Oil Quality Sensor (OQS) Installation Instructions

8263195, 2-Vat Electric LOV

This kit puts an oil quality sensor in flow of oil in the filter system. Follow the instructions below to install the sensor.

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

1. Remove power from unit.
2. Remove all doors.
3. **Optional:** Remove filter pan and filter pan lid, which allows greater access for routing flex lines later.
4. Remove MIB assembly. Leave wires intact and rest box in cabinet to reduce strain on connections. **See Figure 2**.
5. Remove screws securing oil discharge assembly. **See Figure 3**. Leave linkage intact and rest assembly in cabinet.
6. Remove flex line between pick up and pump. **See figure 1**.
7. Secure wire on sensor assembly (as shown in Figure 4) and position sensor assembly in cabinet on rail to the right side of the filter pan and adjacent to the JIB. Position the assembly's screw slots over existing holes in the rail. Use vertical slots for mounting the sensor in an electric fryer; use hori-

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P/N	DESCRIPTION	QTY
1086113	Sensor assembly	1
8263169	Software card kit	1
1086265	Pre-filter assembly	1
8101668	Adapter, flex line	1
8101369	Flex line, 18"	1
8238902	Cap and screen, pre-filter	1
8070263	Butterfly terminal	1
8238990	Wrench, 1-1/16" (27mm)	1
8238991	Wrench, 1-1/16" (27mm) crows foot	1
2401125	Bracket, wrench	1
2401086	Wrench, pre –filter	1
8104167	Lanyard, wrench	1
8090412	Screw, #10	4
8197113	Instructions	1
8074158	Zip tie	4

Figure 1: Use a 1 1/16 crow-foot wrench to remove flex line be-

Figure 2: Remove the MIB assembly.

Figure 3: Remove the oil disposal valve handle assembly.

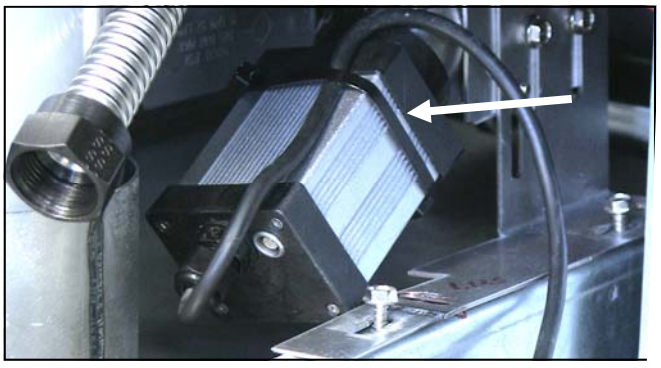
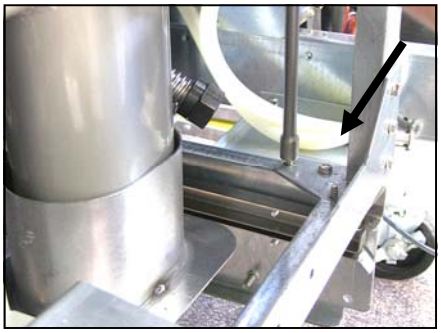
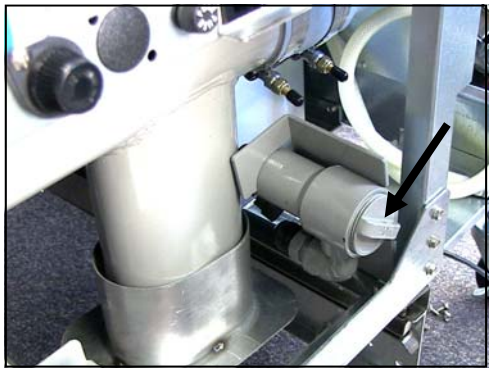


Figure 4: Position the sensor assembly and hand tighten. Use vertical holes in bracket to secure sensor in an electric fryer; use horizontal bracket holes to secure in a gas fryer. Note wire tie securing wiring to sensor body.

zontal slots for mounting in a gas fryer cabinet. Leave all screws hand tight.

8. Route flex line from top of sensor assembly to the pump. **See figure 7**.
9. Position pre-filter assembly, using existing frame gusset screws. Leave hand tight. **See Figures 5 and 6**.
10. Route flex line from pre-filter discharge (top port) to bottom of sensor. **See Figure 8**.
11. Route flex line from pickup tube assembly around oil manifold down spout to input (bottom port) on the pre-filter. **See Figure 9**.
12. Replace filter pan lid and filter pan (if previously removed).
13. Tighten pre-filter bolts, ensuring that pre-filter shifted to the left as far as possible .
14. Ensure all flex lines are tightened. There should be no kinks, ensuring all bends are as smooth as possible.
15. Reattach MIB.
16. Reattach disposal valve assembly.





Figures 5-6: The pre-filter (shown below left) is mounted on a frame gusset (shown at left). Use the existing screws and hand tighten the pre-filter.

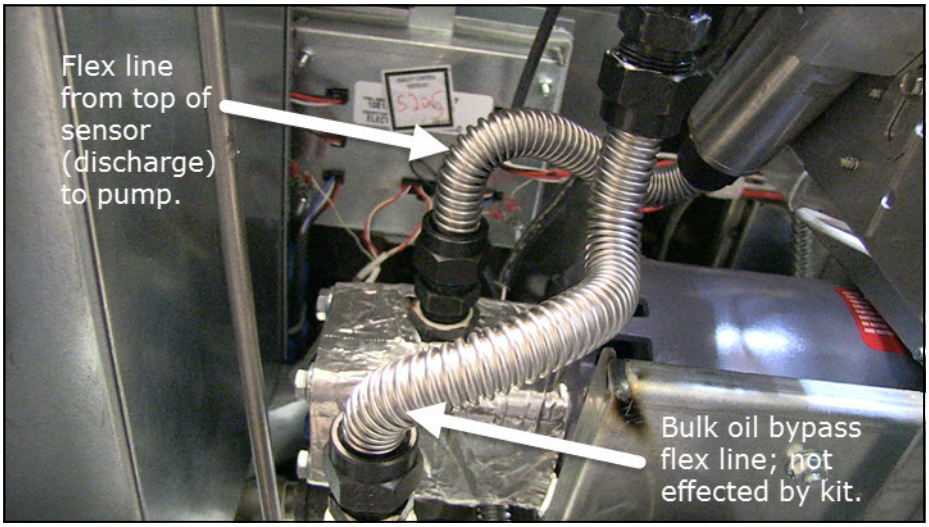


Figure 7: Route the flex line from the top of the sensor to the pump. The lower flex line visible in the photo is a bypass used in bulk oil systems. It is not effected by the kit.

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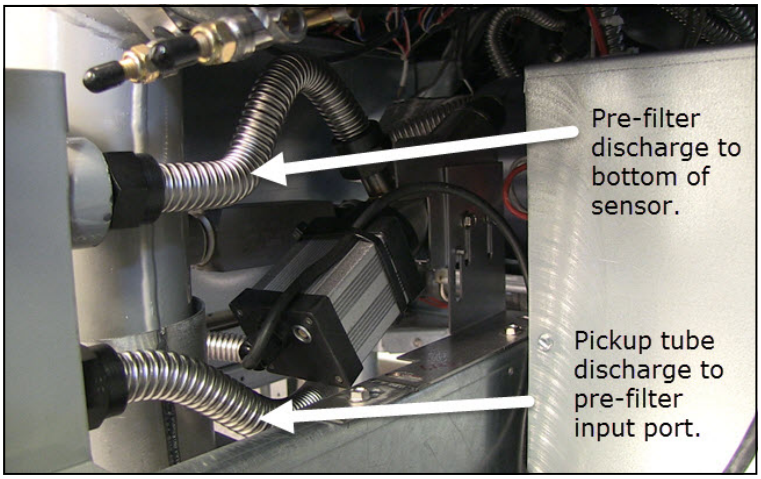


Figure 8: Route a flex line from the pre-filter discharge (top port) to the bottom of the sensor.

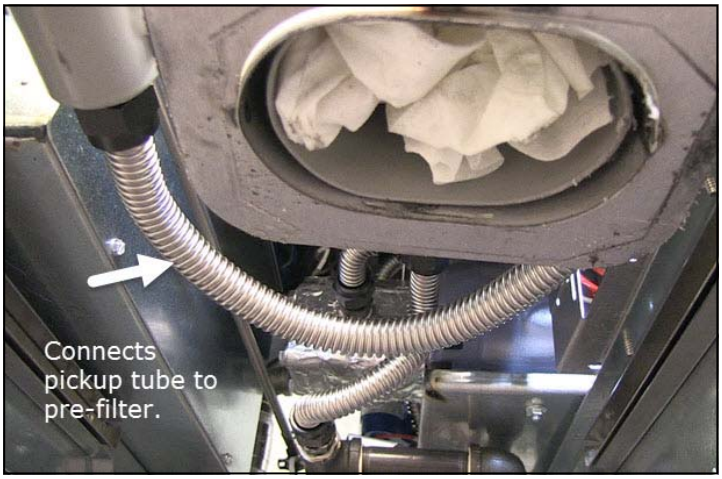
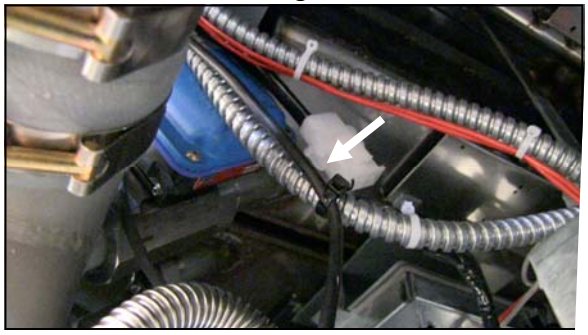


Figure 9: Route a flex line from the pre-filter input (bottom port) in Figure 8) to pickup assembly discharge (above).

Routing Wiring Harness, Mounting Wrench

1. Remove control bezel by removing screws on the underside of the bezel. See Figure 10. Earlier units have a sliding bezel, which is removed by lifting up on the bezel at the top center of the controller.
2. Remove screws in the top corners of the right controller and lower it.
3. Remove fascia below removed controller.
4. Route wiring harness from sensor along existing wire conduits, securing with wire ties, to the control box. **See figures 11-12**.
5. Route the harness to the control box. Place a bushing in a control box access hole to route the wire through to the controller.
6. Remove the orange communication (CAN) cable from the controller. **See figure 13**. 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.
7. Lace the wrench lanyard on the bracket and mount the pre-filter wrench in the cabinet to the right of the pre-filter. **See Figures 14-15**.

Figure 10: Remove screws on underside of bezel. (3-vat shown.)



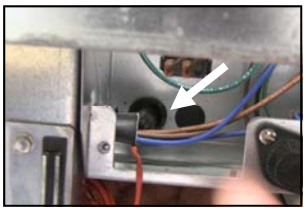


Figure 11-12: Route the harness from the sensor along existing wiring conduit with wire ties (left) to the control box. Route the harness through a bushing and into the control box (above).

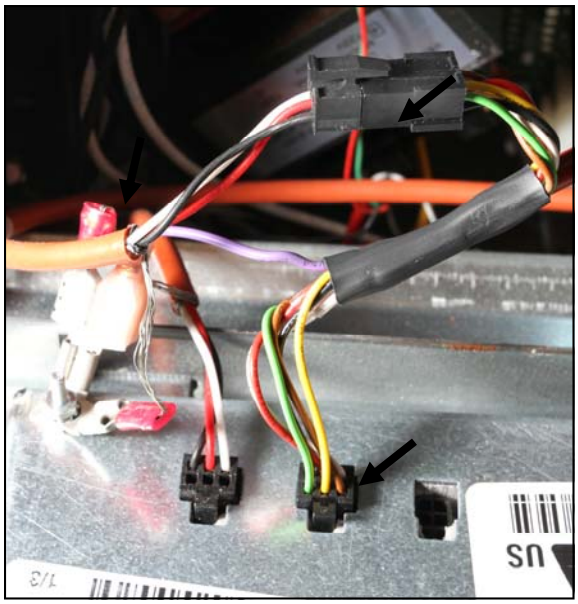
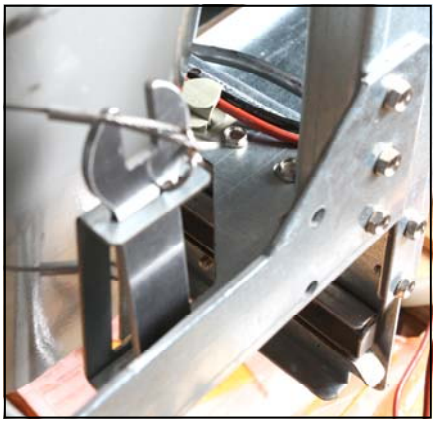


Figure 13: The sensor harness routed to the controller has two heads. The male end (arrow lower right) is plugged into the controller where the CAN cable was unplugged. Plug the CAN cable into the female end (arrow top center) and add the butterfly spade terminal to the controller's ground terminal and attach the sensor's ground terminal (arrow at center left).



Figures 14-15: Secure the lanyard to the bracket and attach the pre-filter wrench assembly to the cabinet channel with sheet metal

Updating Software

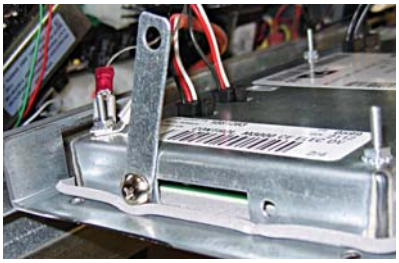


Figure 16: Remove screw and rotate cover to access SD card slot.

1. Lower the leftmost controller.
2. Rotate the cover up as shown. **See Figure 16**.
3. 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 17**.
4. Once inserted, UPGRADE IN PROGRESS is displayed on the left display and WAIT on the right.

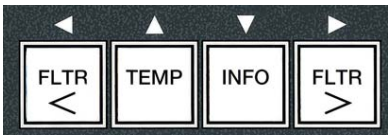
Figure 17: Fully insert the card.

5. 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.
6. 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.
7. The display changes to REMOVED SD CARD on the left and 100 on the right.
8. Remove the SD card using the fingernail slot on the top of the SD card.
9. The display changes to CYCLE POWER.
10. Cycle the unit power using the hidden reset momentary rocker behind the far right control box in electric . HOLD THE SWITCH FOR 15 SECONDS, which ensures THE MIB BOARD HAS POWERED FULLY DOWN. **See Figure 18**.
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.

Figure 18: The electric reset switch is under the controller on the right side of the fryer.

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 setup the software the Oil Quality Sensor.

Using Oil Quality Sensor



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

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.

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 2X 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 19)** 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 20)**.
2. Use a small brush to clear debris. from the attached screen **(Figure 21)**.
3. Clean under a water tap and thoroughly dry.
4. Return the cap to the pre-filter housing and tighten.

Figure 19

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 20

Figure 21