Repair - Parts

Displacement Pump

309577P

EN

For use with Reactor® air and electric proportioners. For professional use only.

3500 psi (24.5 MPa, 245 bar) Maximum Working Pressure

See page 2 for model information.

Important Safety Instructions

Read all warnings and instructions in this manual. Save these instructions.

TI3733

TI2663

PROVEN QUALITY. LEADING TECHNOLOGY.

Contents

Model Numbers

Part No., Series	Effective Area of Displacement
Component A (ISO) Pumps with wet-cup flush feature	
246830, Series A	0.396 in.^{2} (2.55 cm^2)
246831, Series B	0.552 in.^{2} (3.56 cm^2)
246832, Series A	0.743 in.^{2} (4.79 cm^2)
262647, Series A	0.552 in.^{2} (3.56 cm^2)
24Y175, Series A	0.396 in.^{2} (2.55 cm^2)
Component B (Resin) Pumps	
245970, Series A	0.396 in.^{2} (2.55 cm^2)
245971, Series B	0.552 in.^{2} (3.56 cm^2)
245972, Series A	0.743 in.^{2} (4.79 cm^2)
262648, Series A	0.552 in.^{2} (3.56 cm^2)
24Y174, Series A	0.396 in.^{2} (2.55 cm^2)

Related Manuals

The following manuals are available for the Reactor. Refer to these manuals for detailed equipment information.

Reactor Electric Proportioner	
Part No.	**Description**
309551 or 312065	Reactor Electric Proportioner, Operation Manual (English)
309574 or 312066	Reactor Electric Proportioner, Repair-Parts Manual (English)
309911	Reactor Pump Wet-Cup Flush Kits

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





SKIN INJECTION HAZARD

High-pressure fluid from dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. Get immediate surgical treatment.

- Engage trigger lock when not dispensing.
- Do not point dispensing device at anyone or at any part of the body.
- Do not put your hand over the fluid outlet.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.




FIRE AND EXPLOSION HAZARD

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:

- 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 in related manuals.
- 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.

⚠ 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.
- Do not leave the work area while equipment is energized or under pressure.
- 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.

BURN HAZARD

Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns:

- Do not touch hot fluid or equipment.

⚠ WARNING

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) for handling instructions and to know the specific hazards of the fluids you are using, including the effects of long-term exposure.
- When spraying, servicing equipment, or when in the work area, always keep work area well ventilated and always wear appropriate personal protective equipment. See **PERSONAL PROTECTIVE EQUIPMENT** warnings in this manual.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

PERSONAL PROTECTIVE EQUIPMENT

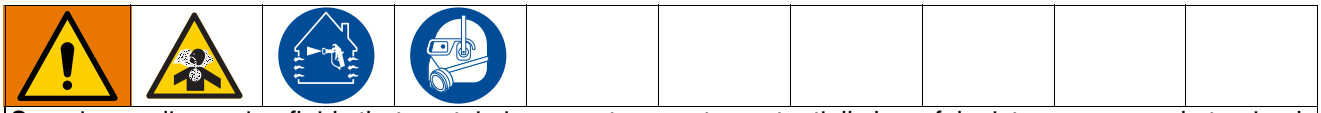
Always wear appropriate personal protective equipment and cover all skin when spraying, servicing equipment, or when in the work area. Protective equipment helps prevent serious injury, including long-term exposure; inhalation of toxic fumes, mists or vapors; allergic reaction; burns; eye injury and hearing loss. This protective equipment includes but is not limited to:

- A properly fitting respirator, which may include a supplied-air respirator, chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority.
- Protective eyewear and hearing protection.

Important Isocyanate (ISO) Information

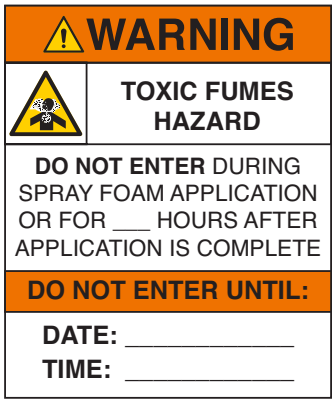
Isocyanates (ISO) are catalysts used in two component materials.

Isocyanate Conditions



Spraying or dispensing fluids that contain isocyanates creates potentially harmful mists, vapors, and atomized particulates.

- Read and understand the fluid manufacturer's warnings and Safety Data Sheet (SDS) to know specific hazards and precautions related to isocyanates.
- Use of isocyanates involves potentially hazardous procedures. Do not spray with this equipment unless you are trained, qualified, and have read and understood the information in this manual and in the fluid manufacturer's application instructions and SDS.
- Use of incorrectly maintained or mis-adjusted equipment may result in improperly cured material.which could cause off gassing and offensive odors. Equipment must be carefully maintained and adjusted according to instructions in the manual.
- To prevent inhalation of isocyanate mists, vapors and atomized particulates, everyone in the work area must wear appropriate respiratory protection. Always wear a properly fitting respirator, which may include a supplied-air respirator. Ventilate the work area according to instructions in the fluid manufacturer's SDS.
- Avoid all skin contact with isocyanates. Everyone in the work area must wear chemically impermeable gloves, protective clothing and foot coverings as recommended by the fluid manufacturer and local regulatory authority. Follow all fluid manufacturer recommendations, including those regarding handling of contaminated clothing. After spraying, wash hands and face before eating or drinking.
- Hazard from exposure to isocyanates continues after spraying. Anyone without appropriate personal protective equipment must stay out of the work area during application and after application for the time period specified by the fluid manufacturer. Generally this time period is at least 24 hours.
- Warn others who may enter work area of hazard from exposure to isocyanates. Follow the recommendations of the fluid manufacturer and local regulatory authority. Posting a placard such as the following outside the work area is recommended:



Keep Components A and B Separate

Cross-contamination can result in cured material in fluid lines which could cause serious injury or damage equipment. To prevent cross-contamination:

- **Never** interchange component A and component B wetted parts.
- Never use solvent on one side if it has been contaminated from the other side.

Moisture Sensitivity of Isocyanates

Exposure to moisture (such as humidity) will cause ISO to partially cure, forming small, hard, abrasive crystal that become suspended in the fluid. Eventually a film will form on the surface and the ISO will begin to gel, increasing in viscosity.

NOTICE

Partially cured ISO will reduce performance and the life of all wetted parts.

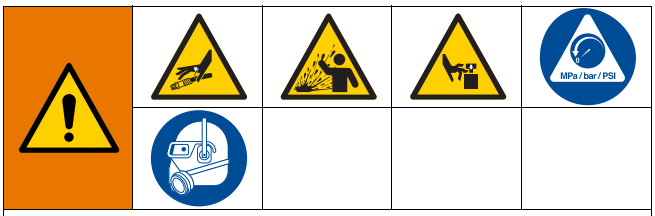
- Always use a sealed container with a desiccant dryer in the vent, or a nitrogen atmosphere. **Never** store ISO in an open container.
- Keep the ISO pump wet cup or reservoir (if installed) filled with appropriate lubricant. The lubricant creates a barrier between the ISO and the atmosphere.
- Use only moisture-proof hoses compatible with ISO.
- Never use reclaimed solvents, which may contain moisture. Always keep solvent containers closed when not in use.
- Always lubricate threaded parts with an appropriate lubricant when reassembling.

NOTE: The amount of film formation and rate of crystallization varies depending on the blend of ISO, the humidity, and the temperature.

Operation

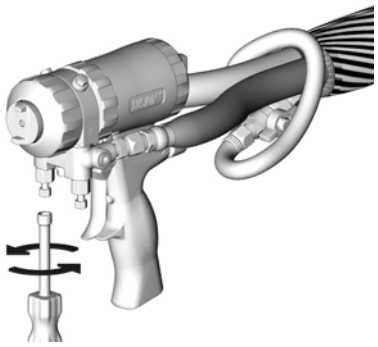
Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.

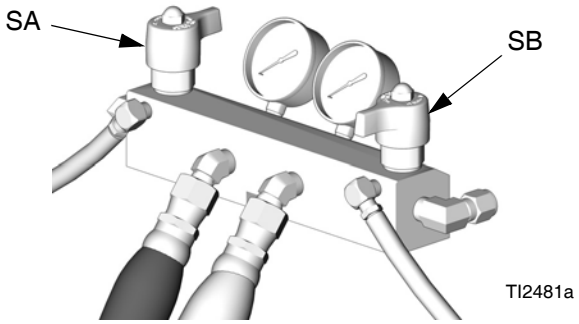


This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Relieve pressure in gun and perform gun shutdown procedure. See gun manual.
2. Close gun fluid manifold valves A and B.



3. Shut off feed pumps and agitator, if used.
4. Turn PRESSURE RELIEF/SPRAY valves (ASA, SB) to PRESSURE RELIEF. Route fluid to waste containers or supply tanks. Ensure that gauges drop to 0.



Tools Needed

- Vise with flat jaws
- 12 in. adjustable, open end wrench (2)
- Non-sparking hammer, 20 oz maximum
- Small screwdriver
- Throat Seal Liquid (TSL), Graco Part No. 206995
- ISO Pump Oil, Graco Part No. 217374
- Pick or long small screwdriver
- Snap-ring pliers
- 1/2 in. (13 mm) diameter plastic rod
- 7/8 in. deep-well socket (246830 and 245970 only)
- 1/2 in. (13 mm) x 2.5 in. (64 mm) bolt with washers and nut
- Channel locks
- Dropcloth and rags

Repair Kits

A repair kit is available for your pump. Kit parts are marked with an asterisk, for example (3*). See page 24. Kit must be purchased separately. For best results, use all parts in the kit.

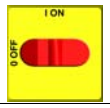
Clean and Inspect Parts

1. Clean and inspect all parts. Intake and piston ball seats, sleeve, and displacement rod must not be worn, scratched, or damaged.

2. Remove and clean sleeve when repacking pump.

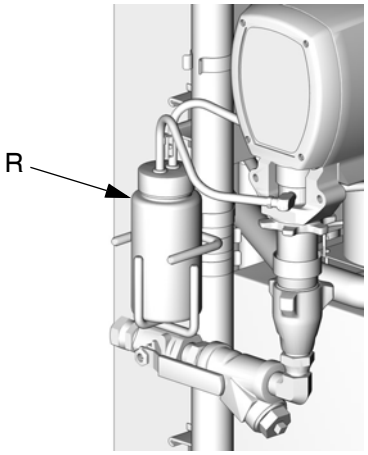
Supply Wet-cups with Throat Seal Liquid

Pump rod and connecting rod move during operation. Moving parts can cause serious injury such as pinching or amputation. Keep hands and fingers away from wet-cup during operation.

Turn main power OFF  before filling wet cup.

1. **Component A (ISO) Pump:** Keep reservoir (R) 3/4 filled with Graco Throat Seal Liquid (TSL), Part No. 206995. Wet-cup piston (28) circulates TSL through packing nut/wet-cup (19), to carry away isocyanate film on displacement rod.

   After some time TSL will thicken and darken, and must be replaced. Thick, dirty TSL will not pump through lines and will harden in wet-cup. Check condition of TSL every week, minimum, and change when needed.



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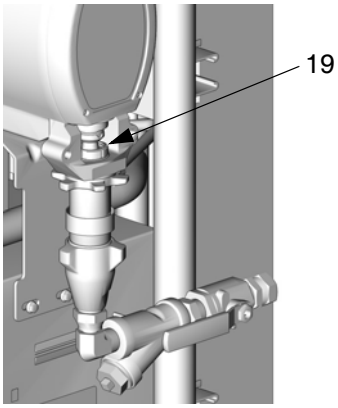
2. **Component B (Resin) Pump:** Check felt washers (21) in packing nut/wet-cup (19) daily. Keep saturated with Graco Throat Seal Liquid (TSL), Part No. 206995, to prevent material from hardening on displacement rod. Replace felt washers when worn or contaminated with hardened material.



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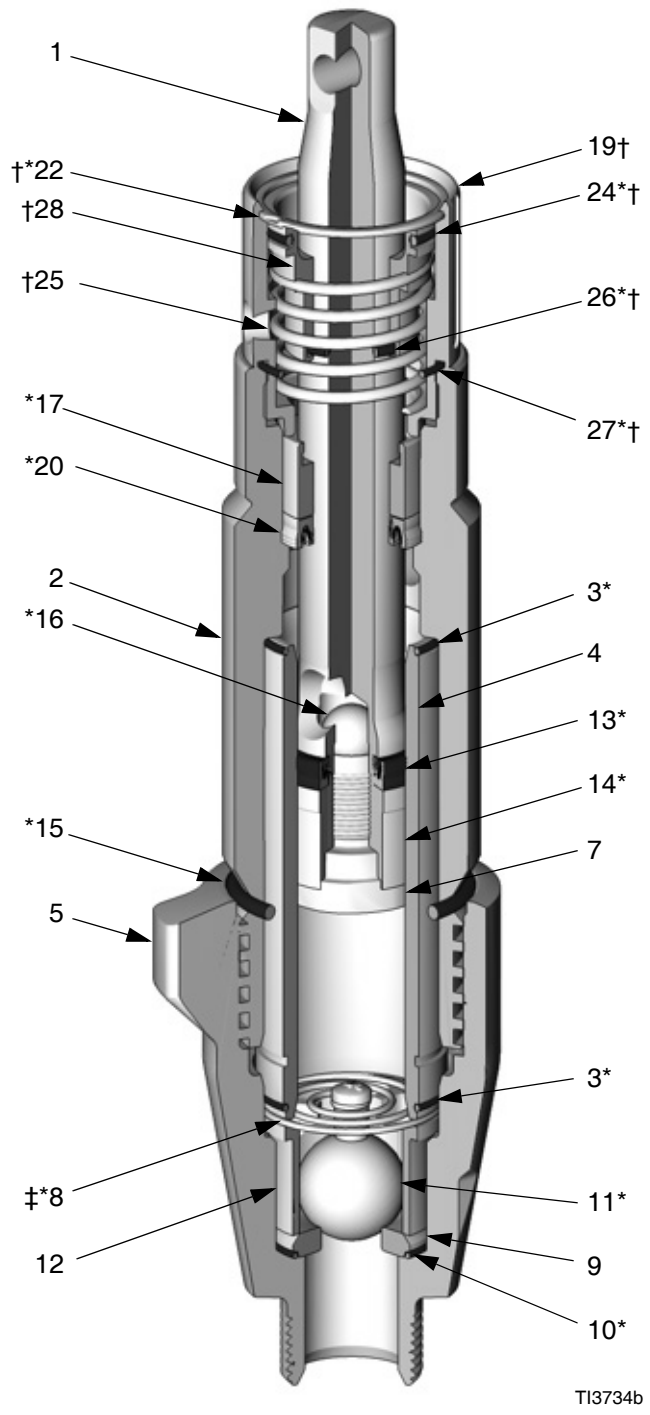
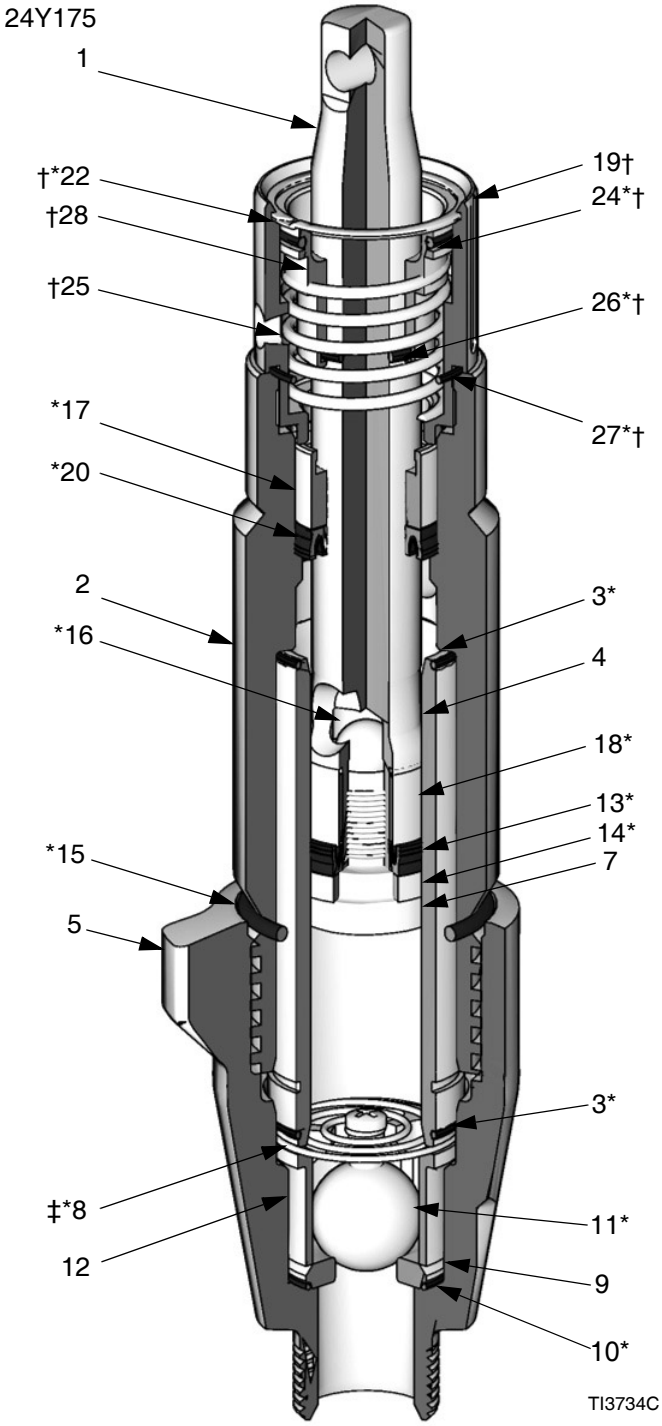
Cutaway Views

Component A (ISO) Pump

246830
246832

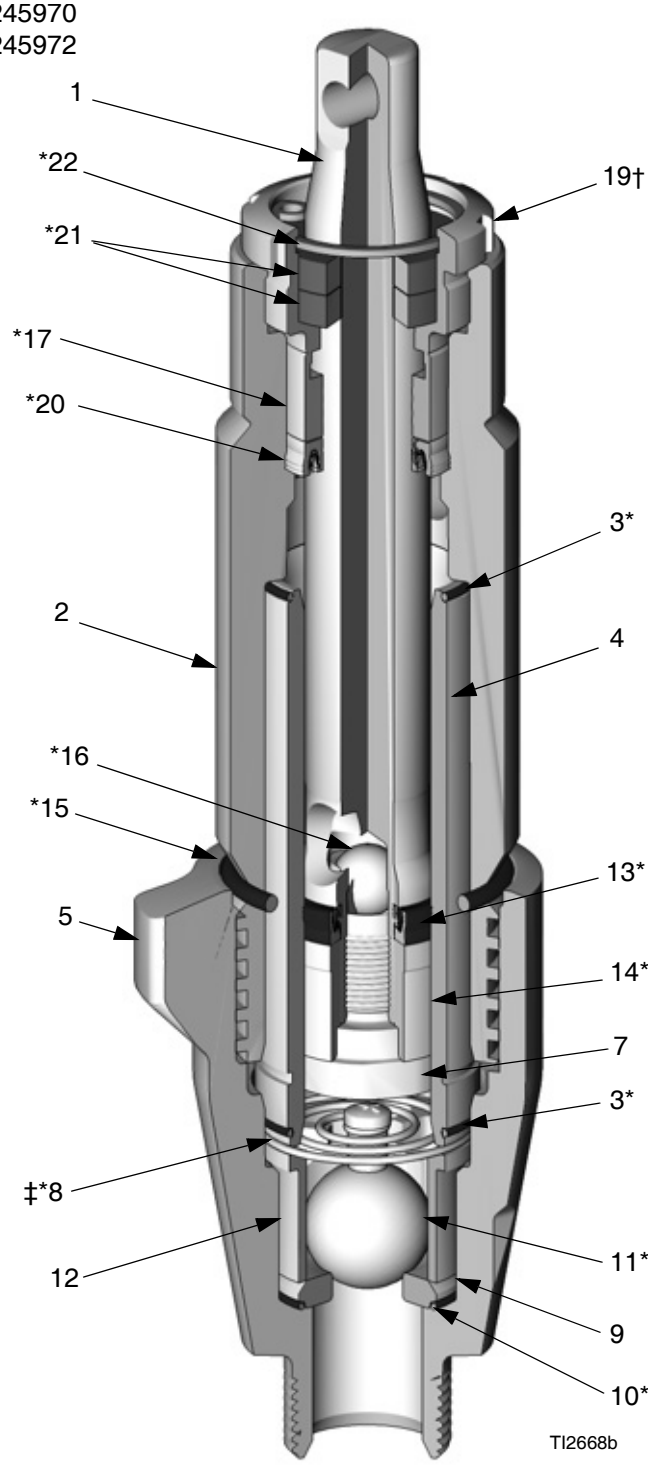


246831
262647
24Y175

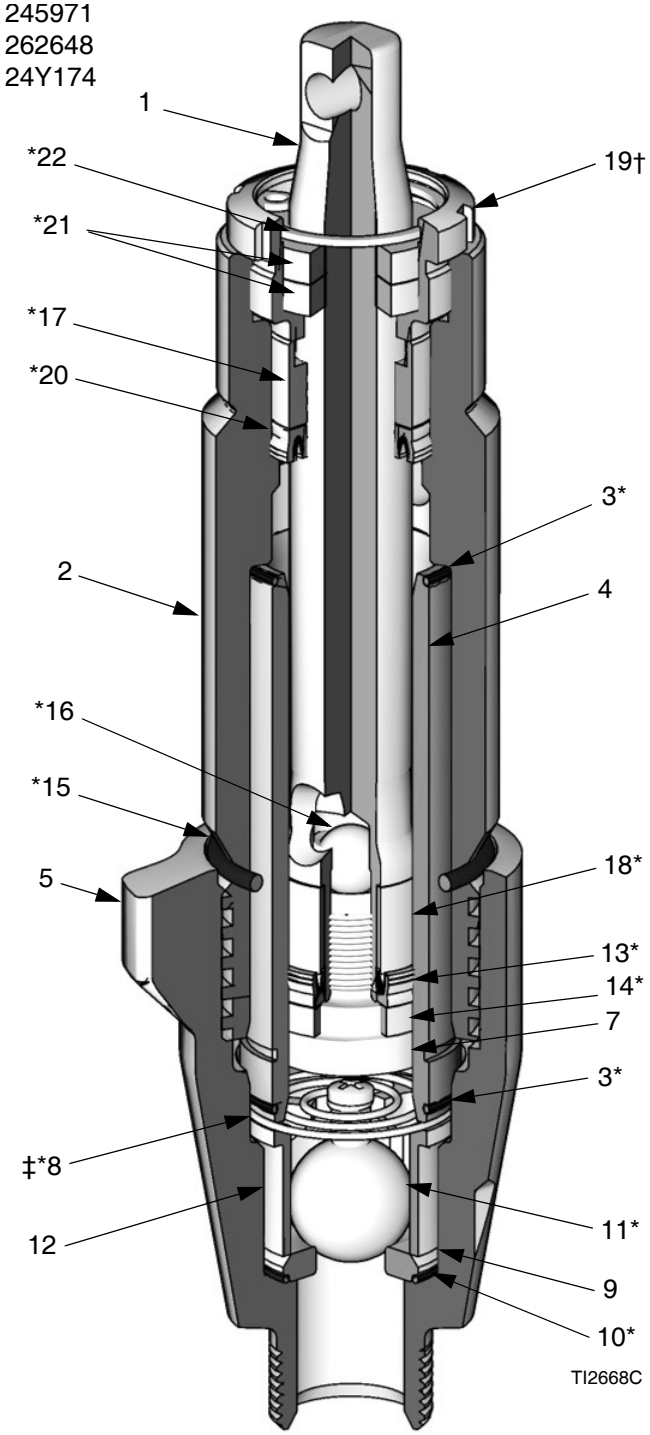


Component B (Resin) Pump

245970
245972



245971
262648
24Y174



Disassembly

Pump rod and connecting rod move during operation. Moving parts can cause serious injury such as pinching or amputation. Keep hands and fingers away from connecting rod during operation.

1. Shut off A, B, and heat zones.
2. Flush pumps. See Reactor manual.
3. Relieve pressure, page 6.
4. Press A. Motor will run until pumps are at bottom of strokes, then shut off.
5. Turn main power OFF. Disconnect power supply.

NOTE: Steps 6-8 apply to pump A. See FIG. 1. To disconnect pump B, go to steps 9 and 10. Use dropcloth or rags to protect Reactor and surrounding area from spills.

6. Disconnect fluid inlet (C) and outlet (D). Also disconnect steel outlet tube from heater inlet.
7. Disconnect tubes (T). Remove tube fittings (U) from wet-cup.
8. Loosen star-shaped locknut (G) by hitting firmly with a non-sparking hammer. Unscrew pump far enough to expose retaining pin under plastic finger guard. Push retaining spring up. Push pin out. Continue unscrewing pump.

NOTE: Steps 9 and 10 apply to pump B. See FIG. 2. Use dropcloth or rags to protect Reactor and surrounding area from spills.

9. Disconnect fluid inlet (C) and outlet (D). Also disconnect steel outlet tube from heater inlet.
10. Push retaining spring (E) up. Push pin (F) out. Loosen star-shaped locknut (G) by hitting firmly with a non-sparking hammer. Unscrew pump.

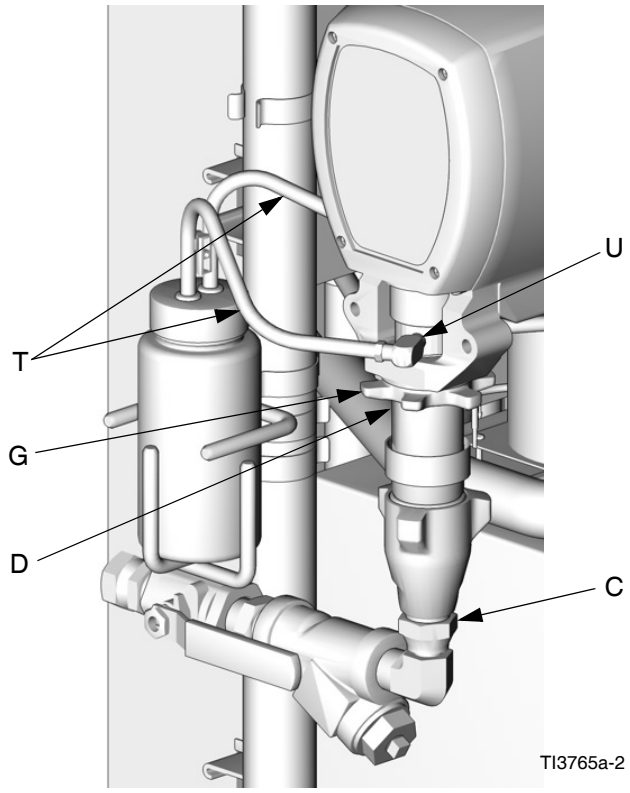


FIG. 1: Disconnect Pump A

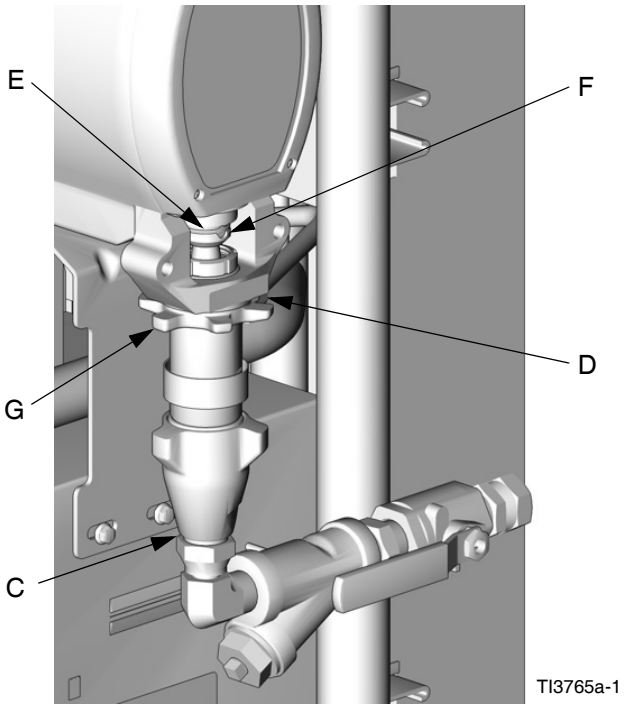
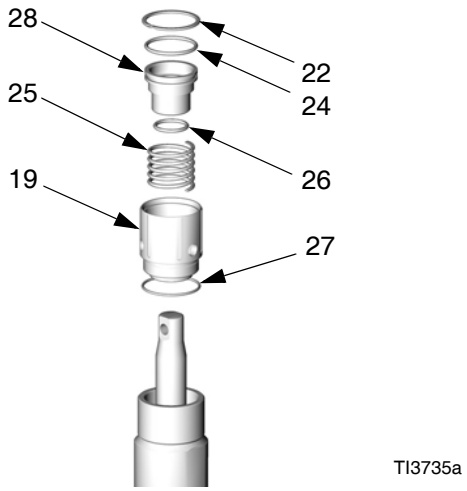


FIG. 2: Disconnect Pump B

11. Remove packing nut/wet-cup as follows:

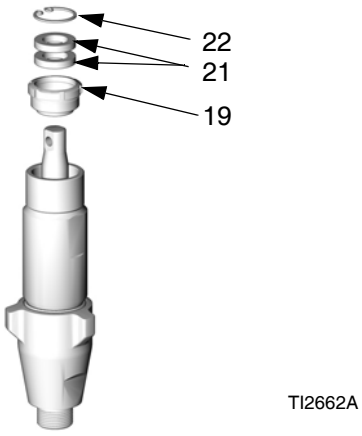
a. Component A (ISO) Pumps

- Remove packing nut/wet-cup assembly.
- Compress piston (28) into wet-cup (19), using a 1/2 in. (13 mm) x 2.5 in. (64 mm) bolt with washers and nut.
- Remove retaining ring (22).
- Remove bolt, washers, and nut.
- Remove piston (28), spring (25), and o-rings (24, 26, 27).

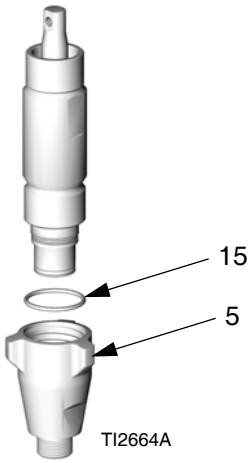


b. Component B (Resin) Pumps

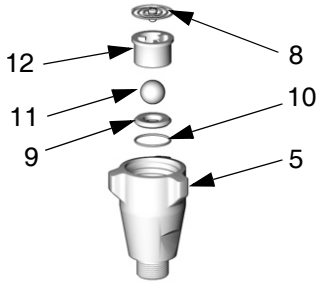
Unscrew packing nut (19). Remove retaining ring (22) and felt washers (21).



12. Loosen intake valve housing (5) with non-sparking hammer, then unscrew. Remove o-ring (15).

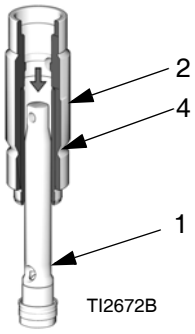


13. Disassemble intake valve. Be sure to remove o-ring (10).

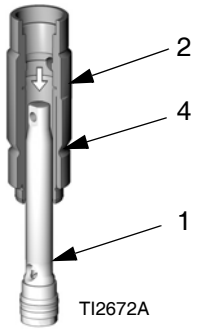


NOTE: Spring (8) is on Models 246832 and 245972 only.

14. Tap rod (1) with non-sparking hammer to drive it out of cylinder (2).



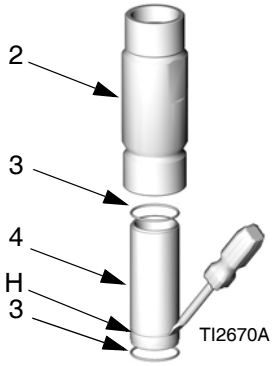
Typical configuration



246831, 262647, 245971, 262648, 24Y175, and 24Y174 only

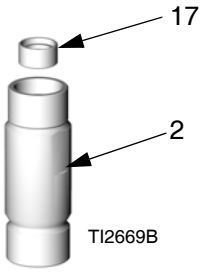
NOTE: Sleeve (4) may come out with rod.

15. Using screwdriver in groove (H), remove sleeve (4) from cylinder (2), or pull it off rod. Remove o-rings (3).

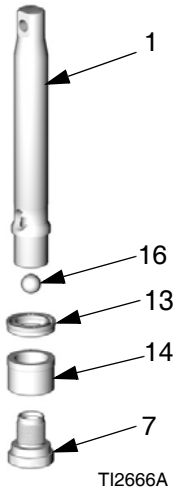


NOTE: Be sure top o-ring (3) comes out

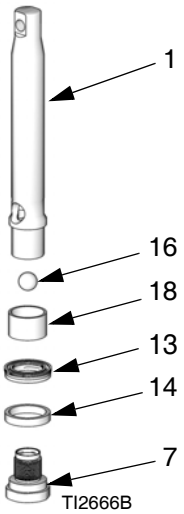
16. Remove bushing (17).



17. Unscrew piston (7) from rod (1). Remove ball (16), u-cup (13), and bushing (14).

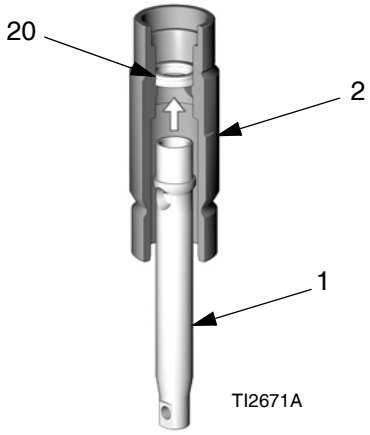


Typical configuration



246831, 262647, 245971, 262648, 24Y175, and 24Y174 only

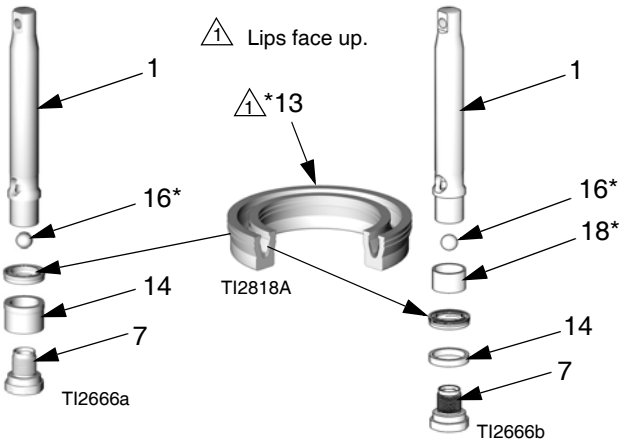
18. Insert piston end of rod (1) into cylinder (2) and push u-cup (20) out.



Reassembly

NOTE: Coat all non-Loctited parts with Graco 217374 ISO Pump Oil before reassembly, to ease future disassembly.

1. Install ball (16*) in rod (1). Center u-cup (13*) on rod (1). Lips of u-cup must face up. Use piston (7) to evenly push u-cup onto rod, then remove piston. Slide bushing (14*) onto rod (1). Wide end of bushing must face up, toward u-cup.



Typical configuration

246831, 262647, 245971, 262648, 24Y174, and 24Y175 only

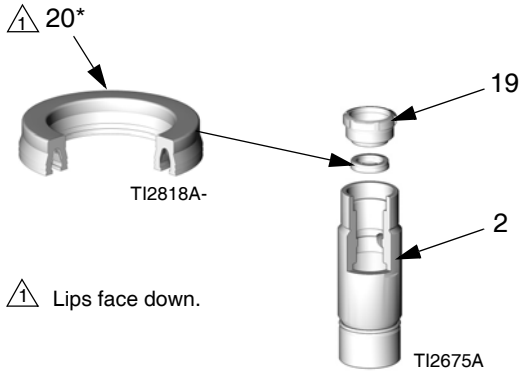
NOTE: Sealing patch on piston threads is good for four repackings. Use Loctite® on piston threads after four repackings; be sure none gets on ball.

2. Install piston (7). Be careful not to damage sealing edges of u-cup. Torque as specified below.

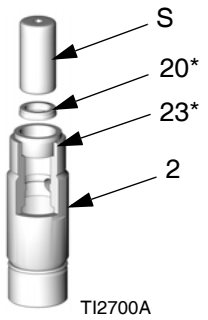
Model	Torque ft-lb (N•m)
246830 and 245970	24-30 (32-40)
246831, 245971, 262648, and 24Y174	47-53 (63-71)
246832 and 245972	95-105 (129-143)

3. Install throat u-cup as follows:

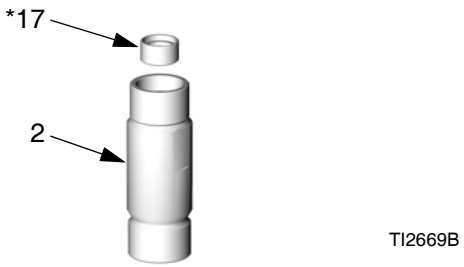
   a. **Models 246831, 262647, 246832, 245971, 262648, 245972, 24Y174, and 24Y175:** Grease u-cup (20*) and cylinder (2). Place u-cup in cylinder with lips facing down. Be careful not to damage sealing edges of u-cup. Install packing nut (19) to properly insert and align u-cup, then remove packing nut.



   b. **Models 246830 and 245970:** Grease u-cup (20*) and cylinder (2). Place seal installation tool (23*) in cylinder. Place u-cup in tool with lips facing down. Be careful not to damage sealing edges of u-cup. Press u-cup in place with 7/8 in. deep-well socket (S). Remove socket and tool.



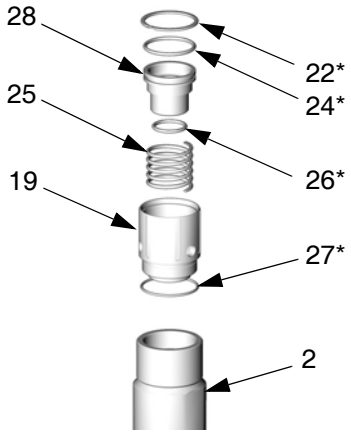
4. Insert bushing (17*). Press bushing in place to seat u-cup.



5. Assemble packing nut as follows:

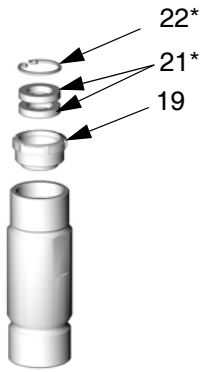
   a. Component A (ISO) Pump:

   - Install spring (25) in wet-cup (19).
   - Install o-rings (24*, 26*) on piston (28) and insert piston in wet-cup.
   - Compress piston (28) into wet-cup, using a 1/2 in. (13 mm) x 2.5 in. (64 mm) bolt with washers and nut.
   - Install retaining ring (22*) in groove.
   - Remove bolt, washers, and nut.
   - Install o-ring (27*) on wet-cup.
   - Install packing nut/wet-cup assembly handtight. Screw assembly all the way down, so external o-ring (27) seats on top of cylinder (2).



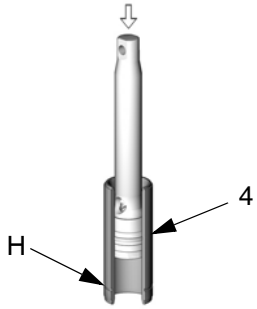
   b. Component B (Resin) Pump:

   - Install felt washers (21*) into packing nut (19).
   - Install retaining ring (22*).
   - Install packing nut handtight



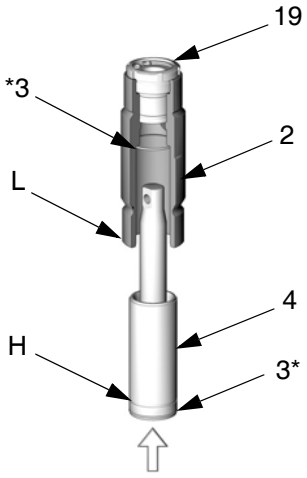
NOTE: Groove (H) in sleeve outer surface must be toward bottom.

6. Lubricate piston u-cup and sleeve top edge. Push piston assembly into top of sleeve (4). Drive in with non-sparking hammer.



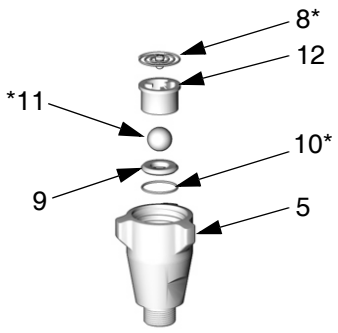
7. Lubricate top 1-2 in. (25-50 mm) of displacement rod (1) and outside of sleeve (4). Grease o-rings (3*) and place one in cylinder and other on bottom of sleeve.

8. Slide sleeve/rod assembly into bottom of cylinder (2). Drive in with hammer until top of groove (H) aligns with bottom of cylinder (L). Use plastic rod to drive displacement rod until 1/4-3/8 in. (6-10 mm) of its greatest diameter is visible above packing nut (19).



9. Reassemble intake valve with o-ring (10*), seat (9), and ball (11*). Install ball guide (12).

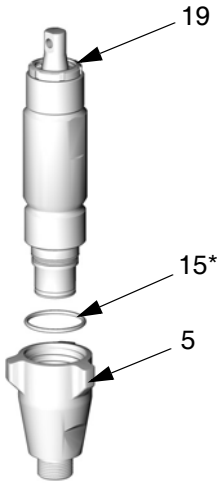
   Models 246832 and 245972 only: Install spring (8*) with screw at top.



TI2665A

NOTE: Seat may be flipped over and used on other side. Clean seat thoroughly. No scratches permitted on sealing edge.

10. Replace o-ring (15*). Install intake valve. Torque housing (5) as follows, or be sure intake valve is snug against cylinder.



TI2687A

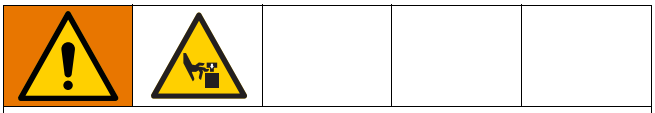
Model	Torque ft-lb (N•m)
246830 and 245970	65-75 (88-101)
246831, 262647, 245971, 262648, 24Y174, and 24Y175	75-85 (101-114)
246832 and 245972	185-215 (251-291)

11. Tighten packing nut/wet-cup.

NOTE: Do not overtighten packing nut/wet-cup. Throat u-cup (20) is not adjustable.

   a. Pump A: Wrap base of wet-cup (19) with a rag and tighten securely with channel locks.

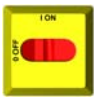
   b. Pump B: Pump B: Torque packing nut (19) to 130-150 in-lb (15-17 N•m).



Pump rod and connecting rod move during operation. Moving parts can cause serious injury such as pinching or amputation. Keep hands and fingers away from connecting rod during operation.

12. Reconnect power supply. Turn main power ON  .

13. Press  . Motor will run until pumps are at bottom of strokes, then shut off.

14. Turn main power OFF  . Disconnect power supply.

NOTE: Steps 15-18 apply to pump B. See FIG. 3. To reconnect pump A, go to step 19.

15. Ensure star-shaped locknut (G) is screwed on pump with flat side up. Screw pump into bearing housing (M) until pin holes align. Push pin (F) in. Pull retaining spring (E) down.

16. Continue screwing pump into housing until fluid outlet (D) is aligned with steel tube and top threads are +/- 1/16 in. (2 mm) of bearing face (N).

17. Tighten star-shaped locknut (G) by hitting firmly with a non-sparking hammer.

18. Reconnect fluid inlet (C) and outlet (D).

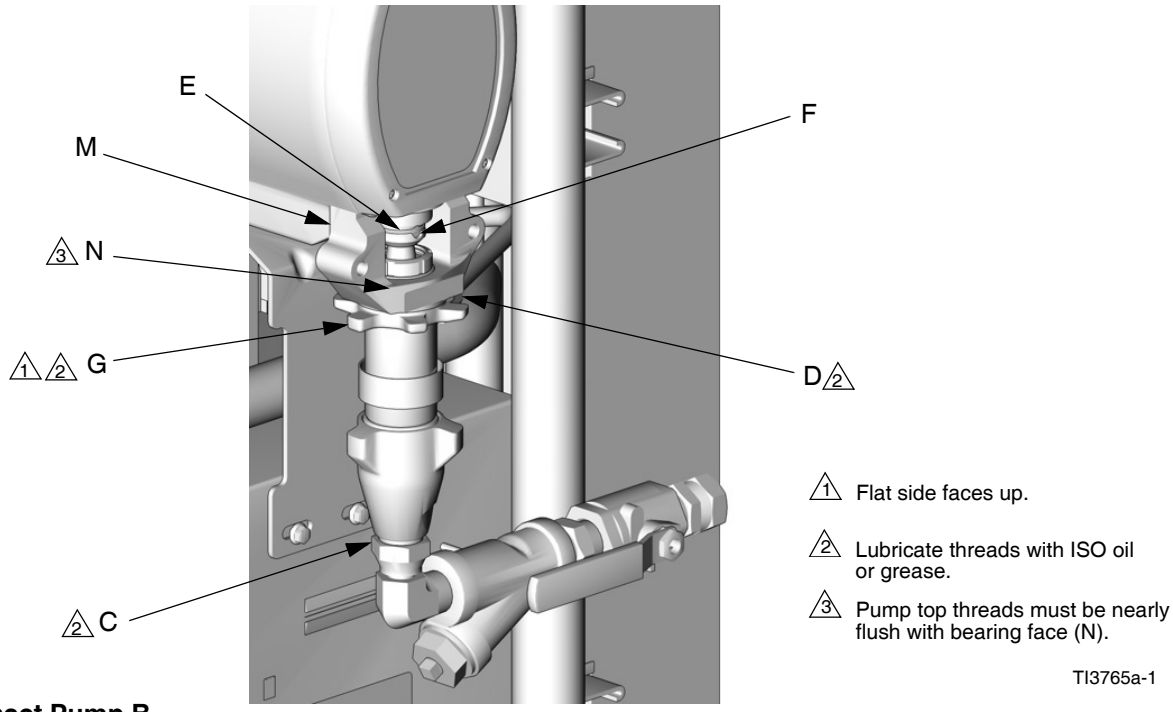


FIG. 3: Reconnect Pump B

NOTE: Steps 19-32 apply to pump A only. See FIG. 4.

19. Screw pump into bearing housing (M) until top threads are level with bearing face (N). Rotate pump to align pump outlet fitting to outlet tube.

20. Wet-cup has four 1/8 npt ports. Two will be inaccessible when pump is installed. Note or mark these ports. Remove pump. Apply thread sealant and install plugs in the two ports. Torque plugs to 10-15 ft-lb (14-20 N•m). ***Do not overtighten.***

21. Ensure star-shaped locknut (G) is screwed on pump with flat side up. Carefully twist and extend the rod (1) 2 in. (51 mm) above the wet-cup assembly.

22. Start threading pump into bearing housing (M). Place finger guard (P) over rod when it is accessible through window of bearing housing. When pin holes align, insert pin. Pull retaining spring down.

NOTE: Finger guard is not used on Model E-30.

23. Seat finger guard (P) on wet-cup (19). Continue threading pump into bearing housing (M) until top threads are +/- 1/16 in. (2 mm) of bearing face (N).

24. Apply thread sealant and screw barbed fitting into motor side of wet-cup. Torque to 10-15 ft-lb (14-20 N•m). ***Do not overtighten.***

25. Apply thread sealant and screw elbow (U) into remaining wet-cup port. Torque to 10-15 ft-lb (14-20 N•m). ***Do not overtighten.***

26. Apply thread sealant and screw barbed fitting into elbow (U). Torque to 10-15 ft-lb (14-20 N•m). ***Do not overtighten.***

27. Connect component A outlet tube loosely at pump and at heater. Line up tube, then tighten fittings securely.

28. Tighten star-shaped locknut (G) by hitting firmly with a non-sparking hammer.

29. Apply thread sealant and screw barbed fitting into elbow (U). Torque to 10-15 ft-lb (14-20 N•m). ***Do not overtighten.***

30. Apply thin film of TSL to barbed fittings. Using two hands, support tubes (T) while pushing straight onto barbed fittings. ***Do not let tubes kink or buckle.*** Secure each tube with a wire tie between two barbs.

31. Reconnect fluid inlet (C) and outlet (D).

32. Purge air and prime the system. See Reactor operation manual.

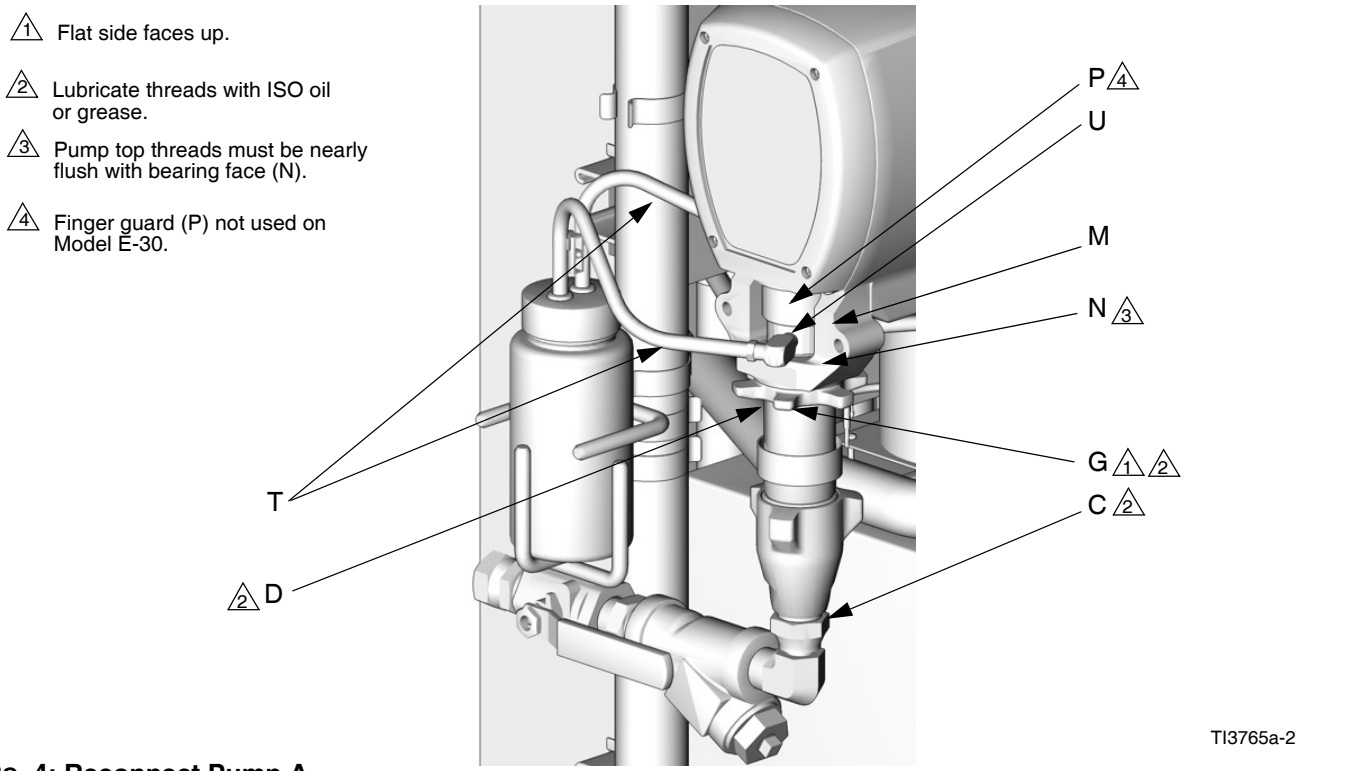


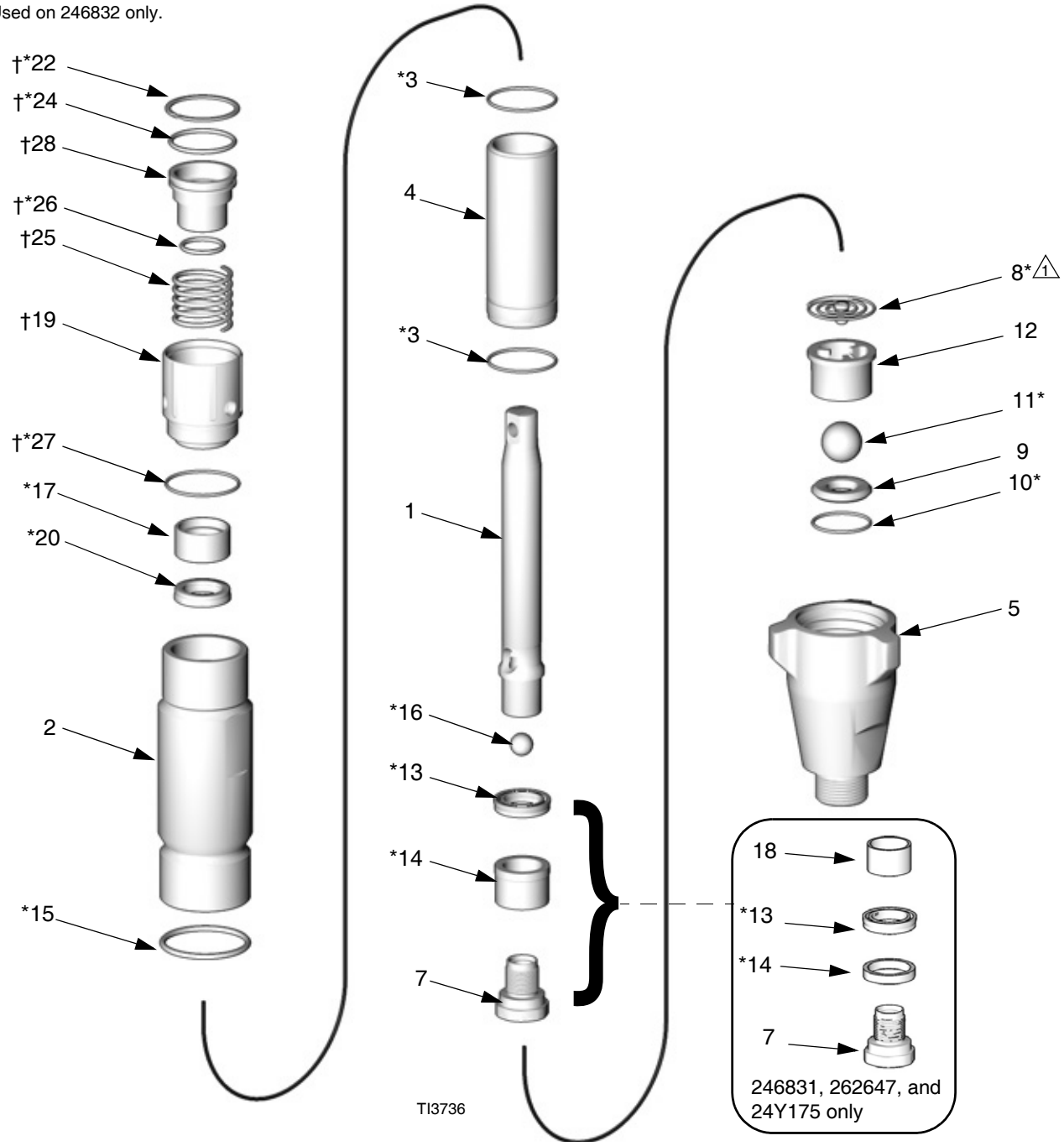
FIG. 4: Reconnect Pump A

Parts

Component A (ISO) Pumps, with wet-cup flush feature

Part 246830, E-20 and E-XP1; includes items 1-7, 9-28
Part 246831, E-XP2; includes items 1-7, 9-22, 24-28
Part 262647, A-25; includes items 1-7, 9-22, 24-28
Part 246832, E-30; includes items 1-17, 19-22, 24-28 (shown)
Part 24Y175, A-XP1; includes 1-7, 9-22, 24-28

⚠1 Used on 246832 only.



Part 246830, E-20 and E-XP1; includes items 1-7, 9-28
Part 246831, E-XP2 and A-25; includes items 1-7, 9-22, 24-28
Part 246832, E-30; includes items 1-22, 24-28 (shown)
Part 24Y175, A-XP1; includes item 1-7, 9-22, 24-28

Ref.	Part	Description	Qty.
1	240518	ROD, displacement; sst (246830)	1
	240517	ROD, displacement; sst (246831, 262647)	1
	246689	ROD, displacement; sst (246832)	1
	15H110	ROD, displacement; sst (24Y175)	
2	243346	CYLINDER, pump (246830)	1
	243347	CYLINDER, pump (246831, 262647)	1
	245413	CYLINDER, pump (246832)	1
	17F955	CYLINDER, pump (24Y175)	
3*	108526	O-RING; PTFE (246830, 24Y175)	2
	107098	O-RING; PTFE (246831, 262647)	2
	108822	O-RING; PTFE (246832)	2
4	248209	SLEEVE, cylinder; sst (246830)	1
	248210	SLEEVE, cylinder; sst (246831, 262647)	1
	248979	SLEEVE, cylinder; sst (246832)	1
	15H112	SLEEVE, cylinder; sst (24Y175)	
5	195892	HOUSING, valve, intake (246830, 24Y175)	1
	195894	HOUSING, valve, intake (246831, 262647)	1
	198219	HOUSING, valve, intake (246832)	1
7	239932	VALVE, piston (246830)	1
	24U993	KIT, valve, piston (246831, 262647)	1
	240580	VALVE, piston (246832)	1
	24V125	VALVE, piston (24Y175)	
8*‡	249770	SPRING, intake ball (246832 only)	1
9	239922	SEAT, intake; carbide (246830, 24Y175); includes items 10 and 11	1
	244199	SEAT, intake; carbide (246831, 262647); includes items 10 and 11	1
	240918	SEAT, intake; carbide (246832); includes items 10 and 11	1
10*	107079	O-RING; PTFE (246830, 24Y175)	1
	108526	O-RING; PTFE (246831, 262647)	1
	107098	O-RING; PTFE (246832)	1
11*	105445	BALL, intake; sst; 0.5 in. (13 mm) (246830, 24Y175)	1
	102972	BALL, intake; sst; 0.875 in. (22 mm) (246831, 262647)	1
	107167	BALL, intake; sst; 1 in. (25 mm) (246832)	1
12	192624	GUIDE, ball (246830, 24Y175)	1
	193027	GUIDE, ball (246831, 262647)	1
	193391	GUIDE, ball (246832)	1
13*	117450	SEAL, u-cup, piston; UHMWPE (246830, 24Y175)	1
	117449	SEAL, u-cup, piston; UHMWPE (246831, 262647)	1
	117448	SEAL, u-cup, piston; UHMWPE (246832)	1
14*	15B078	BUSHING, piston (246830)	1
	15J197	BEARING, lower (246831, 262647)	1
	15B079	BUSHING, piston (246832)	1
	17F958	BEARING, lower (24Y175)	
15*	156593	O-RING; BUNA-N (246830, 24Y175)	1
	156633	O-RING; BUNA-N (246831, 262647)	1
	160325	O-RING; BUNA-N (246832)	1
16*	105444	BALL, piston; sst; 0.3125 in. (8 mm) (246830, 24Y175)	1
	101947	BALL, piston; sst; 0.375 in. (10 mm) (246831, 262647)	1
	107203	BALL, piston; sst; 0.5625 in. (14 mm) (246832)	1
17*	15B075	BUSHING, rod (246830, 24Y175)	1
	15B074	BUSHING, rod (246831, 262647)	1
	15B076	BUSHING, rod (246832)	1
18	15J196	BUSHING, pump (246831, 262647 only)	1
	17F957	BUSHING, pump (24Y175)	
19†	15C569	NUT, packing (246830, 24Y175)	1
	15C571	NUT, packing (246831, 262647)	1
	15C573	NUT, packing (246832)	1
20*	117447	SEAL, u-cup, throat; UHMWPE (246830, 24Y175)	1
	117446	SEAL, u-cup, throat; UHMWPE (246831, 262647)	1
	117448	SEAL, u-cup, throat; UHMWPE (246832)	1
22*†	118377	RING, retaining (246830, 24Y175)	1
	118378	RING, retaining (246831, 262647)	1
	118379	RING, retaining (246832)	1
23*	15B661	TOOL, installation, seal (246830 only); not shown; part of Repair Kit 246420	1
24*†	118381	O-RING; fluoroelastomer (246830, 24Y175)	1
	107563	O-RING; fluoroelastomer (246831, 262647)	1
	118403	O-RING; fluoroelastomer (246832)	1
25†	118374	SPRING (246830, 24Y175)	1
	118375	SPRING (246831, 262647)	1
	118376	SPRING (246832)	1
26*†	118380	O-RING; fluoroelastomer (246830, 24Y175)	1
	110955	O-RING; fluoroelastomer (246831, 262647)	1
	C20111	O-RING; fluoroelastomer (246832)	1

Ref.	Part	Description	Qty.
27*†	107563	O-RING; fluoroelastomer (246830, 24Y175)	1
	103414	O-RING; fluoroelastomer (246831, 262647)	1
	111178	O-RING; fluoroelastomer (246832)	1
28†	15C570	PISTON, wet-cup, ISO (246830, 24Y175)	1
	15C572	PISTON, wet-cup, ISO (246831, 262647)	1
	15C574	PISTON, wet-cup, ISO (246832)	1

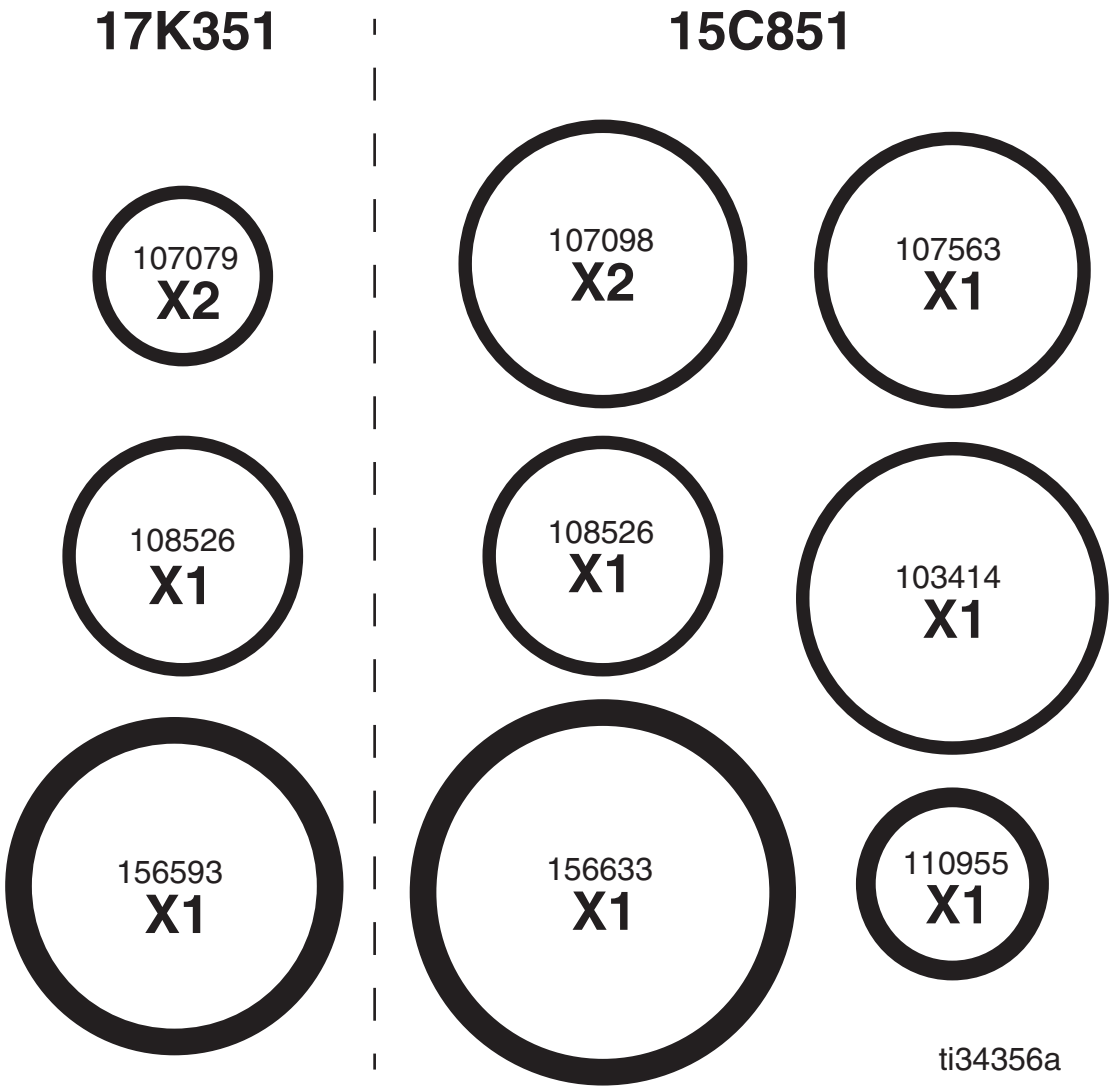
‡ This part is also available in the Intake Spring Kit 249770, which may be purchased separately.

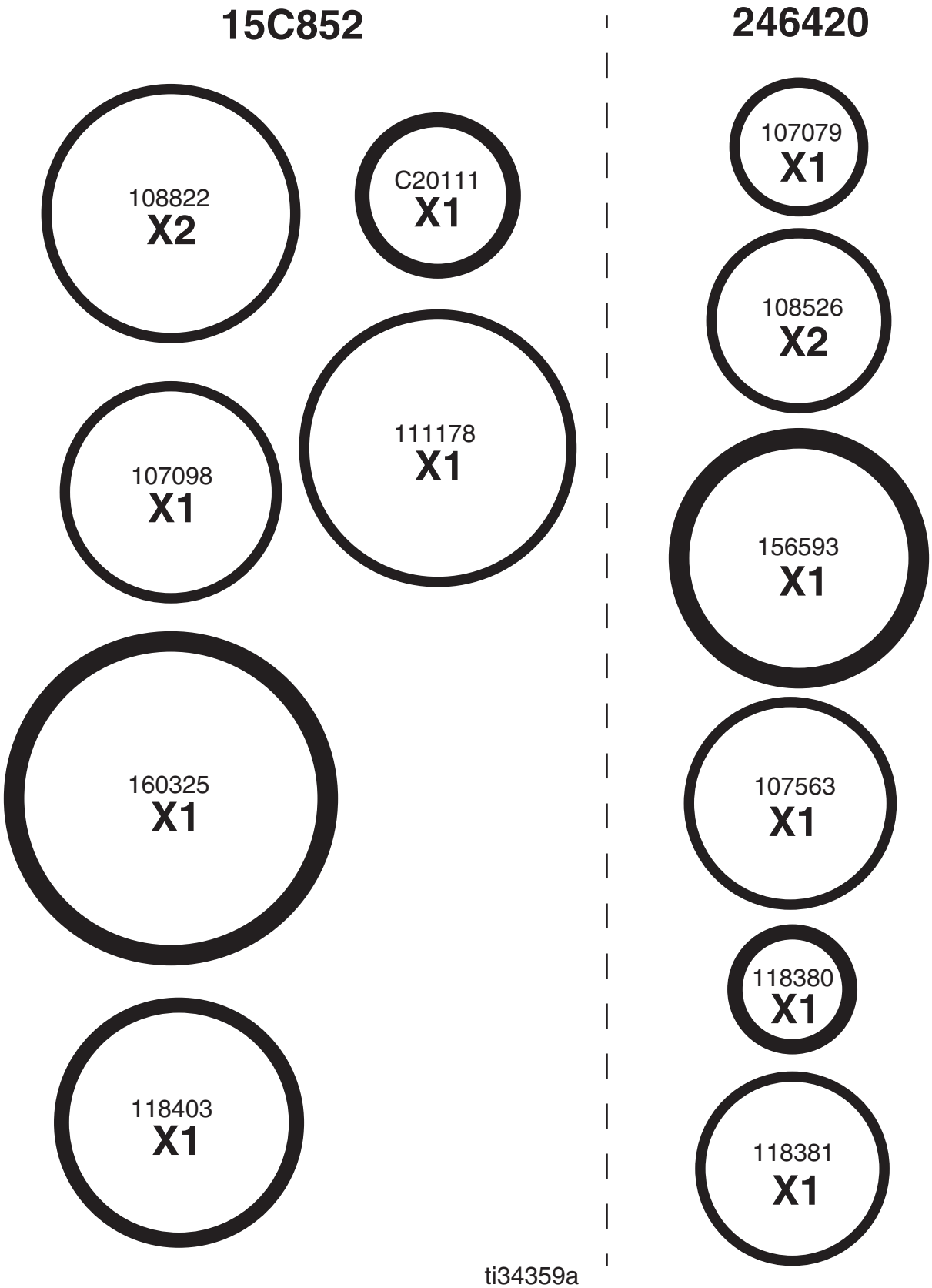
* These parts are included in the Pump Repair Kits, which may be purchased separately. Some parts in the kit may not be used in your pump.

† These parts are included in the Wet-Cup Kits. Order the correct kit for your pump from the table below. See page 30 for information on 246928 Reservoir Kit.

Pump Part No.	Pump Repair Kit	Wet-Cup Kit
246830	246420	246962
246831, 262647	15C851	246963
246832	15C852	246964
24Y175	17K351	246962

Component A Pump Repair Kits

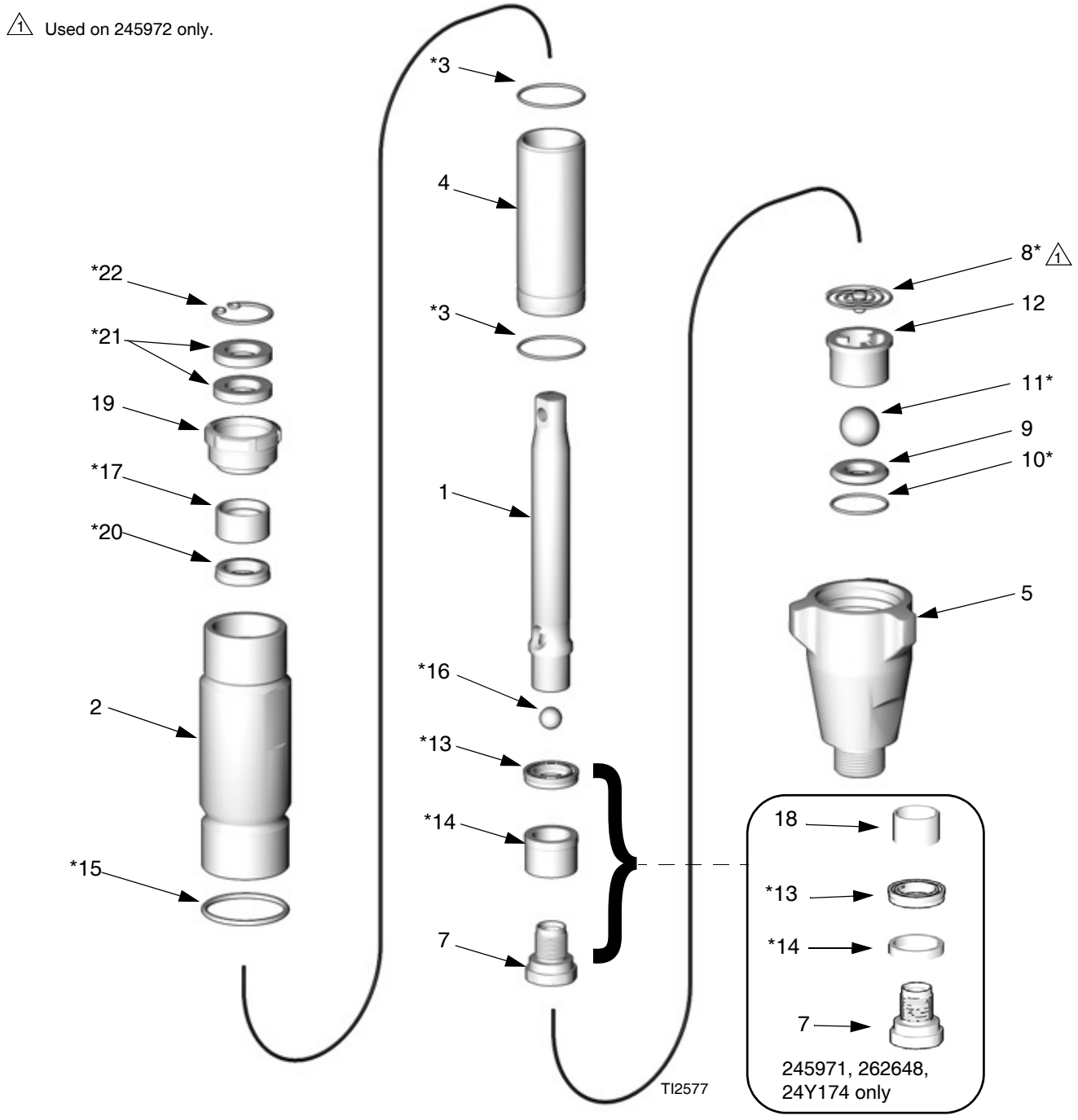



15C852
108822
X2
C20111
X1
111178
X1
107098
X1
160325
X1
118403
X1
246420
107079
X1
108526
X2
156593
X1
107563
X1
118380
X1
118381
X1
ti34359a

Component B (Resin) Pumps

Part 245970, E-20 and E-XP1; includes items 1-7, 9-23
Part 245971, E-XP2; includes items 1-7, 9-22
Part 262648, A-25; includes items 1-7, 9-22
Part 245972, E-30; includes items 1-22 (shown)
Part 24Y174, A-XP1; includes items 1-7, 9-22

NOTE: These pumps were also used on Component A (ISO) side of Reactors built before May 2003.



Part 245970, E-20 and E-XP1; includes items 1-7, 9-23
Part 245971, E-XP2; includes items 1-7, 9-22
Part 262648, A-25; includes items 1-7, 9-22
Part 245972, E-30; includes items 1-22 (shown)
Part 24Y174, A-XP1; includes items 1-7, 9-22

Ref.	Part	Description	Qty.
1	240518	ROD, displacement; sst (245970)	1
	240517	ROD, displacement; sst (245971, 262648)	1
	246689	ROD, displacement; sst (245972)	1
	15H110	ROD, displacement; sst (24Y174)	
2	243346	CYLINDER, pump (245970)	1
	243347	CYLINDER, pump (245971, 262648)	1
	245413	CYLINDER, pump (245972)	1
	17F955	CYLINDER, pump (24Y174)	
3*	108526	O-RING; PTFE (245970, 24Y174)	2
	107098	O-RING; PTFE (245971, 262648)	2
	108822	O-RING; PTFE (245972)	2
4	248209	SLEEVE, cylinder; sst (245970)	1
	248210	SLEEVE, cylinder; sst (245971, 262648)	1
	248979	SLEEVE, cylinder; sst (245972)	1
	15H112	SLEEVE, cylinder; sst (24Y174)	
5	195892	HOUSING, valve, intake (245970, 24Y174)	1
	195894	HOUSING, valve, intake (245971, 262648)	1
	198219	HOUSING, valve, intake (245972)	1
7	239932	VALVE, piston (245970)	1
	24U993	KIT, valve, piston (245971, 262648)	1
	240580	VALVE, piston (245972)	1
	24V125	VALVE, piston (24Y174)	
8*‡	249770	SPRING, intake ball (245972 only)	1
9	239922	SEAT, intake; carbide (245970, 24Y174); includes items 10 and 11	1
	244199	SEAT, intake; carbide (245971, 262648); includes items 10 and 11	1
	240918	SEAT, intake; carbide (245972); includes items 10 and 11	1
10*	107079	O-RING; PTFE (245970, 24Y174)	1
	108526	O-RING; PTFE (245971, 262648)	1
	107098	O-RING; PTFE (245972)	1
11*	105445	BALL, intake; sst; 0.5 in. (13 mm) (245970, 24Y174)	1
	102972	BALL, intake; sst; 0.875 in. (22 mm) (245971, 262648)	1
	107167	BALL, intake; sst; 1 in. (25 mm) (245972)	1
12	192624	GUIDE, ball (245970, 24Y174)	1
	193027	GUIDE, ball (245971, 262648)	1
	193391	GUIDE, ball (245972)	1
13*	117450	SEAL, u-cup, piston; UHMWPE (245970, 24Y174)	1
	117449	SEAL, u-cup, piston; UHMWPE (245971, 262648)	1
	117448	SEAL, u-cup, piston; UHMWPE (245972)	1
14*	15B078	BUSHING, piston (245970)	1
	15J197	BEARING, lower (245971, 262648)	1
	15B079	BUSHING, piston (245972)	1
	17F958	BEARING, lower (24Y174)	
15*	156593	O-RING; BUNA-N (245970, 24Y174)	1
	156633	O-RING; BUNA-N (245971, 262648)	1
	160325	O-RING; BUNA-N (245972)	1
16*	105444	BALL, piston; sst; 0.3125 in. (8 mm) (245970, 24Y174)	1
	101947	BALL, piston; sst; 0.375 in. (10 mm) (245971, 262648)	1
	107203	BALL, piston; sst; 0.5625 in. (14 mm) (245972)	1
17*	15B075	BUSHING, rod (245970, 24Y174)	1
	15B074	BUSHING, rod (245971, 262648)	1
	15B076	BUSHING, rod (245972)	1
18	15J196	BUSHING, pump (245971, 262648 only)	
	17F957	BUSHING, pump (24Y174)	
19†	193046	NUT, packing (245970, 24Y174)	1
	193032	NUT, packing (245971, 262648)	1
	189589	NUT, packing (245972)	1
20*	117447	SEAL, u-cup, throat; UHMWPE (245970, 24Y174)	1
	117446	SEAL, u-cup, throat; UHMWPE (245971, 262648)	1
	117448	SEAL, u-cup, throat; UHMWPE (245972)	1
21*	117597	WASHER, felt (245970, 24Y174)	2
	117599	WASHER, felt (245971, 262648)	2
	117600	WASHER, felt (245972)	2
22*	551528	RING, retaining (245970, 24Y174)	1
	117718	RING, retaining (245971, 262648)	1
	117719	RING, retaining (245972)	1
23*	15B661	TOOL, installation, seal (245970 only); not shown; part of Repair Kit 246420	1

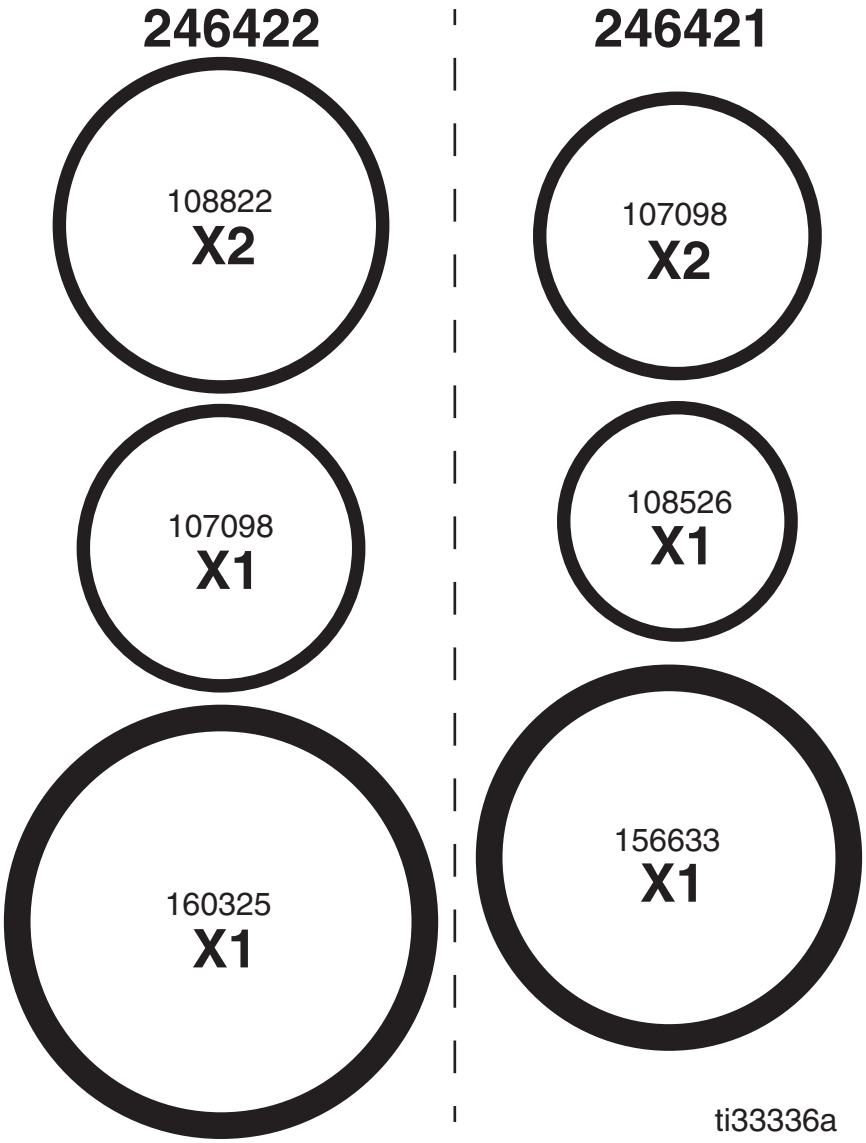
‡ This part is also available in the Intake Spring Kit 249770, which may be purchased separately.

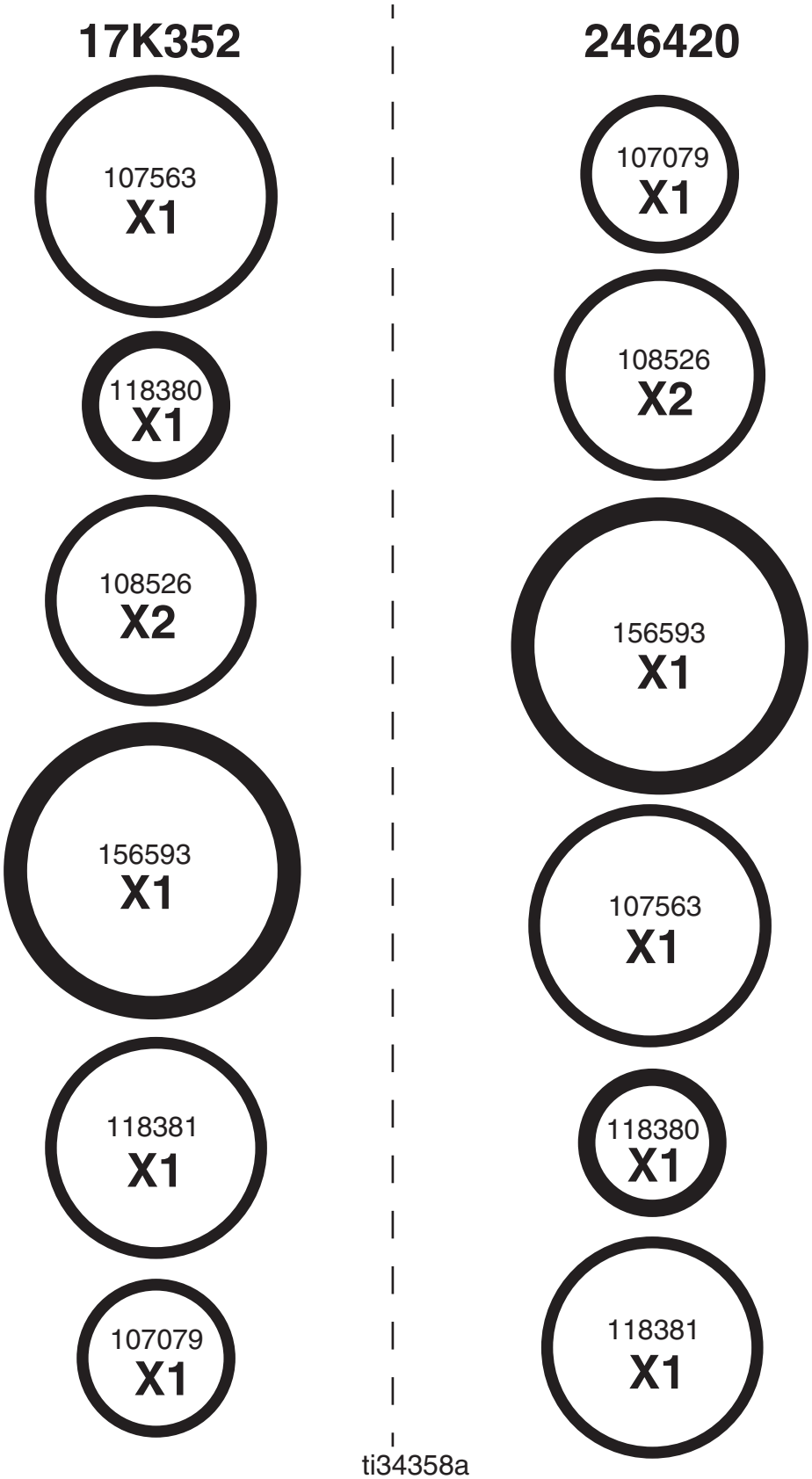
† Wet-Cup Conversion Kits may be purchased separately to convert pumps 245970, 245971, 262648, and 245972. See page 30 for further information.

* These parts are also included in the Pump Repair Kits, which may be purchased separately. Some parts in the kit may not be used in your pump. Order the correct kit for your pump from the table below.

Pump Part No.	Repair Kit
245970	246420
245971, 262648	246421
245972	246422
24Y174	17K352

Component B Pump Repair Kits




17K352
107563
X1
118380
X1
108526
X2
156593
X1
118381
X1
107079
X1
246420
107079
X1
108526
X2
156593
X1
107563
X1
118380
X1
118381
X1
ti34358a

Accessories

Wet-Cup Conversion Kits

These kits convert 245970, 245971, 262648, or 245972 pumps to the wet-cup flush design. Refer to the following table to select the correct kit for your pump. Kits include instruction manual 309911.

Pump Part No.	Wet-Cup Conversion Kit	
245970, 24Y174	**248061,** includes:	
	246962 Wet-Cup Kit (see page 24 for parts)	246928 Reservoir Kit (see below)
245971, 262648	**248062,** includes:	
	246963 Wet-Cup Kit (see page 24 for parts)	246928 Reservoir Kit (see below)
245972	**248063,** includes:	
	246964 Wet-Cup Kit (see page 24 for parts)	246928 Reservoir Kit (see below)

246928 Reservoir Kit

This kit is included with Wet-Cup Conversion Kits 248061, 248062, and 248063 (see above).

This kit can also be used if replacing an earlier style ISO pump with the wet-cup flush design. Order this kit separately, and order the correct pump for your Reactor from page 22.

Kit includes reservoir, tubing, mounting hardware, and fittings to supply TSL to flush wet-cup. Includes instruction manual 309911.

Throat Seal Liquid

Use in reservoir for piston style wet-cups on component A pumps, or to fill wet-cup of component B pumps.

Part No.	Quantity
206995	1 qt (1 liter)
206996	1 gal. (3.8 liters)

217374 ISO Pump Oil

Use in wet-cups of non-piston style component A pumps (built before May 2003), and as thread lubricant when rebuilding pumps.

Technical Data

Category	Data
Maximum working pressure	3500 psi (24.5 MPa, 245 bar)
Effective area of displacement	*246830, 245970, 24Y174, and 24Y175:* 0.396 in.^{2} (2.55 cm^2) *246831, 262647, 245971, and 262648:* 0.552 in.^{2} (3.56 cm^2) *246832 and 245972:* 0.743 in.^{2} (4.79 cm^2)
Fluid inlet size	*246830, 246831, 262647, 245970, 245971, 262648, 24Y174, and 24Y175:* 3/4 npt(m) *246832 and 245972:* 1 npsm(m)
Fluid outlet size	*246830, 245970, 24Y174, and 24Y175:* 1/4 npt(f) *246831, 262647, 246832, 245971, 262648, and 245972:* 3/8 npt(f)
Wetted parts	stainless steel, PTFE, zinc-plated carbon steel, acetal, tungsten carbide, chrome plating, ultra-high molecular weight polyethylene

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Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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For patent information, see www.graco.com/patents.

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Phone: 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

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Original instructions. This manual contains English. MM 309577
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