

4-Ball Lowers with Open Wet Cup

3A3452H

750cc, 1000cc, 1500cc, and 2000cc Models

EN

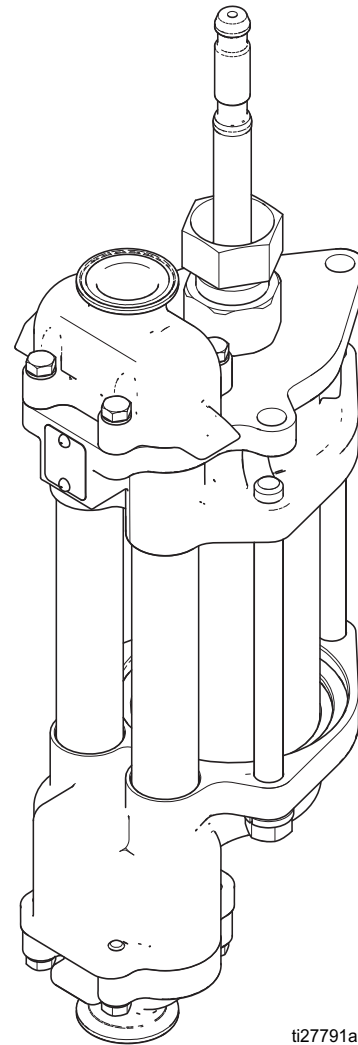
Designed for low-pressure, high-volume circulation of finishing materials. Do not use for flushing or purging lines with caustics, acids, abrasive line strippers, or other similar fluids. For professional use only.



Important Safety Instructions

Read all warnings and instructions in this manual and in your separate pump manual. Save these instructions.

See **Technical Data** for information on Maximum Fluid Working Pressure.



ti27791a

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|--------|-----------------------------------|
| 3A3381 | Viscount® 4-Ball Pumps |
| 3A3385 | E-Flo® 4-Ball Pumps, Operation |
| 3A3386 | E-Flo® 4-Ball Pumps, Repair/Parts |

Models




| Model | Size | Material of Construction | Connection Style |
|--------|--------|--------------------------|------------------|
| 17K660 | 750cc | Carbon Steel | NPT |
| 17K661 | 1000cc | | |
| 17K662 | 1500cc | | |
| 17K663 | 2000cc | | |
| 17K664 | 750cc | Stainless Steel | Tri-Clamp |
| 17K665 | 1000cc | | |
| 17K666 | 1500cc | | |
| 17K667 | 2000cc | | |
| 17K668 | 750cc | | NPT |
| 17K669 | 1000cc | | |
| 17K670 | 1500cc | | |
| 17K671 | 2000cc | | |

Related Manuals

| | |
|--------|--|
| 3A3381 | Viscount® 4-Ball Pumps |
| 3A3382 | High-Flo® 4-Ball Pumps |
| 3A3383 | President® 4-Ball Pumps |
| 3A3384 | E-Flo® DC 4-Ball Pumps |
| 3A3453 | E-Flo® DC 2000, 3000, and 4000 Circulation Pumps |
| 311592 | E-Flo® 4-Ball Pumps, Installation |

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

|  WARNING | |
|--|---|
|  | <p>FIRE AND EXPLOSION HAZARD</p> <p>Flammable fumes, such as solvent and paint fumes, in work area can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> • Use equipment only in well ventilated area. • Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking). • Ground all equipment in the work area. See Grounding instructions. • Never spray or flush solvent at high pressure. • Keep work area free of debris, including solvent, rags and gasoline. • Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present. • Use only grounded hoses. • Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive. • Stop operation immediately if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area. |
|  | <p>PRESSURIZED EQUIPMENT HAZARD</p> <p>Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> • Follow the Pressure Relief Procedure when you stop spraying/dispensing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately. |

! WARNING



EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheet (SDS) from distributor or retailer.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



MOVING PARTS HAZARD

Moving parts can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.



TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read Safety Data Sheet (SDS) to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.



PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Repair

Full Lower Disassembly

See **Repair Kits**, page 19, for a complete list of available repair kits.

NOTE: Throat Seal Kits are available with a variety of packing materials. Kit parts are marked with a dagger (†).

NOTE: Piston Seal Kits are available for each lower size. Kits are available with a variety of packing materials. Kit parts are marked with a diamond (◆).

NOTE: Complete Pump Repair Kits also are available for each lower size. Kit parts are marked with an asterisk (*).

Preparation for Disassembly

1. Flush the pump, if possible.



2. Stop the pump at the bottom of its stroke.
3. Relieve the pressure. See your separate pump manual.
4. Remove the lower from the motor as described in your separate pump manual.

Remove the Outlet Checks

NOTE: See FIG. 5, page 9, for an exploded view of the parts.

1. Secure the inlet check manifold (18) in a vise.
2. Loosen but do not remove the wet cup (43) and the throat cartridge (41).
3. Remove the four capscrews (9) and washers (8) from around the outlet check manifold (22).
4. Remove the outlet check manifold (22), balls (23), seats (24) and gaskets (7).

NOTICE

Be careful not to drop or damage the balls (23) or seats (24). A damaged ball or seat cannot seal properly and the pump will leak.

Remove and Disassemble the Throat Cartridge

1. Loosen and remove the wet cup (43).
2. Loosen and remove the throat cartridge (41). Remove the PTFE o-ring (35).
3. Remove the glands (19 and 26) and packings (20, 25). Remove and inspect the stack of belleville springs (42). If necessary, order Kit 17K755 to replace them.

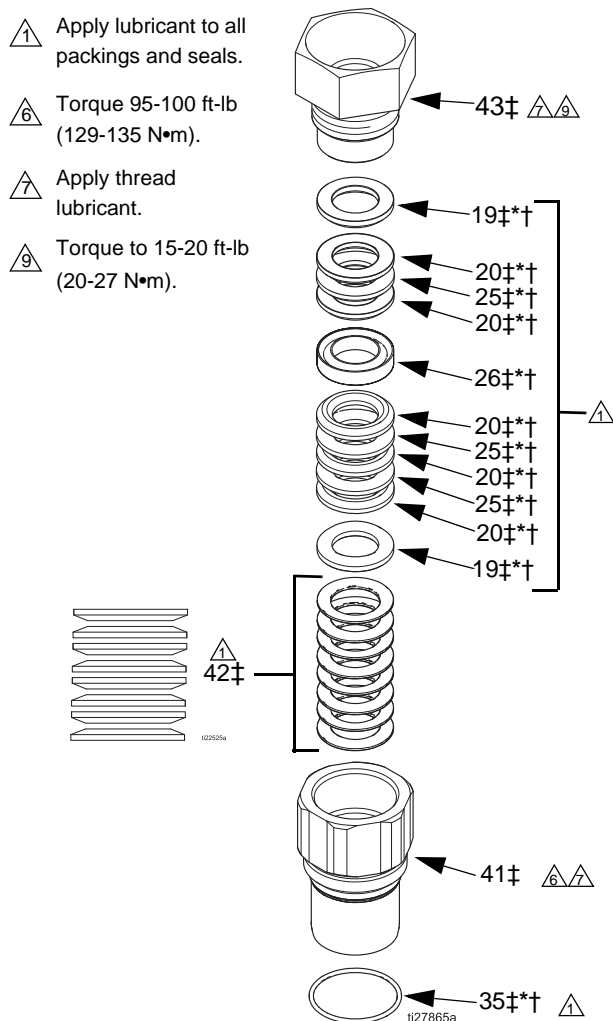


FIG. 1. Throat Packing Detail

Disassemble the Fluid Section

See FIG. 5, page 9, for an exploded view of the parts.

1. Remove the three screws (13) and lock washers (14). Lift off the fluid outlet housing (16).

NOTE: The fluid tubes (3), cylinder (1), and piston assembly may come loose with the fluid outlet housing (16), or may remain in place on the fluid inlet housing (15).

2. Remove the fluid tubes (3) and cylinder (1).
3. Pull the piston assembly out of the cylinder (1). Inspect the surface of the piston rod (17) and the inside surfaces of the cylinder (1) and fluid tubes (3). If any of these parts are scratched or damaged, replace them.
4. Remove two o-rings (2) from the fluid inlet housing (15), where the fluid tubes (3) sit. Remove o-rings (2) from the grooves at each end of the fluid tubes (3).
5. Release the inlet check manifold (18) from the vise.

Disassemble the Piston Assembly

1. Place the flats of the piston nut (12) in a vise.
2. Unscrew the rod (17) from the piston nut (12).
3. Remove the piston (10), seal (11♦*) and spacer (40, not used on 750 cc models).

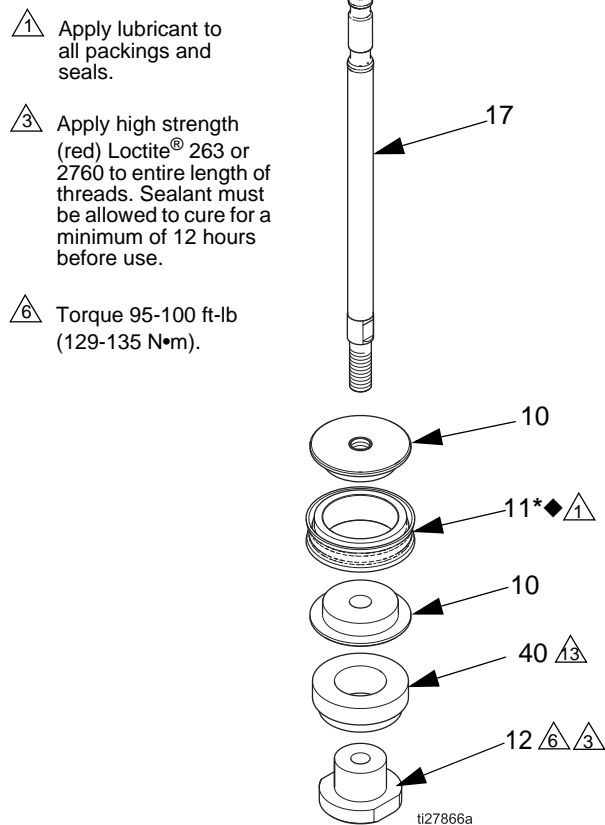


FIG. 2. Disassemble or Assemble the Piston (1000cc, 1500cc, and 2000cc models only)

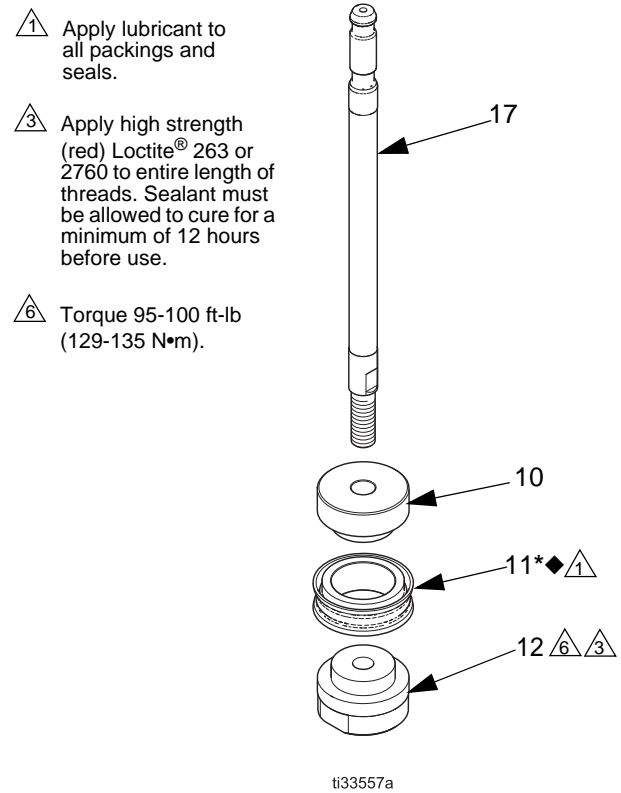


FIG. 3. Disassemble or Assemble the Piston (750cc models only)

Remove and Disassemble the Inlet Checks

See FIG. 5, page 9, for an exploded view of the parts.

1. Remove the four capscrews (9) and washers (8) from the inlet check manifold (18).
2. Remove the balls (5), inlet seats (6 and 33), and gaskets (7).

NOTICE

Be careful not to drop or damage the balls (5) or seats (6 and 33). A damaged ball or seat cannot seal properly and the pump will leak.

3. Inspect the pressure relief valve in the seat (6) to make sure it is not clogged. Press down on the valve's ball to see if the ball and the spring are free to move.

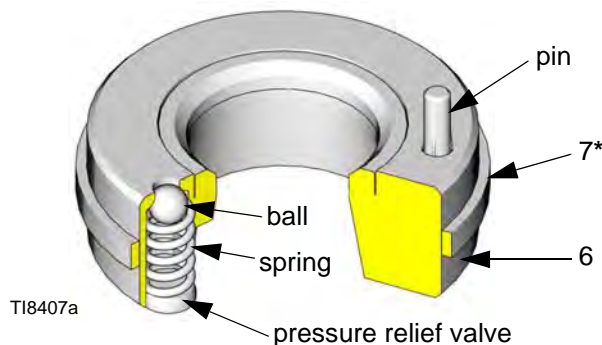


FIG. 4. Inlet Seat with Pressure Relief Valve

NOTICE

If the pressure relief valve in the seat (6) is clogged or filled with material, the pump may overpressurize, causing leakage. To clear, soak the seat in a compatible solvent. Make sure all material residue is cleaned from the ball and seat area. If the relief valve cannot be thoroughly cleaned so that the ball and spring are free to move, replace the seat (6).

4. Clean all parts in a compatible solvent. Inspect all parts for wear or damage. If you are using a repair kit, use all the new parts in the kit, discarding the old ones they replace. Replace any other parts as needed. Worn or damaged parts may cause the pump to perform poorly or cause premature wear of the new seals and packings.

Full Lower Reassembly

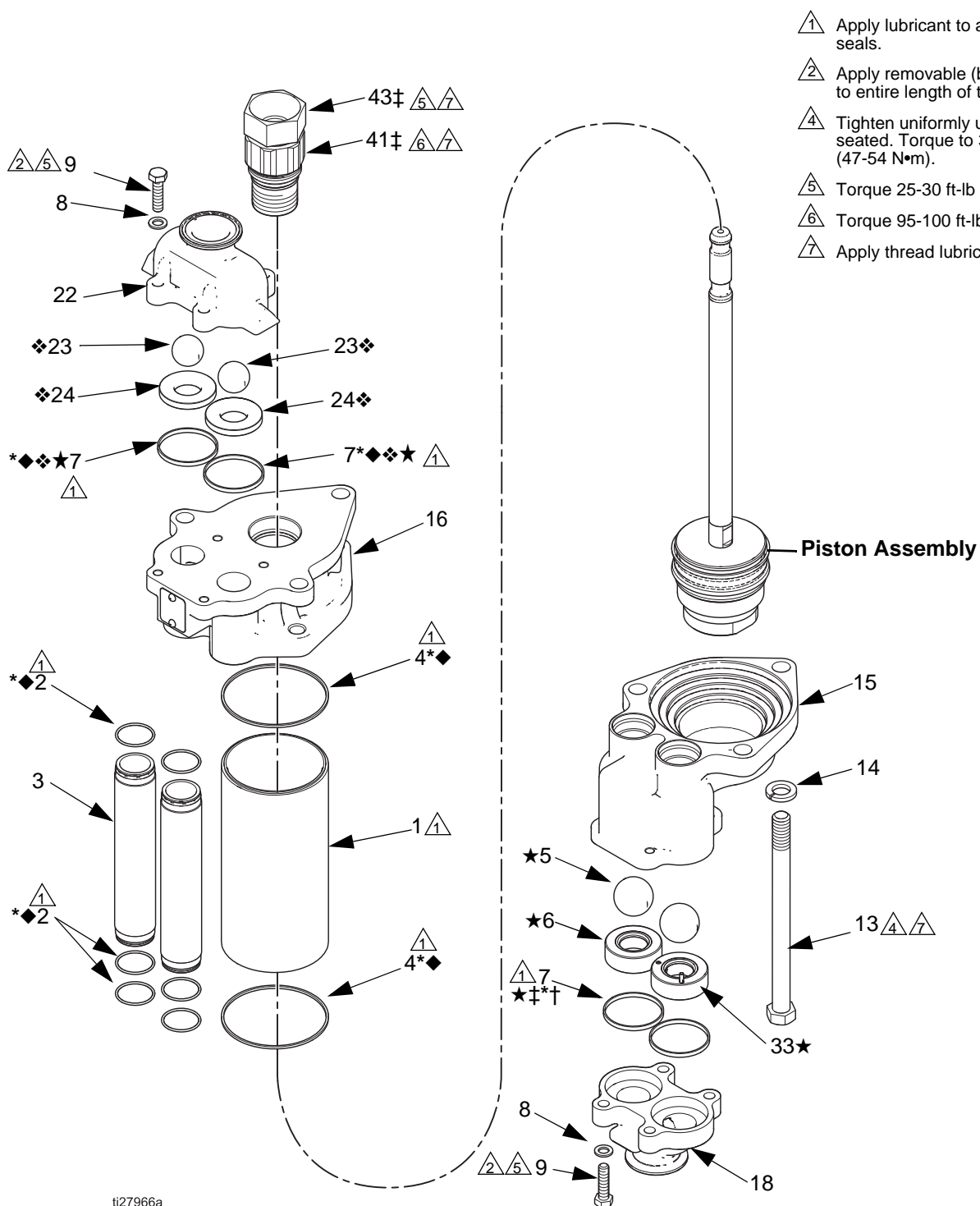


FIG. 5. Exploded View of Lower

Reassemble the Piston Assembly

1. 1000cc, 1500cc, and 2000cc models only: Place the halves of the piston (10) around the piston seal (11◆*) and snap them together. See FIG. 2, page 7.

or

750cc models only: Place piston seal (11◆*) onto piston (10). See FIG. 3, page 7.

2. Apply high strength (red) Loctite® 263 or 2760 to the inner diameter threads on the piston nut (12). Screw the rod (17) through the piston (10) and spacer (40; not used on 750cc models) into the piston nut (12).
3. Torque the piston nut (12) to 95-100 ft-lb (129-135 N•m). Sealant must be allowed to cure for a minimum of 12 hours before use.

Reassemble the Inlet Checks

1. With the fluid inlet housing (15) turned upside down, install the inlet check balls (5★). Lubricate and install the gaskets (7*◆❖★).

| | | | |
|--|--|--|--|
| | | | |
| <p>COMPONENT RUPTURE HAZARD</p> <p>The inlet check seat that has the relief valve (6★) must be installed at the fluid inlet, as shown in FIG. 5. The relief valve reduces the risk of pump overpressurization. The seat cannot relieve pressure if installed on the other side of the fluid inlet housing (15).</p> | | | |

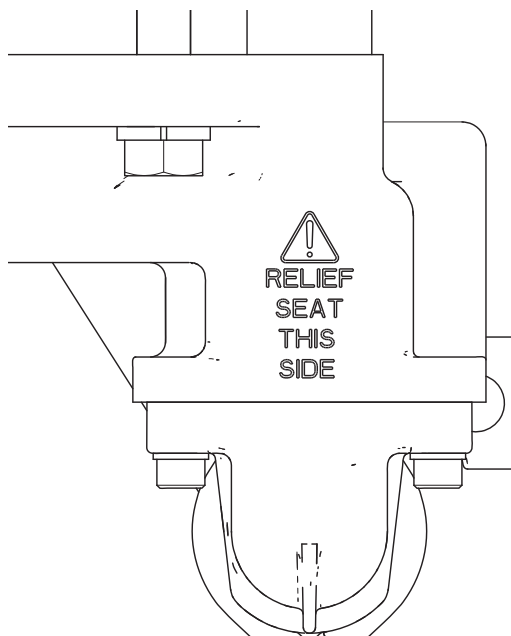


FIG. 6. Placement of Inlet Seat with Relief Valve

2. Use the **text cast into the inlet fluid housing (15)** as a guide to install the relief valve inlet seat (6★). The pin (See FIG. 7) on the seat must point into the inlet fluid housing (15). This pin limits the positioning of the seat (6★), ensuring that the vent hole is not blocked by part of the housing.

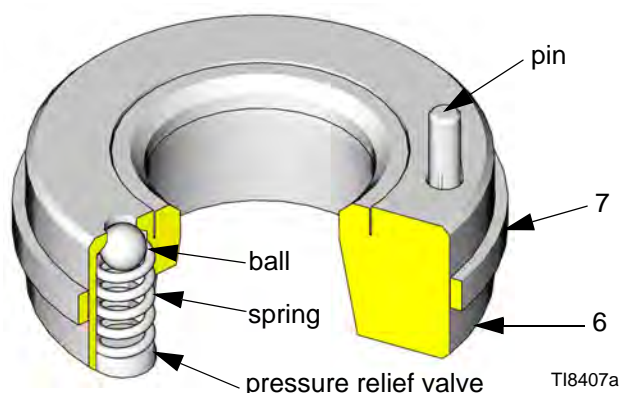


FIG. 7. Inlet Seat with Pressure Relief Valve

3. Install the inlet check seat without a relief valve (33★) in the right side of the lower housing (15).

NOTE: The seats (6★ and 33★) are not reversible. The chamfered side must face the ball.

4. Place the inlet check manifold (18) on the fluid inlet housing (15). Apply removable (blue) Loctite® 243 to entire length of the capscrew (9) threads. Install the lock washers (8) and capscrews (9). Torque to 25–30 ft-lb (34–41 N•m). See FIG. 5.

Reassemble the Fluid Section

1. Place the inlet check manifold (18) in a vise. Place one o-ring (2◆*) in each side of the fluid inlet housing (15), where the fluid tubes (3) sit. Place o-rings (2◆*) in the grooves at each end of the fluid tubes. Place a gasket (4◆*) in both the fluid inlet and fluid outlet housings (15 and 16). Position the fluid tubes (3) and cylinder (1) in the fluid inlet housing (15).

NOTE: It may be necessary to use a rubber mallet to set the fluid tubes (3) in place.

2. Lubricate the inside of the cylinder (1). Slide the piston assembly into the cylinder (1). Rotate the piston assembly as shown.

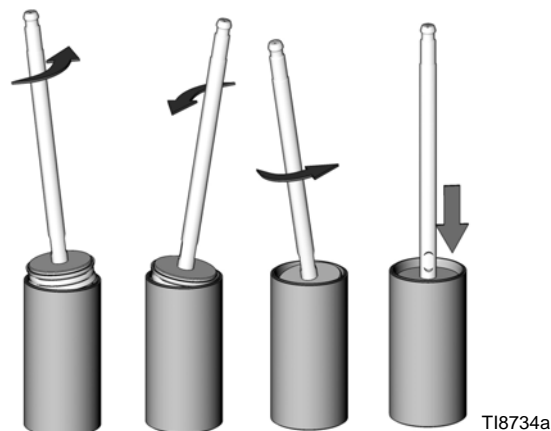


FIG. 8. Install Piston in Cylinder

Reassemble and Install the Throat Cartridge

1. Install the belleville springs (42‡) exactly as shown. They must be installed in this specific orientation.

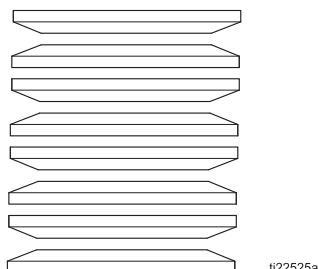


FIG. 9 Assembly of Springs in Throat Cartridge

2. See FIG. 1, page 6. Lubricate the throat packings and glands. Install one male gland (19‡*†), then five v-packings with the *lips facing down*: one ZX (20‡*†), one leather (25‡*†), then ZX, leather, ZX. Install the female gland (26‡*†). Install three v-packings with the *lips facing up*: ZX, leather, ZX. Install the other male gland (19‡*†). Lubricate and install the wet cup (43‡) finger-tight.
3. Lubricate and install the o-ring (35*) onto the throat cartridge (41). Lubricate the threads and install the assembled throat cartridge (41). Torque to 95-100 ft-lb (129-136 N•m).
4. Install the fluid outlet housing (16) over the piston rod (17) and onto the fluid tubes (3) and cylinder (1). It may not seat well at first. Apply thread lubricant and install the bolts (13) and lock washers (14) from the fluid inlet housing (15). Tighten two screws (A, see figure) into the fluid outlet housing (16). They will draw the housings firmly onto the tubes and cylinders. When fully seated, tighten the third screw (B, see figure). Torque all three screws to 35-40 ft-lb (47-54 N•m).

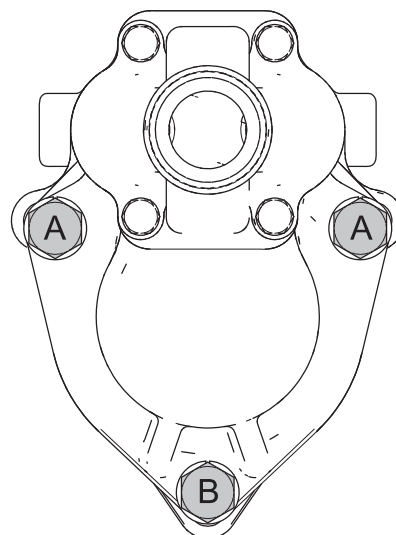


FIG. 10. Tightening Sequence

5. Torque the wet cup (43) to 15-20 ft-lb (20-27 N•m).

Reassemble and Install the Outlet Checks

1. Place an outlet check ball (23❖) and seat (24❖) in each side of the outlet check manifold (22). Lubricate and install a gasket (7*❖❖★) in each side. Install the outlet check manifold (22) on the fluid outlet housing (16).

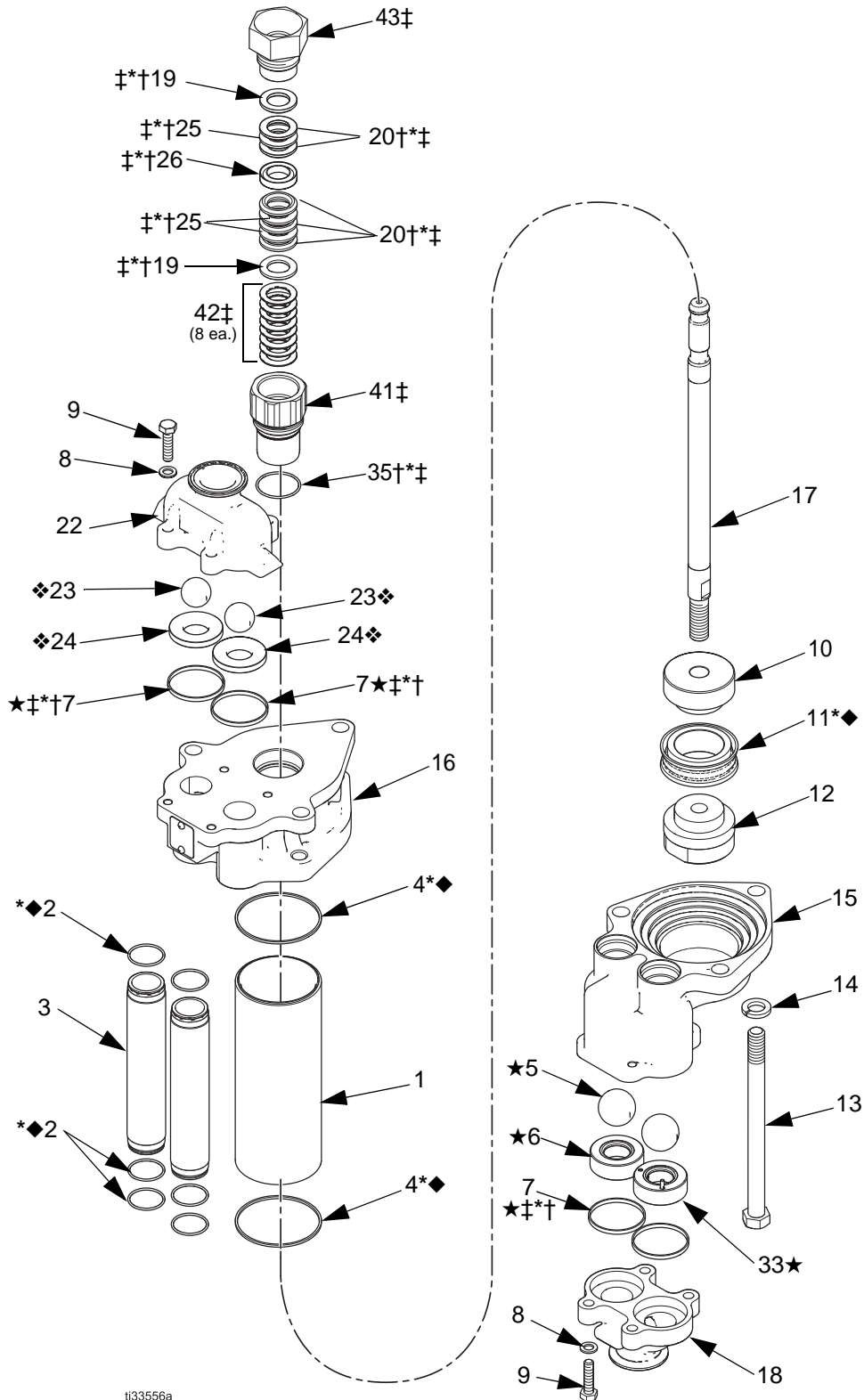
NOTE: The outlet seats (24❖) are not reversible. The chamfered side must face the ball.

2. Apply removable (blue) Loctite® 243 to entire length of the screw threads. Install the lock washers (8) and cap screws (9), and torque to 25-30 ft-lb (34-40 N•m).
3. Reconnect the lower to the motor as explained in a separate pump manual.

[illegible]

Parts

750cc Carbon Steel and Stainless Steel Models



No. 17K660 - 750cc, Carbon Steel
No. 17K664 & 17K668 - 750cc, Stainless Steel

| Ref. | Part | Description | Qty |
|-------|----------------------------|---|-----|
| 1 | 183049 685971 | CYLINDER Chrome; for 750cc CS pump Ultralife; for 750cc SST pump | 1 |
| 2*◆ | 108526 | O-RING; PTFE | 6 |
| 3 | 183085 | TUBE, fluid | 2 |
| 4*◆ | 181875 | GASKET, cylinder, | 2 |
| 5★ | 101968 | BALL, inlet check | 2 |
| 6★ | ----- | SEAT, inlet check with pressure relief valve | 1 |
| 7*◆❖★ | 181877 | GASKET, seat, check valve | 4 |
| 8 | 111003 | WASHER, flat | 8 |
| 9 | 16K289 | SCREW, cap, socket head | 8 |
| 10 | 17M899 | PISTON | 1 |
| 11*◆ | ----- | SEAL, piston | 1 |
| 12 | 17N040 | NUT, piston | 1 |
| 13 | 120466 120199 | WASHER, lock, spring Carbon Steel Models Stainless Steel Models | 3 |
| 14 | 101333 108525 | SCREW, cap, hex head, 9/16-12 x 7.5 in. Carbon Steel Models Stainless Steel Models | 3 |
| 15 | 16D848 16E907 | HOUSING, fluid inlet Carbon Steel Models Stainless Steel Models | 1 |
| 16 | 16D849 16D847 | HOUSING, fluid outlet Carbon Steel Models Stainless Steel Models | 1 |
| 17 | 17E203 17E220 | ROD, piston Chrome; for Carbon Steel Models Ultralife; for Stainless Steel Models | 1 |
| 18 | 192260 15H663 192259 | MANIFOLD, inlet check Carbon Steel Models Stainless Steel Models, Tri-clamp Stainless Steel Models, npt | 1 |
| 19†*† | 16D958 | GLAND, male | 2 |
| 20†*† | 17J537 | V-PACKING, throat, ZX | 5 |

| Ref. | Part | Description | Qty |
|-------|----------------------------|--|-----|
| 22 | 181728 16E906 188104 | MANIFOLD, outlet check Carbon Steel Models Stainless Steel Models, Tri-clamp Stainless Steel Models, npt | 1 |
| 23❖ | 110259 | BALL, outlet check | 2 |
| 24❖ | 17G641 | SEAT, outlet check | 2 |
| 25†*† | 120238 | V-PACKING, leather | 3 |
| 26†*† | 192264 | GLAND, female | 1 |
| 33★ | 239865 | SEAT, inlet check, without pressure relief valve | 1 |
| 35*†† | 107098 | O-RING, PTFE | 1 |
| 36▲ | 172479 | TAG, warning | 1 |
| 41‡ | 17G819 | CARTRIDGE, throat | 1 |
| 42‡ | 17K755 | SPRING, belleville, 8-pack | 1 |
| 43‡ | 181684 | WET CUP | 1 |

▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

----- Parts not sold separately.

* Parts are included in the Complete Pump Repair Kit. See **Repair Kits**.

† Parts are included in the Throat Seal Kit. See **Repair Kits**.

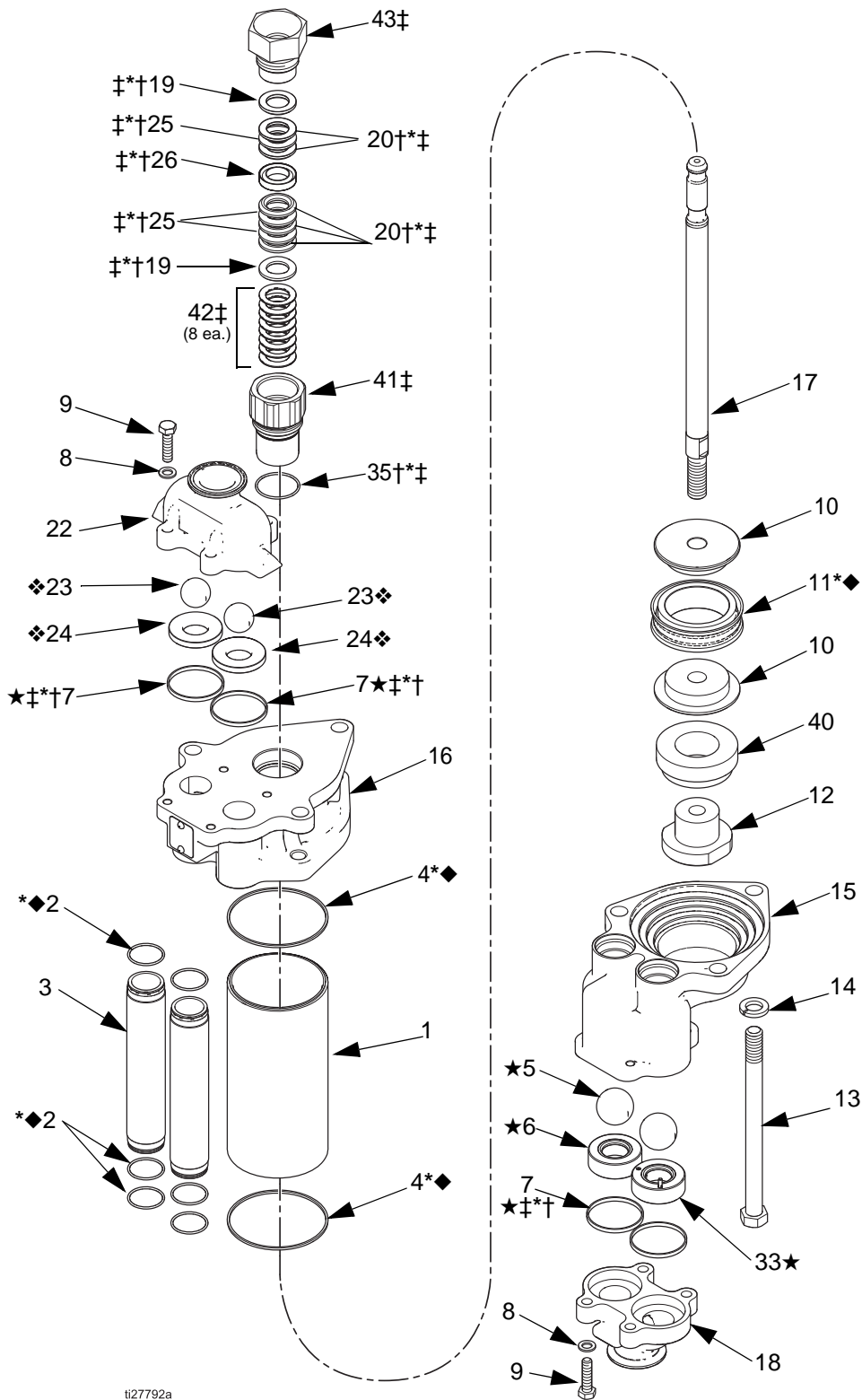
◆ Parts are included in the Piston Seal Kit. See **Repair Kits**.

‡ Parts are included in the Wet Cup Kit 24F144.

❖ Parts are included in Outlet Check Kit 17K757.

★ Parts are included in Inlet Check Kit 17K526.

1000cc, 1500cc, 2000cc Carbon Steel and Stainless Steel Models



No. 17K661 - 1000cc, Carbon Steel
 No. 17K662 - 1500cc, Carbon Steel
 No. 17K663 - 2000cc, Carbon Steel
 No. 17K665 & 17K669 - 1000cc, Stainless Steel
 No. 17K666 & 17K670 - 1500cc, Stainless Steel
 No. 17K667 & 17K671 - 2000cc, Stainless Steel

| Ref. | Part | Description | Qty |
|-----------|--------|--|-----|
| 1 | | CYLINDER | 1 |
| | 183047 | Chrome; for 1000cc CS pump | |
| | 183048 | Chrome; for 1500cc CS pump | |
| | 15G882 | Chrome; for 2000cc CS pump | |
| | 17G628 | Ultralife; for 1000cc SST pump | |
| | 17G629 | Ultralife; for 1500cc SST pump | |
| | 17G630 | Ultralife; for 2000cc SST pump | |
| 2*◆ | 108526 | O-RING; PTFE | 6 |
| 3 | 183085 | TUBE, fluid | 2 |
| 4*◆ | | GASKET, cylinder, | 2 |
| | 183094 | 1000cc | |
| | 181876 | 1500cc | |
| | 15G881 | 2000cc | |
| 5★ | 101968 | BALL, inlet check | 2 |
| 6★ | ----- | SEAT, inlet check with pressure relief valve | 1 |
| 7*◆❖ ★ | 181877 | GASKET, seat, check valve | 4 |
| 8 | 111003 | WASHER, flat | 8 |
| 9 | 16K289 | SCREW, cap, socket head | 8 |
| 10 | | PISTON | 2 |
| | 15G883 | 1000cc | |
| | 15G884 | 1500cc | |
| | 15G885 | 2000cc | |
| 11*◆ | | SEAL, piston | 1 |
| | ----- | 1000cc | |
| | ----- | 1500cc | |
| | ----- | 2000cc | |
| 12 | 15H989 | NUT, piston | 1 |

| Ref. | Part | Description | Qty |
|-------|--------|--|-----|
| 13 | | WASHER, lock, spring | 3 |
| | 120466 | Carbon Steel Models | |
| | 120199 | Stainless Steel Models | |
| 14 | | SCREW, cap, hex head, 9/16-12 x 7.5 in. | 3 |
| | 101333 | Carbon Steel Models | |
| | 108525 | Stainless Steel Models | |
| 15 | | HOUSING, fluid inlet | 1 |
| | 16D848 | Carbon Steel Models | |
| | 16E907 | Stainless Steel Models | |
| 16 | | HOUSING, fluid outlet | 1 |
| | 16D849 | Carbon Steel Models | |
| | 16D847 | Stainless Steel Models | |
| 17 | | ROD, piston | 1 |
| | 17E203 | Chrome; for Carbon Steel Models | |
| | 17E220 | Ultralife; for Stainless Steel Models | |
| 18 | | MANIFOLD, inlet check | 1 |
| | 192260 | Carbon Steel Models | |
| | 15H663 | Stainless Steel Models, Tri-clamp | |
| | 192259 | Stainless Steel Models, npt | |
| 19††† | 16D958 | GLAND, male | 2 |
| 20††† | 17J537 | V-PACKING, throat, ZX | 5 |
| 22 | | MANIFOLD, outlet check | 1 |
| | 181728 | Carbon Steel Models | |
| | 16E906 | Stainless Steel Models, Tri-clamp | |
| | 188104 | Stainless Steel Models, npt | |
| 23❖ | 110259 | BALL, outlet check | 2 |
| 24❖ | 17G641 | SEAT, outlet check | 2 |
| 25††† | 120238 | V-PACKING, leather | 3 |
| 26††† | 192264 | GLAND, female | 1 |
| 33★ | 239865 | SEAT, inlet check, without pressure relief valve | 1 |
| 35*†† | 107098 | O-RING, PTFE | 1 |
| 36▲ | 172479 | TAG, warning | 1 |

Continued on next page.

| Ref. | Part | Description | Qty |
|------|----------------------------|--|-----|
| 40 | 16D850 16D851 16D852 | PISTON, spacer 1000cc 1500cc 2000cc | 1 |
| 41‡ | 17G819 | CARTRIDGE, throat | 1 |
| 42‡ | 17K755 | SPRING, belleville, 8-pack | 1 |
| 43‡ | 181684 | WET CUP | 1 |

▲ Replacement Danger and Warning labels, tags, and cards are available at no cost.

----- Parts not sold separately.

* Parts are included in the Complete Pump Repair Kit. See **Repair Kits**.

† Parts are included in the Throat Seal Kit. See **Repair Kits**.

◆ Parts are included in the Piston Seal Kit. See **Repair Kits**.

‡ Parts are included in the Wet Cup Kit 24F144.

❖ Parts are included in Outlet Check Kit 17K757.

★ Parts are included in Inlet Check Kit 17K526.

Connection Kits

The following kits are available to connect an existing motor to the open wet cup lower (this manual), the sealed lower (Manual 333022), or the enclosed wet cup lower (Manual 3A0539).

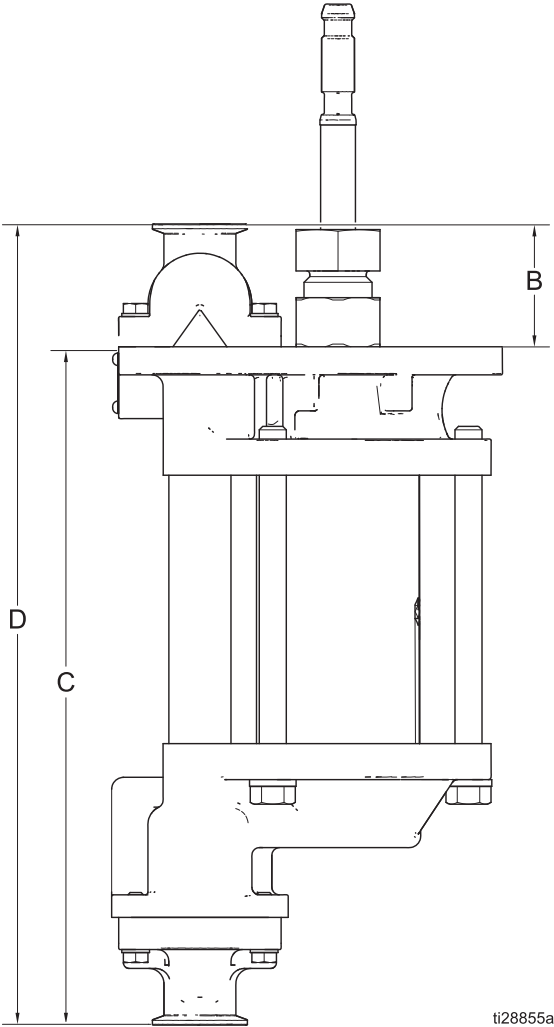
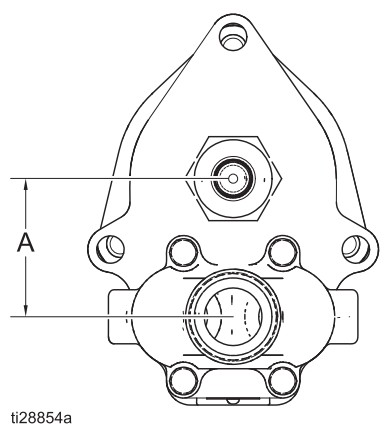
| Lower Style | Motor/Pump Style | | | | | |
|----------------------------------|--------------------------------------|------------|-------------|--------|--------------------|---------------------------|
| | President | Viscount I | Viscount II | E-Flo | Bulldog or Senator | NXT, High-Flo or E-Flo DC |
| Sealed | 17K523 | 17K519 | 17K520 | 17K524 | 17K517 | 17K525 |
| Open Wet Cup or Enclosed Wet Cup | 24J185 (standard) or 24J186 (stubby) | 24F065 | 24J390 | N/A | 24F308 | 288209 |

Repair Kits

| Description | Models 17K660, 17K664, and 17K668 | Models 17K661, 17K665, and 17K669 | Models 17K662, 17K666, and 17K670 | Models 17K663, 17K667, and 17K671 |
|---|---|---|---|---|
| Complete Pump Repair Kit (*) Includes Refs. 2, 4, 7, 11, 19, 20, 25, 26, 35 | 17K759 | 17K761 | 17K763 | 17K765 |
| Chromex Piston Rod** | 16A462 | | | |
| Throat Seal Kit (†) Includes Refs. 19, 20, 25, 26, 35 | | | | |
| PTFE* | 24F243 | | | |
| Leather | 24F244 | | | |
| UHMWPE and Leather | 24F245 | | | |
| UHMWPE and PTFE* | 24F246 | | | |
| ZX and Leather (Standard) | 17K754 | | | |
| ZX and PTFE | 17K916 | | | |
| Piston Seal Kit (◆) Includes Refs. 2, 4, 7, and 11. | | | | |
| ZXP Seal (standard) | 17K912 | 17K913 | 17K914 | 17K915 |
| UHMWPE Seal | 16E904 | 277360 | 277362 | 277358 |
| PTFE Seal** | 16E895 | 277361 | 277363 | 277359 |
| Wet Cup Kit (‡) Includes Refs. 19, 20, 25, 26, 35, 41, 42, 43 | 24F144 | | | |
| Outlet Check Kit (❖) Includes Refs. 7, 23, and 24 | | | | |
| Carbide Seat (standard) | 24F249 | | | |
| Stainless Steel Seat | 17K756 | | | |
| ZX Seat | 17K757 | | | |
| Inlet Check Kit (★) Includes Refs. 5, 6, 7, and 33. | 17K526 | | | |

** Use this component only when required for chemical compatibility. Use may result in a reduced cycle life.

Dimensions



| Dimension | U.S. | Metric |
|-----------|---------|--------|
| A | 3.0 in | 8 cm |
| B | 2.4 in | 6 cm |
| C | 14.4 in | 37 cm |
| D | 17.4 in | 44 cm |

Technical Data

| 4-Ball Pump Wet Cup Lowers (750cc, 1000cc, 1500cc, and 2000cc Sizes) | | |
|--|--|-----------------|
| | U.S. | Metric |
| Maximum Fluid Working Pressure | | |
| Models 17K660, 17K664, and 17K668 | 600 psi | 4.1 MPa, 41 bar |
| Models 17K661, 17K665, and 17K669 | | |
| Models 17K662, 17K666, and 17K670 | 460 psi | 3.2 psi, 32 bar |
| Models 17K663, 17K667, and 17K671 | | |
| Displacement per Cycle (4.75 in. [12 cm] stroke) | | |
| Models 17K660, 17K664, and 17K668 | 750cc | |
| Models 17K661, 17K665, and 17K669 | 1000cc | |
| Models 17K662, 17K666, and 17K670 | 1500cc | |
| Models 17K663, 17K667, and 17K671 | 2000cc | |
| Maximum Fluid Temperature Rating | 150°F | 66°C |
| Fluid Inlet Sizes | 1-1/2 in. Sanitary Quick Clamp 1-1/2 in. NPT | |
| Fluid Outlet Sizes | 1-1/2 in. Sanitary Quick Clamp 1 in. NPT | |
| Wetted Parts | Stainless Steel, PTFE, Leather, Ultra-High Molecular Weight Polyethylene, Tungsten Carbide, Fluoropolymer | |

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Original instructions. This manual contains English. MM 3A3452

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