

# DATA SHEET

## 38 FRAME BLOCK-STYLE PLUNGER PUMP



**Standard Model: 3831**

**Flushed Model: 3831K**



Model 3831 Shown  
(Shaft protector included and mounting rails not included)

| SPECIFICATIONS          | U.S. Measure      | Metric Measure     |
|-------------------------|-------------------|--------------------|
| Flow                    | 36 gpm            | 136 lpm            |
| Pressure Range          | 100 to 1200 psi   | 6.9 to 83 bar      |
| Pump RPM*               | 800 rpm           | 800 rpm            |
| Inlet Pressure Range    | Flooded to 70 psi | Flooded to 4.8 bar |
| Max. Liquid Temp. (NBR) | 160° F            | 71° C              |

Alternative seals available for high temp up to 180° F

|                     |                      |                    |
|---------------------|----------------------|--------------------|
| Bore                | 1.575"               | 40 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) "K" | 1/2" NPT(F)          | 1/2" NPT(F)        |
| Discharge Ports (2) | 1" NPT(F)            | 1" NPT(F)          |
| Shaft Diameter      | 1.378"               | 35 mm              |
| Pulley Mounting     | Either Side          | Either Side        |
| Weight              | 167 lbs.             | 75 kg              |
| Dimensions          | 24.4 x 18.11 x 9.37" | 620 x 460 x 238 mm |

\*Pump minimum is 100 RPM.

### FEATURES

- Triplex design delivers high efficiency and low pulsation.
- Durable dual V-Packings are lubricated and cooled by pumped liquid.
- Special flushed inlet manifold on model 3831K 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.

### ALTERNATIVE SEAL CONFIGURATION

| MATERIAL | SUFFIX CODE | MAXIMUM TEMPERATURE |
|----------|-------------|---------------------|
| NBR      | —           | 160° F (71° C)      |
| FPM      | .0110       | 180° F (82° C)      |
| EPDM     | .0220       | 160° F (71° C)      |

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

$$\text{DETERMINING THE PUMP R.P.M.} \quad \frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{"Desired" gpm}}{\text{"Desired" rpm}}$$

$$\text{DETERMINING THE REQUIRED H.P.} \quad \text{Hp (Electric Brake)} = \frac{\text{gpm} \times \text{psi}}{1460}$$

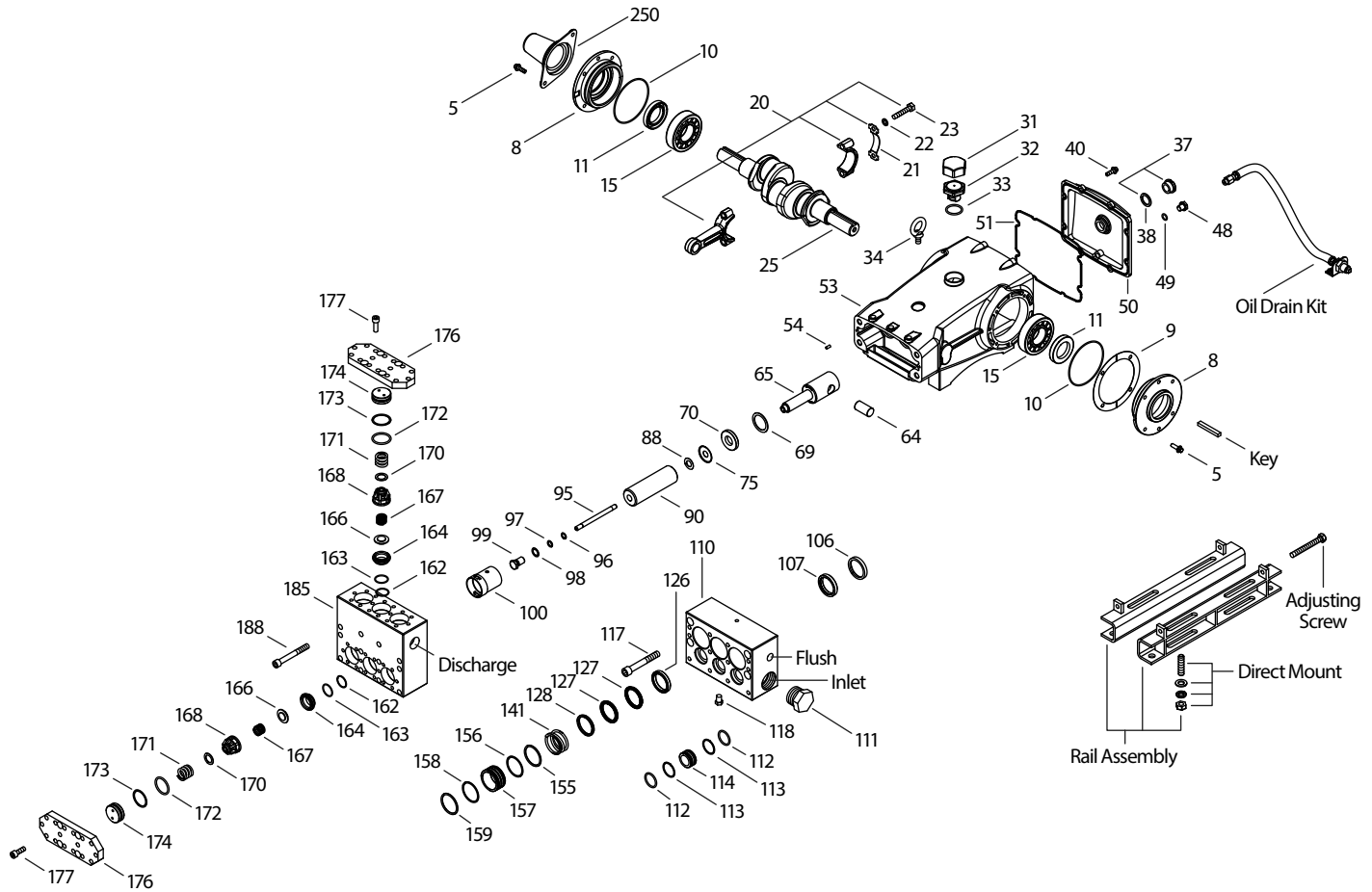
$$\text{DETERMINING MOTOR PULLEY SIZE} \quad \frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$$

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

# PARTS LIST

| ITEM | PN            | MATL   | PN            | MATL   | DESCRIPTION   | QTY |
|------|---------------|--------|---------------|--------|---|-----|
|      | <b>3831</b>   |        | <b>3831K</b>  |        |   |     |
| 5    | 96049         | S      | 96049         | S      | Screw, HH Sems (M10x25) (See Tech Bulletin 125) [06/18]             | 8   |
| 8    | 134604        | AL     | 134604        | AL     | Cover, Bearing (See Tech Bulletin 118, 125) [06/18]                 | 2   |
| 9    | 815279        | FBR    | 815279        | FBR    | Shim, Split 2-Pc (See Tech Bulletin 125) [06/18]                    | 4   |
| 10   | 12398         | NBR    | 12398         | NBR    | O-Ring, Bearing Cover - 70D   | 2   |
| 11   | 13296         | NBR    | 13296         | NBR    | Seal, Oil, Crankshaft   | 2   |
| 15   | 29326         | STL    | 29326         | STL    | Bearing, Roller   | 2   |
| 20   | 121467        | TNM    | 121467        | TNM    | Rod, Connecting Assy (Incls: 21,22,23)                              | 3   |
| 21   | 126749        | STCP R | 126749        | STCP R | Washer, Locking (M10)   | 3   |
| 22   | 126593        | STCP R | 126593        | STCP R | Washer, Flat (M10)  | 6   |
| 23   | 122045        | STZP   | 122045        | STZP   | Screw, HH (M10x55)  | 6   |
| 25   | 29325         | FCM    | 29325         | FCM    | Crankshaft, Dual End (M48)  | 1   |
| 31   | 828710        | PE     | 828710        | PE     | Protector, Oil Cap w/Foam Gasket                                    | 1   |
| 32   | 43211         | ABS    | 43211         | ABS    | Cap, Oil Filler   | 1   |
| 33   | 14177         | NBR    | 14177         | NBR    | O-Ring, Oil Filler Cap - 70D  | 1   |
| 34   | 126743        | STCP R | 126743        | STCP R | Bolt, Eye (M12x1.75) (For Lifting Pump Only)                        | 1   |
| 37   | 92241         | —      | 92241         | —      | Gauge, Oil Bubble w/Gasket  | 1   |
| 38   | 44428         | NBR    | 44428         | NBR    | Gasket, Flat, Oil Gauge - 80D                                       | 1   |
| 40   | 125753        | S      | 125753        | S      | Screw, HH Sems (M8x25)  | 8   |
| 48   | 25625         | STCP   | 25625         | STCP   | Plug, Drain (1/4"x19BSP)  | 1   |
| 49   | 23170         | NBR    | 23170         | NBR    | O-Ring, Drain Plug - 70D  | 1   |
| 50   | 45936         | AL     | 45936         | AL     | Cover, Rear (See Tech Bulletin 118)                                 | 1   |
| 51   | 16612         | NBR    | 16612         | NBR    | O-Ring, Cover - 70D   | 1   |
| 53   | 134784        | AL     | 134784        | AL     | Crankcase Assy (Incls: 34, 54) (See Tech Bulletin 118, 125) [06/18] | 1   |
| 54   | 27488         | S      | 27488         | S      | Pins, Guide   | 2   |
| 56   | 27790         | POP    | 27790         | POP    | Pan, Oil  | 1   |
| 59   | 92538         | S      | 92538         | S      | Screw, HH Sems (M6x16)  | 2   |
| 64   | 43864         | CM     | 43864         | CM     | Pin, Crosshead  | 3   |
| 65   | 45116         | SSZZ   | 45116         | SSZZ   | Rod, Plunger  | 3   |
| 69   | 126587        | STCP R | 126587        | STCP R | Washer, Oil Seal  | 3   |
| 70   | 100488        | NBRS   | 100488        | NBRS   | Seal, Oil, Crankcase  | 3   |
| 75   | 43865         | S      | 43865         | S      | Slinger, Barrier  | 3   |
| 88   | 45676         | S      | 45676         | S      | Washer, Keyhole (M16)   | 3   |
| 90   | 43921         | CC     | 43921         | CC     | Plunger (M40x145)   | 3   |
| 95   | 89778         | SS     | 89778         | SS     | Stud, Plunger Retainer (M10x135)                                    | 3   |
| 96   | 20189         | PTFE   | 20189         | PTFE   | Back-up-Ring, Plunger Retainer                                      | 3   |
| 97   | 11345         | NBR    | 11345         | NBR    | O-Ring, Plunger Retainer - 70D                                      | 3   |
| 98   | 44085         | SS     | 44085         | SS     | Gasket, Plunger Retainer  | 3   |
| 99   | 44084         | SS     | 44084         | SS     | Retainer, Plunger (M10)   | 3   |
| 100  | 814279        | PVDF   | 814279        | PVDF   | Retainer, Seal, 2-Pc  | 3   |
| 101  | 44112         | —      | 44112         | —      | Wick, Long Tab  | 3   |
| 106  | 44113         | NBR    | 44113         | NBR    | Seal, LPS w/SS-Spg  | 3   |
| 107  | 45381         | SS     | 45381         | SS     | Washer, LPS Seal  | 3   |
| 110  | <b>701286</b> | SSL    | —             | —      | Manifold, Inlet, Block-Style  | 1   |
| —    | —             | —      | <b>701408</b> | SSL    | <i>Manifold, Inlet, Block-Style, Flushed</i>                        | 1   |
| 111  | 701116        | SS     | 701116        | SS     | Plug, Inlet [1-1/2" NPT(M)]   | 1   |
| 112  | 701794        | NBR    | 701794        | NBR    | O-Ring, Inlet Spacer - 70D  | 6   |
| 113  | 701319        | PTFE   | 701319        | PTFE   | Back-up-Ring, Inlet Spacer  | 6   |
| 114  | 701317        | SS     | 701317        | SS     | Spacer, Inlet   | 3   |
| 117  | 701252        | SS     | 701252        | SS     | Screw, HSH (M14x100)  | 4   |
| 118  | <b>701077</b> | SS     | —             | —      | Plug [1/4" NPT(M)]  | 3   |
| 126  | 45367         | SS     | 45367         | SS     | Adapter, Female   | 3   |
| 127  | 44609         | STG    | 44609         | STG    | V-Packing   | 6   |
| 128  | 45368         | SS     | 45368         | SS     | Adapter, Male   | 3   |
| 141  | 49519         | SS     | 49519         | SS     | Springs, Coil   | 3   |
| 155  | 48860         | NBR    | 48860         | NBR    | O-Ring, V-Packing Spacer - 90D                                      | 3   |
| 156  | 48362         | D      | 48362         | D      | Back-up-Ring, V-Packing Spacer                                      | 3   |
| 157  | 49520         | SS     | 49520         | SS     | Spacer, V-Packing   | 3   |
| 158  | 48362         | D      | 48362         | D      | Back-up-Ring, V-Packing Spacer                                      | 3   |
| 159  | 48860         | NBR    | 48860         | NBR    | O-Ring, V-Packing Spacer - 90D                                      | 3   |
| 162  | 48363         | D      | 48363         | D      | Back-up-Ring, Seat  | 6   |
| 163  | 26142         | NBR    | 26142         | NBR    | O-Ring, Seat - 80D  | 6   |
| 164  | 44612         | SS     | 44612         | SS     | Seat, Stepped   | 6   |
| 166  | 44108         | SS     | 44108         | SS     | Valve   | 6   |
| 167  | 44109         | SS     | 44109         | SS     | Spring  | 6   |
| 168  | 44728         | PVDF   | 44728         | PVDF   | Retainer, Spring  | 6   |
| 170  | 44729         | SS     | 44729         | SS     | Washer, Spring Retainer   | 6   |
| 171  | 44644         | SS     | 44644         | SS     | Spring, Coil (70kg), Valve Plug                                     | 6   |
| 172  | 89827         | NBR    | 89827         | NBR    | O-Ring, Valve Plug - 90D  | 6   |
| 173  | 48364         | D      | 48364         | D      | Back-up-Ring, Valve Plug  | 6   |
| 174  | 701278        | SS     | 701278        | SS     | Plug, Valve   | 6   |
| 176  | 701316        | SS     | 701316        | SS     | Cover, Valve  | 2   |
| 177  | 87951         | S      | 87951         | S      | Screw, HSH (M10x30)   | 32  |

# EXPLODED VIEW



Models  
Standard - 3831  
Flushed - 3831K  
September 2018

| ITEM | PN          | MATL | PN           | MATL | DESCRIPTION  | QTY |
|------|-------------|------|--------------|------|--|-----|
|      | <b>3831</b> |      | <b>3831K</b> |      |  |     |
| 185  | 701315      | SSL  | 701315       | SSL  | Manifold, Discharge, Block-Style   | 1   |
| 188  | 701279      | S    | 701279       | S    | Screw, HSH (M12x100)   | 12  |
| 196  | 701342      | SS   | 701342       | SS   | Plug, Discharge (1" NPT) Not Shown   | 1   |
| 250  | 855042      | NY   | 855042       | NY   | Protector, Shaft w/2 Screws, Lockwashers and Washers (Incl w/Pump) (See Tech Bulletin 125) [06/18] | 1   |

## OPTIONAL PARTS AND ACCESSORIES

| PN            | DESCRIPTION  | QTY |
|---------------|--|-----|
| 701698        | Kit, Seal - Standard                                       | 1   |
| 34017         | Kit, Valve, Preassembled - Standard                        | 2   |
| 92674         | Mount, Rail Assy   | 1   |
| 34039         | Assy, Direct Mount   | 1   |
| 80540         | Screw, HH (M12x100) (Rail Adjusting Screw)                 | 1   |
| 30278         | Oiler (1 oz.) Not Shown                                    | 3   |
| 34314         | Kit, Oil Drain (3/8" X 48")                                | 1   |
| <b>990663</b> | Assembly, Flushing, 5 gal., 115V, 1.1 Amp, 1/2"NPT (3831K) | 1   |

## SERVICE PARTS

| PN            | DESCRIPTION  | QTY |
|---------------|--|-----|
| 6100          | Oil, Case (12-21 oz. Bottles) ISO-68 Hydraulic         | 1   |
| 34021         | Key (M10x8x70)   | 1   |
| 6119          | Lubricant, Anti-seize (2 oz.)                          | 1   |
| 6124          | Gasket, Liquid (3 oz.)                                 | 1   |
| <b>901400</b> | Head, Complete, w/NBR Seals and O-Ring (3831)          | 1   |
| <b>901404</b> | Head, Complete, Flushed w/NBR Seals and O-Ring (3831K) | 1   |
| 819000        | Assembly, Crankcase, Cast Iron Conversion              | 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 replacement parts. R Components comply with RoHS Directive. \* Review individual parts in each kit for material code identification.

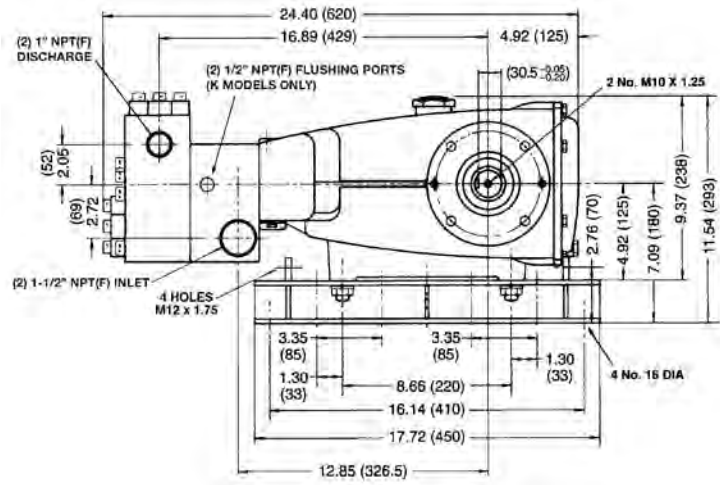
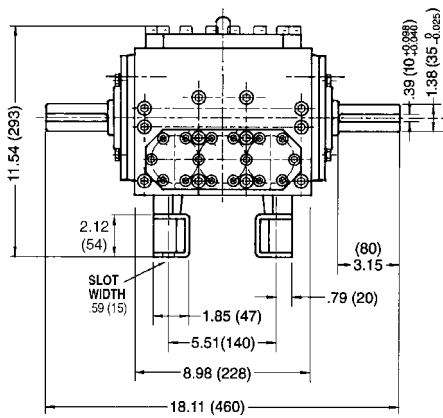
See Tech Bulletins 024, 035, 036, 041, 043, 053, 074, 083, 095, 105, 108, 114, 118, 125 and 127 for additional information. See Service Bulletin 001.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum CC=Ceramic CM=Chrome-Moly D=Acetal EPDM=Ethylene Propylene Diene Monomer F=Cast Iron

FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) NBR5=Buna, Silicone Free NY=Nylon PE=Polyethylene POP=Polypropylene

PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SFG=Special Blend FPM SS=316SS SSL=316SS/Low Carbon SSHB=316SS/High-Strength Brass 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 3831, 3831K

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

| PUMP MODELS | NBR (STD) | FPM (0.0110) | EPDM (0.0220)◆ |
|-------------|-----------|--------------|----------------|
| 3831, 3831K | 701698    | 33268        | 701797         |

| ITEM (Included in Seal Kits) |        |        |        | DESCRIPTION                   | QTY |
|------------------------------|--------|--------|--------|-------------------------------|-----|
| 97                           | 11345  | 11375  | 701490 | O-Ring, Plunger Retainer      | 3   |
| 106                          | 44113  | 44740  | 46955  | Seal, LPS w/SS-Spg            | 3   |
| 112                          | 701794 | 701318 | 701495 | O-Ring, Inlet Spacer          | 6   |
| 113                          | 701319 | 701319 | 701319 | Backup-Ring, Inlet Spacer     | 6   |
| 127                          | 44609  | 44741  | 44609  | V-Packing                     | 6   |
| 155                          | 48860  | 20137  | 701492 | O-Ring, V-Packing Spacer      | 3   |
| 156                          | 48362  | 48362  | 48362  | Backup-Ring, V-Packing Spacer | 3   |
| 158                          | 48362  | 48362  | 48362  | Backup-Ring, V-Packing Spacer | 3   |
| 159                          | 48860  | 20137  | 701492 | 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 (0.0110) | EPDM (0.0220)◆ |
|-------------|-----------|--------------|----------------|
| 3831, 3831K | 34017     | 31955        | 31952          |

| ITEM (Included in Valve Kits) |       |       |        | DESCRIPTION             | QTY |
|-------------------------------|-------|-------|--------|-------------------------|-----|
| 162                           | 48363 | 48363 | 48363  | Backup-Ring, Valve Seat | 3   |
| 163                           | 26142 | 14330 | 701493 | O-Ring, Valve Seat      | 3   |
| 164                           | 44612 | 44612 | 44612  | Seat, Stepped           | 3   |
| 166                           | 44108 | 44108 | 44108  | Valve                   | 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).