

Frymaster®

INTUITION FRYER VISUAL SERVICE GUIDE



9-9-2025



Intuition Visual Guide

Intuition Visual Guide

FRYMASTER

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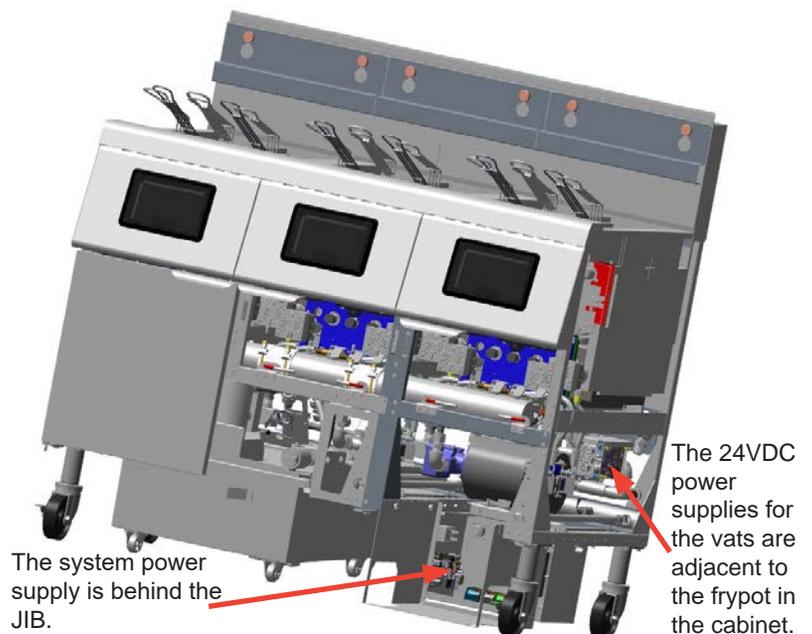
The Intuition fryer shown with its doors open above and in a line drawing cutaway view below.

The Intuition fryer differs from the units before it in many ways.

Prominent is the use of DC voltage to power virtually all the running gear. To achieve that, separate 24 volt DC power supplies are on board for the fryer's systems.

Each vat has a power source mounted in the cabinet interior. The common functions of the battery, such as the filter system, are powered by a single power source mounted behind the JIB.

The division of the power is illustrated in the schematic on the opposite page.

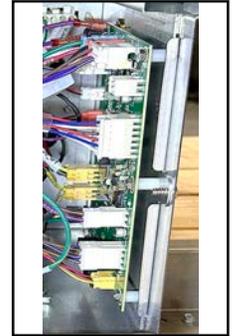


New Fryer, New Acronyms

The Intuition fryer introduces new acronyms and incorporates some used on earlier auto filtering fryers. It also eliminates some circuit boards and their acronyms that were prominent on other fryers. There are no Smart Interface Boards (SIBs), Valve Interface Boards (VIBs), Automatic Intermittent Filter (AIFs) boards. In some cases the probe associated with the function retains the acronym. In another, the Oil Is Back probe is retained but its approach to measuring oil temperature has been redesigned.

New Acronyms

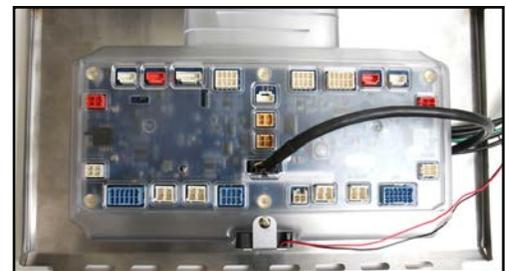
- **SCB:** System Control Board. It's in the box behind the JIB and controls system wide functions of the fryer, such as filtration. There is one per system. A single screw allows the SCB mounting plate to slide out.
- **HCB:** Heat Control Board. One per vat and it's behind the controller under a translucent cover. It controls vat-specific operations. There is one per vat.
- **VFD:** Variable Frequency Drive. It's in the box behind the JIB. It provides three-phase power to the filter motor, which allows it to operate clockwise and counterclockwise. There is one per system.



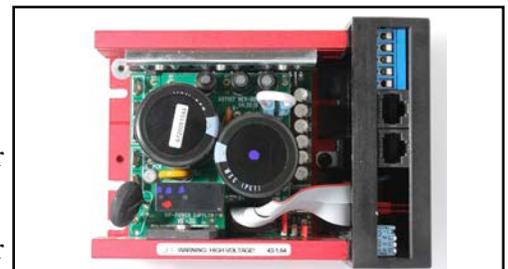
System Control Board

Familiar Acronyms

- **OIB:** Oil Is Back. This frypot probe detects the departure and return of oil. It must be satisfied for the vat to heat. The OIB in the Intuition is a simpler design with fewer parts than earlier OIB's. There is one per vat.
- **OQS:** Oil Quality Sensor. It measures the quality of the oil by measuring suspended particles and projects its longevity. There is one per system.
- **ATO:** Automatic Top Off. This frypot probe detects oil and calls for top off when oil is off the probe. There is one per vat.
- **AIF:** Automatic Intermittent Filtration. This frypot probe detects oil movement during a filter cycle. There is one per vat.



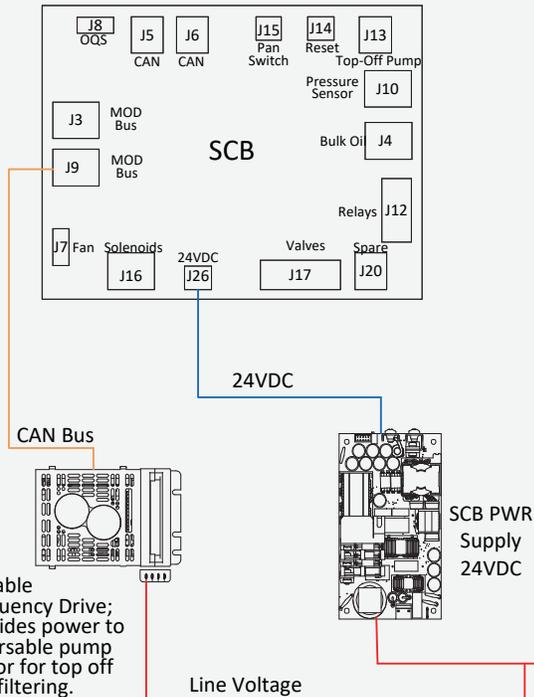
Heat Control Board



Variable Frequency Drive

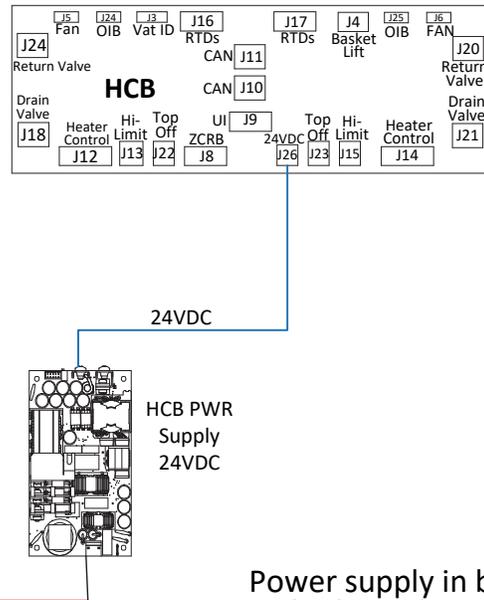
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System Control Board handles functions for the entire fryer

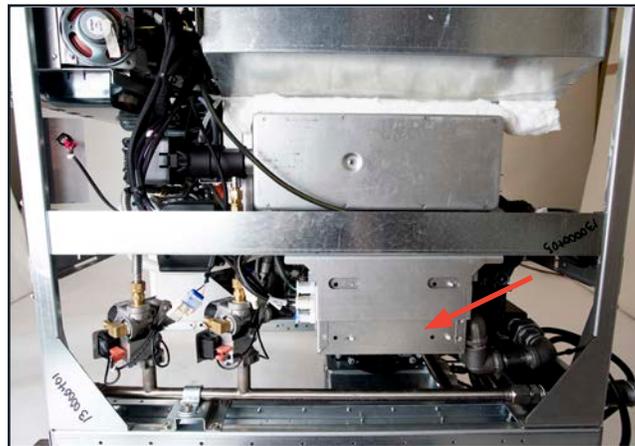


Components in System Control Board box behind JIB. The components include a terminal block that routes power to the power supply and the VFD.

Heating Control Board, one per vat, handles functions for a vat



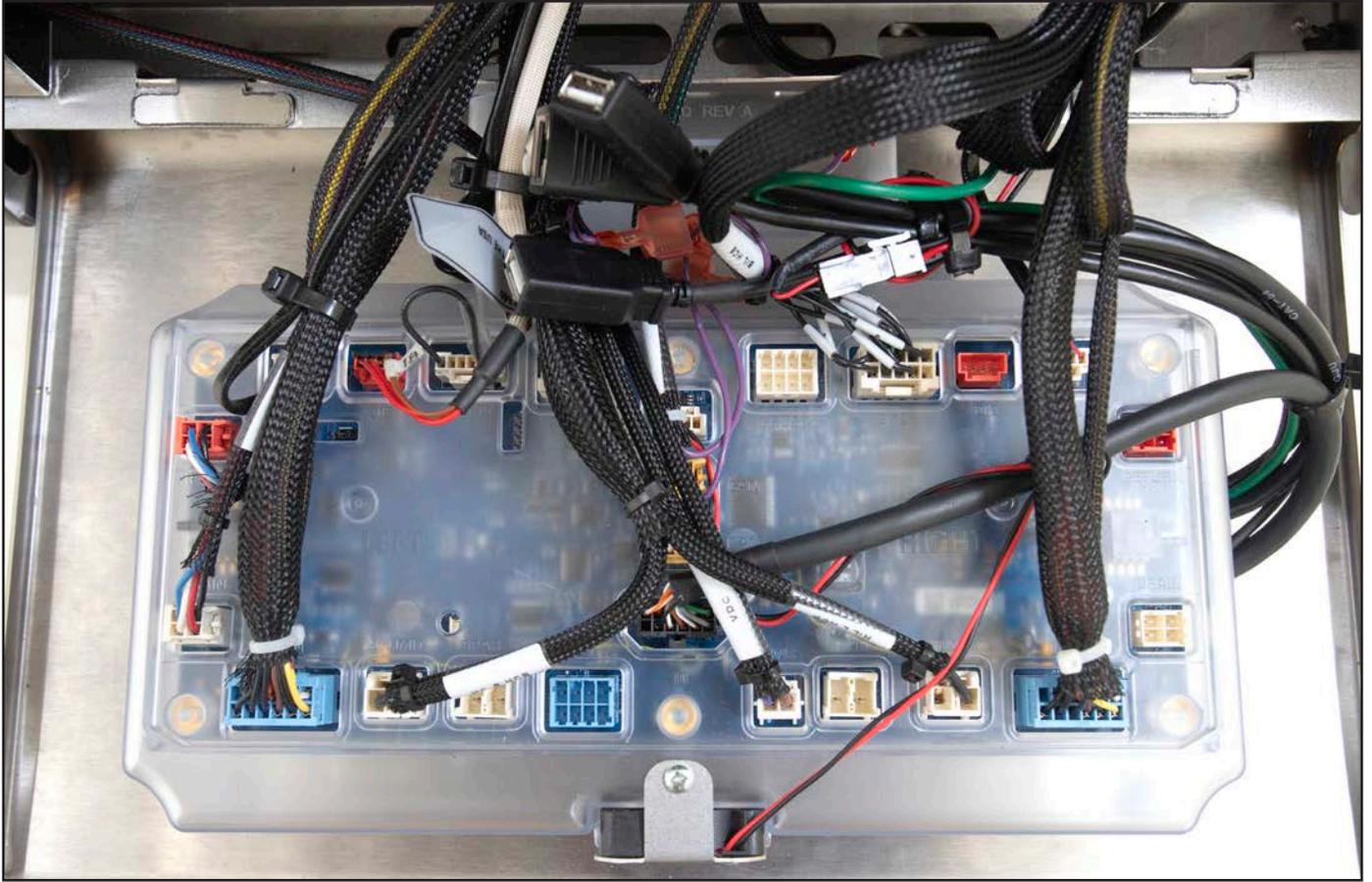
Power supply in box attached to cabinet side interior below vat. There's one for each vat.



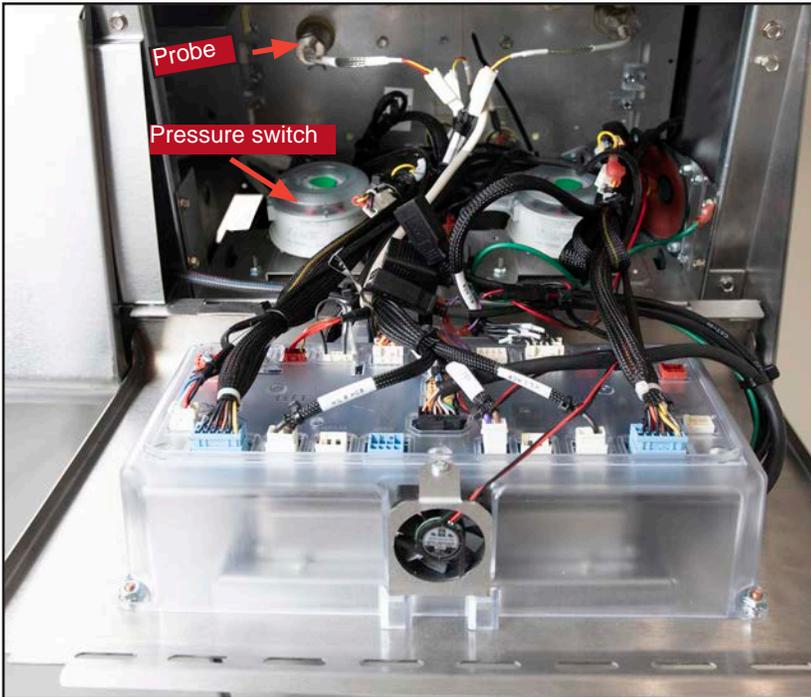
A vat power supply (arrow above) on its bracket and removed for service at left.

The power supply for a vat is accessible behind a removable side. It rests on studs and lifts out for service. It's shown removed from the cabinet at left.

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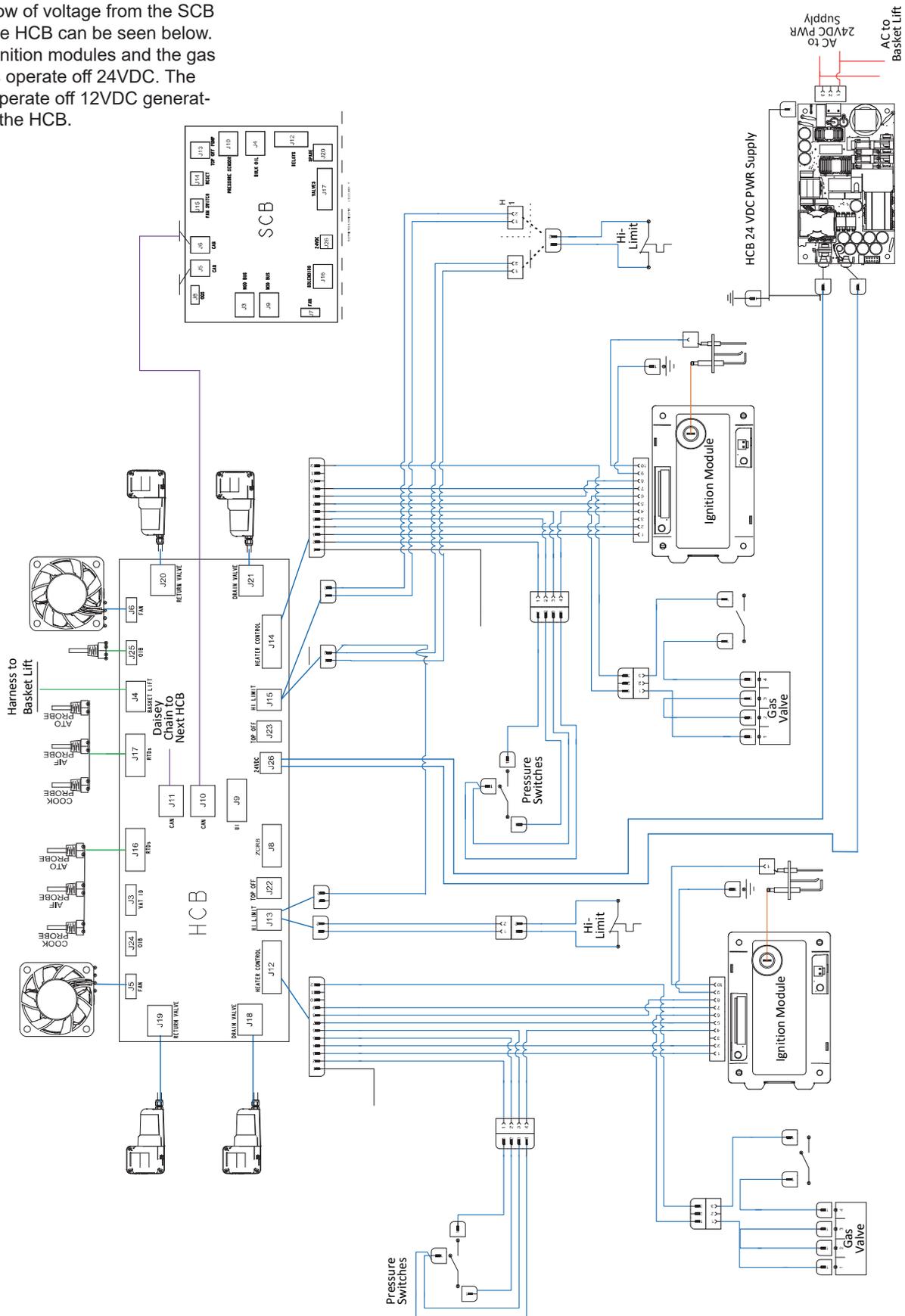
The controller is shown lowered. The harnesses are automotive style and the ports on the back of the Heat Control Board are labeled. The covering is clear, which allows diagnostic LED's to be seen during servicing. LEDs are annotated on page 29.



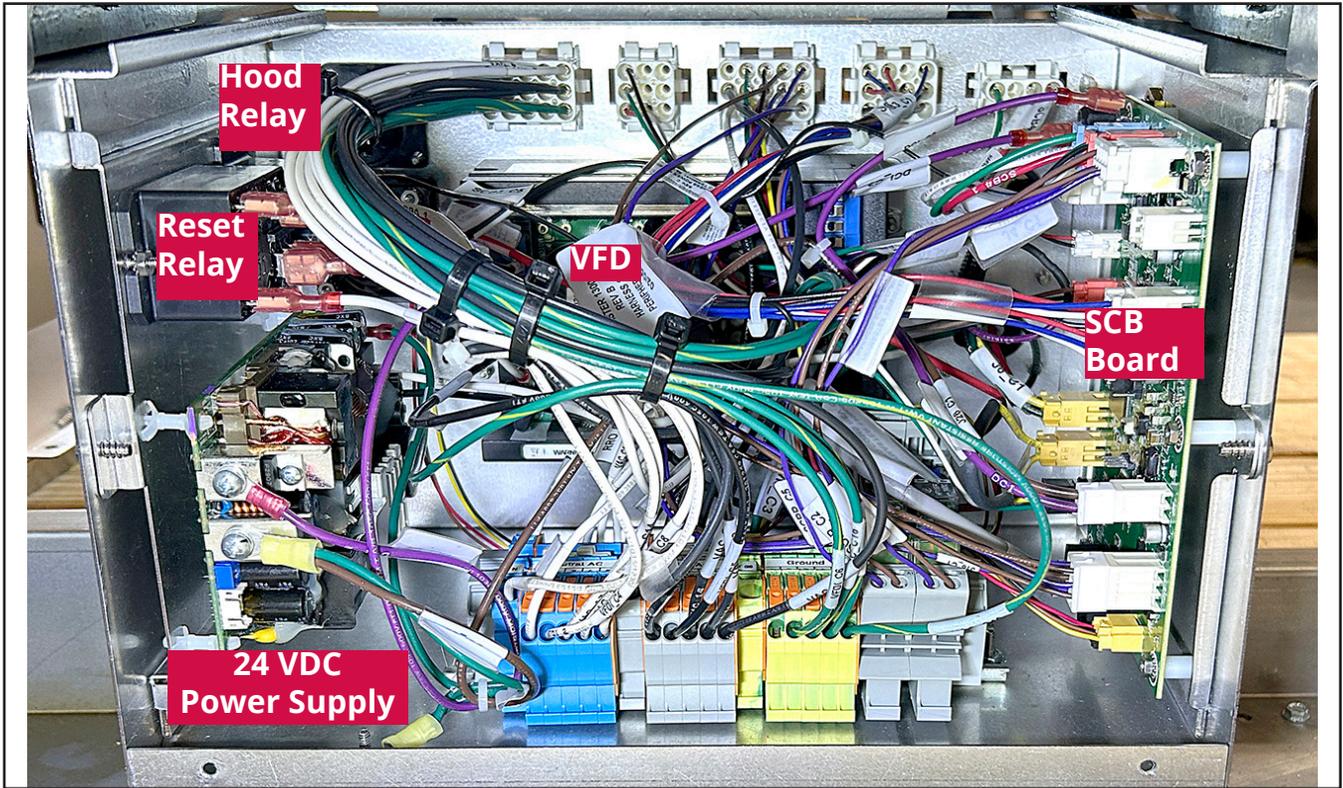
The control box interior is visible (left). There are no more circuit boards in the box. The HCB housing holds all that circuitry.

Intuition Visual Guide

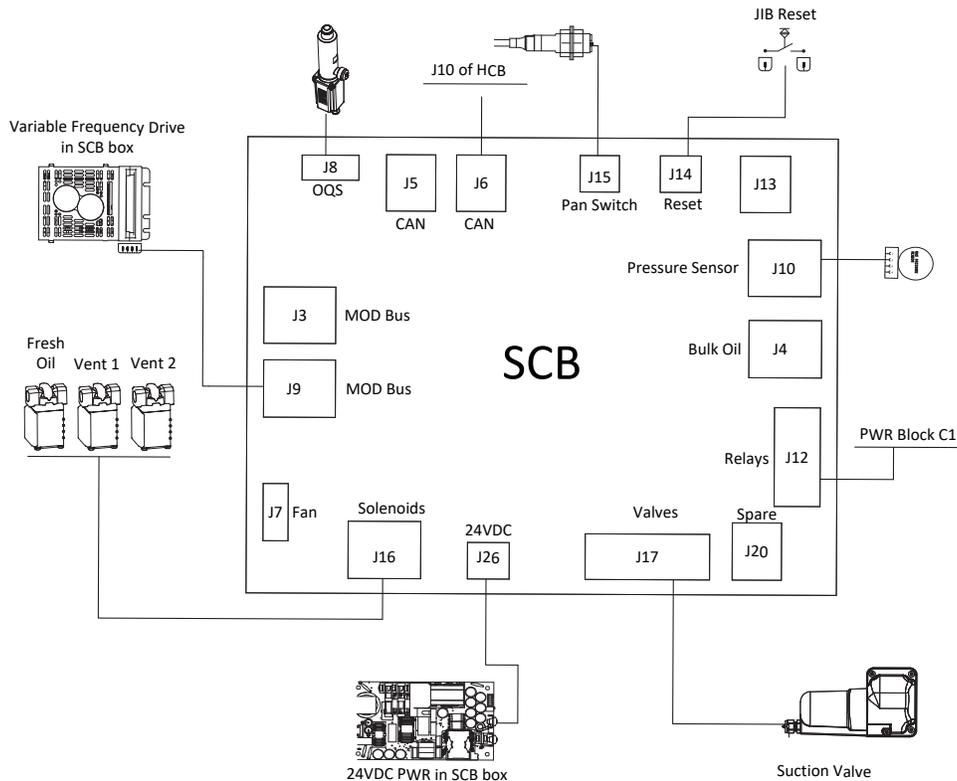
The flow of voltage from the SCB and the HCB can be seen below. The ignition modules and the gas valves operate off 24VDC. The fans operate off 12VDC generated by the HCB.



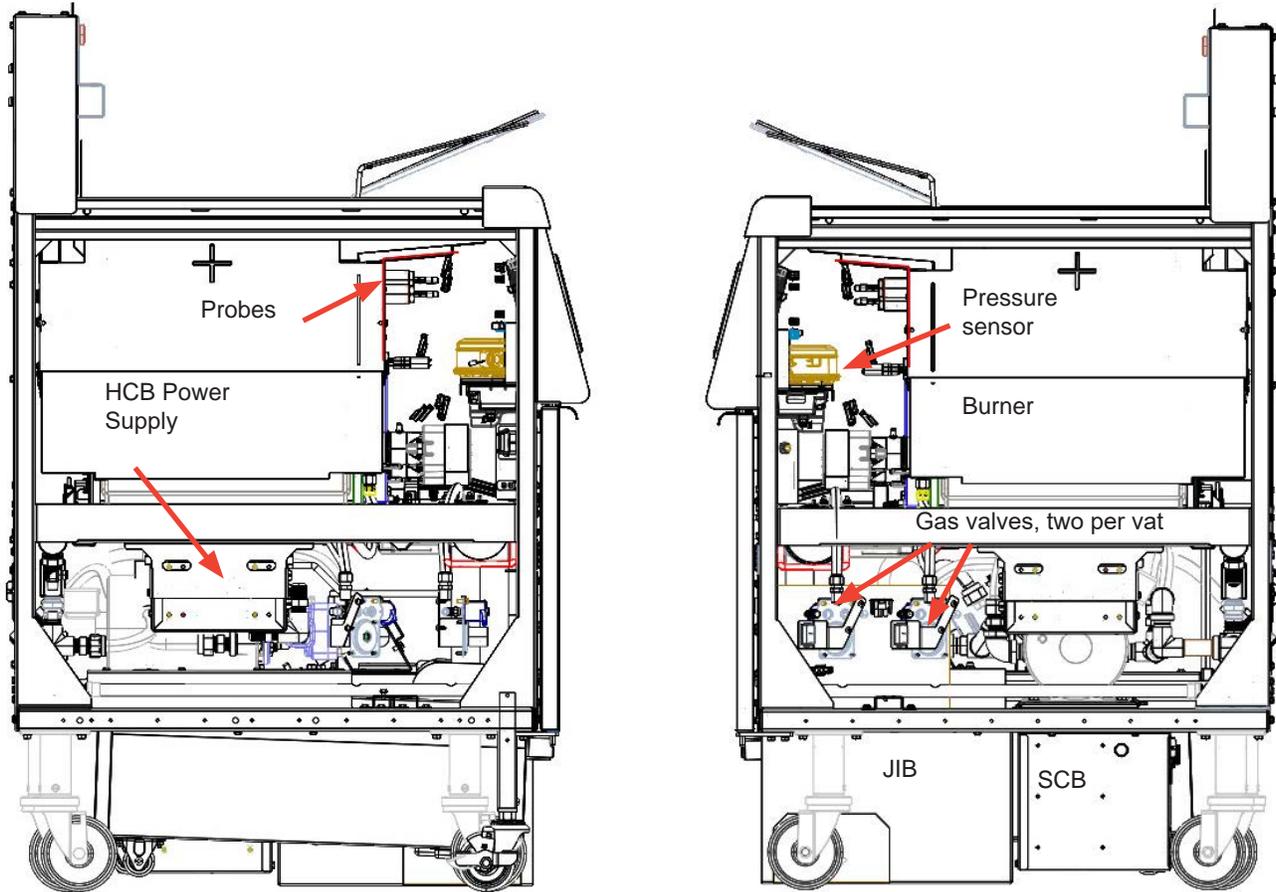
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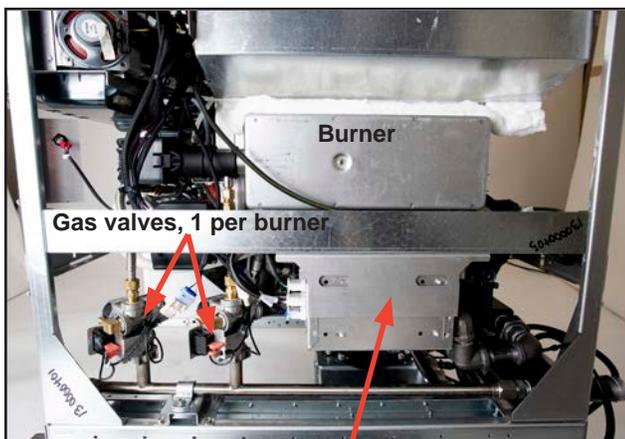
The System Control box, behind the JIB, holds a 24VDC power supply, a Variable Frequency Drive (VFD) and the System Control Board. The routing of power from the SCB is shown below. The VFD allows the motor that drives the one oil pump to move backwards and forwards. Moving backwards, it draws oil from the manifold after a filter cycle, preventing cross contamination between new and used oil.



Component Identification, Location



Cutaway views (left and right, above) of the Intuition fryer. A photo of the right side is show below. The sides are removable to gain access to the components shown.

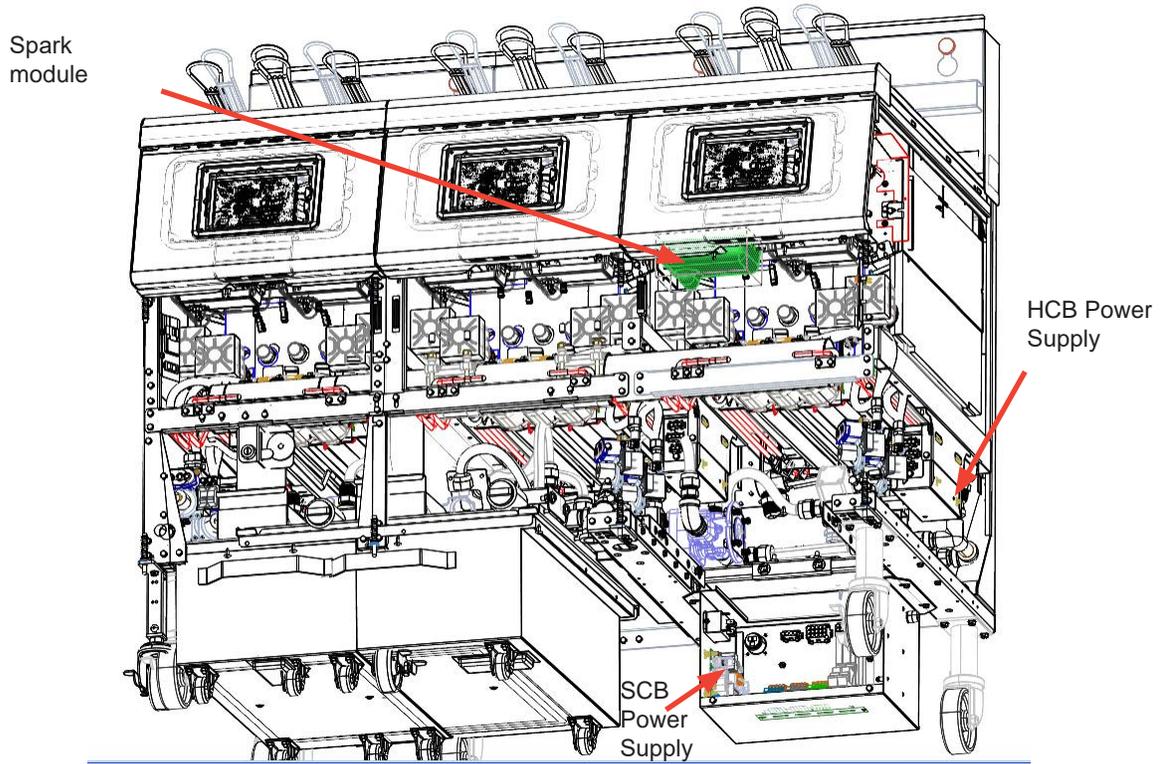


HCB Power Supply

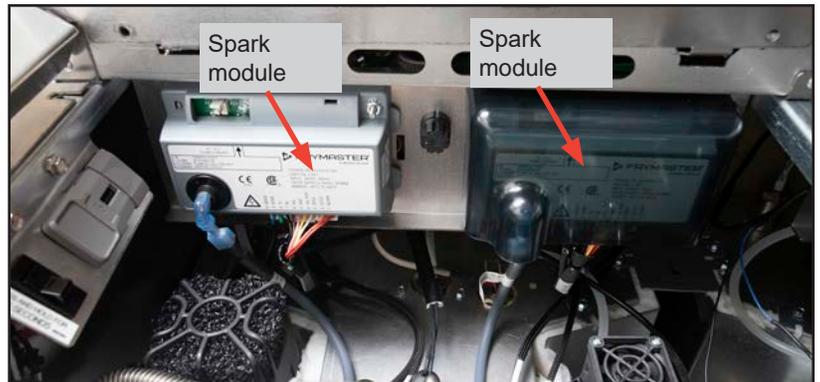


The pump and motor, which serve the filter and top off systems, can be seen above. The variable frequency drive in the box below the pump allows the motor to run forward and backward.

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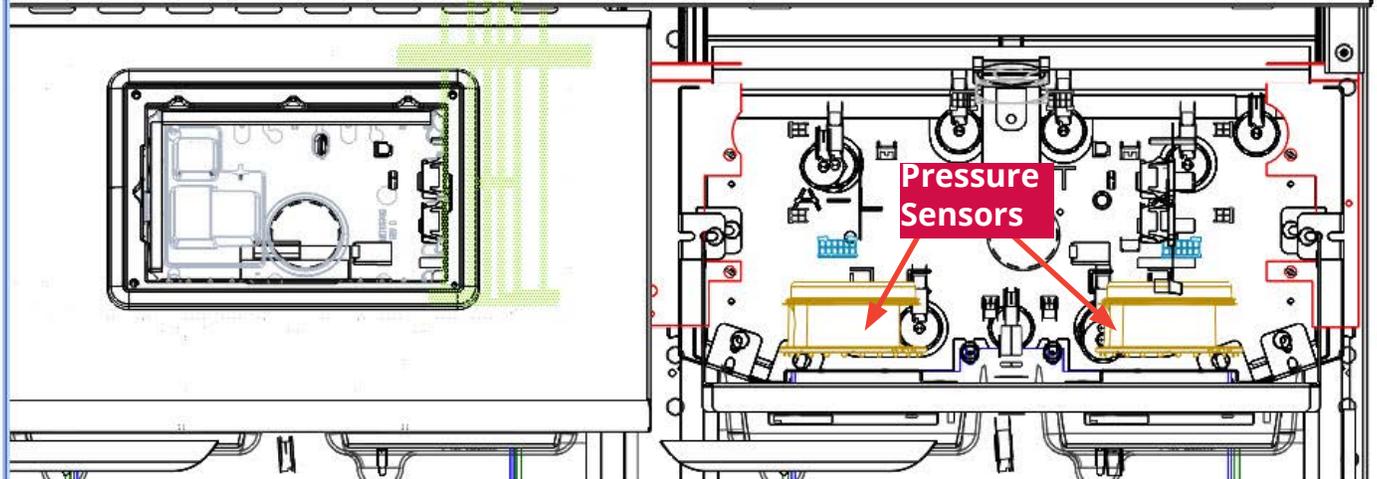


A low-angle view of the unit in cutaway (above) and a photo (right) show placement of vital components. The right spark module in the photo is shown covered in a translucent cover. The cover, for clarity, is removed from the left. Both are mounted horizontally under the controller.



A pair of 24VDC gas valves, one for each burner of a frypot is visible left. The valves have individual on/off switches. They run on natural gas or propane and require no adjustment for high altitude.

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The control box is shown in a cut-away view above. The HCB housing holds the only circuit board and the controller, leaving the box clear of obstructions. The probes, visible in the photo at left, are easy to reach. The pressure sensors (in gold above) and white in the photo (left) measure the output of the fans. The controller, which supplies the 12VDC to run them, adjusts their speed to ensure maximum flame efficiency as the filters get dirty. The controller also displays a warning when the filters should be cleaned.

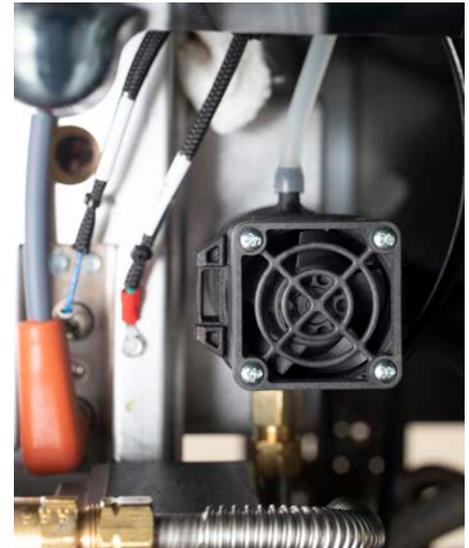
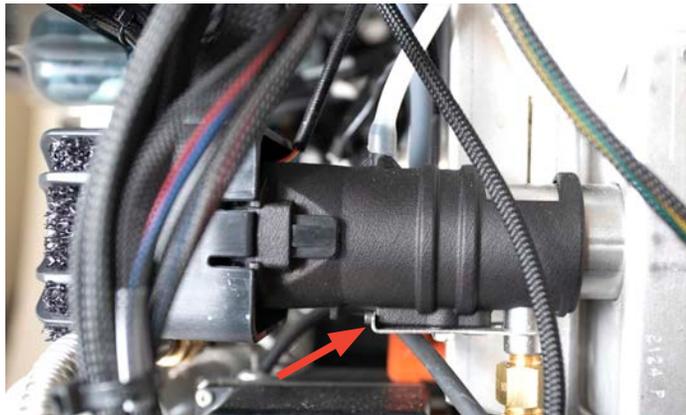


The probes in the frypot are seated on O-rings and (visible in background). The ATO, AIF and cook probes are interchangeable. Their leads go straight to ports on the HCB.

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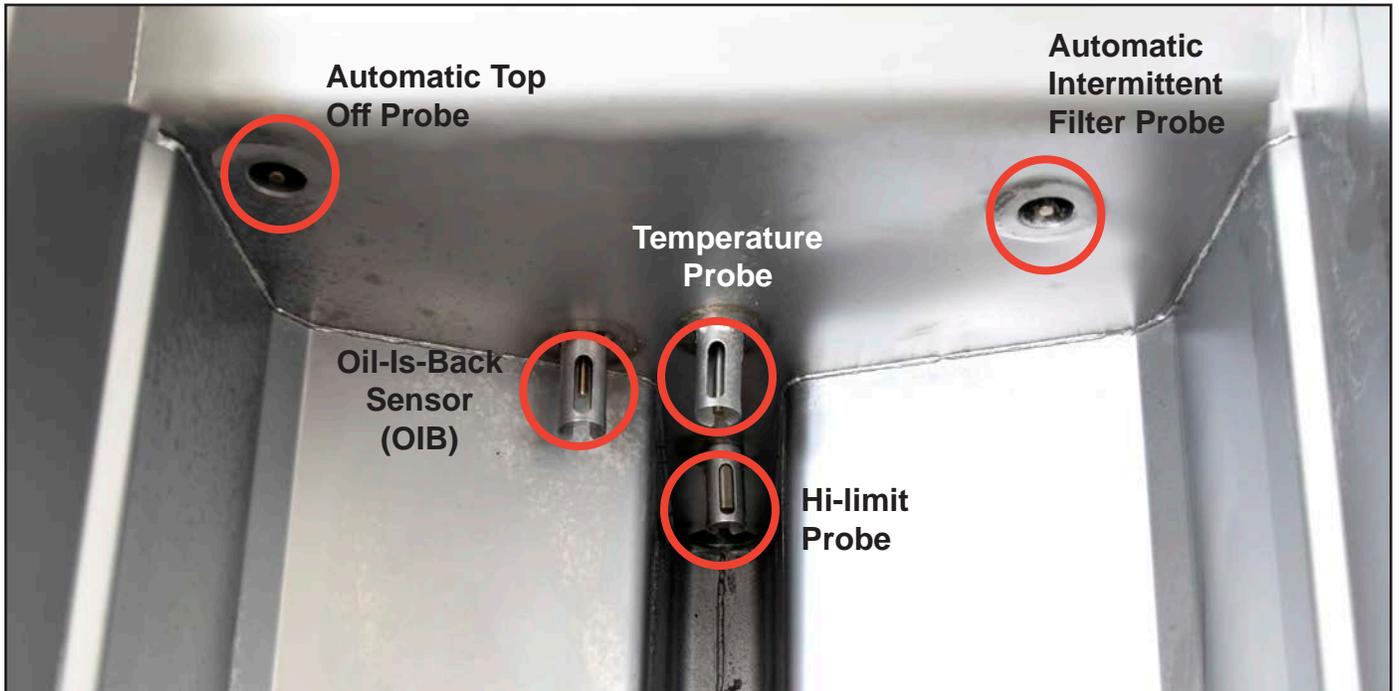


The cabinet interior is shown above. A pair of small blowers replace the boxy blowers seen on H55 closed-burner fryers. The switch to reset the fryer is at left with the USB port for software upgrades.



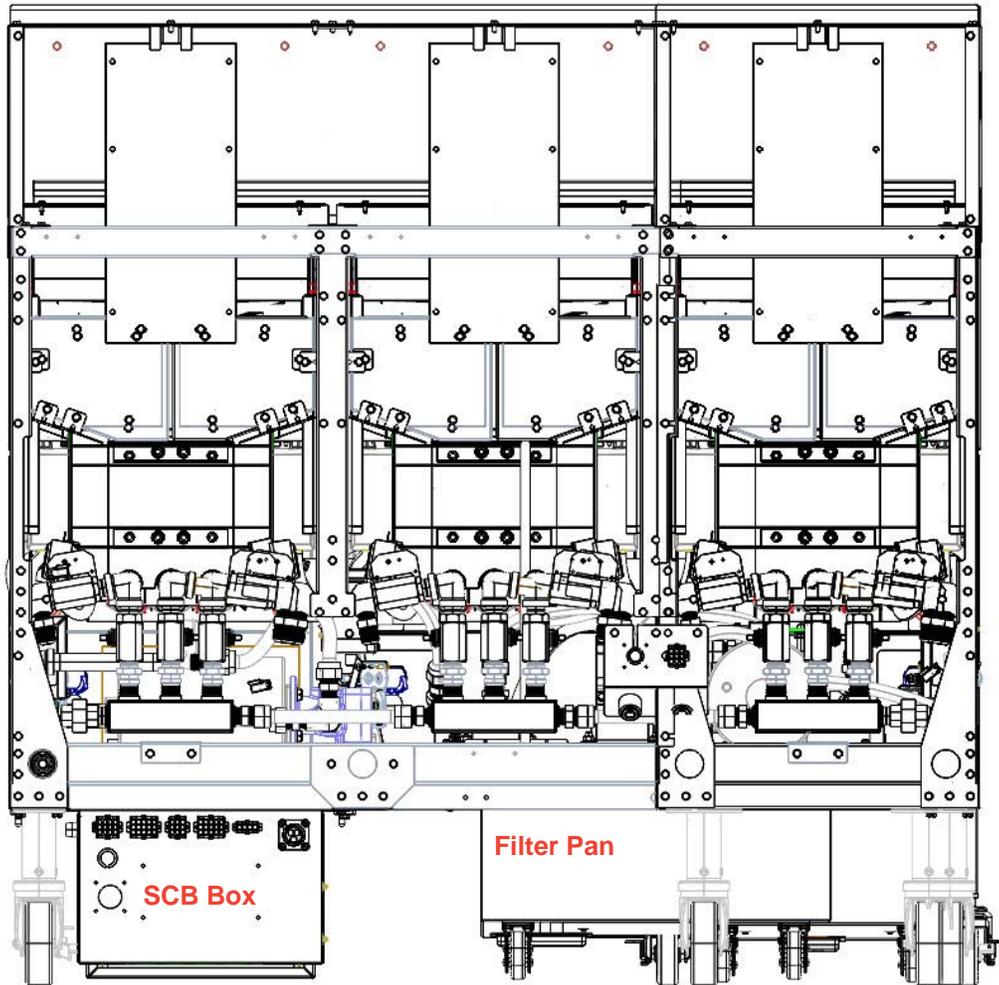
Micro blowers with washable filters are on each burner. The blower assembly twists onto the burner and is held in place (above) with a bracket. The bracket, which straddles the gas line, is held in place with an allen screw. The blower is shown without the filter at right.

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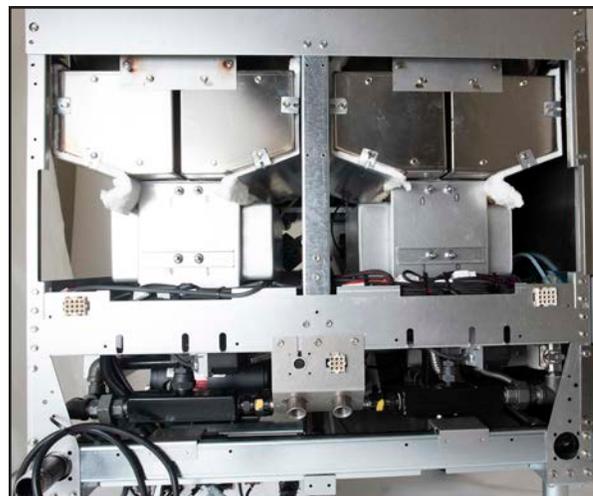


The probes in the frypot are positioned like earlier 30lb fryers with auto filtering and top off. The Oil is Back sensor (left, seen inside and outside the pot) takes a different approach to detecting oil than the OIB in earlier 30lb fryers. It is heated to a temperature just above setpoint. It is instantly active and how quickly it reaches its operating temperature is a check on the presence of oil. If it reaches the temperature too quickly, there's likely no oil and the fryer won't heat. The probe plugs directly into the HCB. There are no other OIB components.

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The back of the fryer holds the gas, oil manifolds and a gas pressure sensor, which measures the pressure of incoming gas.



Fryer with back removed



Gas Pressure Sensor

Installing the Intuition Fryer

The Intuition fryer is pushed to the metal guide that ensures the SCB box is above the lowest part of the pallet as the fryer is pushed off.



The fryer's SCB box is protected by a special pallet guide (shown at right). The fryer's gas valves require no adjustment for natural or propane gas use.

It will also run on voltages greater than 120 volts, however, a jumper has to be removed (shown at right).

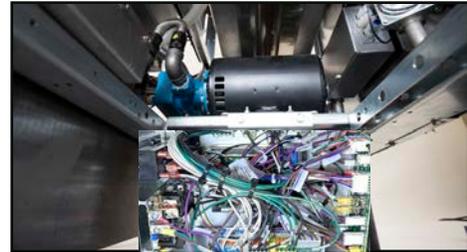
The fryer should be leveled like any auto filtering fryer. There are no other platform-specific installations requirements.



The two-piece metal brackets (above) that hold the fryer to the pallet must be completely removed.



The metal insert in the pallet is a guide to the fryer's wheels, ensuring the SCB box doesn't strike the pallet as the fryer rolls off.



If the fryer's power source is greater than 120 volts, the SCB box (top photo), which is found behind the JIB, must be opened and the jumper on the Variable Frequency Drive, (circled in the photo above) must be removed.

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The spark modules reside in translucent covers (one removed for clarity) under the controllers and above the fans.

Troubleshooting the Intuition Fryer

Spark

Innovative in many ways, the Intuition fryer has the same gas, air and spark requirements as less sophisticated fryers.

Troubleshooting ignition issues should begin with the source of ignition, the 24VDC spark module.

Along with the fryer's onboard analytics, the module has LED's that are illuminated at critical times during the ignition sequence.

The module uses the same flame-sensing technique as legacy fryers: it detects rectified DC voltage with a sense rod. If the flame is not detected, the module will lock out after multiple ignition attempts.



A single red flash (left) from a front-mounted LED indicates the HCB latch contactor is closed and the module is ready for a call for heat.

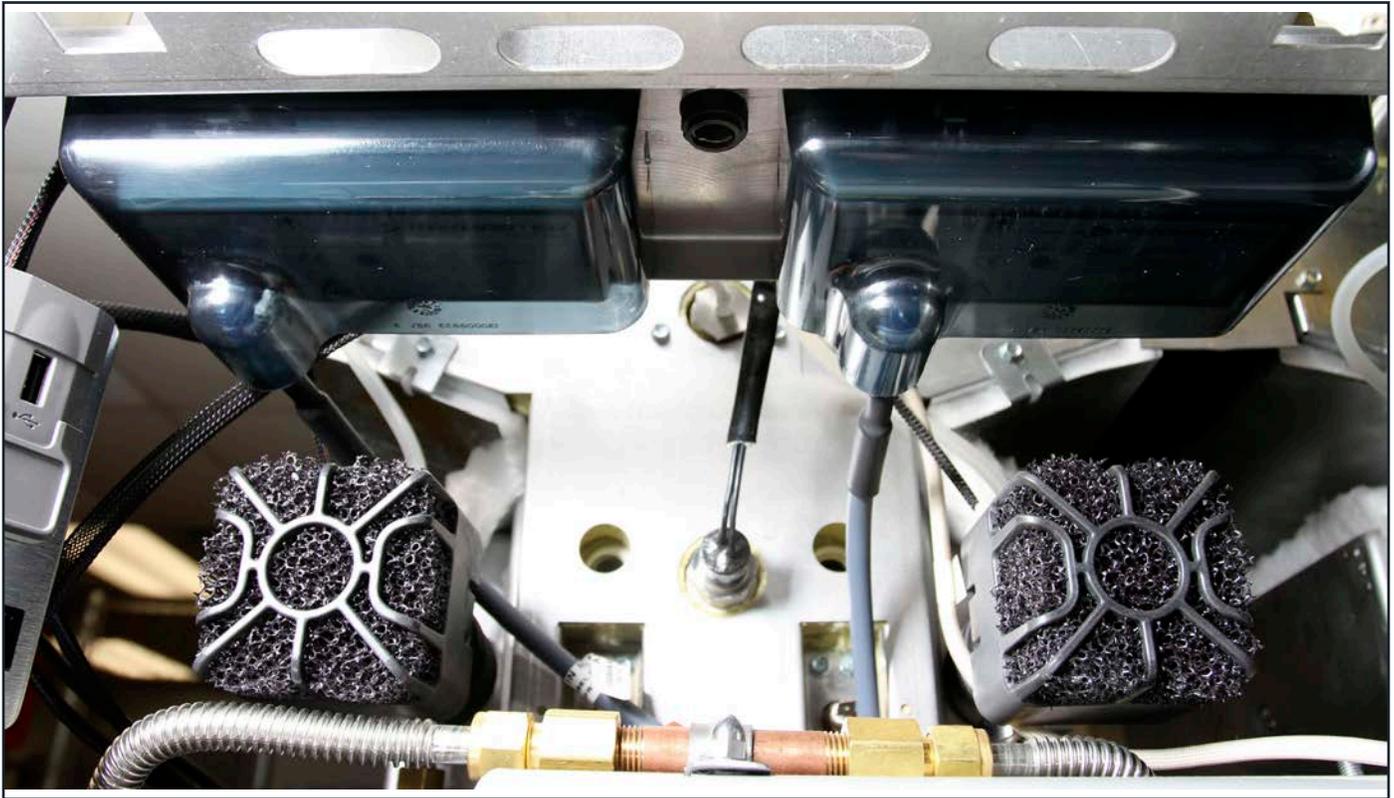
Three flashes indicate trouble: the ignition window has closed and flame has not been detected. The module tries four more times at five-second intervals before locking out.



A green LED, harder to see and on the opposite side of the module (circled at left), indicates 24VDC is present for the module. The LED is lit for the duration of the voltage availability, a call for heat is coming from the HCB. The green LED goes out when voltage is not present.

If voltage is below 18VDC, the green LED is not illuminated and the red LED shows a solid light.

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The DC fans are seen above in the interior of the fryer.

Air

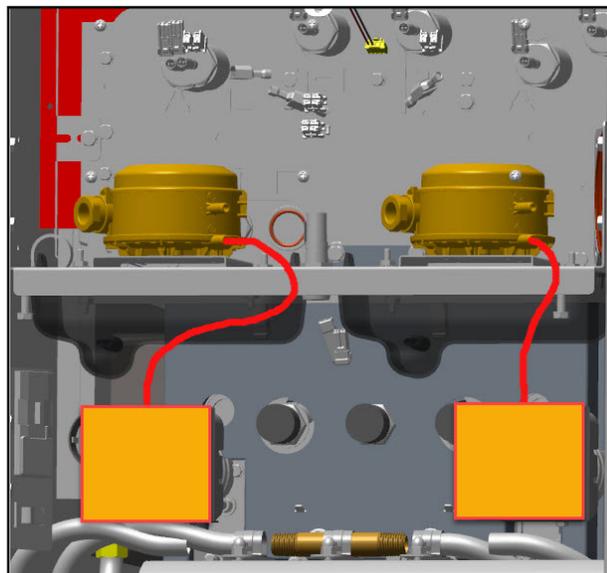
The intuition fryer uses small DC fans to enhance the efficiency of the burners and pressure switches to monitor the health of the fans.

Poorly performing fans drag down the efficiency of the fryer.

The pressure switches are in the control box and connected to the fans by hoses and electrically connected to the Heat Control Board (HCB), which records their RPM.

As the filters become clogged with oil-laden air and dust, the HCB will adjust their RPM to ensure optimal air flow to the burners. When that can't be achieved, the controller will call for the filters to be replaced or cleaned.

Filter snap off and can be cleaned at the sink.



The pressure switches are seen in the control box behind the HCB (above). The fans and their connecting hoses are shown in an illustration (left). The illustration shows the hose in the front for clarity. The actual route is through the rear of the control box. The hoses must be free of kinks, routed away from hot surfaces, and connected to the (+) marked port on the sensor.

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The fans, when replacement is needed, are designed to be removed completely, body and fan.

A split bracket, (visible at right) must be backed away from the stem the fan assembly sits on with an allen screw and rotated off the burner port.

There are two O-rings in the fan throat, which makes for a tight fit.

The curved cut in the fan's rear opening means the fan must be rotated off the gas line when the fan is removed.

The hose that joins the fan to the pressure switch (below) must be connected to the (+) port.

Voltage at the switch can be measured at the numbered terminals in the photo (below right): When the fan is off, $9.3 \pm .2$ VDC between terminals 1 and 3. With the fryer calling for heat, 24 ± 1 VDC between terminals 1 and 2.

The pressure sensors are set for optimal performance at the factory, however, they can be adjusted in the field.

For popping, the indexed wheel can be turned to produce more air.

When the burner fails to stay lit, air flow can be reduced. Adjusting the switch

affects the fan and the millivolt current used to detect flame. The optimal millivolt output of the spark module, measurable with a ohm meter in series with the flame sensor, is 1.5 ± 0.4 uA.

The reading should be taken with the vat between 250°F (121°C) and 300°F (149°C).



A split-tail bracket on the blower straddles the gas line on the burner (above and below). A allen wrench is necessary to pull the bracket forward when removing the burner.



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Fuel

The sealed burners of the Intuition fryer are provided gas from 24VDC gas valves, which sit on a gas manifold, one for each burner.

Gas enters the fryer (Natural or Liquid Petroleum) through the shared manifold. The flow into the manifold is monitored by a sensor at the rear of the manifold (see below).

The coupling to the fryer from the restaurant's gas supply can be under the fryer or at the rear.

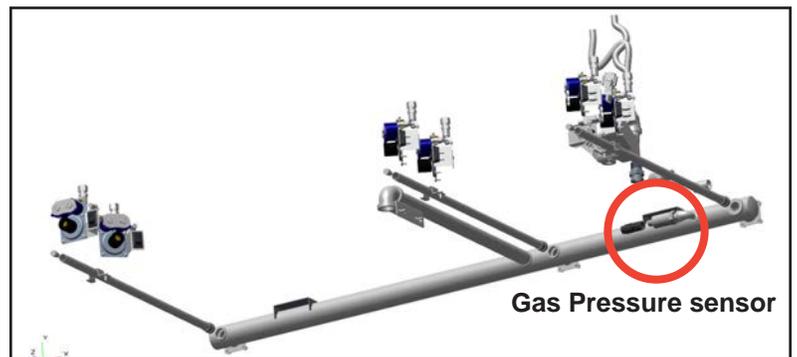
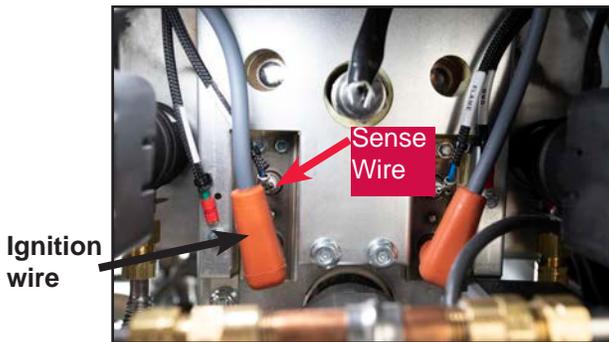
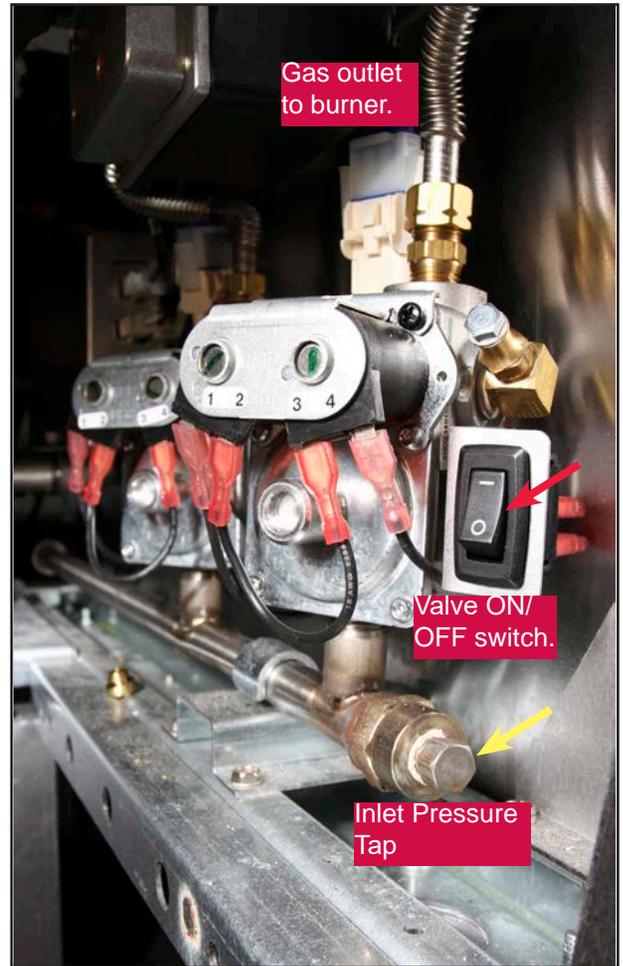
Problems associated with gas pressure can be checked at the tap on the valve or the tap on the manifold.

A sensor on the manifold (see below) monitors the incoming gas pressure and can display the results. The sensor makes remote monitoring of gas pressure possible.

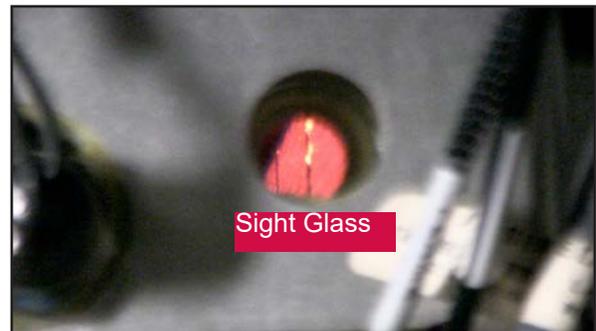
Flame in the burner, visible through the sight glass, is a good indication the fryer is functioning. The flame should turn orange after a minute of full-burn operation.

Other quick checks for failed ignition include the presence and condition of the flame sense wire and the spark wires.

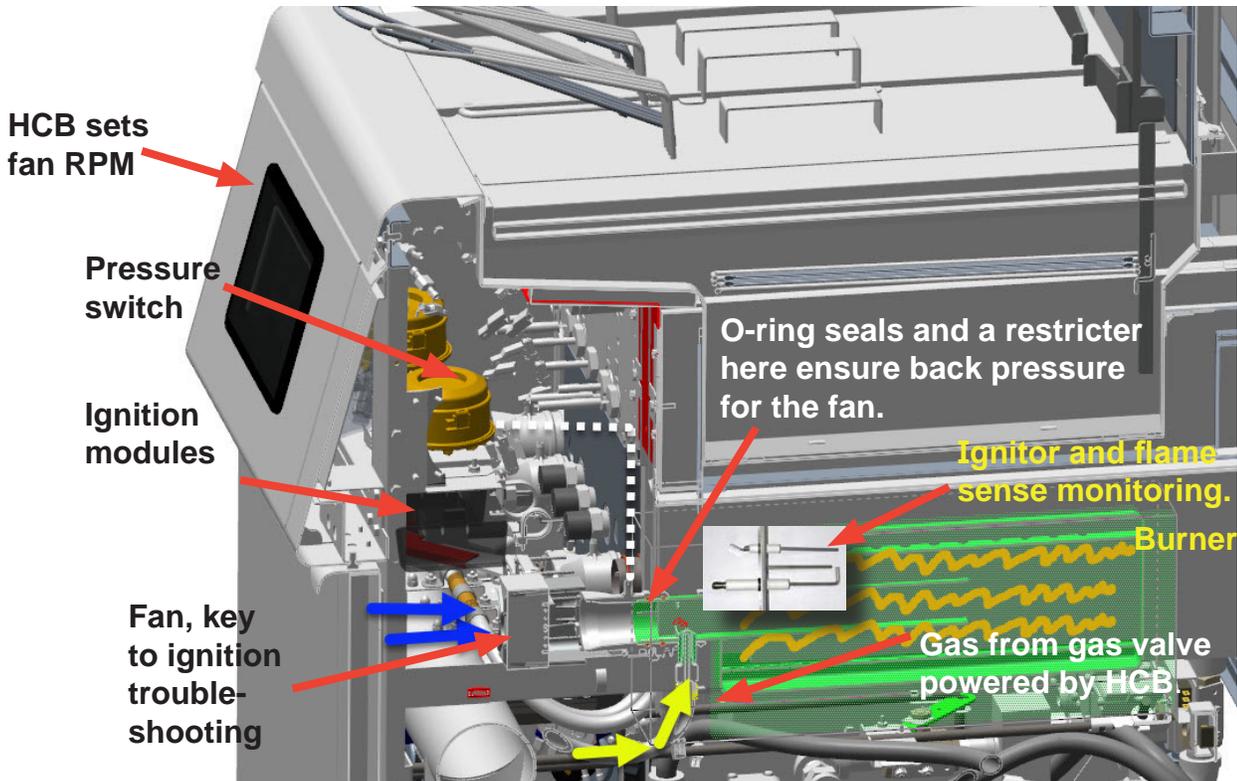
As mentioned earlier, the flame in the burner is sensed by the spark module. It measures DC millivoltage on the sense wire after sending AC voltage into the burner where it passes through the flame and is rectified to DC.



The DC gas valves are shown (top right). Their ON/OFF switch should be checked if the fryer won't ignite. The condition of the ignition and sense wires (above) are other quick checks. The pressure of the incoming gas is measured by a sensor (circled above) and at right. A blue glow can be seen in the sight glass (right). It should turn orange after a minute of operation.



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Ignition

The fryer follows this sequence when firing:

- The fan runs and the pressure it produces is detected by the pressure switch and that is reported to the HCB.
- 24VDC from the vat-specific power supply to the HCB flows to the pressure switch and on to the spark module.
- The spark module provides power to open the gas valve, spark to the ignitor, and looks for flame in the burner by detecting a DC millivolt current with the flame sense rod. No flame sense, the module locks out.

What can go wrong:

Burner Inlet restriction: A restrictor in the burner inlet provides back pressure to the combustion fan and generates higher static pressure at the gas orifice. If NOT present, the unit will NOT activate the pressure switch and the system won't call for heat. The restrictor can be seen through the fan blades (and in the cut-away above), but it is not easy. The best way to confirm it is installed is to remove the fan adapter.

Pressure Switch: It is the key to powering the ignition module. If the air switch is set incorrectly or wired wrong, it won't work. The pressure setting of the switch determines the RPM of the fan at ignition. Too high and there's too much air; too low, not enough air. It is easily adjusted to adapt to store conditions.

Ignition Module: It controls the high-voltage spark, flame sense monitoring and gas valve voltage. The HCB provides the 24VDC to the ignition module. Each vat has its own source of 24VDC power.

Ignitor: The ignitor is the source of spark and provides the sense rod to monitor the flame during operation. If the ceramics or high-voltage electrodes are broken or out of place, the system won't work. The base of the ignitor must be grounded. Poor ignitor bracket grounding will cause the system to fail.

Gas Valve: The gas valve controls gas getting to the burner face. It has an internal regulator that must be set correctly. It is powered by the ignition module. It has an independent power switch.

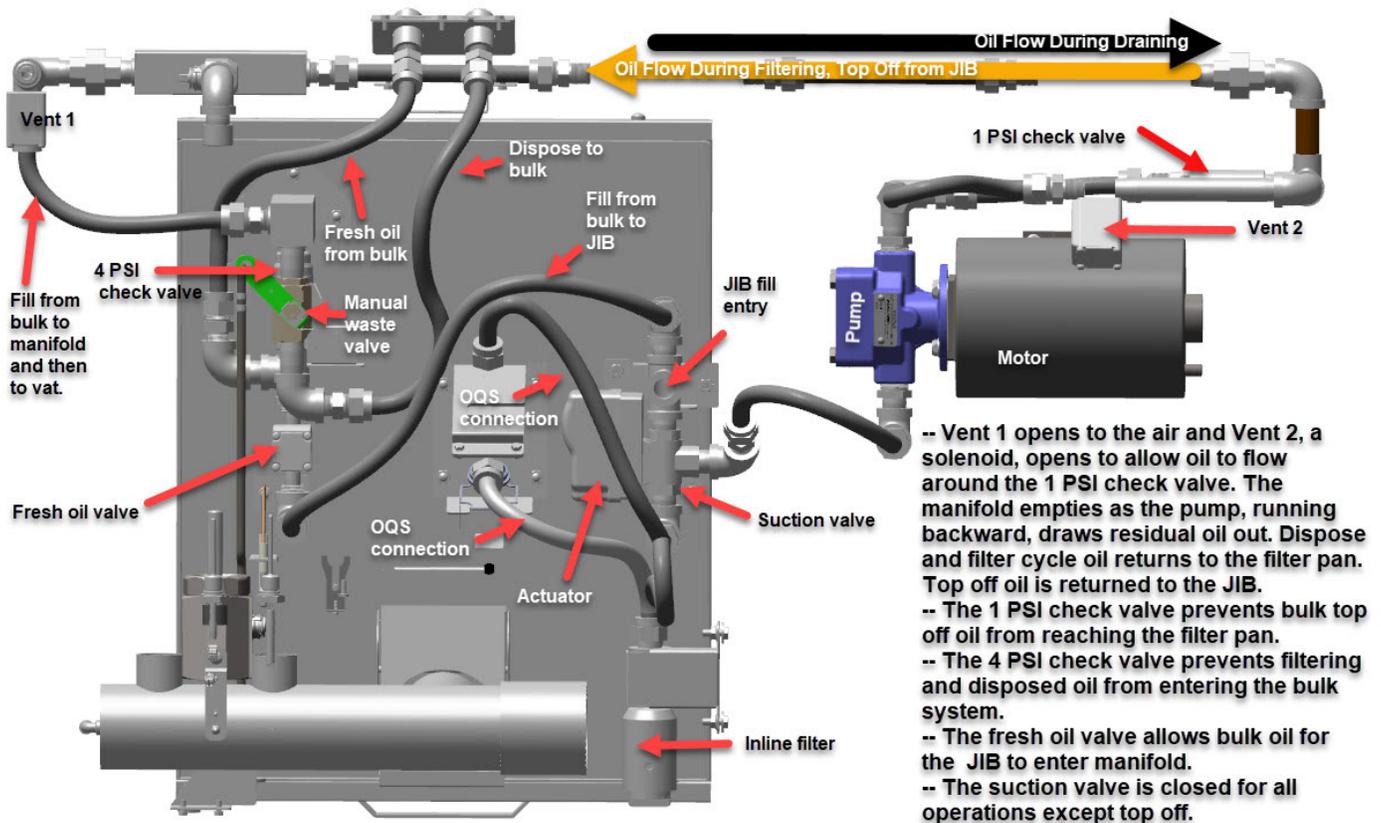
Key Troubleshooting Areas

- Wire connections
- Pressure switch hose connection
- Filter clogging
- Fan adapter mounting, O-ring sealing
- Fan Mounting

Oil Return System

The Intuition's oil return system (annotated in the following graphics) differs from other automatically filtering and filling fryers in that it has only one pump and a variable-speed motor. The pump that circulates the oil for filtrations at high RPM also pumps oil from the JIB to the vats at low RPM for automatic fill ups. The three-phase pump motor achieves this with power from the variable frequency drive (VFD) in the system control box behind the JIB.

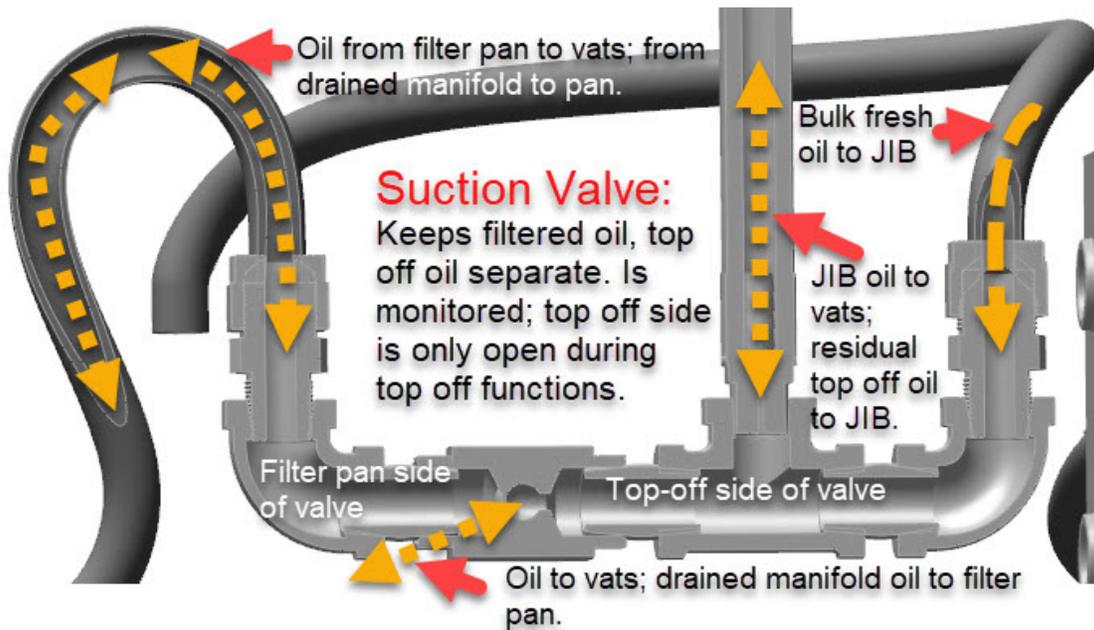
The reverse motion of the pump draws residual oil from the manifold between filtering and filling sessions. Vent 1 opens to the air, allowing the manifold to drain and Vent 2, a solenoid, opens to allow the rearward moving oil a path around the check valve that prevents top off oil from entering the bulk system. The oil is pulled to the filter pan, or in the case of top off, it is returned to the JIB.



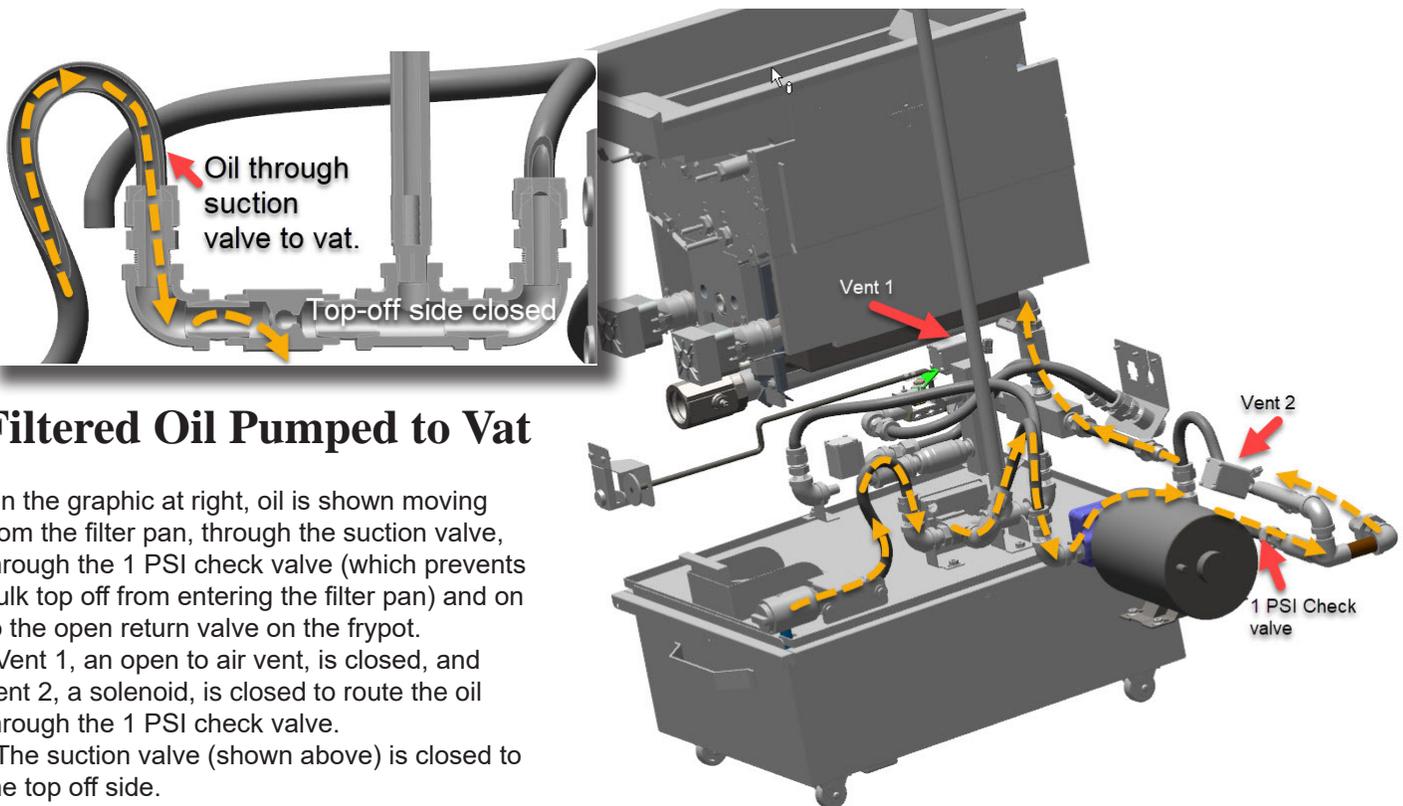
What Goes Wrong

- Most problems are self-inflicted:
- Failure to filter at prompted alerts.
- Failure to clean the inline filter.
- Failure to change the filter pad/paper, clean the pan.
- Any of these procedural failures can lead to the filter system failing.

Suction Valve Directs Oil Through Drain System



In many cases the oil flows through a valve atop the filter pan on the suction side of the pump, the suction valve. It keeps oil flowing to and from the filter pan separate from oil flowing to or from the top off system — the JIB or bulk-oil system delivered top off oil. It is operated by an actuator and always monitored. It's open to the valve's top off side only during top off functions. The following graphics show the various oil paths.



Filtered Oil Pumped to Vat

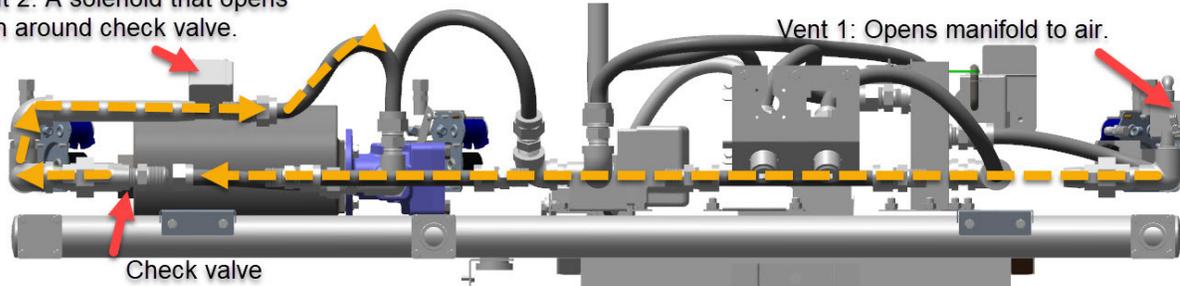
In the graphic at right, oil is shown moving from the filter pan, through the suction valve, through the 1 PSI check valve (which prevents bulk top off from entering the filter pan) and on to the open return valve on the frypot.

Vent 1, an open to air vent, is closed, and vent 2, a solenoid, is closed to route the oil through the 1 PSI check valve.

The suction valve (shown above) is closed to the top off side.

Role of the Vents

Vent 2: A solenoid that opens path around check valve.

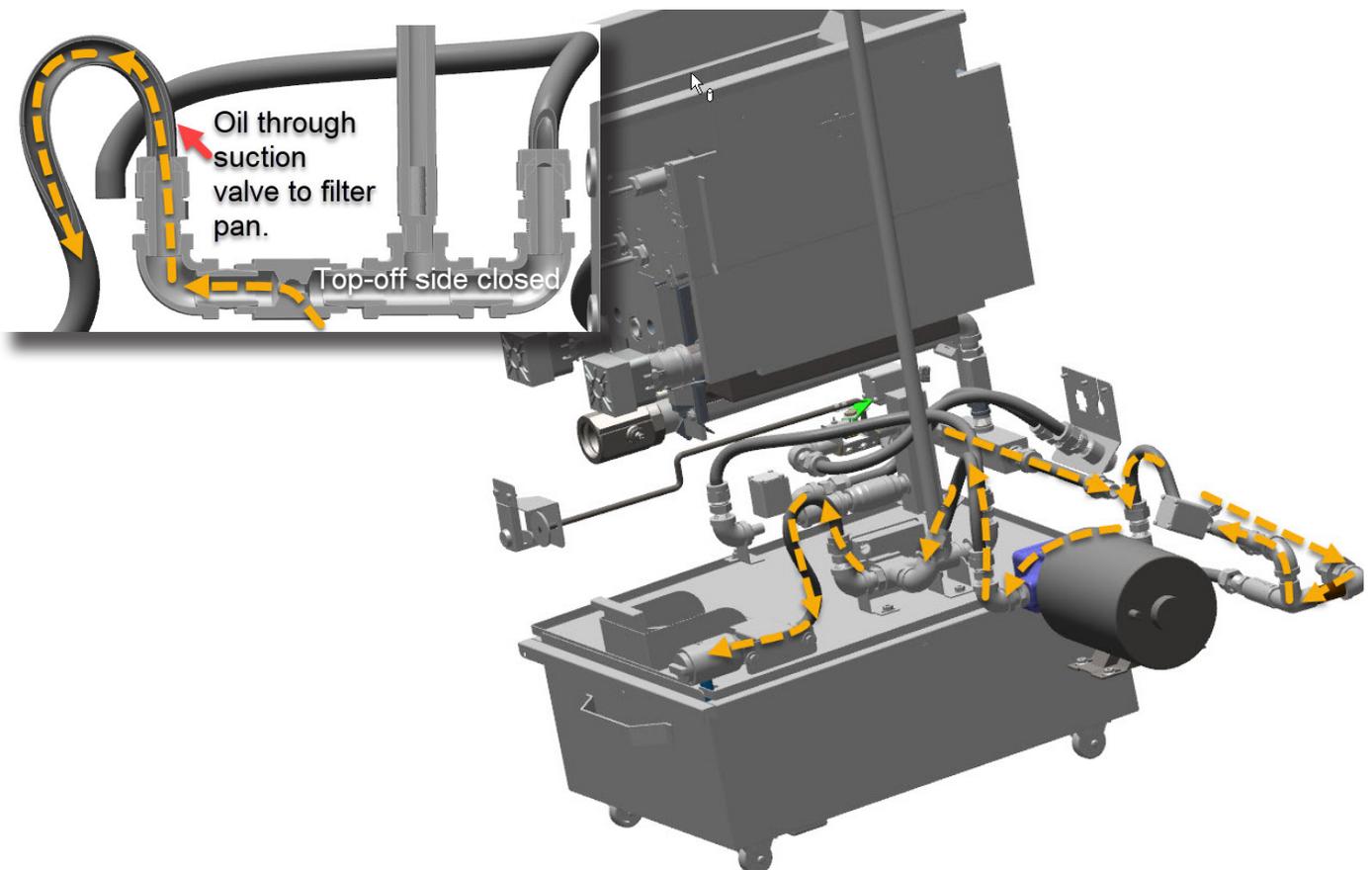


Two valves, or vents, on the plumbing are there to facilitate draining the manifold after it is filled with top off or filtering oil.

Vent 1 (right above) opens to air.

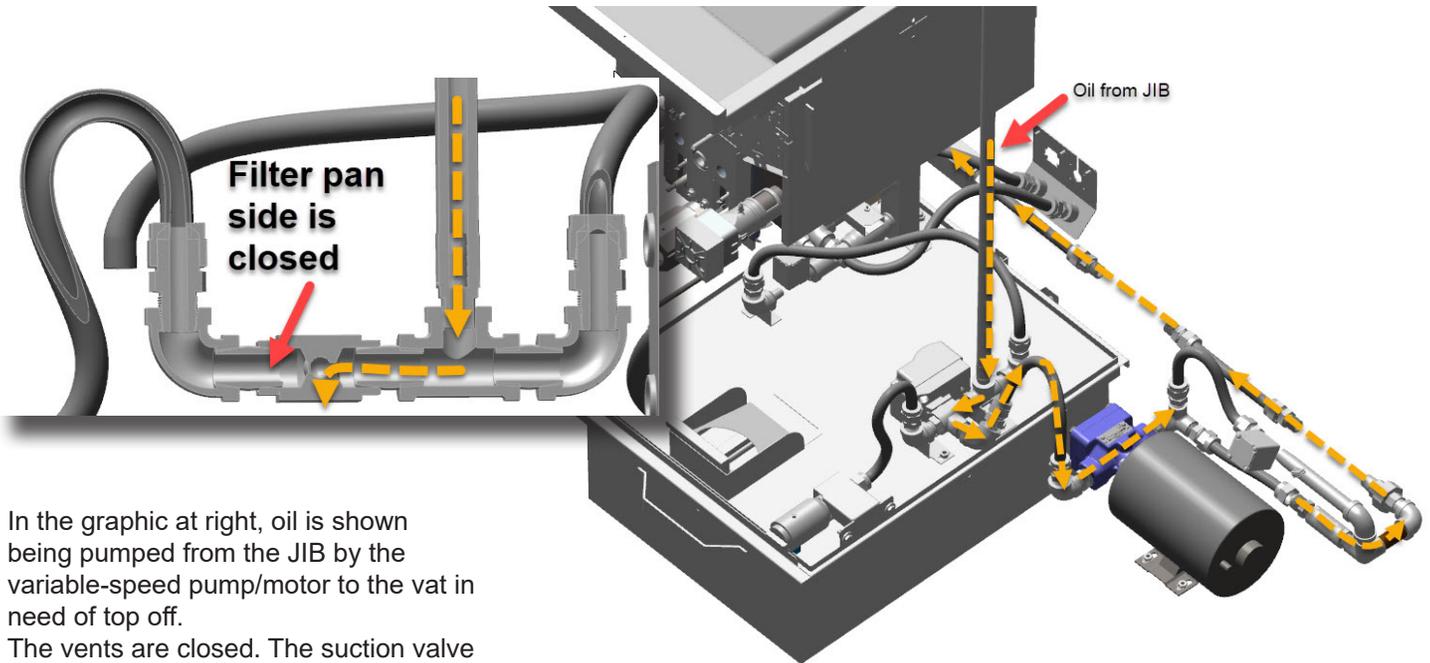
Vent 2 (above) is a solenoid, which opens and allows oil a path around the check valve that prevents outgoing filtered or fresh oil and oil returning to the pan from co-mingling. Both are controlled by software.

Oil Drawn by Pump from Manifold to Pan

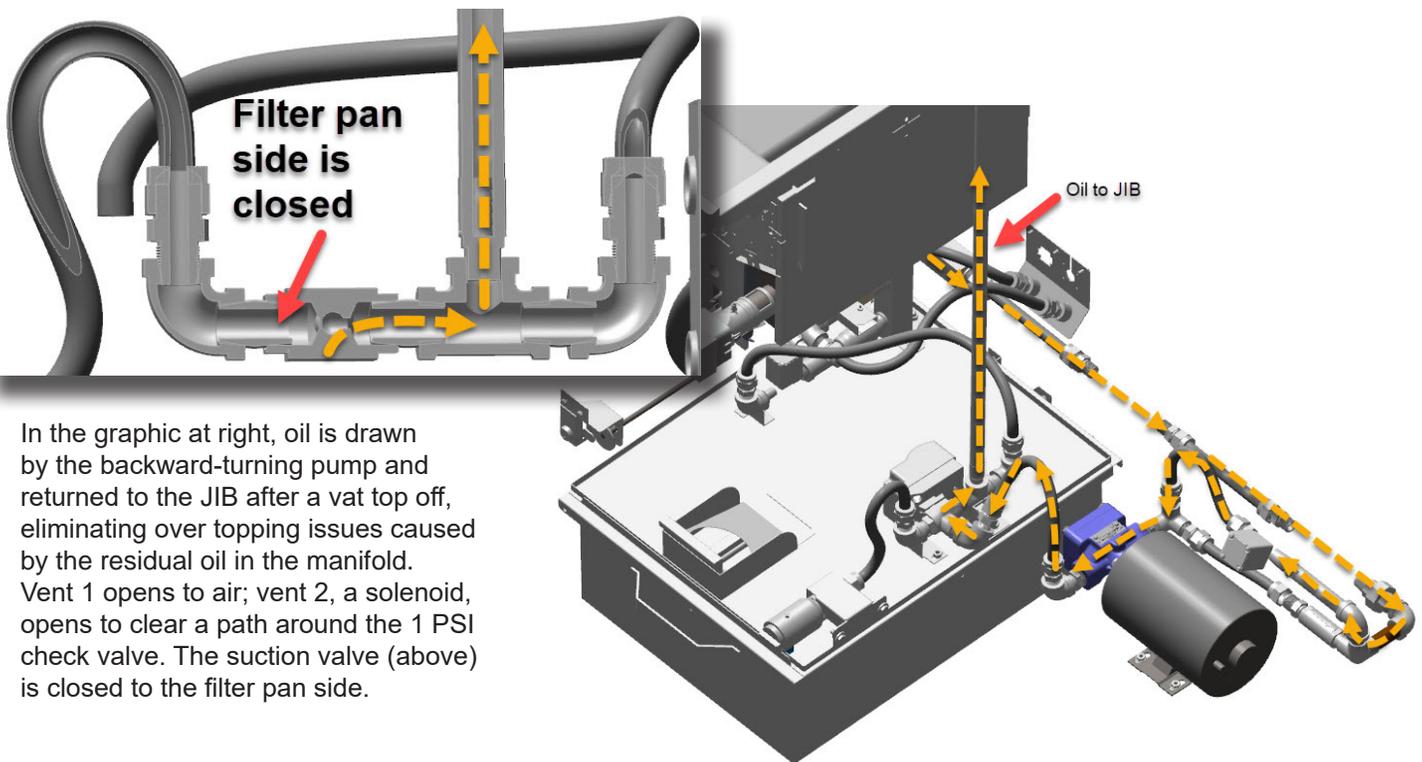


In the graphics (above), residual oil is shown being drawn from the manifold to the filter pan after a filter cycle by the backward-turning pump. Vent 1 is open to air to promote draining and Vent 2, a solenoid, is open to allow oil to flow past the 1 PSI check valve. The suction valve (inset, top left) is closed to the top off side.

Oil from JIB to Vat; Residual Returned After Top Off

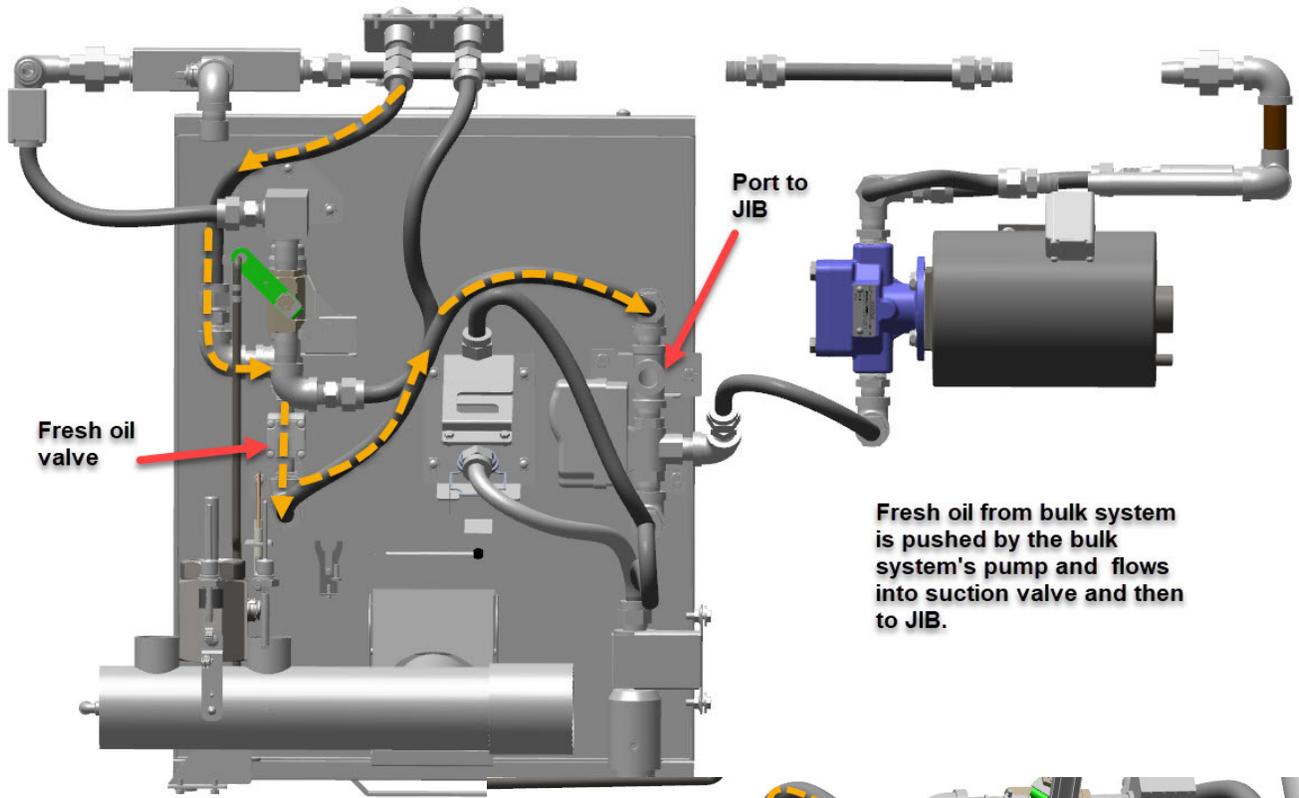


In the graphic at right, oil is shown being pumped from the JIB by the variable-speed pump/motor to the vat in need of top off. The vents are closed. The suction valve is closed to the filter pan side.



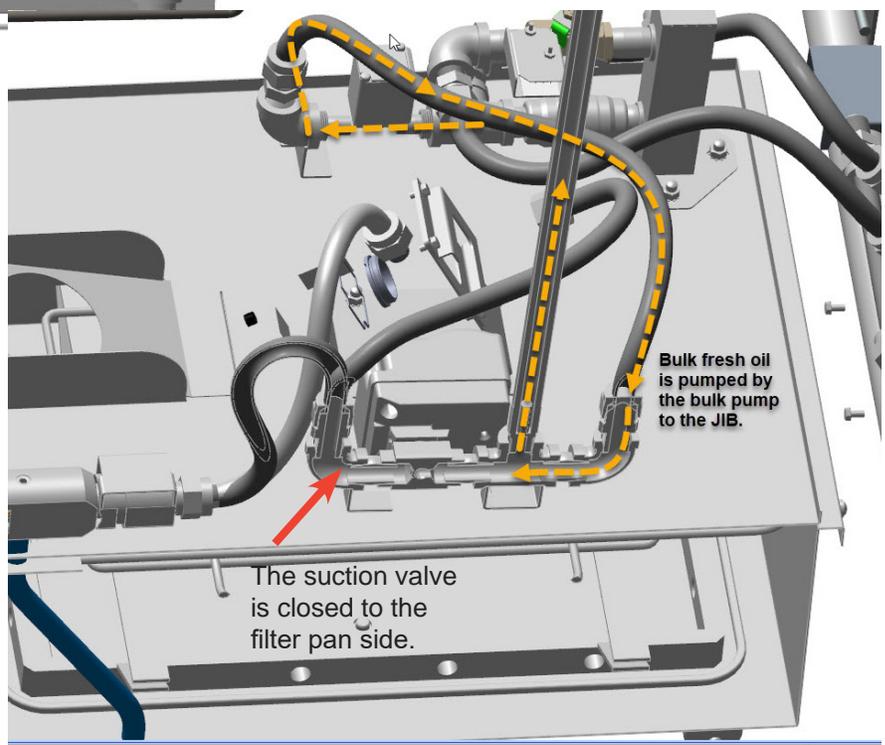
In the graphic at right, oil is drawn by the backward-turning pump and returned to the JIB after a vat top off, eliminating over topping issues caused by the residual oil in the manifold. Vent 1 opens to air; vent 2, a solenoid, opens to clear a path around the 1 PSI check valve. The suction valve (above) is closed to the filter pan side.

Bulk System Pumps Fresh Oil to Fryer's JIB



Fresh oil from bulk system is pushed by the bulk system's pump and flows into suction valve and then to JIB.

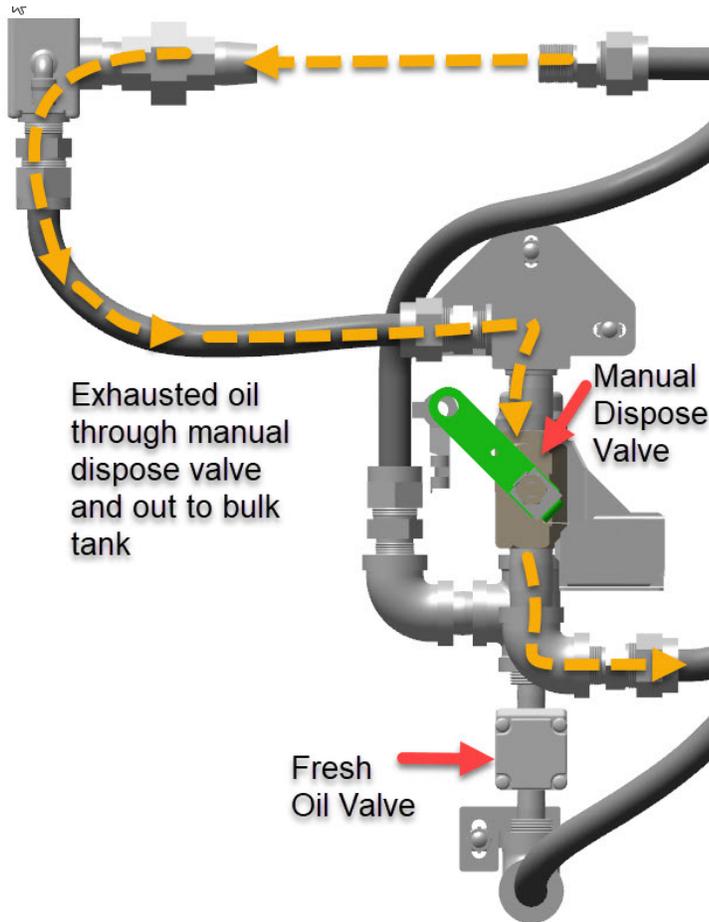
The fryer's pump is not involved in filling the JIB tank from the bulk system. Oil, pushed by the bulk system's pump, flows through the fresh oil valve and to the suction valve, which is closed to the filter pan side.



Bulk fresh oil is pumped by the bulk pump to the JIB.

The suction valve is closed to the filter pan side.

Dispose, Fresh Oil Valves Direct Flow



Much like the suction valve, the dispose and fresh oil assembly performs a traffic cop role.

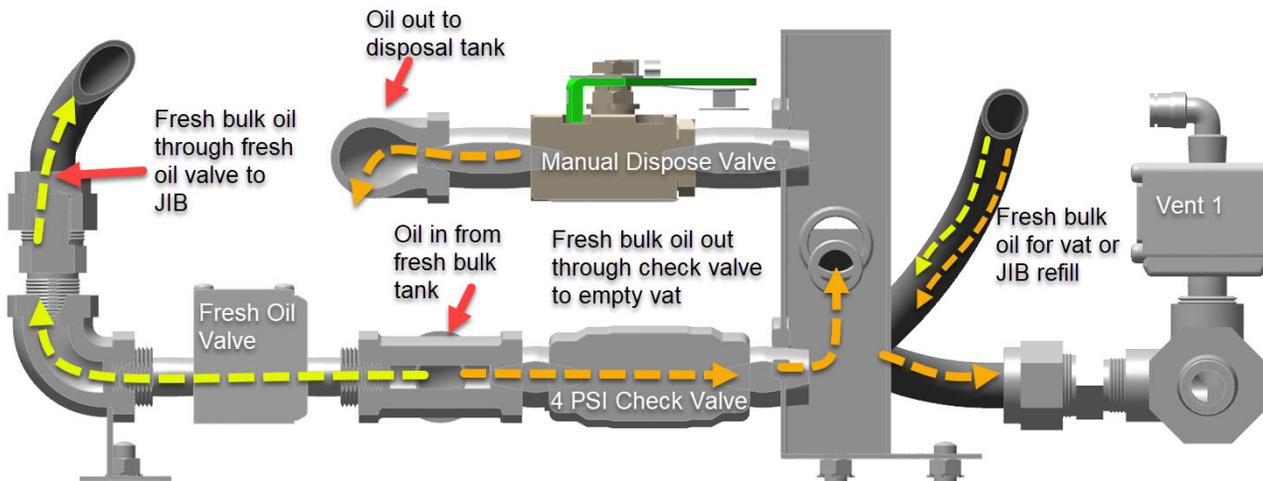
- Oil in the assembly can be headed to the JIB, pumped from the bulk system's pump.
- Headed to an empty vat, again pumped by the bulk system's pump.
- Headed to the bulk system's disposal tank and it this instance pumped by the fryer's pump.

The valve assembly ensures the oil is on the right path.

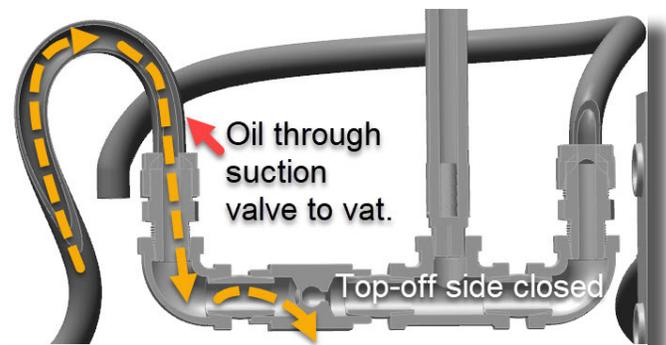
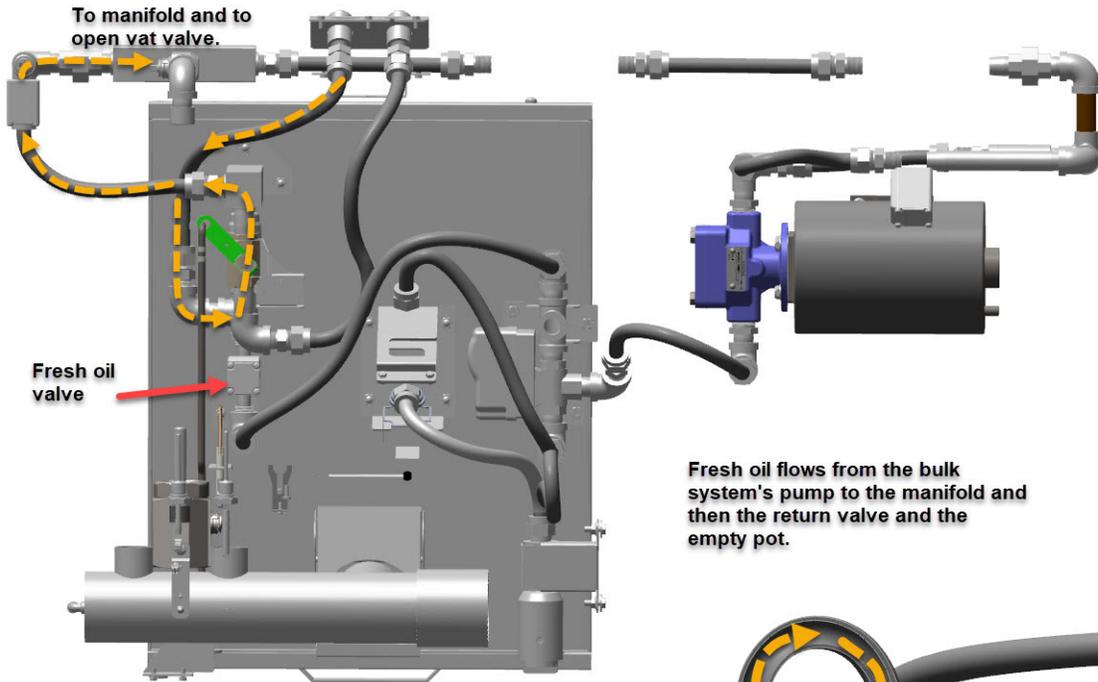
The graphics left and below show the various paths of the oil.

The 4 PSI check valve prevents exhausted oil bound for the disposal tank from re-entering the manifold and reaching the frypots.

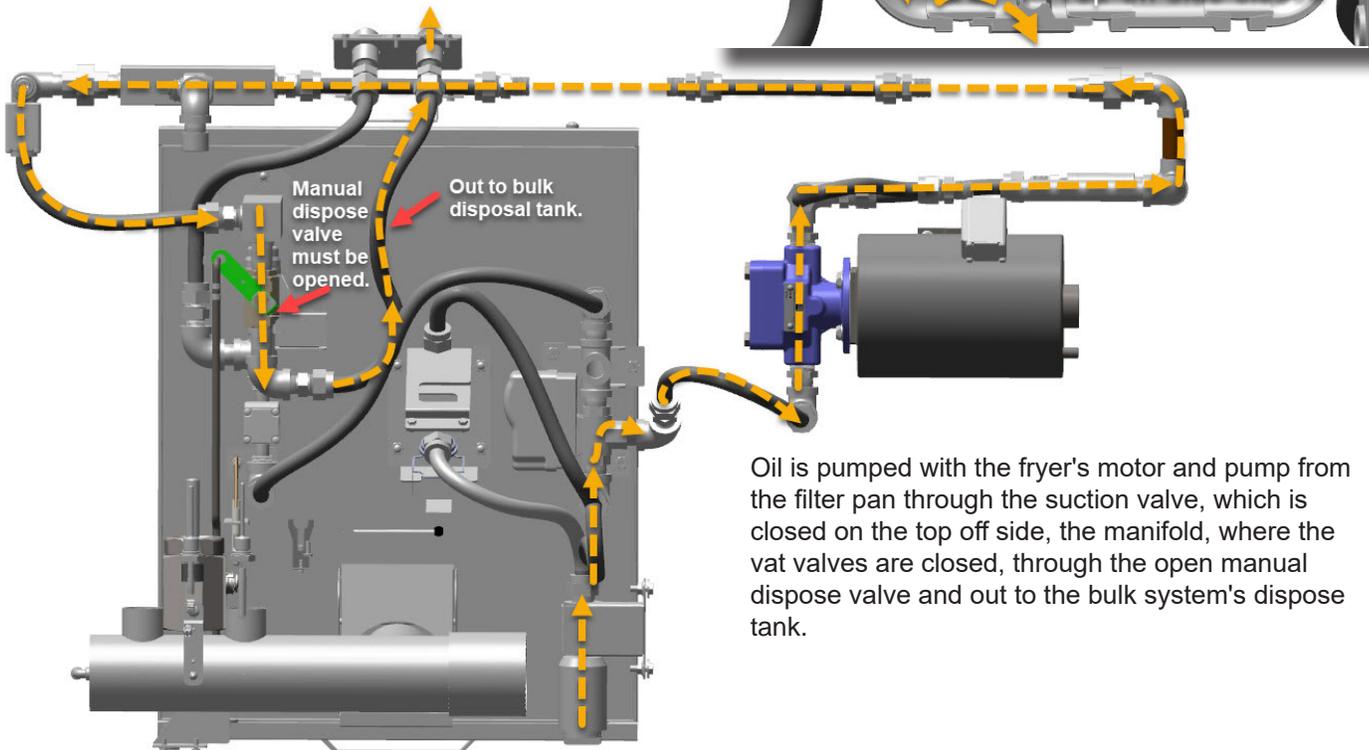
With the fresh valve open, the check valve also prevents oil intended to fill the JIB from entering the manifold.



Bulk Oil System Pumps Fresh Oil to Fill Empty Vat

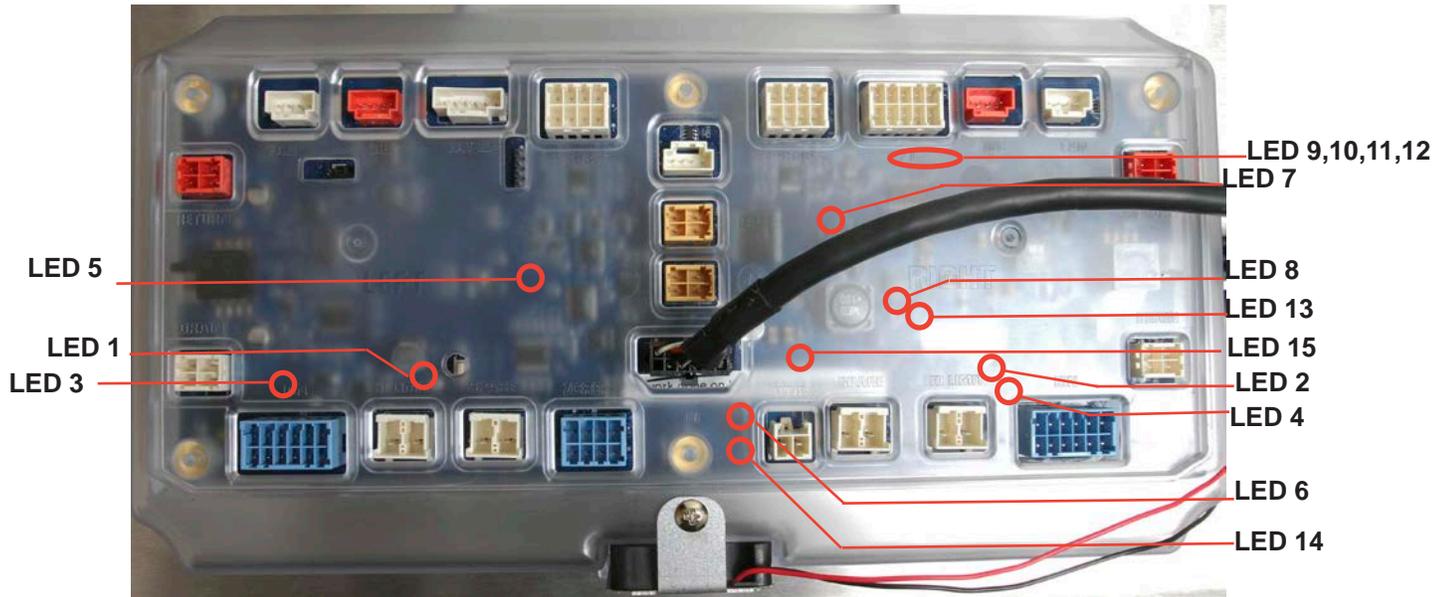


Exhausted Oil Pumped to Bulk Tank



Reading the HCB's LEDs

The heating control board (HCB) on back of the touchscreen holds a number of LED's useful in troubleshooting issues with the fryer. Lower the controller (shown without cables for clarity). The status or presence of an illuminated LED indicates the activity of a component. Absence of an LED indicates a problem with power reaching the component or the component itself. The location is approximate.



LED #	Description	Color	Indicates
LED 1	24V Latch L	Orange	Power on the left side heating latch relay (<i>Unit is ready for a call for heat</i>)
LED 2	24V Latch R	Orange	Power on the right side heating latch relay (<i>Unit is ready for a call for heat</i>)
LED 3	24V Heat L	Orange	Power on the left side heat relay (<i>Unit is calling for heat</i>)
LED 4	24V Heat R	Orange	Power on the right side heat relay (<i>Unit is calling for heat</i>)
LED 5	CPU Status LED	Red	HCB board "Heartbeat" (<i>CPU has power, operating</i>)
LED 6	Status LED (24VDC)	Green	24 volts DC is present (<i>Voltage available from power supply</i>)
LED 7	Status LED (12VDC)	Green	12 volts DC is present (<i>Voltage, created by the HCB, available for blower fans</i>)
LED 8	Status LED (3.3VDC)	Green	3.3 volts DC is present (<i>HCB-generated voltage, powers CPU</i>)
LED 9	Right Basket Lift	Orange	Far right basket lift signal is active
LED 10	Right Center Basket Lift	Orange	Right center basket lift signal is active
LED 11	Left Center Basket Lift	Orange	Left center basket lift signal is active
LED 12	Left Basket Lift	Orange	Far left basket lift signal is active
LED 13	Status LED (5.0 VDC)	Green	5.0 volts DC is present (<i>HCB-generated voltage for use by the board</i>)
14, 15	Not used		

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Event Log Codes

Event Log codes appear on the controller and indicate the source of fryer issues.

Code	Name	Side	Signal	Reason
E113 E113L E113R	Cook Probe Failure Left Cook Probe Failure Right Cook Probe Failure	Left Left Right	Vat Error	Cook Probe Open Circuit. Ensure the cook probe is securely connected.
E113L	Left Cook Probe Failure	Left	Vat Error	Left Cook Probe Open Circuit
E113R	Right Cook Probe Failure	Right	Vat Error	Right Cook Probe Open Circuit
E116 E116L E116R	High Limit 1 Exceeded (Hot Hi 1) Left High Limit 1 Exceeded Right High Limit 1 Exceeded	Left Left Right	Vat Error	High limit temperature is past more than 410°F (210°C), or in CE countries, 395°F (202°C). Ensure the frypot is full of oil.
E117 E117L E117R	High Limit 2 Exceeded (Hot Hi 2) Left High Limit 2 Exceeded Right High Limit 2 Exceeded	Left Left Right	Vat Error	High limit switch has opened.
E118 E118L E118R	High Limit Problem (Hot Hi 3) Left High Limit Problem (Hot Hi 3) Right High Limit Problem (Hot Hi 3)	Left Left Right	Vat Error	Vat temperature exceeds 460°F (238°C) and the high limit has failed to open. Immediately disconnect power to the fryer.
E119 E119L E119R	Heating Failure Left Heating Failure Right Heating Failure	Left Left Right	Vat Error	Heat Latch Relay Fault Heating Control latch circuit failed. Heat Contactor failed to latch. Turn off fryer and turn on again.
E120 E120L E120R	Heat Relay Failure Left Heat Relay Failure Right Heat Relay Failure	Left Left Right	Heat Control Failure	Heat Relay Fault. Power cycle the fryer.
E124L E124R	Left Fan Failure Right Fan Failure	Left Right	Heat Control Failure	Fan Regulation Error. Ensure the fan filter is clean.
E125L E125R	Left Pressure Switch Not Closed Right Pressure Switch Not Closed	Left Right	Heat Control Failure	Pressure Switch failed to close. Ensure the fan filter is clean.
E127L E127R	Left Pressure Switch Not Open Right Pressure Switch Not Open	Left Right	Heat Control Failure	Pressure Switch Not Open
E128L E128R	Left Ignition Lock Out Right Ignition Lock Out	Left Right	Heat Control Failure	Ignition Lockout
E129 E129L E129R	Top Off Probe Failure Left Top Off Probe Failure Right Top Off Probe Failure	Left Left Right	Vat Error	Top Off Probe Open Circuit. Ensure the top off probe is securely attached. Clean probe.
E130 E130L E130R	Spare Probe Failure Left Spare Probe Failure Right Spare Probe Failure	Left Left Right	Vat Error	Spare Probe Open Circuit
E132 E132L E132R	Drain Valve Not Open Left Drain Valve Not Open Right Drain Valve Not Open	Left Left Right	Drain Valve Error	Drain valve was trying to open and its position is unknown.
E133 E133L E133R	Drain Valve Not Closed Left Drain Valve Not Closed Right Drain Valve Not Closed	Left Left Right	Drain Valve Error	Drain valve was trying to close and its position is unknown.
E134 E134L E134R	Return Valve Not Open Left Return Valve Not Open Right Return Valve Not Open	Left Left Right	Return Valve Error	Return valve was trying to open and its position is unknown.
E135 E135L E135R	Return Valve Not Closed Left Return Valve Not Closed Right Return Valve Not Closed	Left Left Right	Return Valve Error	Return valve was trying to close and its position is unknown.
E137 E137L E137R	AIF Probe Failure Left AIF Probe Failure Right AIF Probe Failure	Left Left Right	Vat Error	AIF probe reading out of range.

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Code	Name	Side	Signal	Reason
E139	Change Oil Filter			25-hour timer has expired, or dirty filter logic has activated. Change the filter paper or pad.
E141	Pump Not Filling			The system detects that oil may be present in the filter pan. Ensure the filter isn't clogged. Ensure the pre-filter is clean. Ensure the pre-screen and filter pan O-rings are present and in good condition. Ensure the pre-filter is tightened with the pre-filter wrench.
E142 E142L E144R	Clogged Drain Left Clogged Drain Right Clogged Drain	Left Right	Vat Error	Vat did not empty during filtration. Ensure the drain is not clogged and use the fryer tool to clear drain.
E143 E143L E143R	Oil Sensor Failed Left Oil Sensor Failed Right Oil Sensor Failed	Left Left Right	Vat Error	Ensure the oil sensor is clean. Ensure the oil level is at or above the middle oil level line
E144 E144L E144R	(Isn't displayed, only logged) Left Vat Right Vat	Left Right	Vat Error	Recovery time exceeded maximum time limit. Ensure oil is not added to the frypot during the recovery check. If electric, ensure the power cord is fully seated into the receptacle.
E145 E145L E145R	Recovery Fault - Schedule service Left Recovery Fault Left Recovery Fault	Left Right	Vat Error	Recovery time exceeded maximum time limit for three or more consecutive cycles.
E151	UI Position Error			Duplicate board ID error. Ensure board ID is set correct.
E152	UI Controller Error			The controller has an unknown error. Power cycle the fryer.
E153	CAN Bus Error			Communications are lost between boards. Power cycle the fryer. Ensure the connections are secure between the boards.
E161	Misconfigured Energy Type			The fryer is not correctly configured for the energy type. Ensure the energy type is correct.
E162 E162L E162R	Frypot Not Heating Left Frypot Not Heating Right Frypot Not Heating	Left Right	Vat Error	The frypot is not heating properly. Gas fryers: Ensure the gas is connected to the fryer. Ensure the gas valve/supply valve is on/open. Ensure quick disconnect is properly connected. Ensure fan filter is clean. Electric fryers: Ensure the power cord is securely connected to the power receptacle. Ensure the breaker is on and not tripped
E163 E163L E163R	(Isn't displayed, only logged)	Left Right		Rate of rise error occurred during a recovery test. Ensure the oil level is at the bottom oil level when cold and at the middle or top oil level line when at setpoint. On electric fryers ensure the probe is not touching the elements.
E165 E165L E165R	Clean OIB Sensor Clean Left OIB Sensor Clean Right OIB Sensor	Left Right	Vat Error	Oil Absent While Heating
E166 E166L E166R	Drain Valve Open Left Drain Valve Open Right Drain Valve Open	Left Right		Drain valve is opened during cooking. Power cycle the fryer.

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Code	Name	Side	Signal	Reason
E168 E168L E168R	HCB OIB Heater Fault Left HCB OIB Heater Fault Right HCB OIB Heater Fault	Left Left Right	Vat Error	OIB Heater Fault
E169	Recipe File Not Available			Controller missing product recipes. Replace controller with a factory programmed controller.
E170	Oil Temp High During OQS		OQS Error	Oil temperature is too high for a valid OQS reading. Filter at a temperature between 300°F (149°C) and 375°F (191°C).
E171	Oil Temp Low During OQS		OQS Error	Oil temperature is too low for a valid OQS reading. Filter at a temperature between 300°F (149°C) and 375°F (191°C).
E172	TPM Range Low		OQS Error	The TPM range is too low for a valid OQS reading. This may be seen with fresh new oil. Continue cooking and repeat OQS filter later.
E173	TPM Range High		OQS Error	The TPM range is above the discard value. Dispose the oil.
E174	OQS Error		OQS Error	The OQS has an internal error. Power cycle the fryer.
E175	OQS Air Error		OQS Error	The OQS is detecting air in the oil. Check the O-rings and check/tighten prescreen filter with pre-filter wrench to ensure no air is entering the OQS sensor.
E176	OQS Communication Error		OQS Error	The OQS sensor has a communication error. Power cycle the entire fryer battery. Ensure the OQS is securely connected to the HCB board.
E177 E177L E177R	OIB Probe Failure Left OIB Probe Failure Right OIB Probe Failure	Left Left Right	Vat Error	OIB Probe TC Fault
E184 E184L E184R	Low Oil Condition Left Low Oil Condition Right Low Oil Condition	Left Right		The frypot oil level is low. Ensure the oil level is at or above the middle oil level line.
E185 E185L E185R	Rate Of Rise Fault Left Rate Of Rise Fault Right Rate Of Rise Fault	Left Right	Vat Error	Ensure the frypot is filled with oil to the low oil level line.
E186L E186R	Fan Filter Is Dirty - Clean fan filter	Left Right		Remove and clean the fan filter.
E187L E187R	Fan Filter Is Clogged - Clean fan filter now	Left Right		Remove and clean the fan filter.
E188	Waste Valve Open			Close the waste valve.
E189	VFD Communication Failure			Power cycle the entire fryer battery. Check VFD cables. Ensure VFD is functional.
E190	Suction Valve Opening error			Power cycle the entire fryer battery. Check Valve and actuator?
E191	Suction Valve Closing Error - Not Set To JIB			Suction Valve Not Set To Jib
E192L E192R	Fan Life Warning - Replace Fan Soon	Left Right		Replace the fan.
E193L E193R	Left Fan Life Failure Right Fan Life Failure	Left Right		Replace the fan.

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Code	Name	Side	Signal	Reason
E194L E194R	Left Ignition Module Not Detected Right Ignition Module Not Detected	Left Right	Ignition Module Communication Failure	Ensure the module is connected and operational.
E195	HCBC Not Detected			Power cycle the entire fryer battery. Ensure the connections to the HCB are secure.
E196	SCB Not Detected			Power cycle the entire fryer battery. Ensure the connections to the SCB are secure.
E197L E197R	Left Flame Current Low Right Flame Current Low	Left Right	Heat Control Failure	Ensure the connections to the flame sensor are secure.
E199	Fresh Oil Valve Opened			Ensure the fresh oil valve is functioning correctly.
E200	(Isn't displayed, only logged)			VFD current reduction. Change filter pad or paper. Ensure bulk quick disconnect is correctly attached and bulk dispose line is not clogged.
E201	VFD Air Detection			Ensure the O-rings are present and in good condition.
E202	Pump Motor - VFD Current Limit		VFD Error Status	Ensure the pre-screen filter is clean. Ensure the filter pad or paper is clean. If disposing to bulk, ensure bulk quick disconnect is correctly attached and bulk dispose line is not clogged. If topping off, ensure JIB hose is not pinched and pick up tube is clear of debris.
E203	VFD Fault		VFD Error Status	Ensure the VFD is functioning correctly.
E204	Suction Valve High Current			Ensure the suction valve is functioning correctly.
E205 E205L E205R	Drain Valve Current High Left Drain Valve Current High Right Drain Valve Current High	Left Right	Rotary Valve Fault	Clear drain with fryer tool. Ensure all objects are out of drain. Power cycle the entire fryer battery. Ensure the drain valve is functioning correctly.
E206 E206L E206R	Return Valve Current High Left Return Current High Right Return Current High	Left Right	Rotary Valve Fault	Left Return Rotary Valve High Current Right Return Rotary Valve High Current
E207	Dirty Filter Media			Ensure the pre-screen filter is clean. Ensure the filter pad or paper is clean.
E208 E208L E208R	No Oil Detected Left Vat No Oil Detected Right Vat No Oil Detected	Left Right		No oil detected in the vat. Ensure the frypot is full of oil. Clean OIB, ATO and AIF sensors. Ensure the sensors are functioning correctly.
E209L	Left Combustion Fan Failure	Left		Left combustion fan RPM is not detected.
E209R	Right Combustion Fan Failure	Right		Right combustion fan RPM is not detected.
E210	HCBC High PCB Temp		HCBC PCB High Temp	The HCB board temperature is too high. Turn off touchscreen, let the system cool for 30 minutes. Ensure the HCB cooling fan is functioning correctly.
E211	UI High PCB Temp			The controller temperature is too high. Turn off touchscreen, let the system cool for 30 minutes. Ensure the HCB cooling fan is functioning correctly.
E212	SCB PCB High Temp			Turn off touchscreen, let the system cool for 15 minutes. Ensure the SCB is functioning correctly, and that the temperature is not high.
E213	Error reading USB USB			Ensure USB is formatted correctly. Try a different USB.

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Code	Name	Side	Signal	Reason
E214	Error Writing to USB			Ensure USB is formatted correctly. Try a different USB. Check security on USB device.
E217	Error Reading SD CARD			Ensure SD card is formatted correctly. Try a different SD card.
E218	Error Writing to SD CARD			Ensure SD card is formatted correctly. Try a different SD card.
E219	Low Gas Pressure – XX.XX inches of WC			Ensure gas line is connected. Ensure gas supply is turned on. Check gas pressure.
E220	High Gas Pressure – XX.XX inches of WC			Turn off controllers. Turn off gas supply. Check gas pressure.
E221	(Isn't displayed, only logged)			The system gas pressure sensor has failed. Check gas pressure. Ensure the gas pressure sensor is functioning correctly.
E223	Config File Missing			This signal is generated at power up if the config file is not found in the UI. What is solution in the field?
E224	Zero Cross Relay Board Communication Error		ZCRB Error	What is solution for this in the field?
E225L E225R	Left Heater Plug Not Connected Right Heater Plug Not Connected	Left Right	Heating Plug Detect State Change	Ensure the heater plug is securely attached.
E226	Vent Valve 1 Open Circuit			Ensure the Vent Valve 1 is securely connected.
E227	Vent Valve 1 Short Circuit			Ensure the Vent Valve 1 connection is not shorted.
E228	Vent Valve 2 Open Circuit			Ensure the Vent Valve 1 is securely connected.
E229	Vent Valve 2 Short Circuit			Ensure the Vent Valve 2 connection is not shorted.
E230	Bulk Fresh Oil Valve Short Circuit			Ensure the bulk fresh oil valve is not shorted.
E231	Bulk Fresh Oil Valve Open Circuit			Ensure the bulk fresh oil valve is securely connected.
E232	Left Basket Lift Not Down			Left basket lift failed to lower. Check connections, settings and function.
E233	Left Center Basket Lift Not Down			Left center basket lift failed to lower. Check connections, settings and function.
E234	Right Center Basket Lift Not Down			Right center basket lift failed to lower. Check connections, settings and function.
E235	Right Basket Lift Not Down			Right basket lift failed to lower. Check connections, settings and function.
E236L E236R	Left Fan Calibration Error Right Fan Calibration Error	Left Right		System unable to determine fan switch RPM. Rerun fan calibration. Ensure the fan filter is clean.
E237L E237R	Left Ignition Module Error Right Ignition Module Error	Left Right	Heat Control Failure	Ensure the ignition module is functioning correctly.
E238	HCB Update Error			Ensure the HCB firmware is correct. Reload the HCB firmware.
E239	SCB Update Error			Ensure the SCB firmware is correct. Reload the SCB firmware.
E240	Waste Valve Closed			Ensure the waste valve is closed and that the switch is functioning correctly.
E241	HCB Config Error			Power cycle the entire fryer battery. Ensure the HCB configuration is correct.??How

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Code	Name	Side	Signal	Reason
E242	SCB Config Error			Power cycle the entire fryer battery. Perform an SCB reset - Ensure the SCB configuration is correct. Ensure the connections between the SCB and HCB are secure. Ensure that terminators are present in both boards and are secure.
E243	UI Firmware Update Failed			Reload the UI firmware. Power cycle the entire fryer battery.
E244	Update Failure			Reload the update. Power cycle the entire fryer battery.
E245L E245R E245LC E245RC	Left Basketlift not detected Right Basketlift not detected Left Center Basketlift not detected Right Center Basketlift not detected			1. If a basket lift is not installed, ensure that Settings > Cooking > Basket Lift is Off. 2. If a basket lift is installed an enabled in settings, ensure the basket lift is plugged into the back of the fryer.
E246L E246R E246LC E246RC	Left Basketlift fault detected Right Basketlift fault detected Left Center Basketlift fault detected Right Center Basketlift fault detected			1. If a basket lift is not installed, ensure that Settings > Cooking > Basket Lift is Off. 2. If a basket lift is installed an enabled in settings, ensure the basket lift is plugged into the back of the fryer.
E247	HCB Operation Not Permitted			??
E248	SCB Operation Not Permitted			??
E249	No Gas Pressure		The gas pressure switch detects low gas or no gas pressure.	1. Ensure gas line is connected. 2. Ensure gas supply is turned on. 3. If issue continues call service.
E250	Vat in Errored State			
E251	Vat in Disabled State			

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