

# FILTERQUICK™ FQE30-T ELECTRIC FRYER

## CHAPTER 5: OPERATOR TROUBLESHOOTING

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### 5.1 Introduction

This section provides an easy reference guide to some of the common problems that may occur during the operation of this equipment. The troubleshooting guides that follow are intended to help correct, or at least accurately diagnose, problems with this equipment. Although the chapter covers the most common problems reported, you may encounter problems that are not covered. In such instances, the Frymaster Technical Services staff will make every effort to help you identify and resolve the problem.

When troubleshooting a problem, always use a process of elimination starting with the simplest solution and working through to the most complex. Never overlook the obvious – anyone can forget to plug in a cord or fail to close a valve completely. Most importantly, always try to establish a clear idea of why a problem has occurred. Part of any corrective action involves taking steps to ensure that it doesn't happen again. If a controller malfunctions because of a poor connection, check all other connections, too. If a fuse continues to blow, find out why. Always keep in mind that failure of a small component may often be indicative of potential failure or incorrect functioning of a more important component or system.

***Before calling a service agent or the Frymaster HOTLINE (1-800-24-FRYER):***

- **Verify that electrical cords are plugged in and that circuit breakers are on.**
- **Have your fryer's model and serial numbers ready to give to the technician assisting you.**

 **DANGER**

**Hot oil will cause severe burns. Never attempt to move this appliance when filled with hot oil or to transfer hot oil from one container to another.**

 **DANGER**

**This equipment should be unplugged when servicing, except when electrical circuit tests are required. Use extreme care when performing such tests.**

**This appliance may have more than one electrical power supply connection point. Disconnect all power cords before servicing.**

**Inspection, testing, and repair of electrical components should be performed by an authorized service agent only.**

## 5.2 Troubleshooting

### 5.2.1 Controller and Heating Problems

Problem	Probable Causes	Corrective Action
<b>No display on the controller.</b>	A. No power to fryer. B. Failed controller or other component	A. Verify that the fryer is plugged in and that the circuit breaker is not tripped. B. Call your FAS for assistance.
<b>FQ4000 displays IS VAT FULL? YES NO</b> after a filtration.	A. Normal operation during most at the beginning or end of most filtration functions. B. If the display appears many times during a filter it could be an indication of slow oil return.	A. Ensure the vat is full of oil and press the √ button. B. See section 5.3 troubleshooting –Filter Pump runs, but oil return is very slow.
<b>FQ4000 displays IS DRAIN CLEAR?</b>	Drain is clogged and oil failed to drain.	Clear drain with Fryers Friend and press √ button. Filtration will resume.
<b>FQ4000 displays CHANGE FILTER PAD?</b>	Filter error has occurred, filter pad clogged, 25-hour filter pad change prompt has occurred or change filter pad was ignored on a prior prompt.	Change the filter pad and ensure the filter pan has been removed from the fryer for a minimum of 30 seconds. Do <b>NOT</b> ignore <b>CHANGE FILTER PAD</b> prompts.
<b>Fryer does not heat.</b>	A. Power cord(s) not plugged in.	A. Verify that all the power cord(s) are fully seated in their receptacle(s), locked into place and that circuit breaker is not tripped
	B. Controller or other components have failed.	B. Call your FAS for assistance.
<b>Fryer heats until high-limit trips with heat indicator ON.</b>	Temperature probe or controller has failed.	Call your FAS for assistance.
<b>Fryer heats until high-limit trips without heat indicator ON.</b>	Contact or controller has failed	Call your FAS for assistance.
<b>FQ4000 displays MISCONFIGURED ENERGY TYPE</b>	Energy type in fryer setup is incorrect.	Ensure that the fryer is configured properly for the correct energy type.
<b>FQ4000 displays VAT ID CONNECTOR NOT CONNECTED</b>	Controller locator missing or disconnected.	Ensure the 6-pin locator is connected to rear of controller and it properly grounded in control box.
<b>Controller locks up.</b>	Controller error.	Remove and restore power to the controller. If problem persists, call your FAS for assistance.

## 5.2.2 Error Messages and Display Problems

<b>Problem</b>	<b>Probable Causes</b>	<b>Corrective Action</b>
<b>FQ4000 displays E19 HEATING FAILURE.</b>	Failed controller, failed transformer, failed SIB board, open high-limit thermostat.	Call your FAS for assistance.
<b>FQ4000 display is in wrong temperature scale (Fahrenheit or Celsius).</b>	Incorrect display option programmed.	Toggle between F° to C° by entering Manager settings, temperature and toggling the temperature scale. Turn the controller on to check temperature. If the desired scale is not displayed, repeat.
<b>FQ4000 displays HOT-HI-1.</b>	Frypot temperature is more than 410°F (210°C) or, in CE countries, 395°F (202°C).	Shut the fryer down immediately and call your FAS for assistance.
<b>FQ4000 displays HELP HI-2 or HIGH LIMIT FAILURE DISCONNECT POWER.</b>	Failed high limit	Disconnect power from the entire fryer immediately and call your FAS for assistance.
<b>FQ4000 displays TEMPERATURE PROBE FAILURE.</b>	Problem with the temperature measuring circuitry including the probe or damaged controller wiring harness or connector.	Shut the fryer down and call your FAS for assistance.
<b>Heating indicator is on, but fryer is not heating.</b>	Three phase power cord unplugged or circuit breaker is tripped.	Verify that all power cord(s) are fully seated in their receptacle(s), locked into place and that circuit breaker is not tripped. If the problem continues call your FAS for assistance.
<b>FQ4000 displays RECOVERY FAULT and alarm sounds.</b>	Recovery time exceeded maximum time limit.	Clear error and silence the alarm by pressing the √ button. Maximum recovery time for electric is 1:40. If this error continues call your FAS for assistance.
<b>FQ4000 displays NO MENU GROUP AVAILABLE FOR SELECTION</b>	All menu groups have been deleted.	Create a new MENU group. Once a new menu is created, add recipes to the group (see section 1.10 of the FQ4000 controller manual).
<b>FQ4000 displays SERVICE REQUIRED followed by an error message.</b>	An error has occurred which requires a service technician.	Press X to continue cooking and call your FAS for assistance. In some cases, cooking may not be available.

### 5.3 Troubleshooting the Auto Filtration

Problem	Probable Causes	Corrective Action
<b>Fryer filters after each cook cycle.</b>	Filter after setting incorrect.	Change or overwrite the filter after setting by re-entering the filter after value in Manager Settings, Filter Attributes in section 1.8 of the FQ4000 controller manual.
<b>Clean and Filter won't start.</b>	Temperature too low.	Ensure fryer is at setpoint before starting a Clean and Filter.
<b>FQ4000 display shows FILTER BUSY.</b>	<ul style="list-style-type: none"> <li>A. Another filtration cycle or filter pad change is still in process.</li> <li>B. Filter interface board has not cleared checking system.</li> </ul>	<ul style="list-style-type: none"> <li>A. Wait until the previous filtration cycle ends to start another filtration cycle. Change filter pad if prompted.</li> <li>B. Wait 15 minutes and try again.</li> </ul>
<b>Filter pump won't start or pump stops during filtering.</b>	<ul style="list-style-type: none"> <li>A. Power cord is not plugged in or circuit breaker is tripped.</li> <li>B. Pump motor has overheated causing the thermal overload switch to trip.</li> <li>C. Blockage in filter pump.</li> </ul>	<ul style="list-style-type: none"> <li>A. Verify that the power cord is fully plugged in and the circuit breaker is not tripped.</li> <li>B. If the motor is too hot to touch for more than a few seconds, the thermal overload switch has probably tripped. Allow the motor to cool at least 45 minutes then press the Pump Reset Switch (see section 2.1.2 of the FQ4000 controller manual).</li> <li>C. Call your FAS for assistance.</li> </ul>
<b>Drain valve or return valve stays open.</b>	<ul style="list-style-type: none"> <li>A. VIB board has failed.</li> <li>B. Actuator has failed.</li> </ul>	Call your FAS for assistance.
<b>FQ4000 display shows INSERT pan.</b>	<ul style="list-style-type: none"> <li>A. Filter pan is not fully set into fryer.</li> <li>B. Missing filter pan magnet.</li> <li>C. Defective filter pan switch.</li> </ul>	<ul style="list-style-type: none"> <li>A. Pull filter pan out and fully reinsert into fryer. Ensure controller does not display P.</li> <li>B. Ensure the filter pan magnet is in place and replace if missing.</li> <li>C. If the filter pan magnet is fully against the switch and controller continues to display INSERT PAN, switch is possibly defective.</li> </ul>

Problem	Probable Causes	Corrective Action
<b>Auto filtration, OQS filter won't start.</b>	<ul style="list-style-type: none"> <li>A. Oil level too low.</li> <li>B. Oil temperature is too low.</li> <li>C. Filter Pan out.</li> <li>D. Filtration in recipe settings is set to OFF.</li> <li>E. Filter relay has failed.</li> </ul>	<ul style="list-style-type: none"> <li>A. Ensure oil level is at the top oil fill line (at the top oil level sensor).</li> <li>B. Ensure the oil temperature is at setpoint.</li> <li>C. Ensure controller does not display P. Ensure the filter pan is fully seated into fryer. Power cycle the fryer.</li> <li>D. Set filtration in recipes to ON.</li> <li>E. Call your FAS for assistance.</li> </ul>
<b>Filter Pump runs, but oil return is very slow.</b>	<ul style="list-style-type: none"> <li>A. Clogged filter pad/paper.</li> <li>B. Improperly installed or prepared filter pan components.</li> <li>C. Pre-filter screen may be clogged or not fully tightened.</li> </ul>	<ul style="list-style-type: none"> <li>A. Ensure the filter is not clogged. If so replace the filter.</li> <li>B. Remove the oil from the filter pan and replace the filter pad/paper, ensuring that the filter screen is in place <b>under</b> the pad/paper. Verify, if using a pad, that the rough side is facing up. Verify that O-rings are present and in good condition on filter pan connection fitting.</li> <li>C. Clean pre-filter (see section 4.5.4) and ensure it is tightened with the attached wrench.</li> </ul>

### 5.3.1 Incomplete Filtration

Should the auto filtration procedure fail an error message is generated. Follow the instructions on the screen to return the oil and clear the error.

DISPLAY	ACTION
IS VAT FULL?	1. Press the √ (check) button if the vat is full to continue. The controller returns to idle cook mode or  . Press X if vat is not filled completely.
FILLING IN PROGRESS	2. No action required as the pump runs.
IS VAT FULL?	3. Press the √ (check) button if the vat is full to continue. The controller returns to idle cook mode or  . Press X if vat is not filled completely.
FILLING IN PROGRESS	4. No action required as the pump runs.
IS VAT FULL?	5. Press the √ (check) button if the vat is full to continue. The controller returns to idle cook mode or  . Press X if vat is not filled completely. If this is the sixth consecutive sequence of incomplete filtration skip to step 10.

CHANGE FILTER PAPER?	6. Press the √ (check) button to continue. Pressing X advances to  .
REMOVE PAN	7. Remove the filter pan.
CHANGE FILTER PAPER	8. Change the filter paper/pad and ensure the filter pan has been pulled forward, out of the cabinet for at least 30 seconds. Once the pan has been out for 30 seconds the controller returns to idle cook mode. Ensure the pan is dry and assembled correctly. Push the filter pan back into the fryer. Ensure "P" is not displayed on the controller.
IS VAT FULL?	9. Press the √ (check) button if the vat is full to continue. The controller returns to idle cook mode. Press X if vat is not full and the controller advances to  .
SERVICE REQUIRED	10. If a filtration error occurs six consecutive times, the return valve closes. Press the √ (check) button to silence alarm and continue.
ERROR PUMP NOT FILLING	11. The system detects oil is not returning to the vat and service is required. Call your FAS.
SYSTEM ERROR FIXED?	12. Press the X button to continue cooking if possible. Call your FAS to repair and reset the fryer. The error will be re-displayed every 15 minutes until the issue is repaired. Auto filtration and auto top off are disabled until the fryer is reset.
ENTER CODE	13. FAS tech enters tech code to reset fryer.
FILL VAT FROM DRAIN PAN?	14. Press the √ (check) button to fill the vat from filter pan to continue. Follow prompts once the vat is full. Press X to skip filling from drain pan.
REMOVE PAN	15. Remove the filter pan.
IS PAN EMPTY?	16. Press the √ (check) button if the filter pan is empty and continue to next step. Press X to continue filling the vat. Follow the prompts once the vat is full.
	17. The controller switches off.

### 5.3.2 Clogged Drain Error

The clogged drain error occurs during auto filtration when the oil level sensor detects that oil has not completely drained from the frypot. This may be due to a clogged drain or an oil sensor failure. Follow the instructions on the controller display to clear the error.

When this occurs the controller displays **CLEAR DRAIN** for 15 seconds changing to **IS DRAIN CLEAR?**

1. Clear debris from the drain using the fryer's friend and press the √ button to continue.
2. The controller displays **DRAINING**. Once the oil level sensor detects the oil has drained, normal auto filtration operation resumes.

### 5.3.3 Filter Busy

When **FILTER BUSY** is displayed the filter interface board is waiting on another vat to be filtered or waiting on another function to finish. Wait 15 minutes to see if problem is corrected. If not, call your local FAS.

### 5.4 Troubleshooting Auto Top Off Issues

PROBLEM	PROBABLE CAUSES	CORRECTIVE ACTION
<b>Frypots top off cold.</b>	Incorrect setpoint.	Ensure setpoint is correct.
<b>One vat doesn't top off.</b>	<ul style="list-style-type: none"> <li>A. Filter error exists.</li> <li>B. Service required error exists</li> <li>C. Solenoid, pump, pin issue, RTD or ATO issue.</li> </ul>	<ul style="list-style-type: none"> <li>A. Clear filter error properly. If problem persists call your FAS for assistance.</li> <li>B. Call your FAS for assistance.</li> <li>C. Call your FAS for assistance.</li> </ul>
<b>Frypots won't top off.</b>	<ul style="list-style-type: none"> <li>A. Fryer temperature too low.</li> <li>B. Oil is too cold.</li> <li>C. Top oil empty displayed</li> <li>D. Service required error exists</li> <li>E. Melting unit switch is off (only on solid shortening units)</li> <li>F. Blown fuse.</li> </ul>	<ul style="list-style-type: none"> <li>A. Fryer temperature must be at setpoint.</li> <li>B. Ensure that the oil in the top off reservoir is above 70°F (21°C).</li> <li>C. Ensure the top off reservoir is not out of oil. Replace top off reservoir or fill from bulk and reset top off system. If problem persists call your FAS for assistance.</li> <li>D. Call your FAS for assistance.</li> <li>E. Ensure the switch on the melting unit is in the ON position.</li> <li>F. Check the fuse on the left of the ATO box. If using a solid shortening melting unit, check the fuse below the melting unit switch.</li> </ul>

### 5.5 Troubleshooting Bulk Oil System Problems

PROBLEM	PROBABLE CAUSES	CORRECTIVE ACTION
<b>Frypot won't fill.</b>	<ul style="list-style-type: none"> <li>A. Incorrect setup procedure.</li> <li>B. Dispose valve not completely closed.</li> <li>C. Bulk oil tank is empty.</li> <li>D. RTI pump issue.</li> </ul>	<ul style="list-style-type: none"> <li>A. Power cycle fryer by disconnecting and reconnecting the bulk oil control connector on rear of fryer.</li> <li>B. Ensure the dispose valve handle is pushed fully closed.</li> <li>C. Call your bulk oil provider.</li> <li>D. Call you FAS for assistance.</li> </ul>

PROBLEM	PROBABLE CAUSES	CORRECTIVE ACTION
<b>Top off reservoir won't fill.</b>	<ul style="list-style-type: none"> <li>A. Incorrect setup procedure.</li> <li>B. Another function is in process.</li> <li>C. Dispose valve not completely closed.</li> <li>D. Bulk oil tank is empty.</li> <li>E. Solenoid, pump or switch issue.</li> </ul>	<ul style="list-style-type: none"> <li>A. Power cycle fryer by disconnecting and reconnecting 5-pin bulk oil control power cord on rear of fryer.</li> <li>B. If a filtration or any other filter menu function is in process or FILTER NOW? YES/NO, CONFIRM YES/NO, or SKIM VAT are displayed, wait until the process is complete and try again.</li> <li>C. Ensure the dispose valve handle is pushed fully closed.</li> <li>D. Call your bulk oil provider.</li> <li>E. Call you FAS for assistance.</li> </ul>
<b>Top off reservoir or vat filling slow.</b>	<ul style="list-style-type: none"> <li>A. Pump or line issues beyond the scope of operator troubleshooting.</li> </ul>	<ul style="list-style-type: none"> <li>A. Contact your bulk oil provider.</li> </ul>

## 5.6 Error Log Codes

See section 1.13.2.1 in the FQ4000 controller manual for instructions to access the Error Log.

Code	ERROR MESSAGE	EXPLANATION
E13	TEMPERATURE PROBE FAILURE	TEMP Probe reading out of range
E16	HIGH LIMIT 1 EXCEEDED	High limit temperature is past more than 410°F (210°C), or in CE countries, 395°F (202°C)
E17	HIGH LIMIT 2 EXCEEDED	High limit switch has opened.
E18	HIGH LIMIT PROBLEM DISCONNECT POWER	Vat temperature exceeds 460°F (238°C) and the high limit has failed to open. Immediately disconnect power to the fryer and call service.
E19	HEATING FAILURE - XXX F or XXX C	Heating Control latch circuit failed. Heat Contactor failed to latch.
E25	HEATING FAILURE - BLOWER	The air pressure switch(s) failed to close.
E27	HEATING FAILURE - PRESSURE SWITCH - CALL SERVICE	The air pressure switch has failed closed.
E28	HEATING FAILURE - XXX F or XXX C	The fryer has failed to ignite and has locked out the ignition module.
E29	TOP OFF PROBE FAILURE - CALL SERVICE	ATO RTD reading out of range
E32	DRAIN VALVE NOT OPEN - FILTRATION AND TOP OFF DISABLED - CALL SERVICE	Drain valve was trying to open and confirmation is missing
E33	DRAIN VALVE NOT CLOSED - FILTRATION AND TOP OFF DISABLED - CALL SERVICE	Drain valve was trying to close and confirmation is missing
E34	RETURN VALVE NOT OPEN - FILTRATION AND TOP OFF DISABLED - CALL SERVICE	Return valve was trying to open and confirmation is missing
E35	RETURN VALVE NOT CLOSED - FILTRATION AND TOP OFF DISABLED - CALL SERVICE	Return valve was trying to close and confirmation is missing

<b>Code</b>	<b>ERROR MESSAGE</b>	<b>EXPLANATION</b>
E36	VALVE INTERFACE BOARD FAILURE - FILTRATION AND TOP OFF DISABLED - CALL SERVICE	Valve Interface Board connections lost or board failure.
E37	AUTOMATIC INTERMITTENT FILTRATION PROBE FAILURE - FILTRATION DISABLED - CALL SERVICE	AIF RTD reading out of range.
E39	CHANGE FILTER PAD	25-hour timer has expired or dirty filter logic has activated.
E41	OIL IN PAN ERROR	The system detects that oil may be present in the filter pan.
E42	CLOGGED DRAIN (Gas)	Vat did not empty during filtration
E43	OIL SENSOR FAILURE - CALL SERVICE	Oil level sensor may have failed.
E44	RECOVERY FAULT	Recovery time exceeded maximum time limit.
E45	RECOVERY FAULT - CALL SERVICE	Recovery time exceeded maximum time limit for two or more cycles.
E46	SYSTEM INTERFACE BOARD 1 MISSING - CALL SERVICE	SIB board 1 connection lost or board failure.
E51	DUPLICATE BOARD ID - CALL SERVICE	Two or more controllers have the same location ID.
E52	USER INTERFACE CONTROLLER ERROR - CALL SERVICE	The controller has an unknown error.
E53	CAN BUS ERROR - CALL SERVICE	Communications are lost between boards.
E54	USB ERROR	USB connection lost during an update.
E55	SYSTEM INTERFACE BOARD 2 MISSING - CALL SERVICE	SIB board 2 connection lost or board failure.
E61	MISCONFIGURED ENERGY TYPE	The fryer is configured for the incorrect energy type.
E62	VAT NOT HEATING - CHECK ENERGY SOURCE - XXXF OR XXXC	The vat is not heating properly.
E63	RATE OF RISE	Rate of rise error occurred during a recovery test.
E64	FILTRATION INTERFACE BOARD FAILURE - FILTRATION AND TOP OFF DISABLED - CALL SERVICE	Filtration Interface Board connections lost or board failure.
E65	CLEAN OIB SENSOR - XXX F OR XXX C - CALL SERVICE	Gas -The oil is back sensor does not detect oil. Clean oil sensor.
E66	DRAIN VALVE OPEN - XXXF OR XXXC	Drain valve is opened during cooking.
E67	SYSTEM INTERFACE BOARD NOT CONFIGURED - CALL SERVICE	Controller is turned on when the SIB board is not configured.
E68	OIB FUSE TRIPPED - CALL SERVICE	The VIB board OIB fuse has tripped and didn't reset.
E69	RECIPES NOT AVAILABLE - CALL SERVICE	The controller has not been programmed with product recipes. Replace controller

<b>Code</b>	<b>ERROR MESSAGE</b>	<b>EXPLANATION</b>
		with factory programmed controller.
E70	OQS TEMP HIGH	Oil temperature is too high for a valid OQS reading. Filter at a temperature between 300°F (149°C) and 375°F (191°C).
E71	OQS TEMP LOW	Oil temperature is too low for a valid OQS reading. Filter at a temperature between 300°F (149°C) and 375°F (191°C).
E72	TPM RANGE LOW	The TPM is too low for a valid OQS reading. This may also be seen with fresh new oil. The incorrect oil type may be selected in the setup menu. The sensor may not be calibrated for the oil type. See oil type chart in instruction document 8197316. If issue continues contact a FAS.
E73	TPM RANGE HIGH	The TPM reading is too high for a valid OQS reading. Dispose the oil.
E74	OQS ERROR	The OQS has an internal error. If issue continues contact a FAS.
E75	OQS AIR ERROR	The OQS is detecting air in the oil. Check the O-rings and check/tighten prescreen filter to ensure no air is entering the OQS sensor. If issue continues contact a FAS.
E76	OQS ERROR	The OQS sensor has a communication error. Check connections to the OQS sensor. Power cycle the entire fryer battery. If issue continues contact a FAS.
E81	SAFE MODE FAILURE ERROR	The system has detected the fryer is not heating properly due to low oil conditions. Ensure the fryer has oil to the bottom fill line or higher. If not, add oil to the bottom fill line. If issue continues contact a FAS.