

Replacement Kits for Fine Finish Sprayers

332133A
EN



IMPORTANT SAFETY INSTRUCTIONS

For detailed sprayer information and warnings, see the Operation manual included with your sprayer.

Includes:

Clamshell Replacement Kits: 16U240, 16U241, 16U242

Switch Replacement Kits: 16U238

Motor/Control Board Replacement Kits: 16U234

Drive Housing Replacement Kits: 16U239




Reciprocator Replacement Kits: 16U236

Pump Assembly Replacement Kits: 16U235

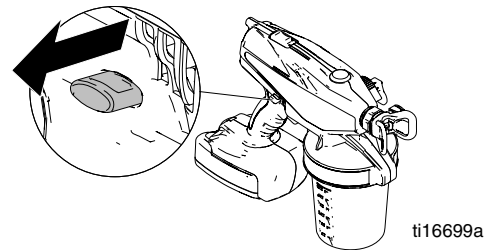
Pump Housing Replacement Kits: 16U237

Pressure Relief Procedure

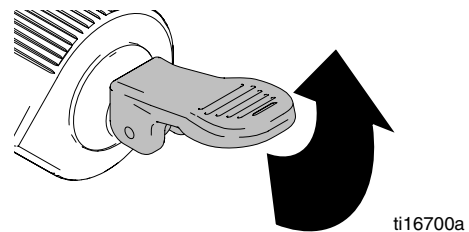
Follow this **Pressure Relief Procedure** whenever you stop spraying and before cleaning, checking, servicing, or transporting equipment.

			
<p>Do not operate or spray near children. Do not aim the sprayer at, or spray any person or animal. Keep hands and other body parts away from the front of the sprayer. For example, do not try to stop the paint flow with any part of the body.</p>			
<p>This sprayer builds up an internal pressure of 1,700 psi during use. Follow this Pressure Relief Procedure whenever you stop spraying and before cleaning, checking, servicing, or transporting equipment to prevent serious injury.</p>			

1. Engage trigger lock.



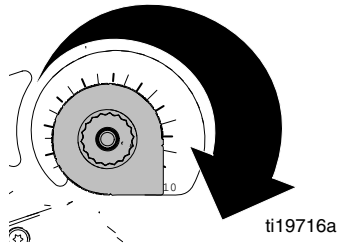
2. Put prime/relief valve UP to release pressure.



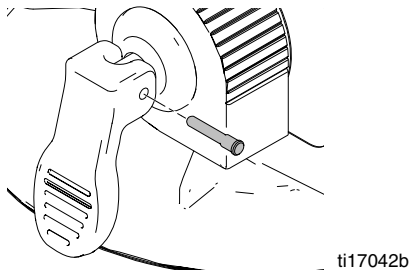
Clamshell Procedures

Clamshell Disassembly

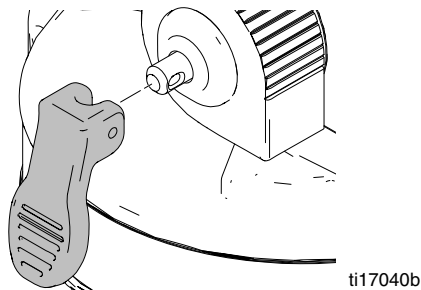
1. Perform **Pressure Relief Procedure** (see page 1).
2. Remove battery, cup, and suction tube.
3. Remove, Made in USA label, and access plug.
4. Remove prime valve assembly.
 - a. Rotate pressure control knob fully clockwise.



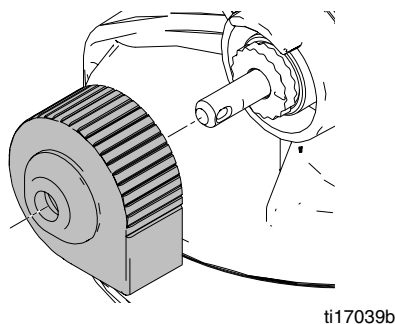
- b. Remove pin from valve handle.



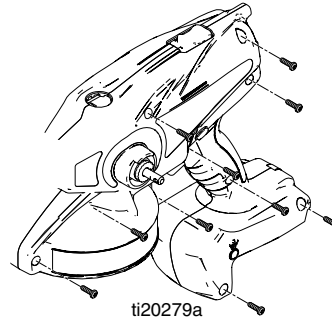
- c. Remove valve handle while in fully clockwise position.



- d. Remove pressure control knob.

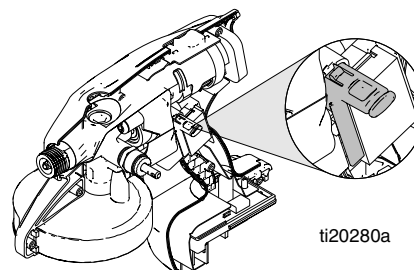


5. Use T15 torx driver to remove ten screws from sprayer enclosure. Remove left half of enclosure by separating rear of enclosure first. **NOTE:** Take a picture or make a mental note of how everything is positioned inside the sprayer.

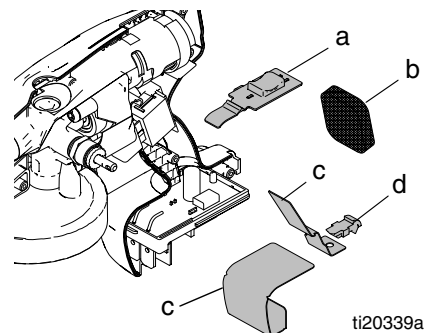


NOTE: If replacing power switch only, stop here and follow instructions on page 7.

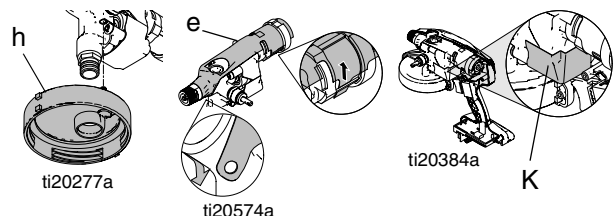
6. Remove trigger lock from left half of enclosure.



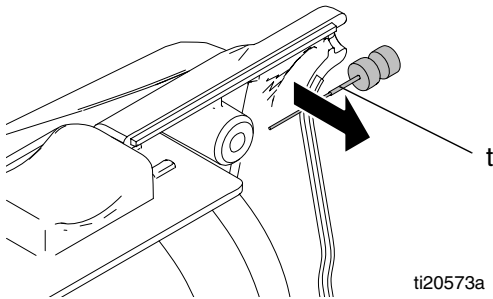
7. Remove slide switch (a), foam pad (b), two static shields (c) in handle of sprayer, and battery indicator light (d).



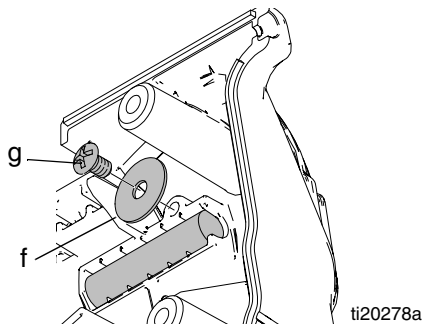
8. Remove material cup mount (h) and drive housing shield (k). Partially lift control assembly out of right side of enclosure and remove top shield (e).



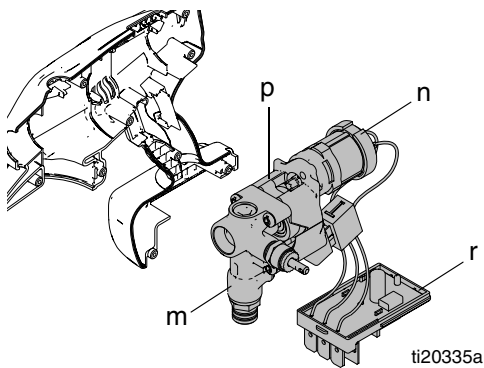
9. Remove static wick (t).



10. Lift pump motor, drive, and control assembly out of right half of enclosure and set aside. Then remove reed switch screw (g) and washer (f).



11. Remove remaining parts of pump (m), motor (n), drive (p), and control assembly (r) from right half of enclosure.



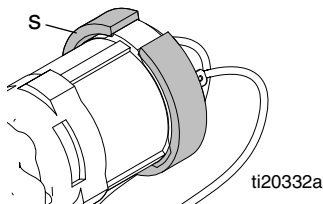
12. Proceed to the appropriate page for the replacement kit you are using:

Clamshell Replacement	Page 2-6
Switch Replacement	Page 7
Motor/Control Board or Drive Housing Replacement	Page 8
Reciprocator Replacement	Page 9
Pump Assembly Replacement	Page 10
Pump Housing Replacement	Page 11

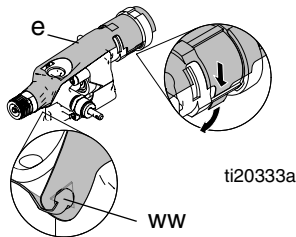
Clamshell Assembly

<p>This sprayer can spray flammable materials or static producing oil-based materials. To help prevent fire and explosion when using sprayer after repair, the static shields and static wick must be undamaged and installed properly before sprayer is put into operation.</p>			

1. Place right half of enclosure on a flat surface.
2. Install isolator strip (s) included in kit around motor. If strip is not torn or distorted, do not replace.

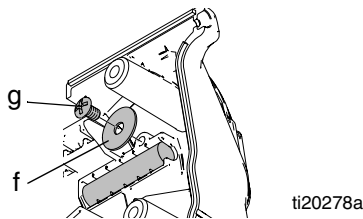


3. Install top static shield (e).

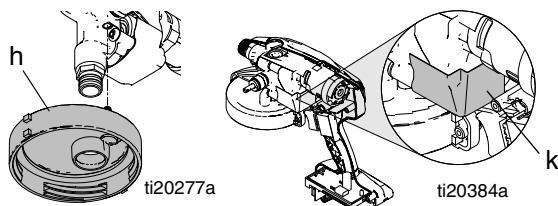


NOTE: Make sure front connector of shield (ww) is tucked under itself and not sticking out on the top. If sticking out, connector could interfere with clamshell seam during reassembly.

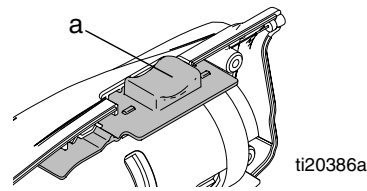
4. Assemble reed switch washer (f) and screw (g). Tighten screw.



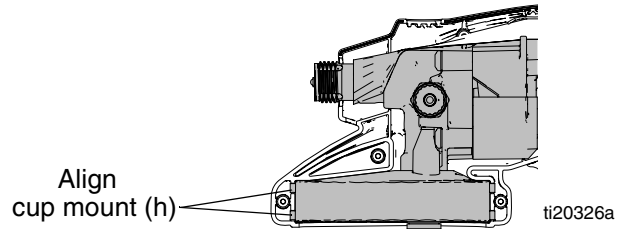
5. Install material cup mount (h) and drive housing static shield (k).



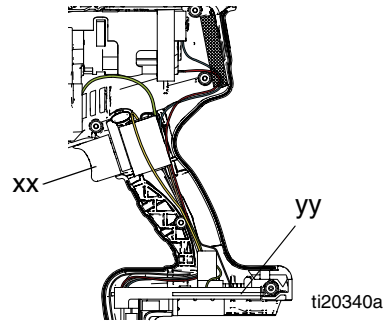
6. Install slide switch (a).



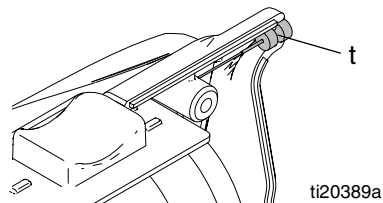
7. Carefully place pump with cup mount (h), motor, drive, and control assembly into right side of enclosure and align as shown.



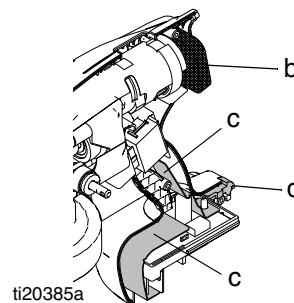
8. Align switch (xx) in enclosure, install control board (yy), and route wires so they will not get pinched by clamshell halves during reassembly.



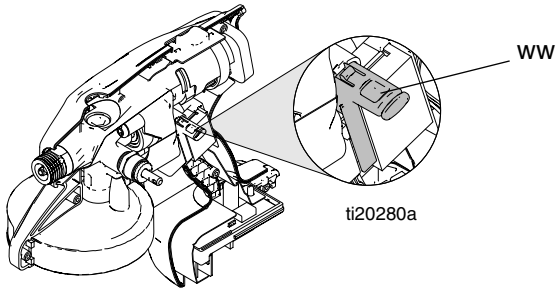
9. Route static wick (t) as shown below. **NOTE:** Make sure wires and static wick will not be pinched when enclosure halves are put together.



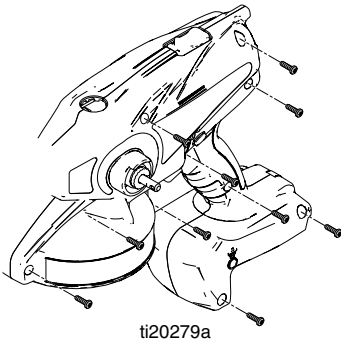
10. Install foam pad (b), two static shields (c) in handle of sprayer, and battery indicator light (d).



11. Install trigger lock (ww) as shown below (there will be a clicking sound when the lock is fully engaged).



12. Carefully assemble both enclosure halves.
 13. Install ten screws into sprayer and use T15 torx driver to tighten. Torque to 8-10 in-lb.



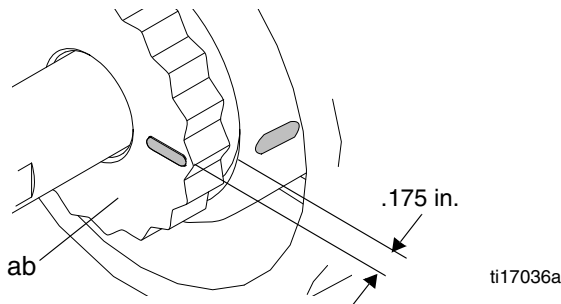
14. Assemble prime valve assembly:

- a. Use the pressure control knob as a tool to rotate retainer fully clockwise (there should be no gap between retainer teeth and metal valve housing).

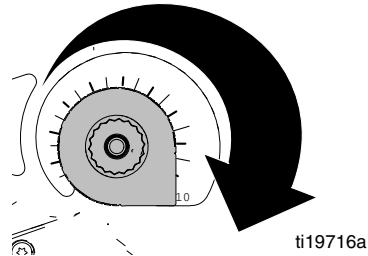
NOTE: You may occasionally have to remove, rotate, and reposition pressure control knob due to stop feature molded into back of knob.

- b. Rotate retainer (ab) backwards (counter-clockwise) until the first instance that the line and mark are aligned.

- c. The valve retainer should now protrude approximately .175 in. from metal valve housing. Your prime/spray valve is now calibrated.

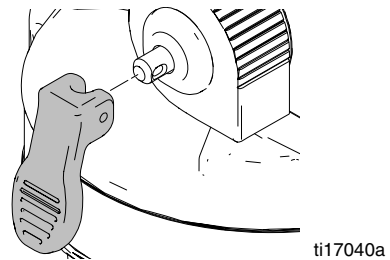


- d. Position pressure control knob in fully clockwise position and press firmly onto retainer.

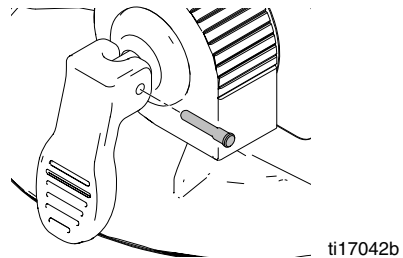


NOTE: You may have to rotate pressure control knob slightly counter-clockwise to fully engage pressure control knob with retainer.

- e. Install valve handle onto stem.






- f. Insert pin into valve handle. Use pliers to press pin into hole.



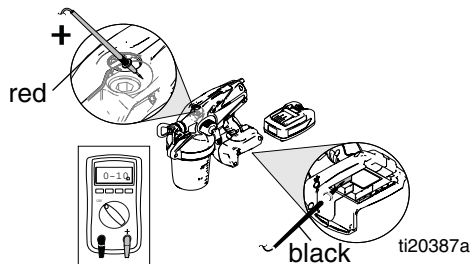
NOTE: If pin does not assemble, repeat steps 14d-14f to ensure pressure control knob is fully engaged with retainer.

IMPORTANT! VERIFY GROUNDING CONTINUITY

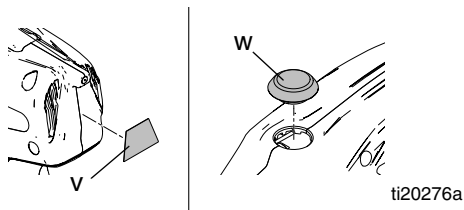
			
<p>This sprayer can spray flammable materials or static producing oil-based materials. To help prevent fire and explosion when using sprayer after repair, validation of ground continuity must be done before sprayer is put back into service.</p>			

NOTE: Due to residual voltage within the sprayer, the battery must be removed from the sprayer for at least 5 minutes before verifying ground continuity in order to get an accurate reading.

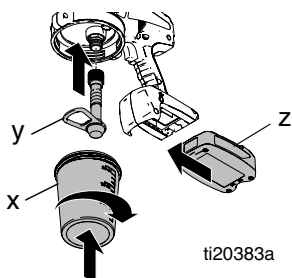
- Use a multimeter or continuity tester to check ground continuity of assembled sprayer. Turn checker on to measure resistance (Ω ohms). Place the positive (red) probe through the sprayer pump inlet valve hole onto the metal pump housing. Place the negative (black) probe onto the negative blade of the battery plug-in on sprayer. Verify the resistance registers/reads in the range of 0-10 (Ω ohms). If resistance fails to register within the above range, repeat **Clamshell Procedures** pages 2-6.



- Attach Made In USA label (v), add existing serial tag, and install access plug (w).



- Assemble cup (x), suction tube (y), and battery (z).



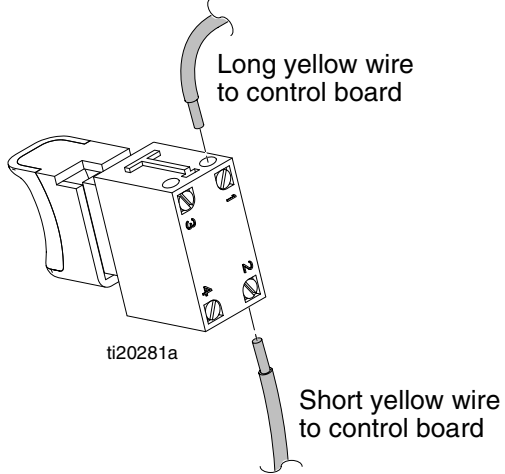
IMPORTANT! VERIFY PROPER OPERATION

After assembly is complete, perform the following procedure to verify proper operation. If sprayer fails one of the steps, repeat **Clamshell Procedures** pages 2-6.

- Verify proper trigger lock operation. Slide trigger lock into “locked” and “unlocked” position and pull trigger. Trigger should not move in locked position and sprayer should run in unlocked position.
- Visually inspect for gaps between enclosure halves. A gap larger than 1/32 in. could be caused by a pinched wire or static shields. If disassembly and inspection indicates that no wire has been pinched, carefully reassemble and repeat verification steps.
- Verify that battery freely slides onto sprayer terminals and is locked when fully engaged.
- Verify belt hook operation (if applicable) by sliding hook completely out and back inside.
- Fill material cup with water and verify unit primes and sprays. Follow setup instructions in sprayer operation manual for proper priming and spraying procedure.
- Rotate pressure control knob to make sure it can rotate fully in both directions.

Switch Replacement

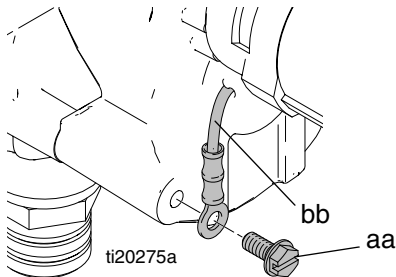
1. Perform steps 1 - 5 of **Clamshell Disassembly** procedure, page 2.
2. Carefully pull switch only out of right side of enclosure.
3. Loosen two screws on back of switch and disconnect two wires.
4. Replace switch and reattach two wires.
5. Tighten two screws.
6. Perform steps 12-17 of **Clamshell Assembly** procedure, page 5-6 and perform **Verify Proper Operation Procedure**, page 6.



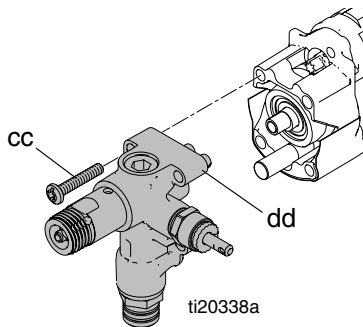
Motor/ Control Board or Drive Housing Replacement

Disassembly

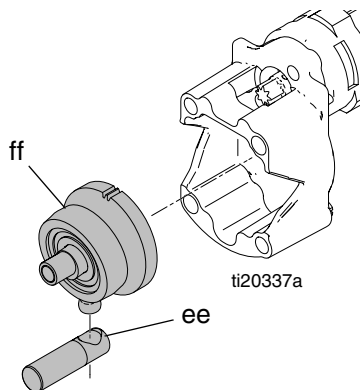
1. Perform **Clamshell Disassembly** procedure, pages 2-3.
2. Remove ground screw (aa) and disconnect ground wire (bb).



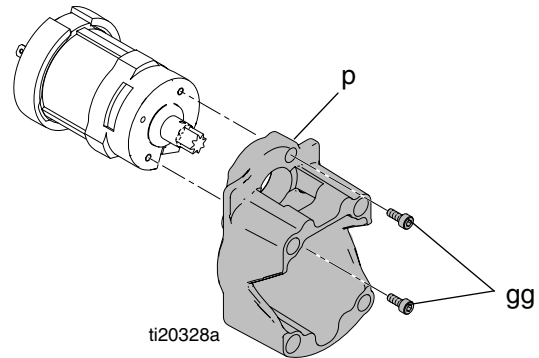
3. Remove four T30 Torx screws (cc) separating pump housing (dd) and drive housing.



4. Remove reciprocator (ff) and large pump piston (ee).



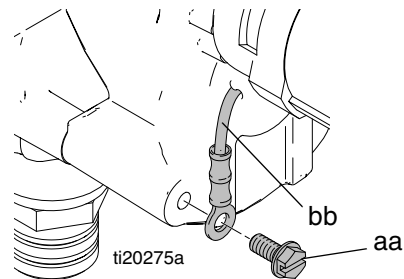
5. Remove two screws (gg) separating drive housing (p) and motor.



6. Remove motor/control board.

Assembly

1. Replace motor control board.
2. Assemble motor, drive housing and reciprocator and tighten two screws to 29 in-lb (3.3 N•m).
3. Assemble drive housing and pump housing and tighten four Torx screws to 105 in-lb (11.9 N•m).
4. Connect ground wire (bb) and tighten ground screw (aa) to 20 in-lb (2.25 N•m).

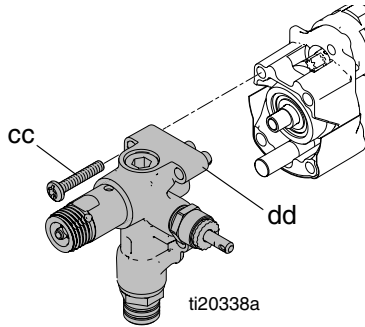


5. Perform **Clamshell Assembly** procedure, pages 4-6.

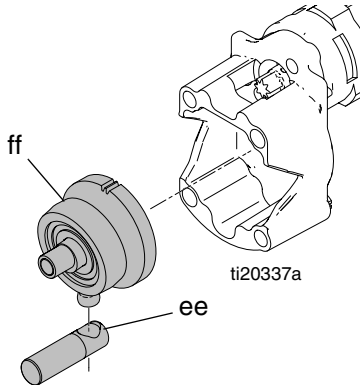
Reciprocator Replacement

Disassembly

1. Perform **Clamshell Disassembly** procedure, pages 2-3.
2. Remove four T30 Torx screws (cc) separating pump housing (dd) and drive housing.

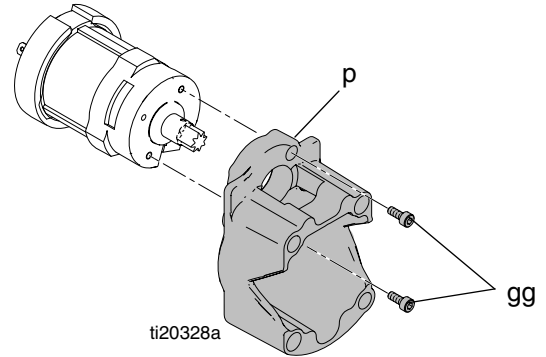


3. Remove reciprocator (ff) and large pump piston (ee).

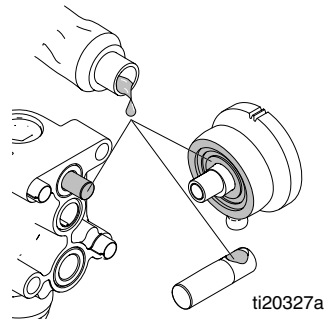


Assembly

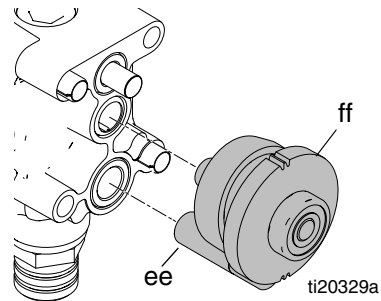
1. Assemble motor and drive housing (p) and tighten two screws (gg) to 29 in-lb (3.3 N•m).



2. Apply supplied lubricant to small piston, face of reciprocator, and cavity of large pump piston.



3. Assemble large piston (ee) to reciprocator (ff) and slide both into pump.

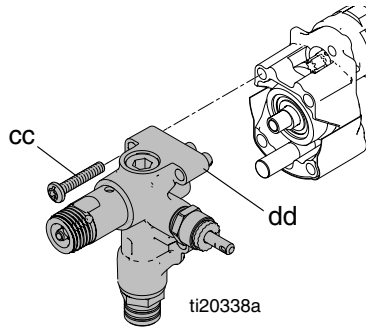


4. Assemble drive housing and pump housing and tighten four Torx screws to 105 in-lb (11.9 N•m).
5. Perform **Clamshell Assembly** procedure, pages 4-6.

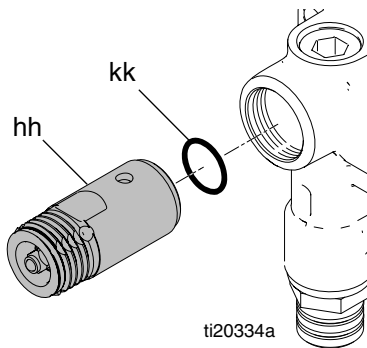
Pump Assembly Replacement

Disassembly

1. Perform **Clamshell Disassembly** procedure, pages 2-3.
2. Remove four T30 Torx screws (cc) separating pump housing (dd) and drive housing.



3. Use 7/8 in. wrench to remove needle valve (hh) from pump. **NOTE:** Make sure o-ring (kk) from back of needle valve is removed from pump.

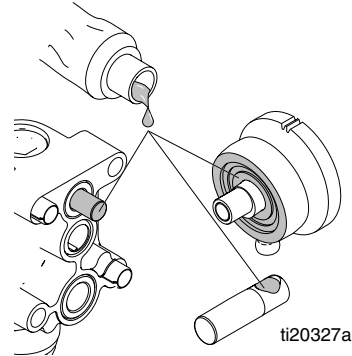


NOTICE

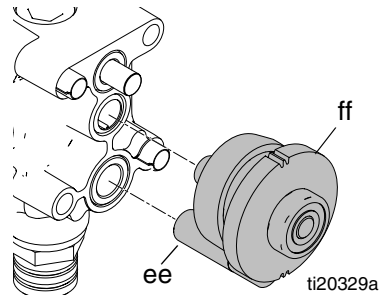
When removing needle valve from pump, avoid crushing threads and damaging parts.

Assembly

1. Install needle valve (see manual 3A1701) and tighten to 150 in-lb (17 N•m). **NOTE:** Make sure o-ring is installed in back of needle valve.
2. Apply supplied lubricant to small piston, face of reciprocator, and cavity of large pump piston.



3. Assemble large piston (ee) to reciprocator (ff) and slide both into pump.

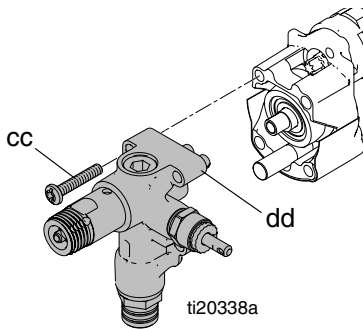


4. Replace drive housing and pump housing and tighten four Torx screws to 105 in-lb (11.9 N•m).
5. Perform **Clamshell Assembly** procedure, pages 4-6.

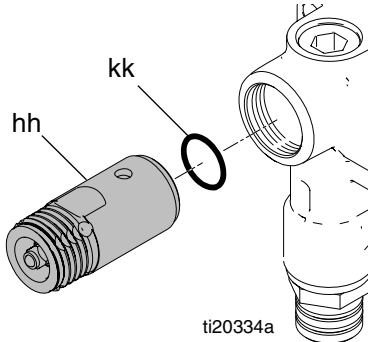
Pump Housing Replacement

Disassembly

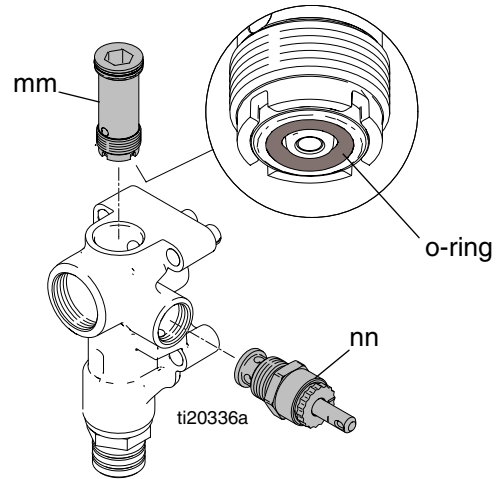
1. Perform **Clamshell Disassembly** procedure, pages 2-3.
2. Remove four T30 Torx screws (cc) separating pump housing (dd) and drive housing.



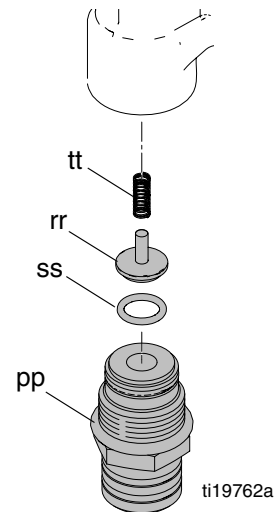
3. Use 7/8 in. wrench to remove needle valve (hh) from pump. **NOTE:** Make sure o-ring (kk) from back of needle valve is removed from pump.



4. Remove outlet valve (mm), and prime valve (nn). **NOTE:** Make sure o-ring comes out when outlet valve is removed.



5. Remove inlet valve (pp), inlet poppet valve (rr), poppet o-ring (ss), and spring (tt).

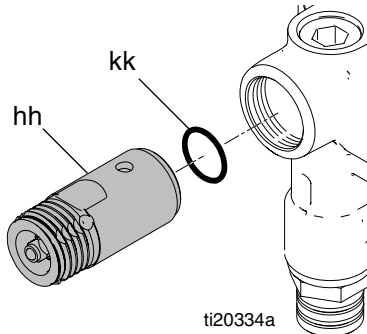


NOTICE

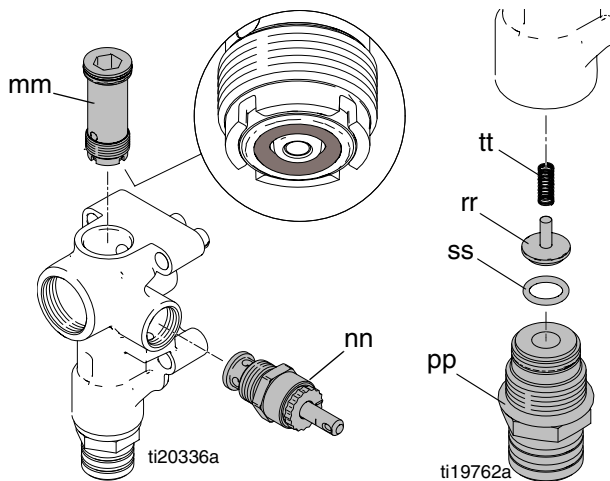
When removing needle valve from pump, avoid crushing threads and damaging parts.

Assembly

1. Install needle valve (hh) and tighten to 105 in-lb (11.9 N•m). **NOTE:** Make sure o-ring (kk) from back of needle valve (hh) is removed from pump.

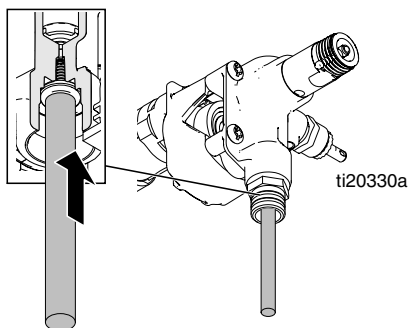


2. Install inlet valve (pp) and tighten to 140 in-lb (15.8 N•m). Install outlet valve (mm) and tighten to 100 in-lb (11.3 N•m). Install prime valve (nn) and tighten to 150 in-lb (17 N•m).

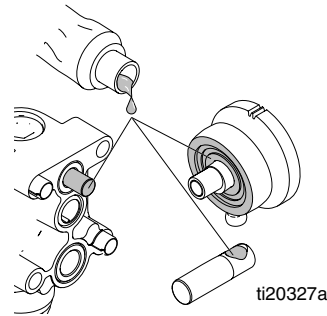


NOTE: Use needle-nose pliers to reinstall inlet poppet valve (rr), poppet o-ring (ss), and spring (tt) with inlet valve (pp).

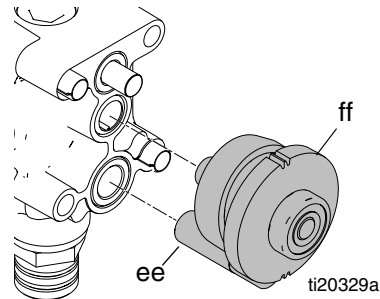
3. Use a pencil or thin rod to lightly push on inlet valve to make sure it moves up and down freely.



4. Apply supplied lubricant to small piston, face of reciprocator, and cavity of large pump piston.



5. Assemble large piston (ee) to reciprocator (ff) and slide both into pump.



6. Assemble drive housing and pump housing and tighten four Torx screws to 105 in-lb (11.9 N•m).
7. Perform **Clamshell Assembly** procedure, pages 4-6.

*All written and visual data contained in this document reflects the latest product information available at the time of publication.
Graco reserves the right to make changes at any time without notice.*

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

Original instructions. This manual contains English. MM 332133

Graco Headquarters: Minneapolis

International Offices: Belgium, China, Japan, Korea

GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA

Copyright 2012, Graco Inc. All Graco manufacturing locations are registered to ISO 9001.

www.graco.com

Revision A - November 2012