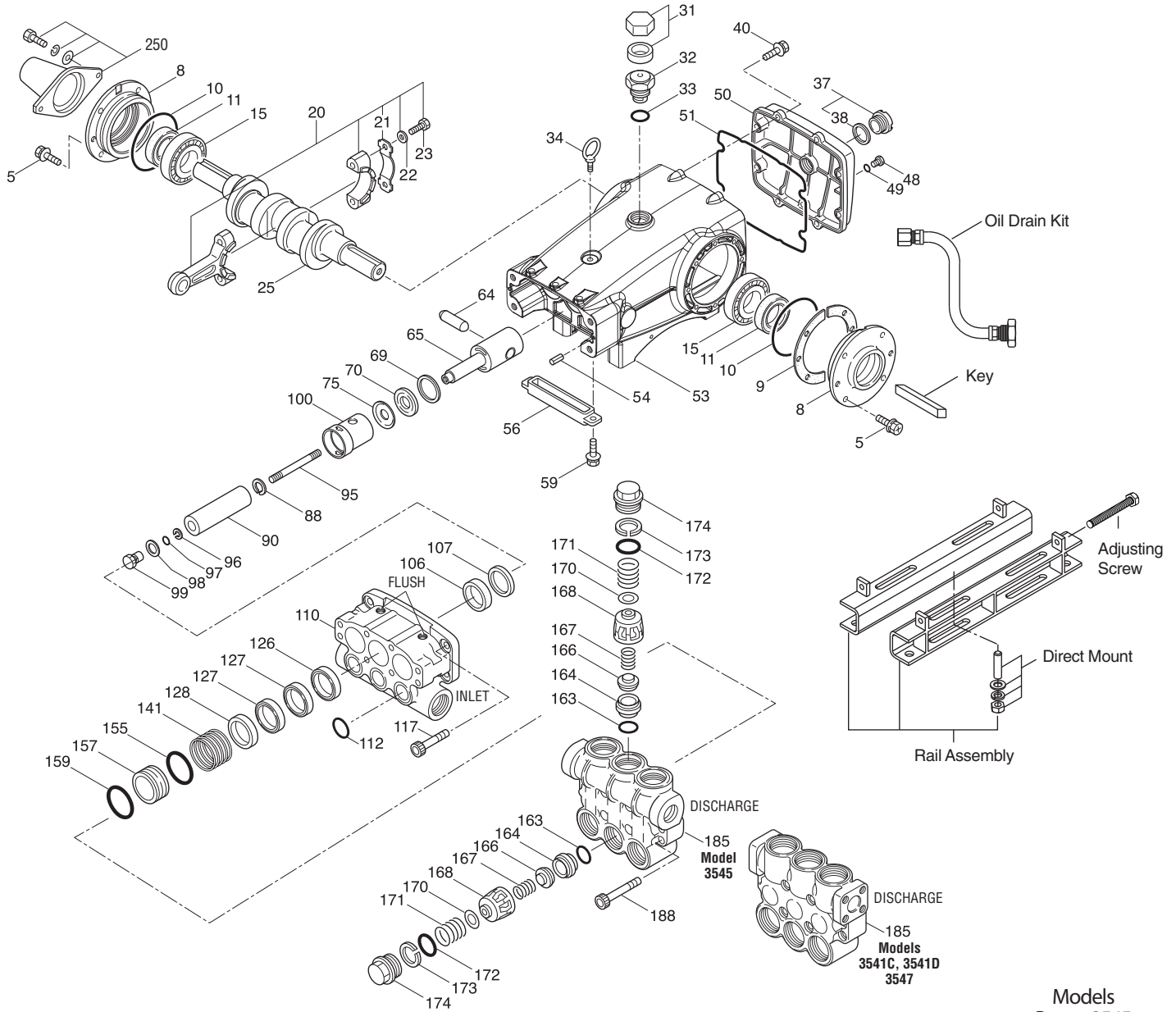
FBB=Forged Brass FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon NAB=Nickle Aluminum Bronze NBR=Medium Nitrile (Buna-N) NBRS=Buna, Silicone Free NY=Nylon

PC=Polycarbonate PE=Polyethylene PPG=Glass Filled Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SFTB=Special Blend PTFE Black

SSZZ=316SS/Zamak STGS=Special Blend PTFE White Silicon Free STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated TNM=Special High Strength

**Standard and optional Seal Kits and Valve Kits listed on pages 3 and 4. Optional Parts and Accessories and Service parts listed on Page 3.**

# EXPLODED VIEW



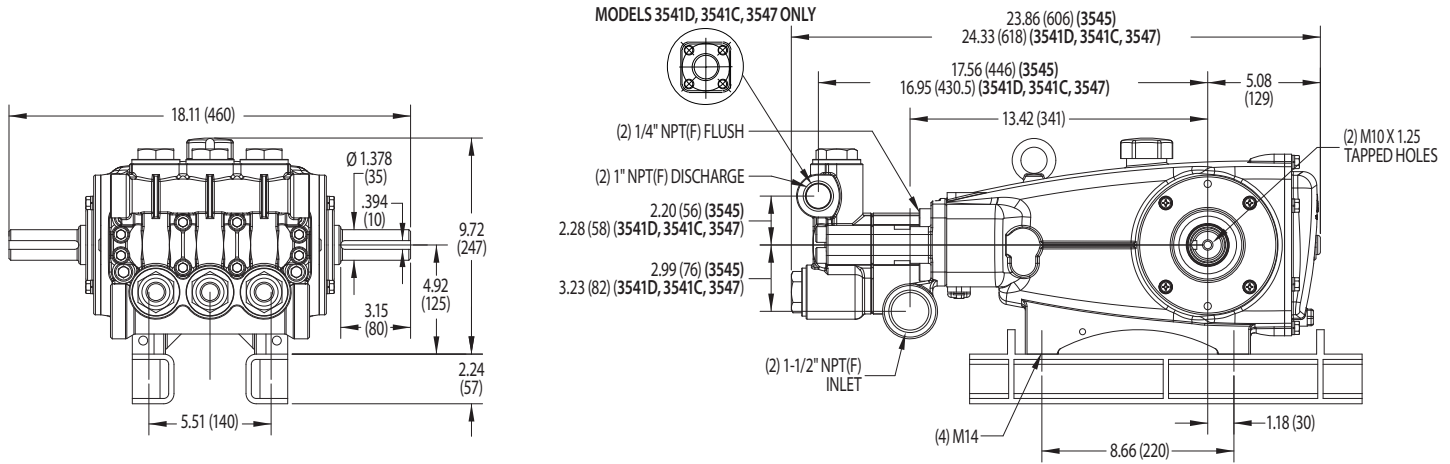
Models  
 Brass - 3545  
 Stainless Steel - 3541D  
 SS Flushed - 3541C  
 NAB - 3547  
 November 2019

## OPTIONAL PARTS AND ACCESSORIES

| PART   | DESCRIPTION                   | QTY |
|--------|-------------------------------|-----|
| 34021  | Key, M10 x 8 x 70             | 1   |
| 92674  | Mount, Rail Assembly          | 1   |
| 34018  | Mount, Direct (STZP R)        | 1   |
| 34039  | Mount, Direct (S)             | 1   |
| 990013 | Hub, "B", 35 mm (STL)         | 1   |
| 80540  | Screwing, Adjusting M12 x 100 | 2   |
| 34314  | Kit, Oil Drain                | 1   |
| 30696  | Plier, Reverse                | 1   |

## SERVICE PARTS

| PART          | DESCRIPTION                                    | QTY |
|---------------|--|-----|
| <b>33234</b>  | Kit, Seal (3545) - Standard                    | 1   |
| <b>33834</b>  | Kit, Seal (3541D,3541C,3547) - Standard        | 1   |
| <b>33235</b>  | Kit, Valve (3545) - Standard                   | 2   |
| <b>33835</b>  | Kit, Valve (3541D,3541C,3547) - Standard       | 2   |
| 6100          | Oil, Case (12 - 21 oz. bottle)                 | 1   |
| 6119          | Lubricant, Anti-Seize (2 oz) (3541D, 3541C)    | 1   |
| 6124          | Gasket, Liquid (3 oz)                          | 1   |
| <b>818428</b> | Head, Complete - 3545 w/NBR Seals and O-Rings  | 1   |
| <b>818371</b> | Head, Complete - 3541D w/NBR Seals and O-Rings | 1   |
| <b>818575</b> | Head, Complete - 3547 w/NBR Seals and O-Rings  | 1   |
| 819000        | Assy, Crankcase, Cast Iron Conversion          | 1   |



Base Model 3545

### SEAL KITS One (1) seal kit required per pump

| PUMP MODELS        | NBR (STD) | FPM (.0110) | EPDM (.0220)◆ |
|--------------------|-----------|-------------|---------------|
| 3545               | 33234 *   | 31261       | 33223 *       |
| 3541D, 3541C, 3547 | 33834 *   | 31261       | 33223 *       |

| ITEM (Included in Seal Kits) | DESCRIPTION |        |        | QTY                      |   |
|------------------------------|-------------|--------|--------|--------------------------|---|
| 97                           | 11345       | 11375  | 701490 | O-Ring, Plunger Retainer | 3 |
| 106                          | 46809       | 702013 | 46945  | Seal, LPS w/SS-Spg       | 3 |
| 112                          | 18688       | 11739  | 701659 | O-Ring, Inlet Manifold   | 3 |
| 127                          | 46813       | 46813  | 46813  | V-Packing                | 6 |
| 155                          | 17784       | 20138  | 701658 | O-Ring, V-Packing Spacer | 3 |
| 159                          | 17784       | 20138  | 701658 | O-Ring, V-Packing Spacer | 3 |

◆ Silicone oil/grease required \*Review material codes for individual items (STG generally by be used as alternative)

### VALVE KITS Two (2) valve kits required per pump

| PUMP MODELS        | NBR (STD) | FPM (.0110) | EPDM (.0220)◆ |
|--------------------|-----------|-------------|---------------|
| 3545               | 33235     | 31262       | 31235         |
| 3541D, 3541C, 3547 | 33835     | 31262       | 31264         |

| ITEM (Included in Valve Kits) | DESCRIPTION |       |        | QTY                      |   |
|-------------------------------|-------------|-------|--------|--------------------------|---|
| 163                           | 26143       | 14331 | 701660 | O-Ring, Valve Seat       | 3 |
| 164                           | 46822       |       |        | Seat (3545)              | 3 |
|                               |             | 48393 | 48393  | Seat (3541D,3541C,3547)  | 3 |
| 166                           | 43932       |       |        | Valve (3545)             | 3 |
|                               |             | 44108 | 44108  | Valve (3541D,3541C,3547) | 3 |
| 167                           | 44109       | 44109 | 44109  | Spring                   | 3 |
| 168                           | 44728       | 44728 | 44728  | Retainer, Spring         | 3 |
| 170                           | 44729       | 44729 | 44729  | Washer, Spring Retainer  | 3 |
| 172                           | 89827       | 11747 | 701494 | O-Ring, Valve Plug       | 3 |
| 173                           | 48364       | 48364 | 48364  | Backup-Ring, Valve Plug  | 3 |

◆ Silicone oil/grease required

#### ⚠ CAUTIONS AND WARNINGS

All High-Pressure Systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. pop-off 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](http://www.catpumps.com/cautions-warnings) or can be requested directly from Cat Pumps.

#### WARRANTY

View the Limited Warranty on-line at [www.catpumps.com/warranty](http://www.catpumps.com/warranty).