

Oil Quality Sensor (OQS) Installation Instructions

8263194, 2-Vat Gas LOV

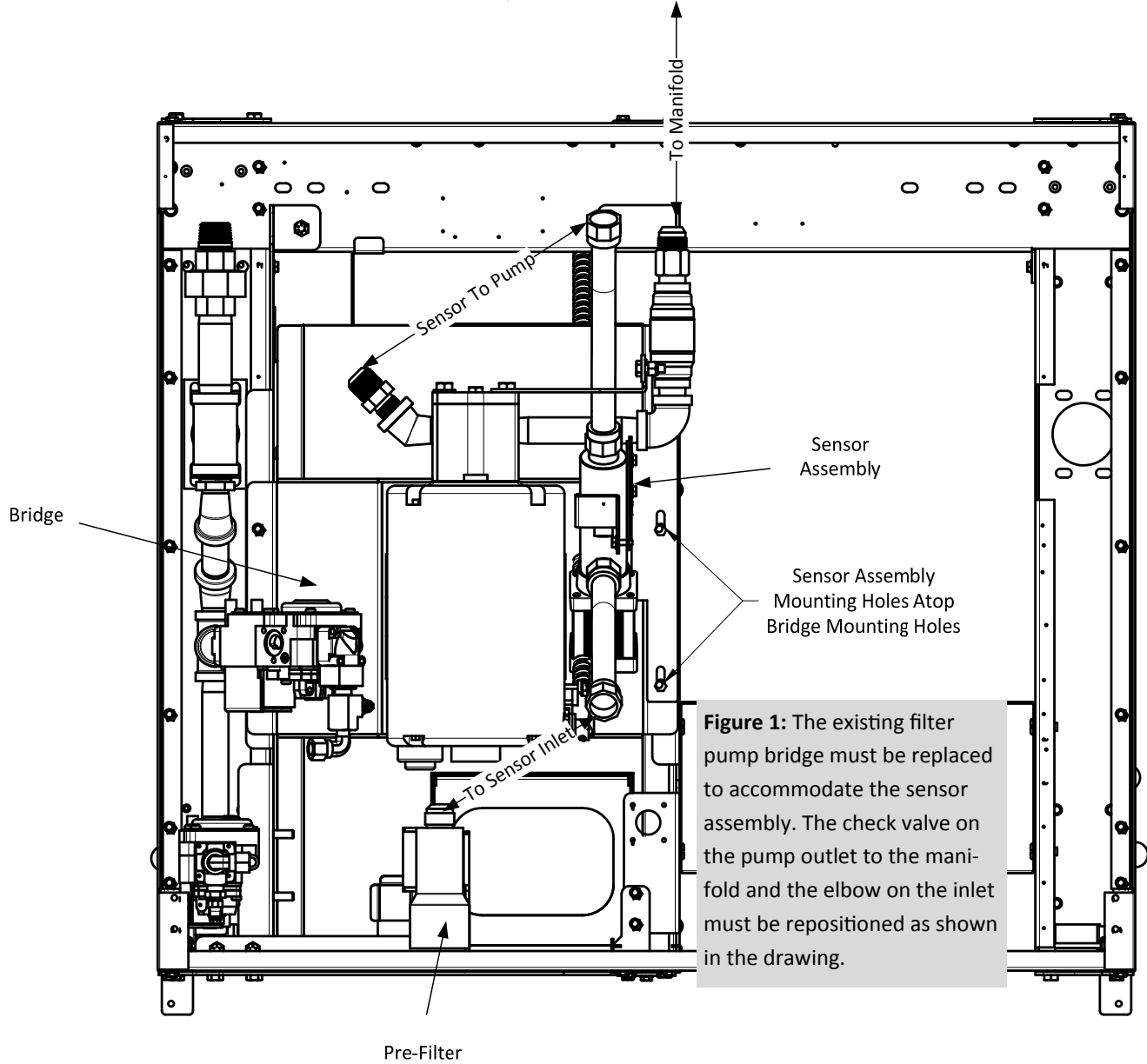


Figure 1: The existing filter pump bridge must be replaced to accommodate the sensor assembly. The check valve on the pump outlet to the manifold and the elbow on the inlet must be repositioned as shown in the drawing.

This kit puts an oil quality sensor in the flow of oil in the filter system. The sensor is connected, via the CAN bus, to the controller. Follow the instructions below to install sensor.

1. Remove power from unit.
2. Remove all doors.
3. Remove filter pan and filter pan lid.

Provided Tools:
 1-1/16 (27mm) Stubby Wrench
 1-1/16 (27mm) Crows Foot Wrench

8263194 Kit, OQS 2-Vat Gas LOV

P/N	DESCRIPTION	QTY
1086114	Sensor assembly	1
8263169	Software card kit	1
8238903	Pre-filter assembly	1
8238902	Cap and Screen, pre-filter	1
8242366	Bridge, pump assembly	1
8130251	Nipple, 1/2x4.50	1
8130062	Elbow, 1/2"	1
2401125	Bracket, wrench	1
2401086	Wrench, pre-filter	1
8104167	Lanyard, wrench	1
8070263	Terminal, butterfly	1
8197114	Instructions	1
8238990	Wrench, 1-1/16"	1
8238991	Wrench, 1-1/16" Crows foot	1

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Continued on Next Page

4. Loosen the allen screws securing the rotary actuators at the rear of the fryer and remove the actuators, which provides space for reaching the fryer interior.
5. Remove flex lines from pump.
6. Remove the vertical brace from the pump. The vertical brace (present for transit stability) does not have to be replaced with the new installation. **See Figure 2.**
7. Loosen conduit connection carrying line voltage to pump. Remove plate covering pump electrical connection and disconnect electrical wiring from the pump motor. **See Figure 3.**
8. With a pin pusher, disconnect the wiring harness to the heater tape on the pump.
9. Remove the bolts securing the pump and motor to the bridge.
10. Remove the screws securing the bridge to the cabinet rails.
11. Lift the bridge and shift the pump and motor to the left (as viewed from front), as necessary to achieve lifting space.
12. Shift the lifted bridge and motor to the left, allowing the right side to clear the cabinet channel.
13. Lower the bridge, pump and motor to the floor.
14. Position the motor and pump and remove the elbow and check valve.
15. Position the provided elbow, piping and check valve to route the oil flow for the sensor. **See Figures 1, 4.**
16. Position the pump and motor with the reconfigured plumbing hardware on the provided bridge. Do not attach with bolts. (The bridge's curved break faces the front of the fryer.)
17. Lift the bridge and the pump into place on the channels, shifting the pump and motor as its lifted to guide the hardware into the space below the frypot.
18. Hand tighten the left-side screws securing the bridge to the channel. Do not install the bolts holding the pump and motor, which allows movement as the flex lines are reattached.
19. Route the pump motor's electrical wiring into the motor housing and through the star nut.
20. Reattach the wiring, tighten the star nut on the



Figure 2: The actuator is shown loosened. The vertical brace (arrow) must be removed.

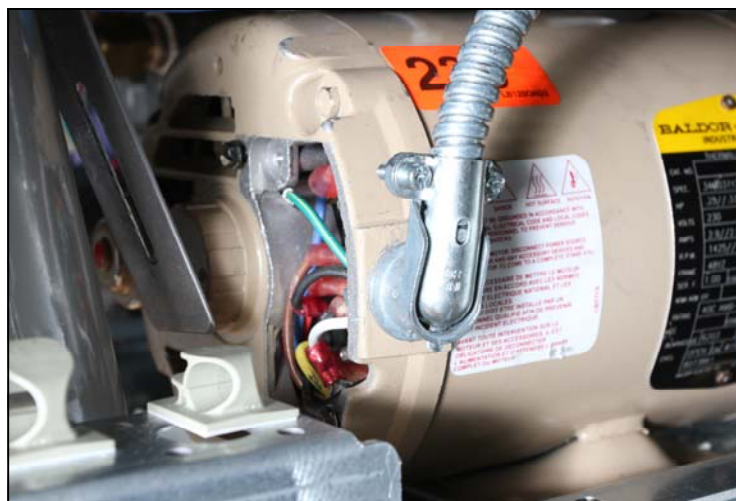


Figure 3: Disconnect the pump from the electrical connection and remove the conduit.



Figure 4: Reposition the check valve and elbow on the pump as shown above and in Figure 1.

conduit and replace the panel over the electrical connection.

21. Reconnect the pump's heater tape to the electrical harness.
22. Position the oil quality sensor and bracket on the right side of the pump, securing it — only hand tight — to the bridge with sheet metal screws that also hold the bridge to the channel.
23. Position the pre-filter, hand tight, in the cabinet above the filter pan.

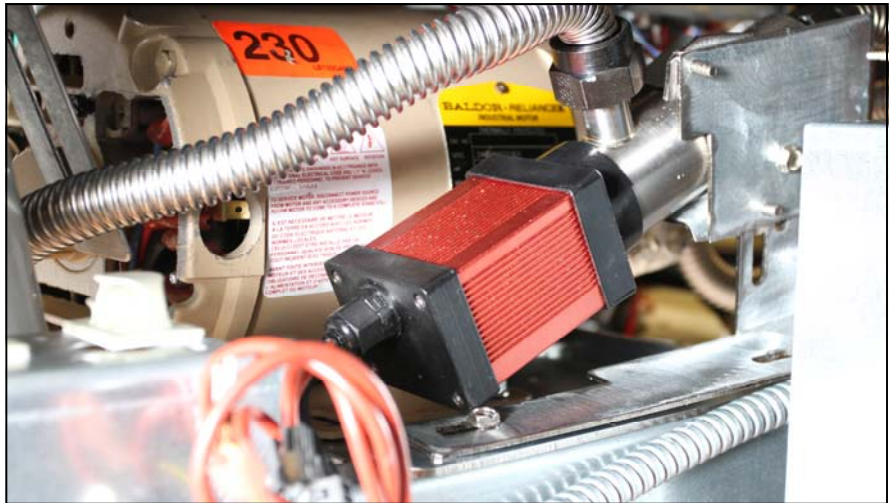


Figure 5: The sensor assembly is shown in position on the pump bridge.

See Figures 1, 6.

24. Route the flex line from the pickup tube to the pre-filter. **See Figure 1.**
25. Route the flex line from the pre-filter discharge to the bottom of the sensor. **See Figure 1.**
26. Route the flex line from the top of the sensor to the pump inlet (suction side). **See Figure 1.**
27. Tighten all flex lines and hardware fasteners and attach pump motor bolts. **See Figure 6.**
28. Attach wire holders along fryer channel and up fryer's vertical cabinet brace. **See Figure 7.**
29. Lace lanyard into bracket and install the pre-filter wrench assembly to the right of the pre-filter. **See Figures 8-9.**



Figure 6: The pre-filter is shown in position above the filter pan. It's secured by two sheet metal screws (arrow). A flex line (shown) connects the pre-filter to the filter pan pickup. A second flex line from the side of the pre-filter leads to the lower connection on the oil quality sensor

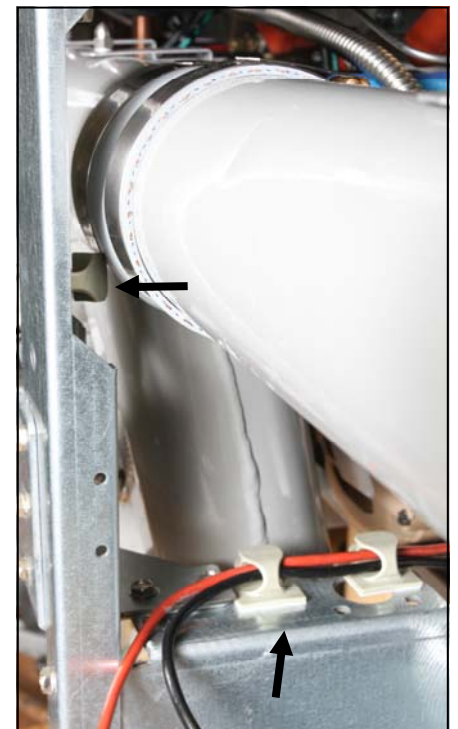
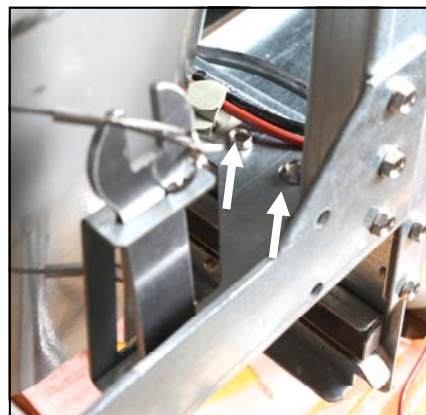


Figure 7: Attach wire guides (as shown above) to the cabinet channel and vertical brace to route sensor wiring to the left controller box.

30. Replace filter pan lid and filter pan.
31. See wiring section on next page.



Figures 8-9: Secure the lanyard to the bracket and attach the pre-filter wrench assembly to the cabinet channel with sheet metal screws. See arrows in **Figure 9.**

Connecting Wiring Harness

1. Remove the controller bezel and lower the left controller.
2. Route wiring from the sensor through the holders to the grommet in the left control box. **See Figure 10.**
3. Remove the CAN wiring from the controller and insert the male plug of the sensor harness. Insert the removed male plug in the female terminal on the sensor harness. Use butterfly terminal provided to reattach all ground wires. **See Figure 11-.**
4. See the Updating Software section on the following page

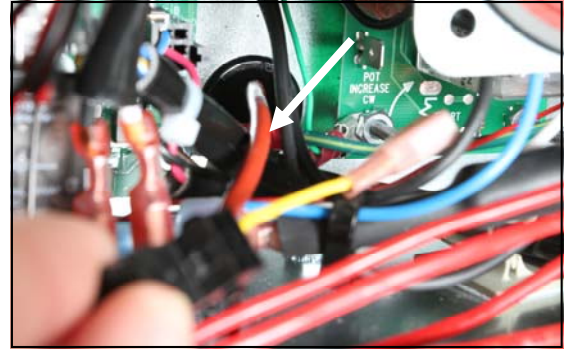


Figure 10: Route the sensor wiring harness through the grommet in the left controller box (arrow).

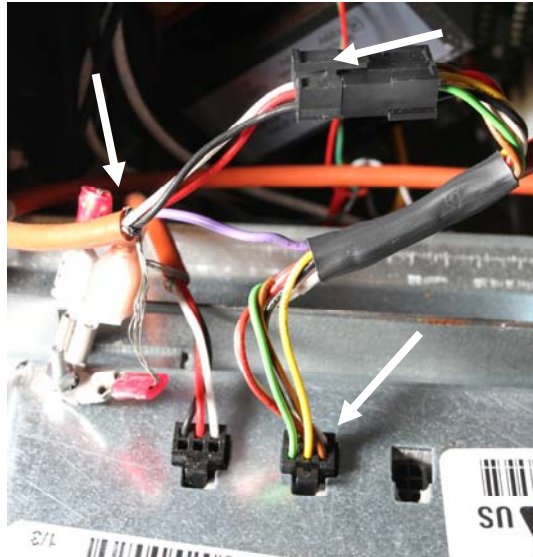


Figure 11: The sensor harness routed to the controller has two heads. The male end (arrow lower right) is plugged into the controller where the CAN cable was unplugged. Plug the CAN cable into the female end (arrow top center) and add the butterfly spade terminal to the controller's ground terminal and attach the sensor's ground terminal

Updating Software

1. Rotate the controller cover up. **See Figure 12.**
2. Insert the SD card, with the contacts facing down and the notch on the bottom right into the slot on the left side of the M3000. ENSURE THE CARD IS FULLY INSERTED INTO THE SD CARD SLOT. **See Figure 13.**
3. Once inserted, UPGRADE IN PROGRESS is displayed on the left display and WAIT on the right.
4. The display changes to CC UPDATING on the left and the percentage complete on the right. The display counts up to 100 on the right, then a flashing BOOT is displayed. DO NOT REMOVE THE CARD UNTIL THE DISPLAY PROMPTS FOR REMOVAL.
5. UPGRADE IN PROGRESS is displayed on the left display and WAIT on the right again followed by COOK HEX, MIB HEX, AIF HEX, ATO HEX ending with OQS HEX displayed on the left and the percentage complete on the right.
6. The display changes to REMOVE SD CARD on the left and 100 on the right.
7. Remove the SD card using the fingernail slot on the top of the SD card.
8. The display changes to CYCLE POWER.
9. Cycle the unit power using the hidden reset momentary rocker switch under the left control box in gas. **See Figure 14.** HOLD THE SWITCH FOR 15 SECONDS, which ensures THE MIB BOARD HAS POWERED FULLY DOWN.
11. The left controller displays OFF. The remaining controllers display a flashing BOOT while the program is transferred.
12. The MIB display changes to show the vat numbers as the software loads, changing to A when complete. The M3000 displays OFF.
13. With the controller displaying OFF, VERIFY software update by pressing the TEMP button to check updated M3000/MIB/AIF/ATO/OQS version on EACH controller with the versions numbers on the SD card. IF ANY OF THE VERSION NUMBERS DO NOT MATCH THE SD CARD, SOME OF THE BOARDS DID NOT UPDATE. REPEAT THE PROCESS, STARTING WITH STEP 6 . Otherwise continue to the next step. It may be necessary to update the individual controller.
14. Once the software has been updated and the versions are correct, replace the cover and screws covering the SD card slot. Reinstall the screws attaching the controllers and bezel. Reinstall the doors.
15. Follow the instructions on the next page to enable the Oil Quality Sensor function in the software.

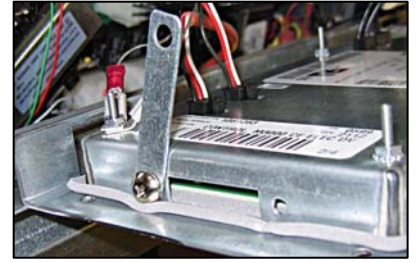


Figure 12: Remove screw and rotate cover to access SD card slot.



Figure 13: Fully insert the card.

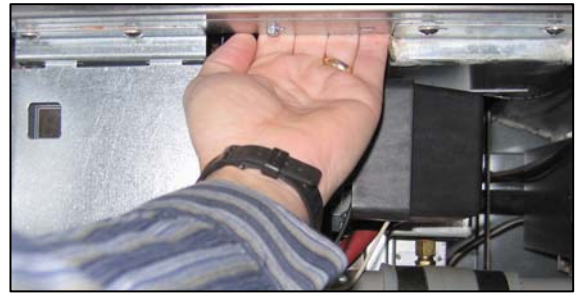
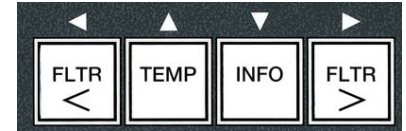


Figure 14: The gas reset switch is on the back side of the control box on the left side of the fryer.

Using Oil Quality Sensor



Field-installed Oil Quality Sensors are defaulted to disabled after the software is loaded. They must be enabled after the install. Follow the instructions below to seup the software and to display oil testing results.

Use these buttons along with the 1✓ and 2X under the display to navigate and choose software settings.

OQS Setup	
Display	Action
OFF	Press and hold the Temp and Info buttons.
Level 1 changing to Level 2	Release Temp ▲ and Info ▼ buttons.
Enter Code	Enter 1-2-3-4.
Level 2, changing to Prod Com	Press Temp ▲ button to scroll to OQS Setup on left display.
OQS Setup	Press 1 ✓ key under display on right.
OQS on left; Disabled on right.	Press either FLTR ◀ ▶ key to scroll to Enabled on right.
OQS Setup	Press 1 ✓ under Enabled display.
Oil Type on the left, Oil type option on right.	Scroll with FLTR ◀ ▶ key to oil choice: OC01=F212 or OC02=McSol. (Find oil type on oil box.)
Oil Type on the left; chosen oil on right.	Press 1 ✓ key under chosen oil on right.
The controller reboots and updates the adjacent controllers, enabling them for oil quality sensor display. It then goes to OFF.	

OQS Filter	
Display	Action
Dashed lines or Menu item; fryer is at operating temperature	Press and hold FLTR ◀ ▶ button (either for full vat, side-specific for split).
FILTER MENU scrolls, changing to Auto Filter	Press INFO ▼ to scroll to OQS filter. Press the 1✓ .
OQS FILTER scrolls with YES/NO	Press 1✓ under YES.
SKIM VAT is displayed, changing to Confirm with YES/NO.	Skim large debris from the vat and press the 1✓ below YES.
DRAINING	None required.
WASHING	None required
FILLING, changing to TPM with alternating X	None required.
TPM value is displayed	None required.
FILLING	None required.
LOW TEMP	None required. The fryer will return to operating temperature.
DISPOSE YES/NO	Displayed if the TPM reading is over 24.

Check TPM Value	
Display	Action
OFF, Dashed lines or menu item	Press and hold INFO ▼ button until INFO MODE scrolls. Release
INFO Mode scrolls on left	Press and release INFO ▼ button until TPM is displayed on the left.
TPM	Press 1✓ under TPM.
DAY/DATE	Press FLTR ▶ to scroll through past seven days. Press INFO ▼ to see TPM reading and day. Press INFO ▼ to toggle between Left and Right readings on a split vat.
TPM value and date	Press 2X under TPM display to return fryer to operation.

Capturing TPM During Maintenance Filter	
Display	Action
Dashed lines or menu item; fryer is at operating temperature.	Press and hold FLTR button ◀ ▶ 3 seconds (either for full vat, side-specific for split).
FILTER MENU scrolls , changing to AUTO Filter.	Press INFO▼ button, scroll to MAINT Filter.
MAINT FILTER scrolls	Press 1✓ button.
MAINT FILTER scrolls with YES/NO	Press 1✓ under YES.
FILTERING	None required.
SCRUB VAT COMPLETE; YES/NO	Wearing appropriate protective gear, scrub the frypot. Press the 1✓ under YES when scrubbing is complete.
WASH VAT, Alternating with YES	Press 1✓ under YES.
WASHING	None Required
WASH AGAIN; YES/NO	Press 1✓ under YES if additional washing is necessary; press 2X under NO if no additional washing is needed.
RINSING	None required.
RINSE AGAIN; YES/NO	Press 1✓ under YES if additional rinsing is necessary; press 2X under NO if no additional rinsing is needed.
POLISH; YES/NO	Press the 1✓ under YES.
OQS; YES/NO	Press the 1✓ under YES to run the oil quality test.
POLISHING	None required
FILL VAT; YES	Press 1✓ under YES.
FILLING	None required.
TPM...X	None required.
TPM value	None required.
FILLING	None required.
IS VAT FULL; YES/NO	Verify vat is full and press 1✓ under YES. Press 2 X under NO if the vat is not full and the pump will run again.
OFF	Leave fryer off or return to service.* DISPOSE YES/NO is displayed when the fryer is turned on and returns to temperature if the TPM value exceeded 24.

The pre-filter (**Figure 15**) installed with the kit requires regular maintenance. Every 90 days, or more frequently if the flow of oil slows, remove the cap and clean the attached screen .

1. Wearing protective gloves, remove the cap from the pre-filter using the supplied wrench (**Figure 16**).
2. Use a small brush to clear debris. from the attached screen (**Figure 17**).
3. Clean under a water tap and thoroughly dry.
4. Return the cap to the pre-filter housing and tighten.



Figure 15



Figure 16

WARNING

DO NOT remove the pre-filter cap when a filter cycle is under way. **DO NOT** operate the filter system with the cap removed. Wear protective gloves when handling the cap. The metal and the oil exposed are hot.

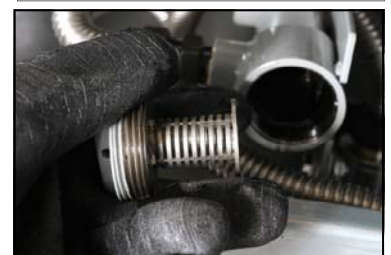


Figure 17