



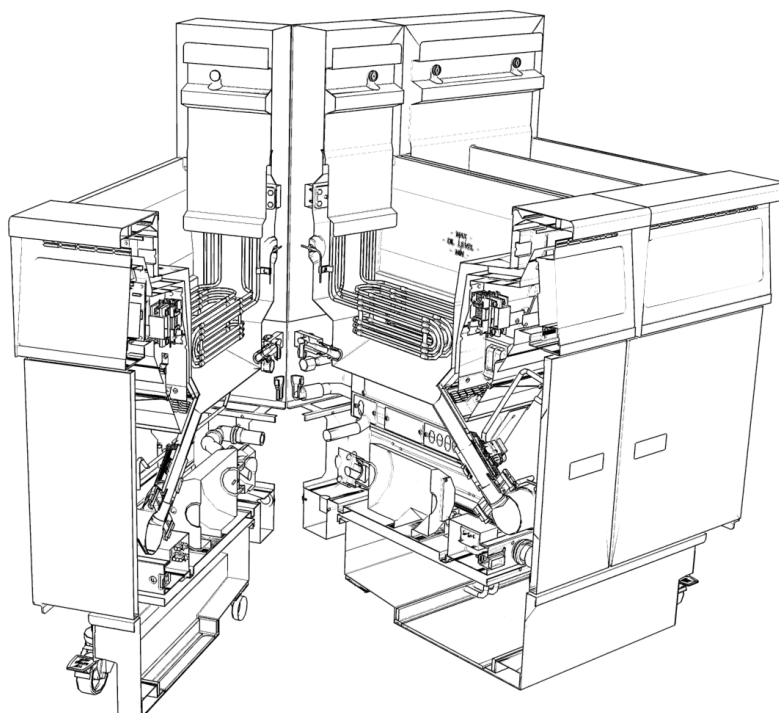
First Choice Group

SPARE PARTS DIAGRAM FOR



Electric Fryer

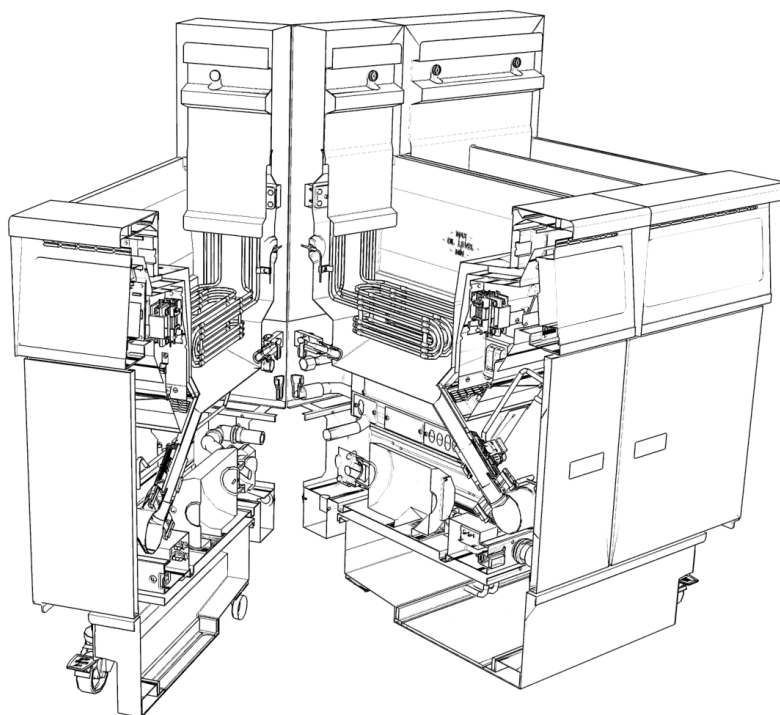
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Technical Service and Exploded Parts
For Electric Fryers
Covering Models
SEH50 Full and Split



WARNING! FIRE HAZARD

THE OIL LEVEL SHOULD NOT FALL BELOW THE MINIMUM INDICATED LEVEL AT ANY TIME. THE USE OF OLD OIL CAN BE DAGEROUS AS IT WILL HAVE A REDUCED FLASH-POINT AND BE MORE PRONE TO SURGE BOILING.

WARNING

INSTALLATION AND ALL CONNECTIONS MUST BE MADE ACCORDING TO NATIONAL AND LOCAL REGULATIONS AND CODES IN FORCE.

WARNING

A COUNTRY APPROVED ALL POLE CIRCUIT BREAKER WITH A MINIMUM OPEN CONTACT GAP OF 3mm MUST BE USED FOR PROPER INSTALLATION.

WARNING

THE FRYER IS NOT JET STREAM APPROVED. DO NOT CLEAN THE APPLIANCE WITH A WATER JET.

NOTICE

INSTALLATION SHOULD ONLY BE DONE BY A COMPETENT SERVICE TECHNICIAN. THE MODEL & SERIAL NUMBER, AND ELECTRICAL REQUIREMENTS STAMPED INTO THE DATA PLATE, LOCATED ON THE INSIDE PANEL OF THE DOOR.

NOTICE

THIS APPLIANCE IS INTENDED FOR PROFESSIONAL USE ONLY, AND AS SUCH, SHOULD BE OPERATED BY FULLY TRAINED PERSONNEL.

NOTICE

IT IS RECOMMENDED THAT THIS MACHINE BE INSPECTED BY A QUALIFIED TECHNICIAN ON A YEARLY BASIS.

WARNING

THE POWER SUPPLY MUST BE DISCONNECTED SERVICING OR CLEANING THE UNIT.

WARNING

SHORTENING, WHEN IT IS AT OPERATING TEMPERATURES, IS VERY HOT AND DANGEROUS! USE EXTREME CAUTION WHEN HANDLING! USE PROPER PROTECTIVE GEAR SUCH AS INSULATED GLOVES, APRONS, FACE SHIELD, AND SLEEVES WHEN HANDLING HOT SHORTENING. DO NOT ATTEMPT TO MOVE MACHINE THAT HAS HOT OIL IN IT. ALLOW TO COOL TO ROOM TEMPERATURE OR DRAIN THE OIL INTO A SUITABLE CONTAINER BEFORE MOVING THE FRYER.

Table of Contents

How Does It Work?	4
Component Troubleshooting.....	4
Temperature Probe Resistance Chart	4
Basic Trouble Shooting	6
Relay Board Component Explanation	8
Reserved for Ladder Diagram	11
Reserved for Schematics.....	12-25
Basic Parts List.....	27
Exploded Drawings	28-37
Element and Tank Components	28
Pump Box and Drain Manifold.....	30
Main Entrance Box	32
Pump Assembly and Filter Pan	34
Wire Harness'	36

Chapter 1: HOW DOES IT WORK?

The SEH 50 fryer components function in specific order of operation. Knowing and understanding the sequence of fryer and components operation will enable you to diagnose equipment failure more accurately.

Heating System

Power to the machine is turned ON:

- If Fuse F1 on the Relay board is good, the A.C. light will illuminate. The computer is supplied with 24VAC and, if the drain valve handle is closed, the proximity switch will supply 24 VAC to the DVI (drain valve interlock) Input at the computer.
- The computer is turned ON:
- The side on relay will be energized, closing the circuit and the S.O. light on the Relay Board will illuminate. If the hi limit is NOT tripped the safety (side on) contactor will energize.
- Computer calls for heat:
- The 24 VDC "heat demand" relay will energize supplying the heat demand contactor with 24 VAC and the H.D. light on the Relay Board will illuminate. This will also supply the computer with a heat feedback signal.

Hi Limit System:

- If the hi limit trips, it causes the side on and heat demand contactors to lose 24VAC supply and the heat feed back loses 24VAC. The computer will display IGNITION FAILURE or HEAT FAIL. After the hi limit resets (unit cools to $375^{\circ}\text{F} \pm 20^{\circ}\text{F}$) the computer will have to be turned off and back on for the unit to heat.

Filter System:

- Opening the RED return valve handle will close the proximity switch causing the "pump run" relay to be energized. The pump motor will begin to run. Closing the return valve handle will de-energize the relay and the pump motor will stop running.
- The pump system is equipped with a circuit breaker which will de-energize the system and the heat tape in the event of overcurrent. The circuit breaker switch must be in the ON position for the pump and heat tape to operate.

- The return piping system may be provided with optional heat tape to prevent solidification of solid shortening. The heat tape is low wattage and is on constantly to maintain liquid shortening in the line.

Optional Basket Lift:

- The basket lift is a self contained unit that requires a 120, 208 or 240V supply. With most fryer configurations, the power is supplied from the entrance box at the back of the fryer but some configurations will require power direct from a wall outlet. When power is supplied to basket lift assembly, the baskets will lift to the up position. The baskets will lower with a 24 VDC output from the controller.

Chapter 2: COMPONENT TROUBLESHOOTING:

TEMP °F/°C	RESISTANCE OHMΩ	TEMP °F/°C	RESISTANCE OHMΩ
60/16	139,055	330/166	1,192
80/27	84,644	335/168	1,123
100/38	53,146	340/171	1,058
120/49	34,328	345/174	998
140/60	22,755	350/177	942
160/71	15,446	355/179	890
180/82	10,716	360/182	841
200/93	7,586	365/185	795
210/99	6,427	370/188	752
220/104	5,470	375/191	712
240/116	4,013	380/193	675
260/127	2,991	385/196	640
280/138	2,262	390/199	607
300/149	1,734	395/202	576
320/160	1,347	400/204	547
325/163	1,267		

Probe:

The resistance of the probe will change as the temperature changes. The resistance will decrease as the temperature rises. The lower the temperature the greater the resistance change will be per degree of temperature change, as the temperature approaches the working range of the probe, the resistance change will become more linear.

If the probe is suspect, check its resistance and the oil/air temperature at which it was taken. Compare these values on the chart below.

If the probe returns an open circuit or 0 Ohms reading it should be replaced. If the resistance varies more than 30 Ohms when being checked between 325-375°F the probe will give a false temperature reading on the computer and should be calibrated (up to 10°F) or replaced. However, it will continue to operate at a slightly higher or lower temperature.

Allow the oil to cool and check the probe resistance at a lower temperature. As can be seen from the chart a greater variation can be tolerated at a lower temperature.

Heat Demand Contactor:

The heat demand contactor has a 24VAC coil and will energize when the correct voltage is supplied to the coil. When energized, the contacts will close, allowing current to flow through the elements. The coil resistance is 192 ohms out of circuit.

Hi Limit:

The hi - limit switch is a normally closed switch until the temperature at the hi-limit bulb reaches 425°F ± 20°F.

WARNING!

This test should be performed by a qualified technician only! Monitor the fryer closely. This test will cause the oil to heat past the normal operating temperature and can cause damage to the machine and its operator if care is not taken.

WARNING!

This test will cause the elements to heat continuously. Remove test resistor when test is complete. Leaving the test resistor in the fryer could cause damage to equipment and/or personal injury.

To test the hi-limit, use a 2kΩ - 5kΩ resistor to simulate a 230°F - 275°F temperature. This will cause the elements to heat continuously until the hi-limit trips or the fryer is turned off.

•If the fryer is equipped with a **computer or digital controller**, plug the resistor in at connector J41 behind the front panel.

•If the fryer is equipped with a **solid state controller** behind the door, plug the resistor in at connector J43 behind the front panel.

If the switch does not trip between the prescribed limits it is defective and should be replaced. Once tripped, the switch cannot be reset until the oil has cooled to approximately 375°F ± 20°F. If the switch does not reset after oil has cooled it is defective.

Once the oil has cooled the hi-limit reset button must be pressed to reset the hi-limit relay on CE and export units only.

Drain Valve & Return Valve Switches:

These switches are a magnetically operated proximity switches. When the Drain Valve handle is moved to the open position, the Actuator will move away from the switch causing the switch to open. When the Drain Valve is closed the switch will close.

Opening the RED return valve handle will close the proximity switch causing the "pump on" relay to be energized. The pump will begin to pump. Closing the return valve handle will de-energize the relay and the pump will stop pumping. These switches can also be checked with an Ohm meter. The normal gap between the Actuator and the Sensor switch on the valve handle is $\frac{1}{8}$ " - $\frac{1}{4}$ " (3 - 6mm).

Transformer:

Transformers are multiple input voltage 24 volt output voltage and can be checked by reading the input and output voltages. A quick check for 24VAC can be done at the relay board behind the computer. The AC led will be lit if the F1 fuse is good and the board is receiving 24VAC

Elements:

Each Element has three coils inside it, check all element

coils out of circuit with an Ohm Meter, the resistance should correspond to the chart below, if the resistance varies more than 5 Ohm the element will need to be changed. Also check for continuity to ground on each end of the suspect element, there should be no continuity to ground.

208 volt elements	18.5 Ohms
220 volt elements	20.7 Ohms
240 volt elements	24.6 Ohms

Safety (Side On) Contactor:

Check the coil with an Ohm Meter, the resistance should be approximately 3 - 6 Ohms out of circuit. If it does not have this resistance it should be changed.

Relay Board:

Note: J connectors are marked on the relay board.

•With 24 VAC supplied to pin #2 at connector J35 and a good F1 fuse, the relay board will have a 24 VAC output at pin #2 on connectors J33 and J34 and the A.C. indicator will be illuminated.

Note: If the fryer is equipped with a computer or solid state digital, at connection J33 there will be a jumper from pin #2 to pin #10 to supply 24 VAC to pin # 2 at connection J31 to supply the controller with 24VAC.

•When the board receives a 24 VDC side on input at pin #7 on connectors J31 or J33, the S.O. indicator will illuminate, the side on relay (S.O.) will energize and there will be a 24 VAC output at pin #4 on connector J32.

•When the board receives a 24 VDC heat demand input at pin #6 on connectors J31 or J33, the H.D. indicator will illuminate, the heat demand relay (H.D.) will energize and there will be continuity between pin #1 and pin #2 at connector J32.

Computer Control:

Note: All controller test points are at connector P/J1 (closest connector to the controller).

•With 24 VAC supplied to pin #1(24VAC supply) and pin # 5(24VAC input from DVI), the display should read "OFF".

•With the controller turned on, there will be a 24 VDC output at pin #9 (side on).

•When the controller calls for heat, there will be a 24 VDC output at pin #8 (heat demand) and a 24 VAC input at pin #6 (heat feed back). If the controller does not receive the 24 VAC input at pin #6 in approximately 90 seconds, the controller will display "HEAT FAIL" or "IGNITION FAILURE". This would indicate a break in the heat demand or heat feed back circuit.

1. Check the hi-limit switch (is it open or tripped).
2. Check the ignition module (sensing pilot flame, locked out, 24 VAC at MV terminal).
3. Check the heat demand relay (H.D.) on the relay board (is heat demand relay energized, continuity through COM and NO contacts).

•If display reads "PROBE OP" "OPEN", ohm test the temperature probe. Check the wires and connectors between the probe and controller for continuity.

•If display reads "SYSTEM" "FAILURE", test the temperature probe and the wires and connectors between the probe and controller for a short.

•If display reads "DRAINING" "TURN OFF", verify that the drain valve is closed, check the proximity switch on the drain valve, turn the fryer off, then turn the fryer on.

Digital Solid State Control:

Note: All controller test points are at connector P/J1 (closest connector to the controller).

•With 24 VAC supplied to pin #1(24VAC supply) and pin # 5(24VAC input from DVI), the display should read "OFF".

•With the controller turned on, there will be a 24 VDC output at pin #9 (side on).

•When the controller calls for heat, the display will read "HEAt", there will be a 24 VDC output at pin #8 (heat demand) and a 24 VAC input at pin #6 (heat feed back). If the controller does not receive the 24 VAC input at pin #6 in approximately 90 seconds, the controller will display "HEAt" "FAIL" . This would indicate a break in the heat demand or heat feed back circuit.

1. Check the hi-limit switch (is it open or tripped).
2. Check the ignition module (sensing pilot flame, locked out, 24 VAC at MV terminal).
3. Check the heat demand relay (H.D.) on the relay board (is heat demand relay energized, continuity through COM and NO contacts).

•If display reads "Prob", ohm test the temperature probe. Check the wires and connectors between the probe and controller for continuity.

- If display reads "Prob" "HI", ohm test the temperature probe and the wires and connectors between the probe and controller for a short.
- If display reads "drn" "tUrn" "oFF", verify that the drain valve is closed, check the proximity switch on the drain valve.

Primary Solid State Control:

Note: All controller test points are at connector P/J3 (the 12 pin connector at the controller).

- 24 VAC is supplied to the controller at pin #1(24VAC supply) and pin # 5 (24 VAC input from DVI),
- With the controller turned on, there will be a 24 VDC output at pin #9 (side on) and the green indicator will be illuminated.
- When the controller calls for heat, there will be a 24 VDC output at pin #8 (heat demand), the yellow indicator on the left will be illuminated and there will be a 24 VAC input at pin #6 (heat feed back).
- When the controller receives the 24 VAC input at pin #6, the yellow indicator on the right will illuminate. If the controller does not receive the 24 VAC input at pin #6, the indicator will not illuminate. This would indicate a break in the heat demand or heat feed back circuit.
 1. Check the hi-limit switch (is it open or tripped).
 2. Check the ignition module (sensing pilot flame, locked out, 24 VAC at MV terminal).
 3. Check the heat demand relay (H.D.) on the relay board (is heat demand relay energized, continuity through COM and NO contacts).
- If the green indicator and the yellow indicator on the left come on and shut off when the controller is turned on, that indicates an open or shorted probe or wires in between the probe and the controller.
- If none of the indicators illuminate when the controller is turned on, verify that the drain valve is closed and that the magnetic proximity switch has continuity when the drain valve is closed. Also verify that there is 24 VAC at pin #1 (24 VAC supply) and pin #5 (24 VAC input from DVI).

Backup Solid State Control:

The backup solid state control works the same as the primary solid state control, with the exception of the 24 VAC supply passing through the solid state backup transfer switch to the computer or solid state digital control.

If the transfer switch is set to backup or if the backup

controller has been unplugged, the primary controller will not work. The jumper must be installed on the relay board (connection J33) to allow the primary controller to function if the backup controller is removed.

Optional Basket Lift:

- The basket lift is a self contained unit that requires a 120, 208 or 240V supply. With most fryer configurations, the power is supplied from the entrance box at the back of the fryer but some configurations will require power direct from a wall outlet.
 - When supply voltage is applied to the basket lift assembly, it goes through a voltage selector switch to a multi tap 24V, 80VA transformer. The transformer supplies 24 VAC to the driver board at connection J54.
- Note:** When power is supplied to basket lift assembly, the baskets will lift to the up position.
- When a timer is activated, it will send a 24 VDC signal to pin #1 (24 VDC+) at connector J51 on the driver board. The driver board will generate a 24 VDC output at J53 to the basket lift motor, lowering the basket.
- Note:** For the purpose of testing, jumping pins #1 and #2 at connection J5 on the driver board will simulate a 24 VDC signal from the controller, lowering the basket.

Fryer Trouble Shooting

PROBLEM	POSSIBLE CAUSE	ACTION
Computer will NOT turn ON Display does NOT light	A. No power to the machine B. F1 Fuse blown C. T1A Transformer	A. Check building circuit breaker, verify power cord is plugged in B. Check F1A Fuse. Replace if defective C. Check voltage in and out of T1A
Computer shows "IGNITION FAILURE" or "HEAT FAIL" and machine does NOT heat.	A. Hi limit tripped B. Heat demand relay C. Relay board	A. Once the oil temp has gone below 375°F $\pm$ 20°, the Hi-limit should reset automatically, if not, replace Hi-limit B. Check & replace if defective C. Check & replace if defective
Machine is heating slowly	A. Side On contactor B. Heat Demand contactor C. Element D. Loss of power on one leg of 3 phase input power	A. Check & replace if defective B. Check & replace if defective C. Check & replace if defective D. Check input power. Repair or call a qualified electrician
Oil is hotter or colder than computer /controller displays	A. Temperature calibration B. Probe C. Probe wiring terminals	A. Adjust temperature offset up to $\pm 10^\circ\text{F}$ B. Check & replace if defective C. Clean or repair terminals
Computer displays "DRAINING" or "TURN OFF"	A. Blue drain valve not fully closed B. Sensor switch C. Incorrect switch gap/alignment	A. Check position of handle B. Switch may be loose or have loose wires, replace if defective C. Check gap/alignment, replace if defective
Computer heat demand lights are lit, machine does not heat. HD & SO lights on relay board are lit.	A. Side on contactor B. Heat demand contactor C. Unit not getting 3 phase power	A. Check & replace if defective B. Check & replace if defective C. Check circuit breaker, is 3 phase power cord plugged in all the way
Computer displays "PROBE FAILURE"	A. Shorted probe B. Open probe C. Probe wiring terminals	A. Check probe & replace if defective B. Check probe & replace if defective C. Clean or repair terminals

Filter Trouble Shooting

PROBLEM	POSSIBLE CAUSE	ACTION
Red return handle is pulled out, but no pump sound can be heard	A. Red return handle not completely open B. Filter circuit breaker may be tripped or in the off position C. Filter motor thermal overload may be tripped D. Sensor switch may be loose or defective E. Power cord unplugged or loose	A. Pull on red return handle to make sure valve is completely open B. Reset the circuit breaker or press it to the on position C. Push the red reset button on the end of the motor D. Check that the switch is tight and that it has the correct gap. Replace if defective E. Check the power cord at the fryer entrance box and at the pump box and make sure that the power cords are plugged in and /or pushed in all the way
Drain valve is closed, computer has been reset, but computer still displays "DRAINING"	A. Blue drain valve not fully closed B. Sensor switch C. Incorrect switch gap/alignment	A. Check position of handle B. Switch may be loose or have loose wires, replace if defective C. Check gap/alignment, replace if defective
Oil is returning to the vat slowly or not at all	A. Dirty filter paper B. Strainer cap dirty C. Filter pan not pushed in completely D. O-rings not sealing on pick up tube	A. Change filter paper B. Remove strainer cap and clean it C. Push filter pan in D. Check & replace if defective
Air bubbles are in the oil being returned to the vat	A. Strainer cap not tight B. Strainer cap not in pick up tube C. Filter pan not pushed in completely D. O-rings not sealing on pick up tube	A. Tighten strainer cap B. Install strainer cap C. Push filter pan in D. Check & replace if defective
Drain valve is open, the oil is draining slowly or not at all	A. Drain valve is not fully open B. Drain line is plugged with debris	A. Apply a little more pressure to the drain valve handle to check that the drain valve is fully open B. Use the clean out rod to clear the drain valve opening. If this does not clear the blockage, close the drain valve, and call for service

Relay Board Component Explanation

Fuse:

F1 - If fuse is blown, A.C. will not be lit.

Trouble Shooting Lights:

A.C. - When lit, F1 Fuse and T1 Transformer are good.

S.O. - When lit, A1 Computer is on and K10 Contactor should be energized.

H.D. - When lit, A1 Computer is on and calling for heat, K11 Contactor should be energized

Relays:

K1 - Heat Demand Relay, will be energized when A1 Computer calls for heat and when H.D. is lit.

K3 - Side On Relay, will be energized when A1 Computer is on and A.C. is lit.

Connectors:

J31 - Connects to A1 Computer

J32 - To Side On and Heat Demand Contactors and Heat Feed Back.

J33 - To 24VAC jumper harness.

J34 - To Drain Switch and optional Basketlifts

J35 - Input voltage from transformer

Relay Board:

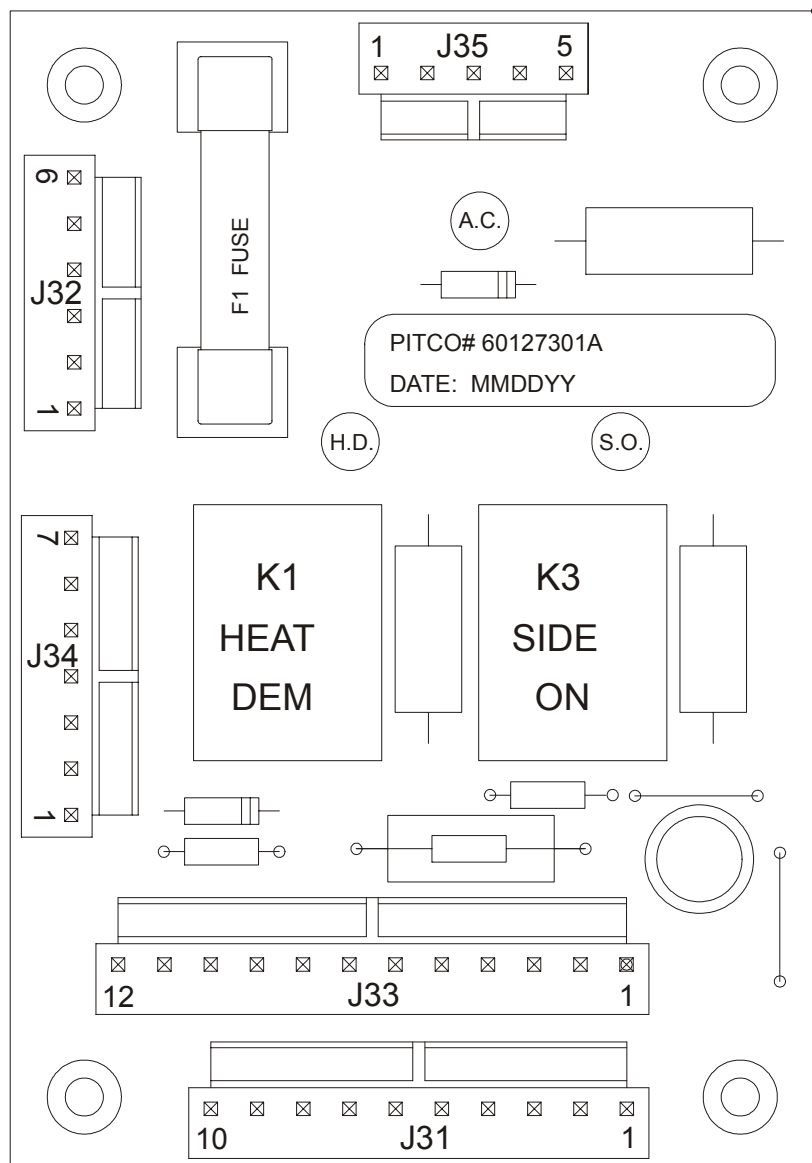
Note: J connectors are marked on the relay board.

•With 24 VAC supplied to pin #2 at connector J35 and a good F1 fuse, the relay board will have a 24 VAC output at pin #2 on connectors J33 and J34 and the A.C. indicator will be illuminated.

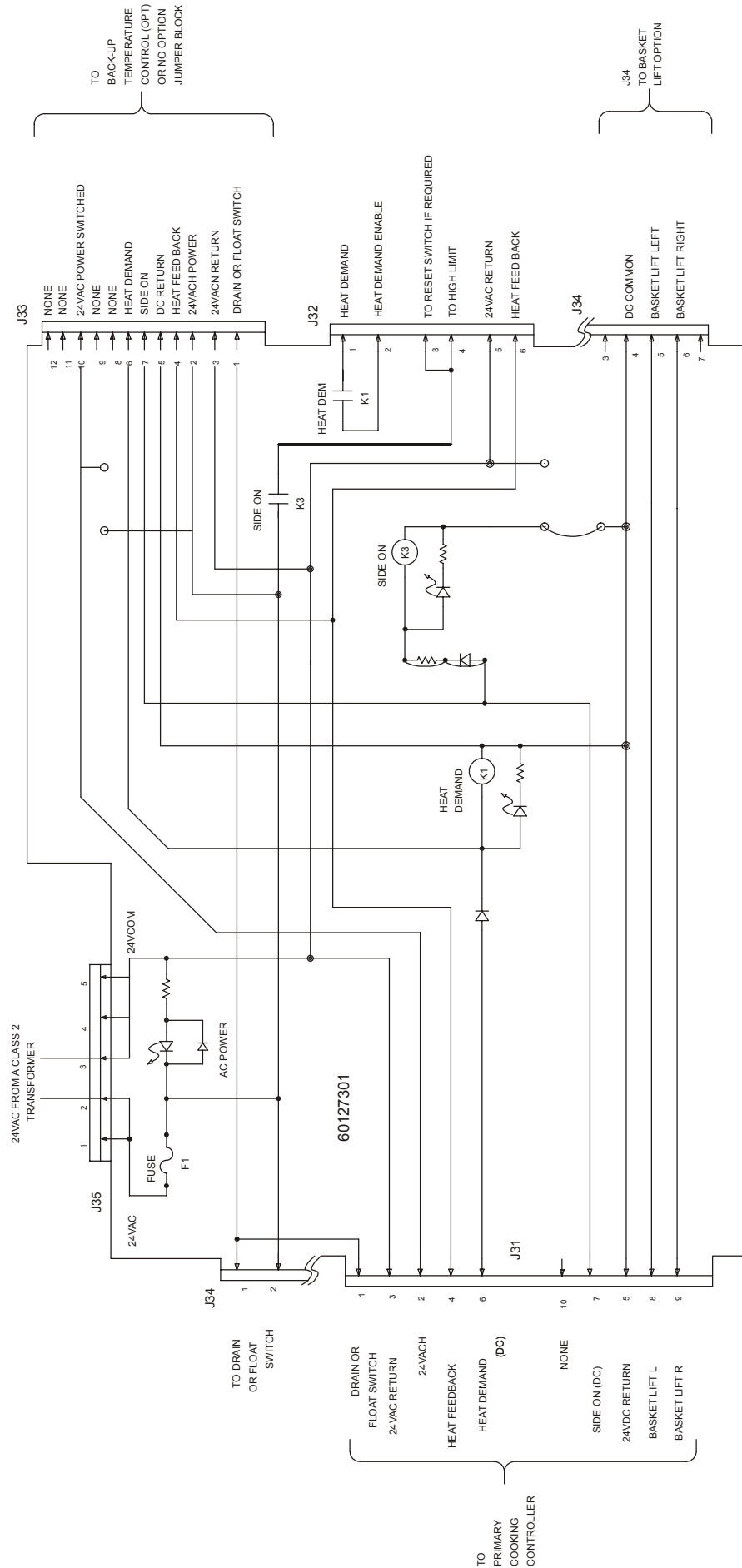
Note: If the fryer is equipped with a computer or solid state digital, at connection J33 there will be a jumper from pin #2 to pin #10 to supply 24 VAC to pin # 2 at connection J31 to supply the controller with 24VAC.

•When the board receives a 24 VDC side on input at pin #7 on connectors J31 or J33, the S.O. indicator will illuminate, the side on relay (S.O.) will energize and there will be a 24 VAC output at pin #4 on connector J32.

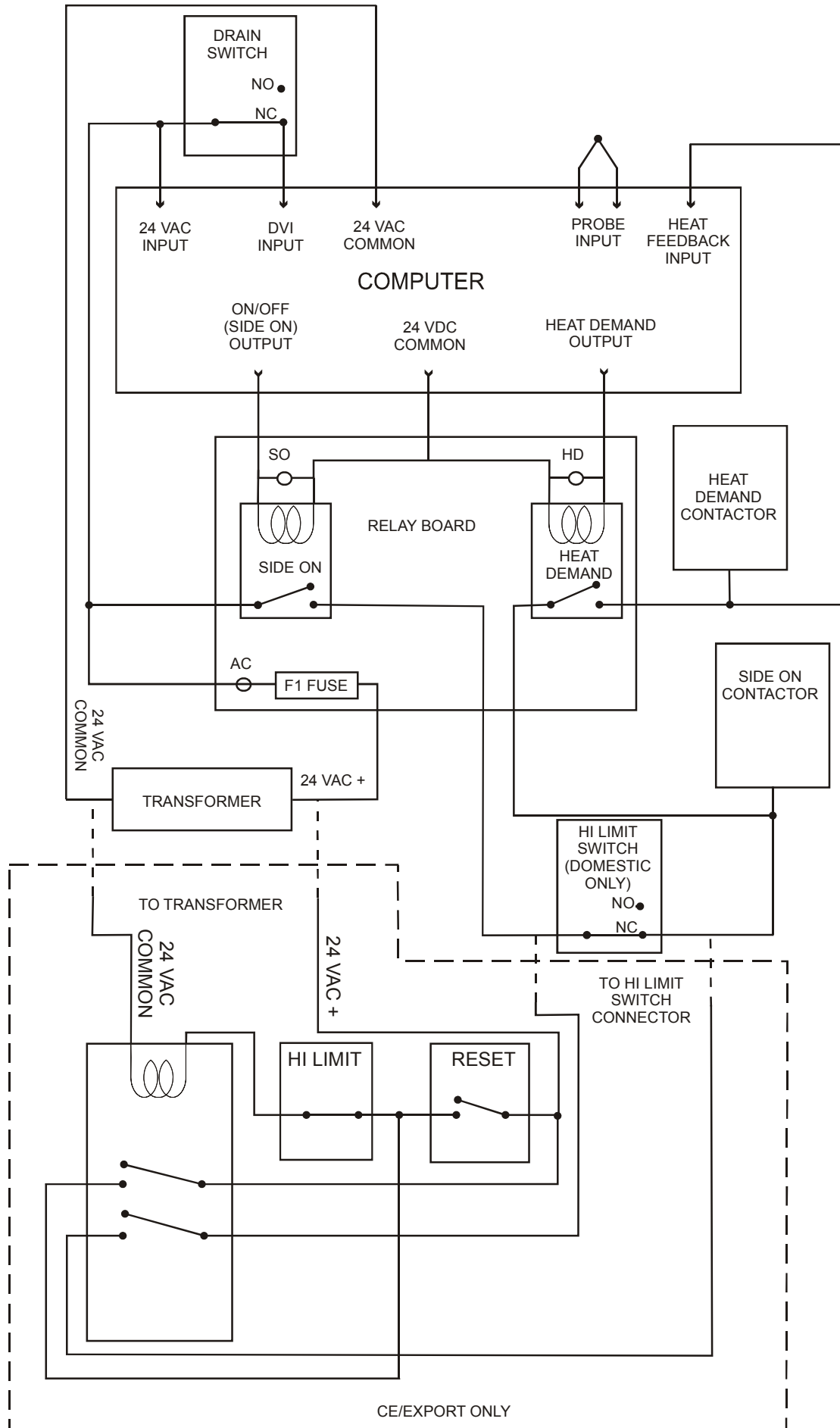
•When the board receives a 24 VDC heat demand input at pin #6 on connectors J31 or J33, the H.D. indicator will illuminate, the heat demand relay (H.D.) will energize and there should continuity between pin #1 and pin #2 at connector J32.



Relay Board



Schematics



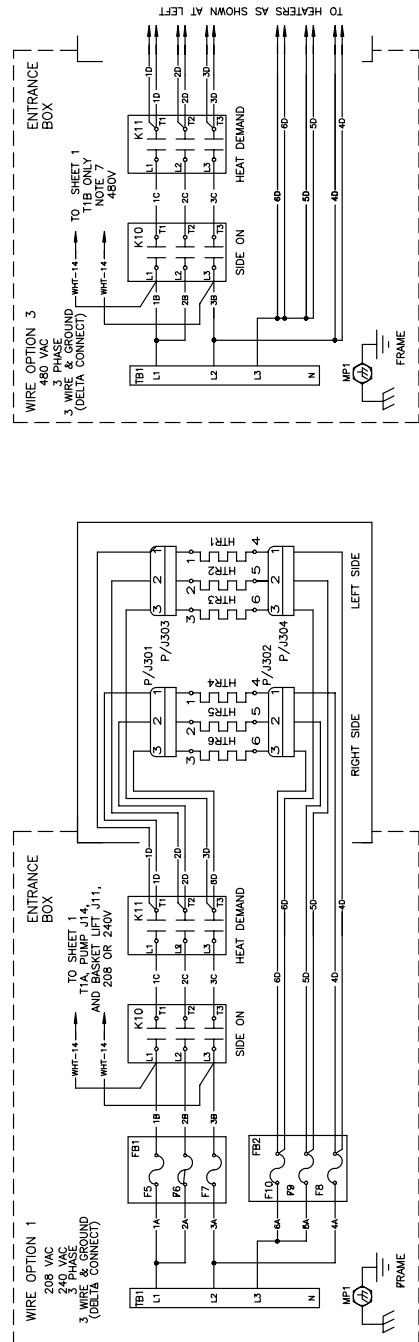


TABLE 2A LINE CONNECTION OPTIONS FOR U.S. AND CANADIAN SERVICES SE14X, SE14, SE14R

[illegible]

TABLE 2B LINE CONNECTION OPTIONS FOR U.S. AND CANADIAN SERVICES SE'18X, SE'18, SE'18R

TABLE 2B LINE CONNECTION OPTIONS FOR U.S. AND CANADIAN SERVICES SE19X, SE18, SE18R												
LINE CONNECTIONS		FILTER PUMP		TRANSFORMER			MODEL SE19			MODEL SE18		
VOLTAGE	WIRE AND LOAD TYPE	P/N CONNECTION	CONNECTION VOLTAGE/AMPS	P/N CONNECTION	CONNECTION VOLTAGE/AMPS	TOTAL HEATER WATTS 7/8 NOTES 7/8	HIRTI, HIRZ P/N 1A-3C WIRE SIZE	FUSES F5-F10 AMPS	TOTAL HEATER WATTS 7/8 NOTES 7/8	HIRTI, HIRZ P/N 1A-3C WIRE SIZE	FUSES F5-F10 AMPS	
208	3 PHASE 3 WIRE & GND	BP730808	208V 4.0A 50/60HZ	BP104020	208V 4.0A 50/60HZ	L1-38.9 A L2-38.9 A L3-38.9 A	50006609 14.0 KW 10 AWG	P5045701 40 A	L1-47.2 A L2-47.2 A L3-47.2 A	50006601 17.0 KW 10 AWG	P5045701 40 A	
240	3 PHASE 3 WIRE & GND	BP730801	240V 3.8A 50/60HZ	BP104023	240V 3.8A 50/60HZ	L1-33.7 A L2-33.7 A L3-33.7 A	50006612 14.0 KW 10 AWG	P5045701 40 A	L1-40.9 A L2-40.9 A L3-40.9 A	50006603 17.0 KW 10 AWG	P5045701 40 A	
480	3 PHASE 3 WIRE & GND	BP730801 W/GPERATE	480V 3.8A 50/60HZ	BP104020	480V 3.8A 50/60HZ	L1-16.8 A L2-16.8 A L3-16.8 A	50006613 14.0 KW 14 AWG	50006604 14 AWG	L1-20.4 A L2-20.4 A L3-20.4 A	50006604 14 AWG	50006608 14 AWG	

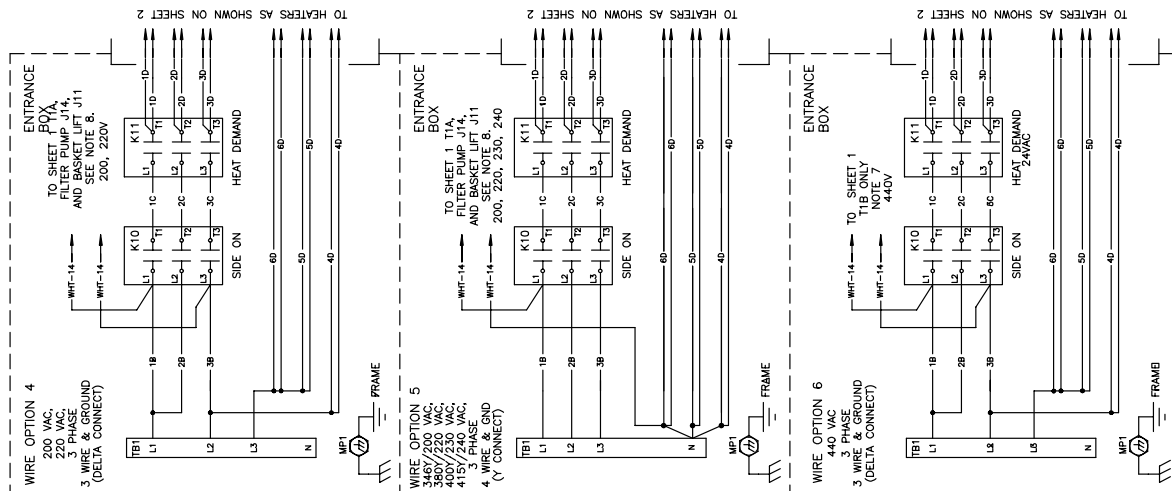


TABLE 3A LINE CONNECTION OPTIONS FOR INTERNATIONAL SERVICES SE14X, SE14, SE14R

LINE CONNECTIONS			FILTER PUMP			TRANSFORMER			MODEL SE14X			MODEL SE14			MODEL SE14R		
VOLTS	WIRE & GND	WIRE OPTION	P/N	CONNECT	PUMP VOLTS/AMPS	P/N	CONNECT	TAP VOLTS	TOTAL HEATER LESS OPTIONS	HTR1, HTR2 P/N	TOTAL HEAT KW	TOTAL HEATER LESS OPTIONS	HTR1, HTR2 P/N	TOTAL HEAT KW	TOTAL HEATER LESS OPTIONS	HTR1, HTR2 P/N	TOTAL HEAT KW
200	3 WIRE & GND	4	60130808	BLK-L1 WHI-L2 208V 4A 50Hz	PP10429 L1-(2) 208	PP10429 L1-(2) 208	PP10429 L1-(2) 208	PP10429 L1-(2) 208	11-37.4 A L2-37.4 A L3-37.4 A	50006609	10 AWG	11-45.4 A L2-45.4 A L3-45.4 A	50006601	10 AWG	11-58.7 A L2-58.7 A L3-58.7 A	50006605	10 AWG
3 PHASE	3 WIRE & GND	4	60130801	BLK-L1 WHI-L2 230V 3.8A 50/60Hz	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	11-36.7 A L2-36.7 A L3-36.7 A	50006610	10 AWG	11-44.6 A L2-44.6 A L3-44.6 A	50006602	10 AWG	11-57.7 A L2-57.7 A L3-57.7 A	50006606	22.0 KW
4 WIRE & GND	4 WIRE & GND	5	60130808	BLK-L1 WHI-L2 208V 4A 50Hz	PP10429 L1-(2) 208	PP10429 L1-(2) 208	PP10429 L1-(2) 208	PP10429 L1-(2) 208	11-21.6 A L2-21.6 A L3-21.6 A	50006609	12.9 KW	11-26.2 A L2-26.2 A L3-26.2 A	50006601	15.7 KW	11-33.9 A L2-33.9 A L3-33.9 A	50006605	20.3 KW
3 PHASE	3 WIRE & GND	5	60130801	BLK-L1 WHI-L2 230V 3.8A 50/60Hz	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	11-21.3 A L2-21.3 A L3-21.3 A	50006610	10 AWG	11-25.8 A L2-25.8 A L3-25.8 A	50006602	10 AWG	11-33.4 A L2-33.4 A L3-33.4 A	50006606	22.0 KW
4 WIRE & GND	4 WIRE & GND	5	60130801	BLK-L1 WHI-L2 230V 3.8A 50/60Hz	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	11-20.2 A L2-20.2 A L3-20.2 A	50006611	10 AWG	11-24.5 A L2-24.5 A L3-24.5 A	50006614	10 AWG	11-31.8 A L2-31.8 A L3-31.8 A	50006615	22.0 KW
4 WIRE & GND	4 WIRE & GND	5	60130802	BLK-L1 WHI-L2 240V 3.5A 50Hz	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	11-19.5 A L2-19.5 A L3-19.5 A	50006612	14.0 KW	11-23.7 A L2-23.7 A L3-23.7 A	50006603	10 AWG	11-30.6 A L2-30.6 A L3-30.6 A	50006607	22.0 KW
3 PHASE	3 WIRE & GND	6	60130801 W/SEPARATE POWER CORD 1PH 230V 3.8A 50/60Hz	PP10428 L1-(2) 440	PP10428 L1-(2) 440	PP10428 L1-(2) 440	PP10428 L1-(2) 440	PP10428 L1-(2) 440	11-13.4 A L2-13.4 A L3-13.4 A	50006613	14 AWG	11-18.7 A L2-18.7 A L3-18.7 A	50006604	14 AWG	11-24.3 A L2-24.3 A L3-24.3 A	50006608	18.5 KW

TABLE 3B LINE CONNECTION OPTIONS FOR INTERNATIONAL SERVICES SE18X, SE18, SE18R

LINE CONNECTIONS			FILTER PUMP			TRANSFORMER			MODEL SE18X			MODEL SE18			MODEL SE18R		
VOLTS	WIRE & GND	WIRE OPTION	P/N	CONNECT	PUMP VOLTS/AMPS	P/N	CONNECT	TAP VOLTS	TOTAL HEATER LESS OPTIONS	HTR1, HTR2 P/N	TOTAL HEAT KW	TOTAL HEATER LESS OPTIONS	HTR1, HTR2 P/N	TOTAL HEAT KW	TOTAL HEATER LESS OPTIONS	HTR1, HTR2 P/N	TOTAL HEAT KW
200	3 WIRE & GND	4	60130808	BLK-L1 WHI-L2 208V 4A 50Hz	PP10429 L1-(2) 208	PP10429 L1-(2) 208	PP10429 L1-(2) 208	PP10429 L1-(2) 208	11-37.4 A L2-37.4 A L3-37.4 A	50006609	10 AWG	11-45.4 A L2-45.4 A L3-45.4 A	50006601	15.7 KW	11-58.7 A L2-58.7 A L3-58.7 A	50006605	20.3 KW
3 PHASE	3 WIRE & GND	4	60130801	BLK-L1 WHI-L2 230V 3.8A 50/60Hz	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	11-36.7 A L2-36.7 A L3-36.7 A	50006610	10 AWG	11-44.6 A L2-44.6 A L3-44.6 A	50006602	10 AWG	11-57.7 A L2-57.7 A L3-57.7 A	50006606	22.0 KW
4 WIRE & GND	4 WIRE & GND	5	60130801	BLK-L1 WHI-L2 230V 3.8A 50/60Hz	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	11-21.6 A L2-21.6 A L3-21.6 A	50006610	10 AWG	11-26.2 A L2-26.2 A L3-26.2 A	50006601	15.7 KW	11-33.9 A L2-33.9 A L3-33.9 A	50006605	20.3 KW
3 PHASE	3 WIRE & GND	5	60130801	BLK-L1 WHI-L2 230V 3.8A 50/60Hz	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	11-21.3 A L2-21.3 A L3-21.3 A	50006611	10 AWG	11-25.8 A L2-25.8 A L3-25.8 A	50006602	10 AWG	11-33.4 A L2-33.4 A L3-33.4 A	50006606	22.0 KW
4 WIRE & GND	4 WIRE & GND	5	60130801	BLK-L1 WHI-L2 230V 3.8A 50/60Hz	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	11-21.3 A L2-21.3 A L3-21.3 A	50006611	10 AWG	11-25.8 A L2-25.8 A L3-25.8 A	50006602	10 AWG	11-33.4 A L2-33.4 A L3-33.4 A	50006606	22.0 KW
4 WIRE & GND	4 WIRE & GND	5	60130801	BLK-L1 WHI-L2 230V 3.8A 50/60Hz	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	11-20.2 A L2-20.2 A L3-20.2 A	50006611	10 AWG	11-24.5 A L2-24.5 A L3-24.5 A	50006614	10 AWG	11-31.8 A L2-31.8 A L3-31.8 A	50006615	22.0 KW
3 PHASE	3 WIRE & GND	5	60130802	BLK-L1 WHI-L2 240V 3.5A 50Hz	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	PP10429 L1-(1) L2-(5) 240	11-19.5 A L2-19.5 A L3-19.5 A	50006612	10 AWG	11-23.7 A L2-23.7 A L3-23.7 A	50006603	10 AWG	11-30.6 A L2-30.6 A L3-30.6 A	50006607	22.0 KW
4 WIRE & GND	4 WIRE & GND	6	60130801 W/SEPARATE POWER CORD 1PH 230V 3.8A 50/60Hz	PP10428 L1-(2) 440	PP10428 L1-(2) 440	PP10428 L1-(2) 440	PP10428 L1-(2) 440	PP10428 L1-(2) 440	11-15.4 A L2-15.4 A L3-15.4 A	50006613	14 AWG	11-18.7 A L2-18.7 A L3-18.7 A	50006604	14 AWG	11-24.3 A L2-24.3 A L3-24.3 A	50006608	18.5 KW

3 PHASE INTERNATIONAL ELECTRICAL SERVICES
FOR MODELS SE14X, SE14, SE14R; SE18X, SE18, SE18R

3 PHASE

SCALE: NONE

SH 3 OF 13

700329 A

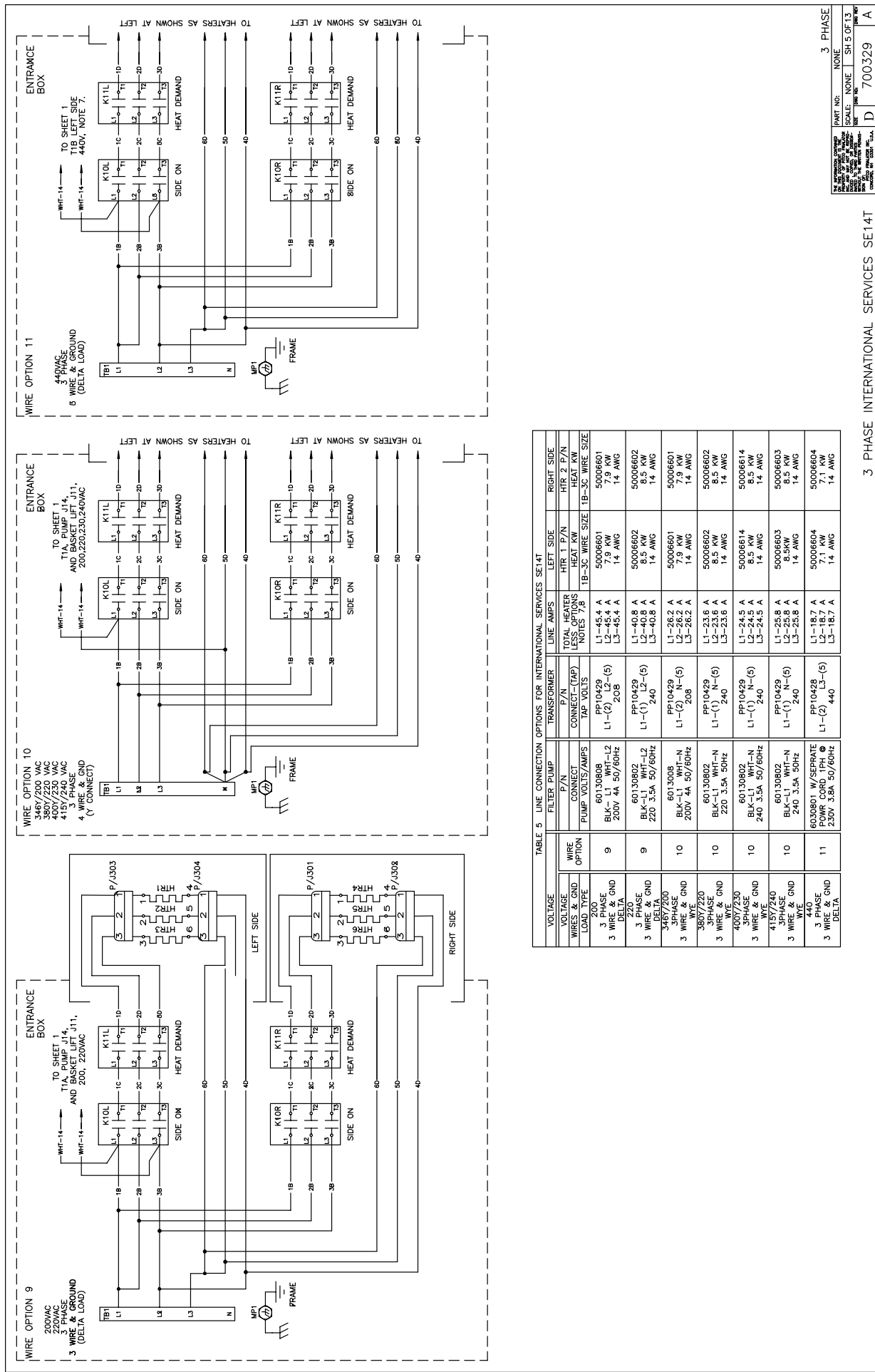
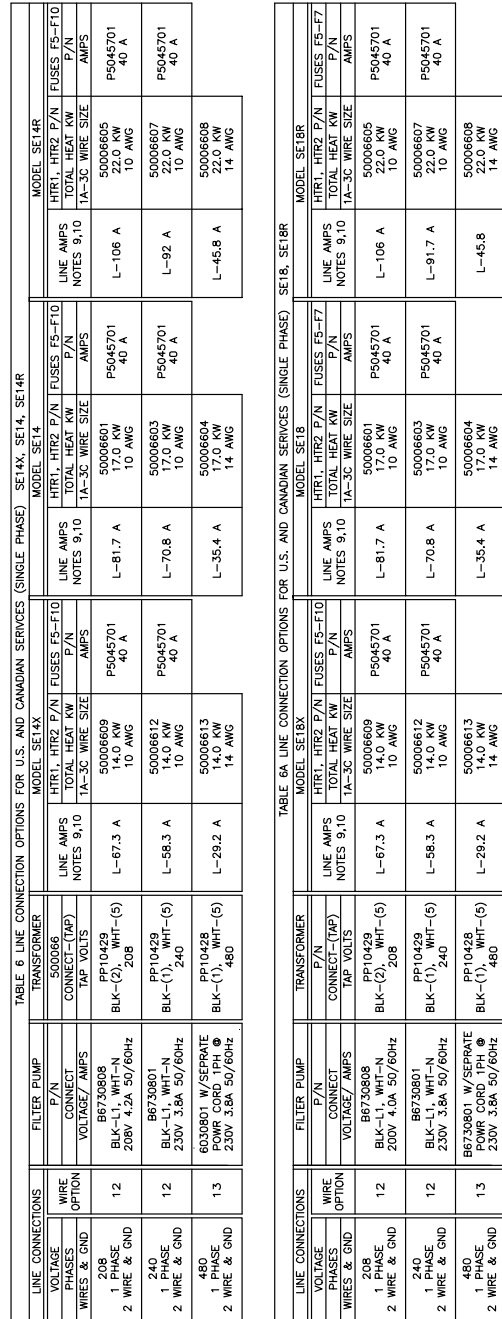


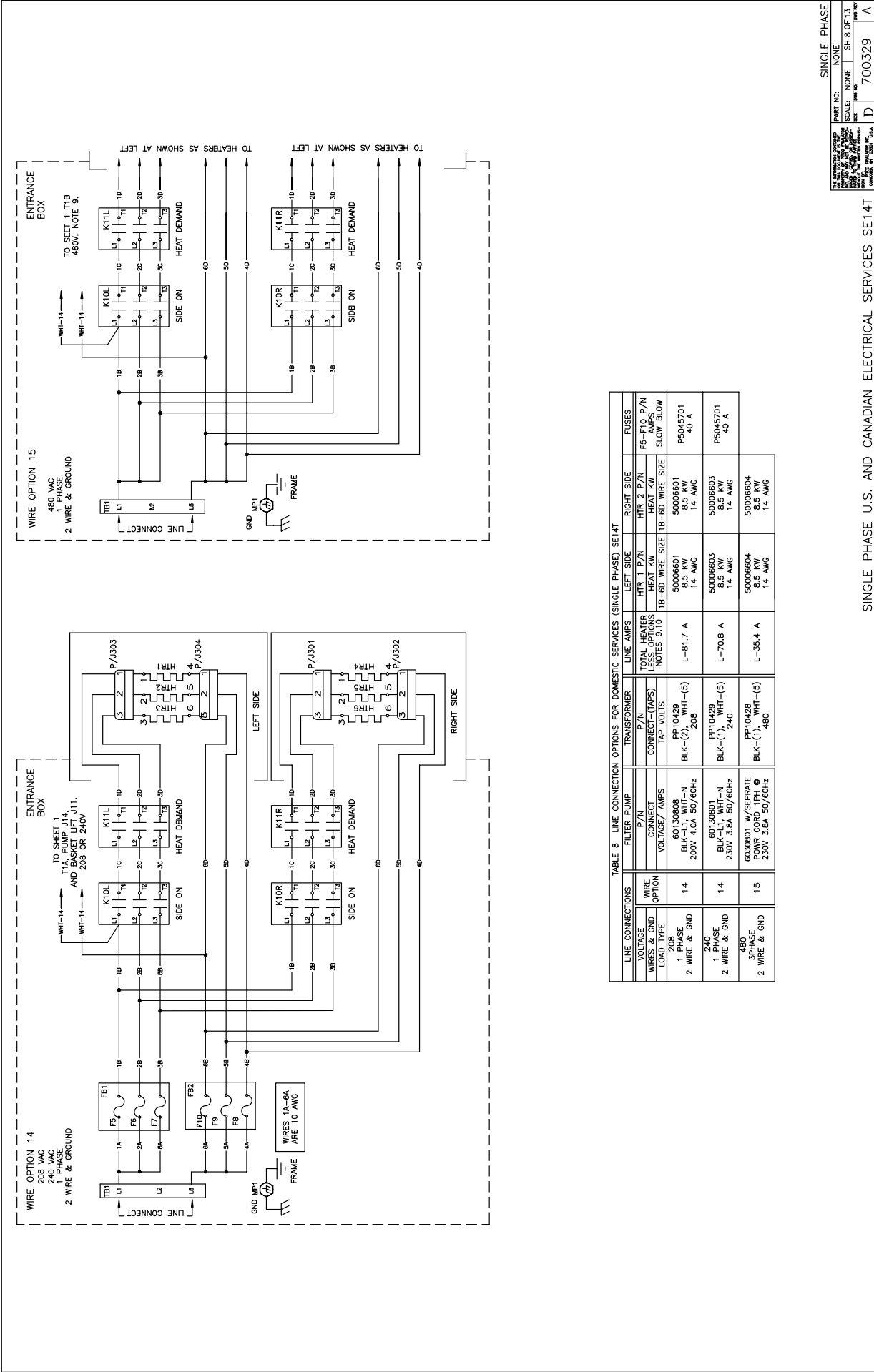
TABLE 5 LINE CONNECTION OPTIONS FOR INTERNATIONAL SERVICES SE14T

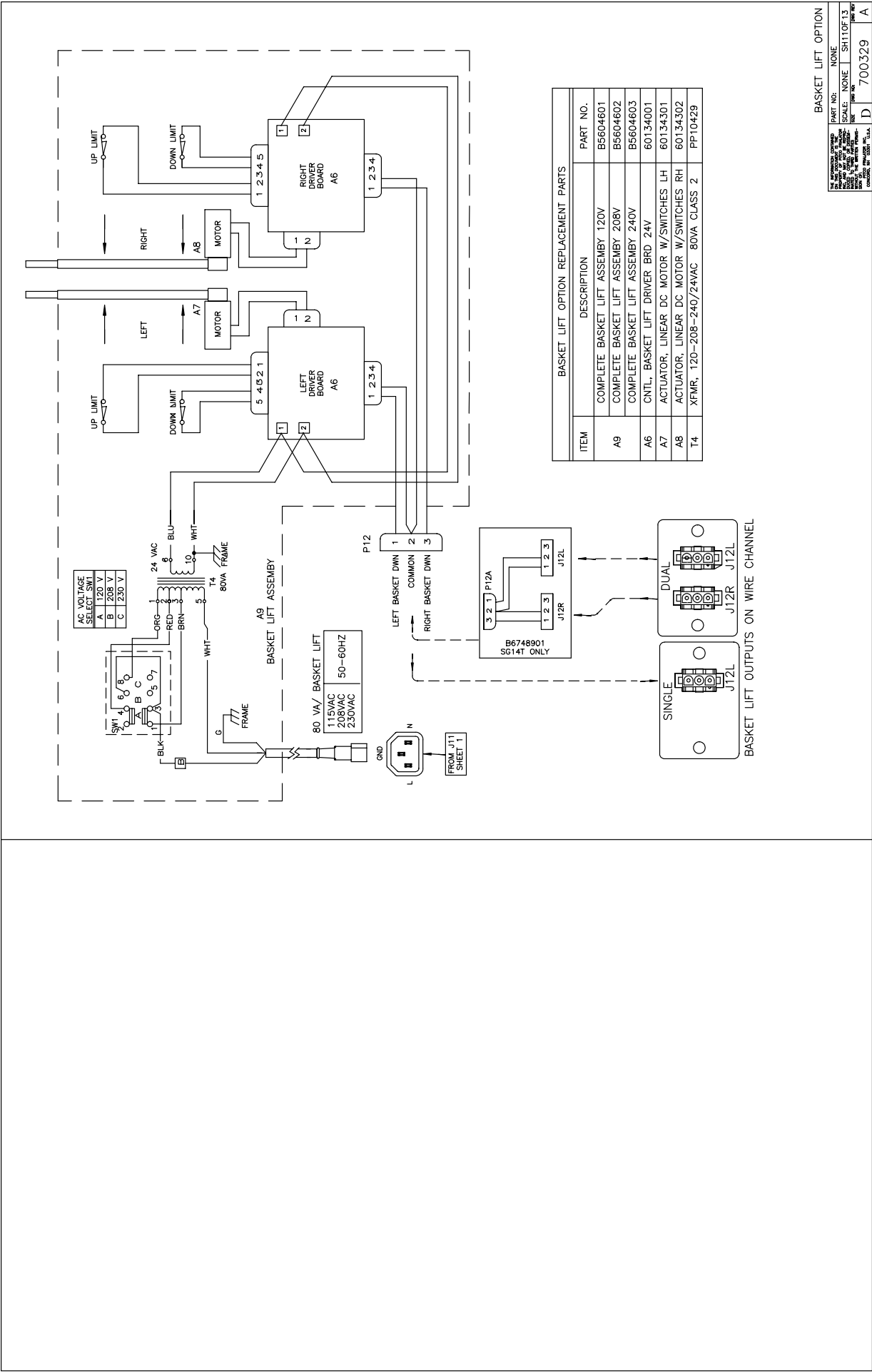
VOLTAGE WIRE & GND LOAD TYPE	WIRE OPTION	FILTER PUMP		TRANSFORMER		LINE AMPS		LEFT SIDE		RIGHT SIDE	
		P/N	CONNECT	P/N	CONNECT (TAP)	TOTAL HEATER AMPS NOTES 7,8	HEAT KW	HTR 1 E/N	HTR 2 E/N	HTR 3 E/N	HTR 4 E/N
200 3 PHASE 3 WIRE & GND DELTA	9	60130808	BLK-L1 WHT-L2 200V 4A 50/60Hz	PP10429 L1-(2) 208	PP10429 L1-(2) 208	L1-45.4 A L2-45.4 A L3-45.4 A	5006601 19 KW 14 AWG	5006601 19 KW 14 AWG	5006601 19 KW 14 AWG	5006601 19 KW 14 AWG	5006601 19 KW 14 AWG
200 3 PHASE 3 WIRE & GND DELTA	9	60130802	BLK-L1 WHT-L2 220 3.5A 50/60Hz	PP10429 L1-(1) N-(5) 240	PP10429 L1-(1) N-(5) 240	L1-40.8 A L2-40.8 A L3-40.8 A	5006602 15.5 KW 14 AWG	5006602 15.5 KW 14 AWG	5006602 15.5 KW 14 AWG	5006602 15.5 KW 14 AWG	5006602 15.5 KW 14 AWG
346V/230 3 PHASE 3 WIRE & GND	10	60130808	BLK-L1 WHT-L2 200V 4A 50/60Hz	PP10429 L1-(2) N-(5) 208	PP10429 L1-(2) N-(5) 208	L1-26.2 A L2-26.2 A L3-26.2 A	5006601 7.9 KW 14 AWG	5006601 7.9 KW 14 AWG	5006601 7.9 KW 14 AWG	5006601 7.9 KW 14 AWG	5006601 7.9 KW 14 AWG
380V/230 3 PHASE 3 WIRE & GND	10	60130802	BLK-L1 WHT-L2 220 3.5A 50Hz	PP10429 L1-(1) N-(5) 240	PP10429 L1-(1) N-(5) 240	L1-23.6 A L2-23.6 A L3-23.6 A	5006602 8.5 KW 14 AWG	5006602 8.5 KW 14 AWG	5006602 8.5 KW 14 AWG	5006602 8.5 KW 14 AWG	5006602 8.5 KW 14 AWG
400V/230 3 PHASE 3 WIRE & GND	10	60130802	BLK-L1 WHT-L2 240 3.5A 50/60Hz	PP10429 L1-(1) N-(5) 240	PP10429 L1-(1) N-(5) 240	L1-24.5 A L2-24.5 A L3-24.5 A	5006614 8.5 KW 14 AWG	5006614 8.5 KW 14 AWG	5006614 8.5 KW 14 AWG	5006614 8.5 KW 14 AWG	5006614 8.5 KW 14 AWG
415V/240 3 PHASE 3 WIRE & GND	10	60130802	BLK-L1 WHT-L2 240 3.5A 50Hz	PP10429 L1-(1) N-(5) 240	PP10429 L1-(1) N-(5) 240	L1-25.8 A L2-25.8 A L3-25.8 A	5006603 8.5 KW 14 AWG	5006603 8.5 KW 14 AWG	5006603 8.5 KW 14 AWG	5006603 8.5 KW 14 AWG	5006603 8.5 KW 14 AWG
440 3 PHASE 3 WIRE & GND DELTA	11	603801 W/SEPARATE POWER CORD 1PH 230V 3.8A 50/60Hz		PP10428 L1-(2) 440	PP10428 L1-(2) 440	L1-18.7 A L2-18.7 A L3-18.7 A	5006604 7.1 KW 14 AWG	5006604 7.1 KW 14 AWG	5006604 7.1 KW 14 AWG	5006604 7.1 KW 14 AWG	5006604 7.1 KW 14 AWG

3 PHASE INTERNATIONAL SERVICES SE14T

3 PHASE	3 PHASE
WIRE & GND	WIRE & GND
DELTA	DELTA
LOAD	LOAD
SCALE: NONE	SCALE: NONE
SH 5 OF 13	SH 5 OF 13
D 700329	D 700329
A	A







BASKET LIFT OPTION	
PART NO.	NONE
SCALE	NONE
DATE	SH10F13
REV	700329
BY	A

Exploded Drawings and Parts Lists

Parts Listing

Fryer Electrical Components:

Part Number Description

50006609 208V Element
 50006610 220V Element
 50006611 230V Element
 50006612 240V Element
 50006613 480V Element
 60068304 Tank/Element O-ring
 60141201 Hi Limit Switch
 A3342802 Upper Hi Limit Bracket
 A3342902 Lower Hi Limit Bracket
 PP10429 120/208/240V Transformer
 PP10560 Side On Contactor
 60139201 Heat Demand Contactor
 P5045282 4 Post Terminal Block
 P5047301 3 Post Terminal Block
 B6700605-C Temperature Probe
 A3342502 Front Probe Bracket
 A3342504 Rear Probe Bracket
 60137301 24VDC Hood Relay
 60126001 24VAC Hi Limit Relay (CE)
 B2004201-C Solid State Control
 B2004202-C Back-up SolidState Control
 60126601 Digital Control
 60126701 Dual Digital Control
 60126801 Computer Control
 60126802 Dual Computer Control
 B3631304 Front Panel Bezel
 60132702 1.5A Time Delay Fuse
 60127301 Relay Board
 60132901 Relay Board Insulation
 B5305001 DVI/Return Switch
 PP10263 DVI/ReturnActuator

Filter Components:

Part Number Description

60130806 115/220V Pump & Motor
 60130807 240V Pump & Motor
 60130810 208V Pump & Motor
 60130803 115/220V Motor
 60130804 240V Motor
 60130809 208V Motor
 PP10417 5 GPM Pump
 60077901 10A Circuit Breaker (120V)
 60078502 5A Circuit Breaker(208-240V)
 60130301 120/24V Transformer
 60130302 230-240/24V Transformer
 60130303 208/24V Transformer

PP11058 24VAC SPST Relay (120V)
 60104701 24VAC DPDT Relay (208-240V)
 60132701 0.2A Time Delay Fuse
 60133503 120V Heat Tape (Pump)
 60133504 230/240V Heat Tape (Pump)
 60133501 120V Heat Tape (Flush Hose)
 60133502 230/240V Heat Tape (Flush Hose)
 PP11104 1" Viton O-ring
 60138701 Full/LH Non Locking Drain Valve
 60138702 RH Non Locking Drain Valve
 60138703 Full/LH Locking Drain Valve
 60138704 RH Locking Drain Valve
 60059302 Drain Line Gasket
 60127702 Drain Line Clamp
 B6665101 Drain Elbow
 B6665201 Drain Tee Full
 A7022407 Drain Line Tube Full/Full
 A7022409 Drain Line Tube Split/Full
 A7022411 Drain Line Tube Split/Split
 A7022101 Drain Tee Ferrule
 A7022201 Drain Tee Flange
 B6664701 Drain Down Spout Full/Full
 B6673301 Drain Down Spout Split
 B5305001 DVI/Return Switch
 PP10263 DVI/ReturnActuator
 B6671201 Strainer Cap
 B4004802 Full/RH Return Handle
 B4004801 LH Twin Return Handle
 60131801 Return Valve
 A7008302 Paper Support
 B6673801 Filter Pan

Miscellaneous

Part Number Description

A4500601 Full Vat Tube Rack
 B4512401 Split Vat Tube Rack
 A3342104 Basket Hanger
 60138101 Basket Hanger Stud
 A4108302 Splash Back
 P6071409 Nylon Cleaning Brush
 A3301001 Cleanout Rod
 B2304602 LH/RH Door
 B3801901 RH Hinge Kit
 B3801902 LH Hinge Kit
 B3902101 9" Caster Set (4)
 A1908202 Channel Strip
 B2101503 Full/Twin Tank Cover

Table 1
Element and Tank Components

Item#	Part#	Part Description
1	A3342102	Basket Hanger w/Capping
	A3342104	Basket Hanger w/o Capping
2	60068304	Element O-ring
3	50006609	Element 208V
	50006610	Element 220V
	50006611	Element 230V
	50006612	Element 240V
	50006613	Element 480V
4	60088003	Bolt, Element 1/4"x20x3/4" SS
5	60141201	Hi Limit Switch
6	A3342902	Lower Hi Limit Bracket
7	PP11366	Screw, 10-24 X 5/8 PHH SS TF
8	A3342802	Upper Hi Limit Bracket
9	PP10665	Screw, 10-24 X 3/8
10	B6700605-C	Temperature Probe
11	A3342504	Rear Probe Bracket
12	A4108302	Splash Back
13	A3342502	Front Probe Bracket
14	60138101	Basket Hanger Stud
	60118201	Bolt,Hex 1/4-20 X 3/4

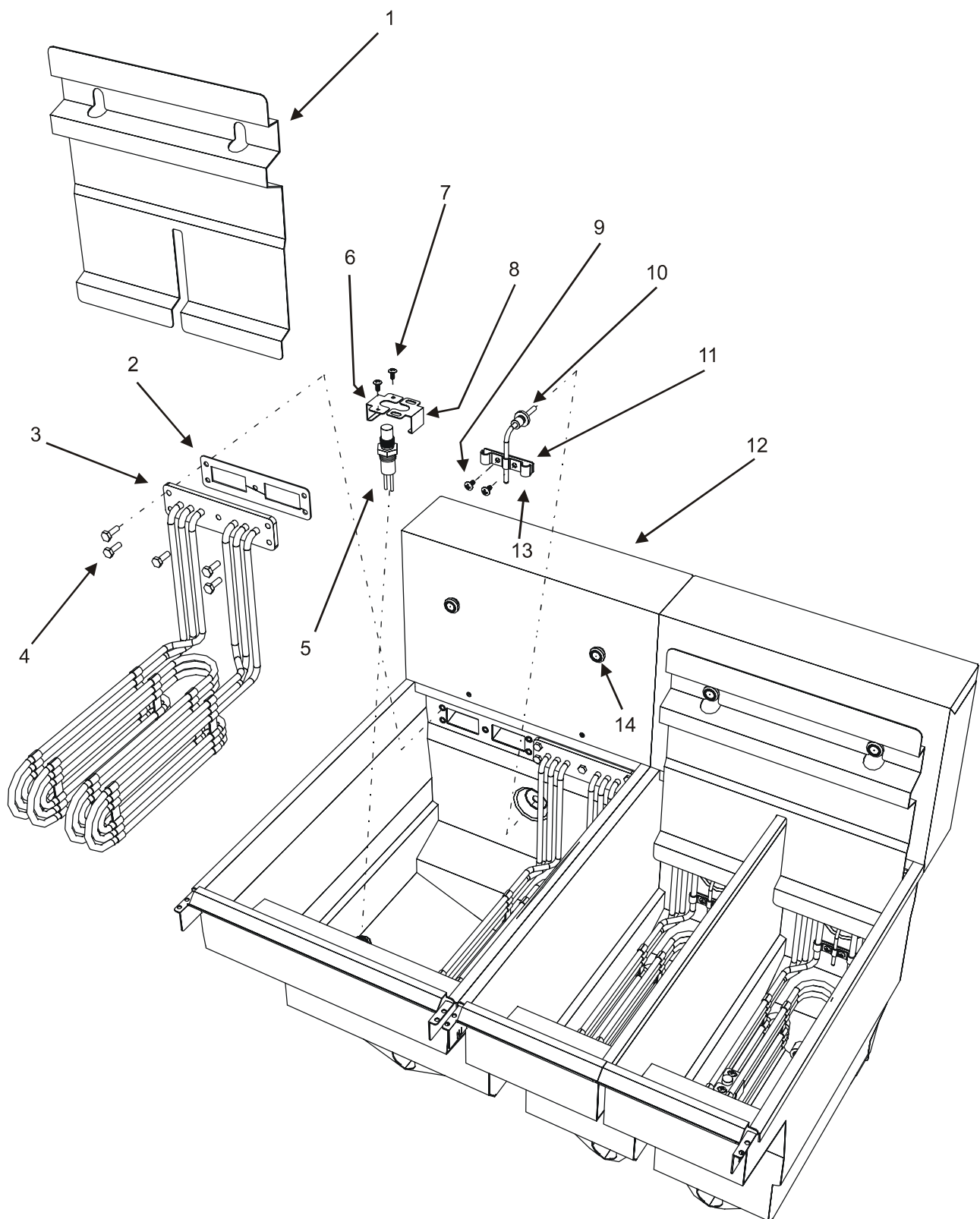
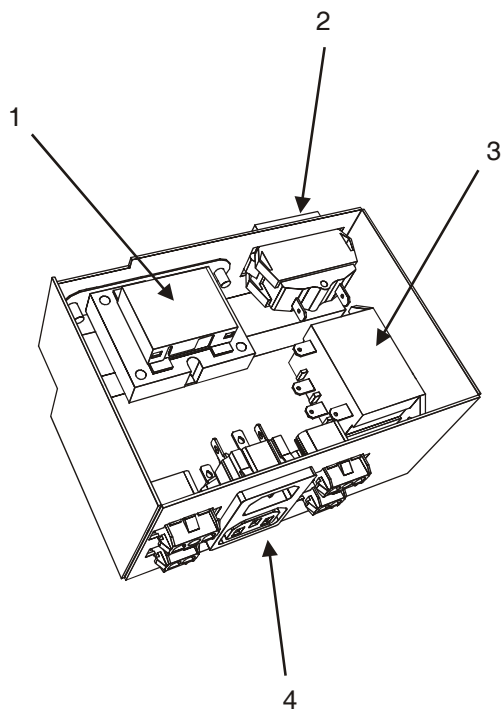


Figure 1

Table 2
Pump Box and Drain Manifold

Item#	Part#	Part Description
1	60130301	120/24V Transformer
	60130302	230-240/24VAC Transformer
	60130303	208VAC Transformer
2	60077901	10A Circuit Breaker (120V)
	60078502	5A Circuit Breaker (208V-240V)
3	PP11058	24VAC SPST Relay (120V)
	60104701	24VAC DPDT Relay (208-240V)
4	60130701	Conn, Pwr In & Out IEC320
5	60138701	Drain Valve, Full/Right Split, W/Non-locking Handle
	60138703	Drain Valve, Full/Right Split, W/Locking Handle
6	A7021701	Drain Valve Nipple
7	A7022201	Drain Flange
8	A7022101	Drain Ferrule
9	B6665101	Drain Elbow
10	60088002	Hex Bolt 3/8"x16x1-1/4"
11	P0082700	Lock Washer 3/8"
12	60127701	Drain Line Clamp
13	60059302	Drain Line Gasket
14	B6664701	Drain Down Spout Full/Full
	B6673301	Drain Down Spout Split
15	60138702	Drain Valve, Left Split, W/Non-locking Handle
	60138704	Drain Valve, Left Split, W/Locking Handle
16	Contact Factory	Drain Line Tube
17	PP10263	DVI Actuator
18	B5305001	DVI Switch Assembly
19	PP10266	Screw, 4-40 X .250 RDH ZN



Pump Entrance Box
(viewed from bottom)

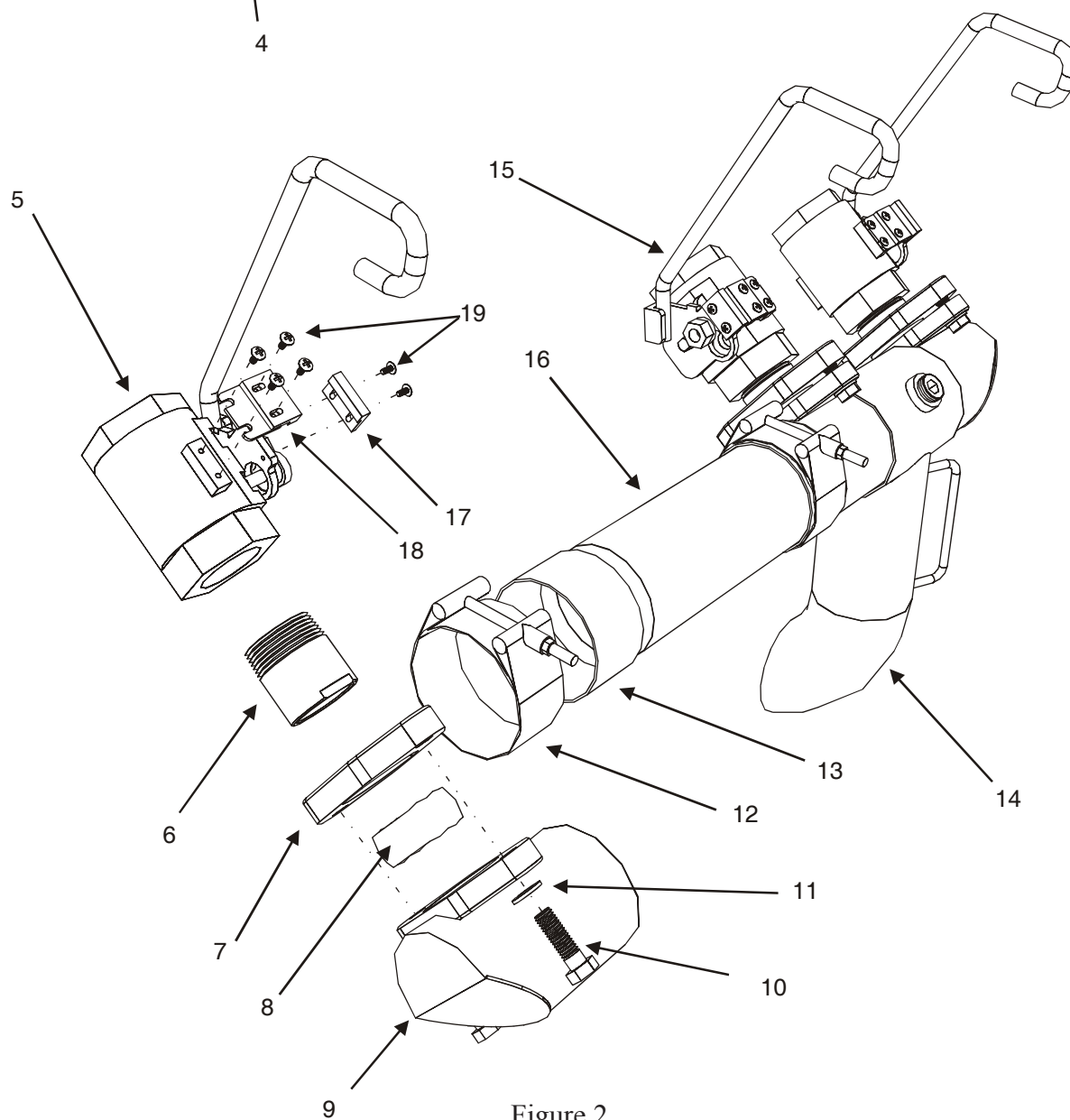


Figure 2

Table 3
Main Entrance Box

Item#	Part#	Part Description
1	60132702	Relay Board Fuse, 1.5A Time Delay
2	60127301	Relay Board
.....	60132901	Relay Board Insulation
3	P5047301	3 Post Terminal Block
4	60139201	Heat Demand Contactor
5	PP10560	Side On Contactor
6	PP10429	Transformer 120/208/240VAC
7	60140701	Rcpt,10A-250V IE320F Screw In
8	P5045282	4 Post Terminal Block
9	B5305001	DVI Return Switch
	PP10263	DVI Return Actuator (not shown)

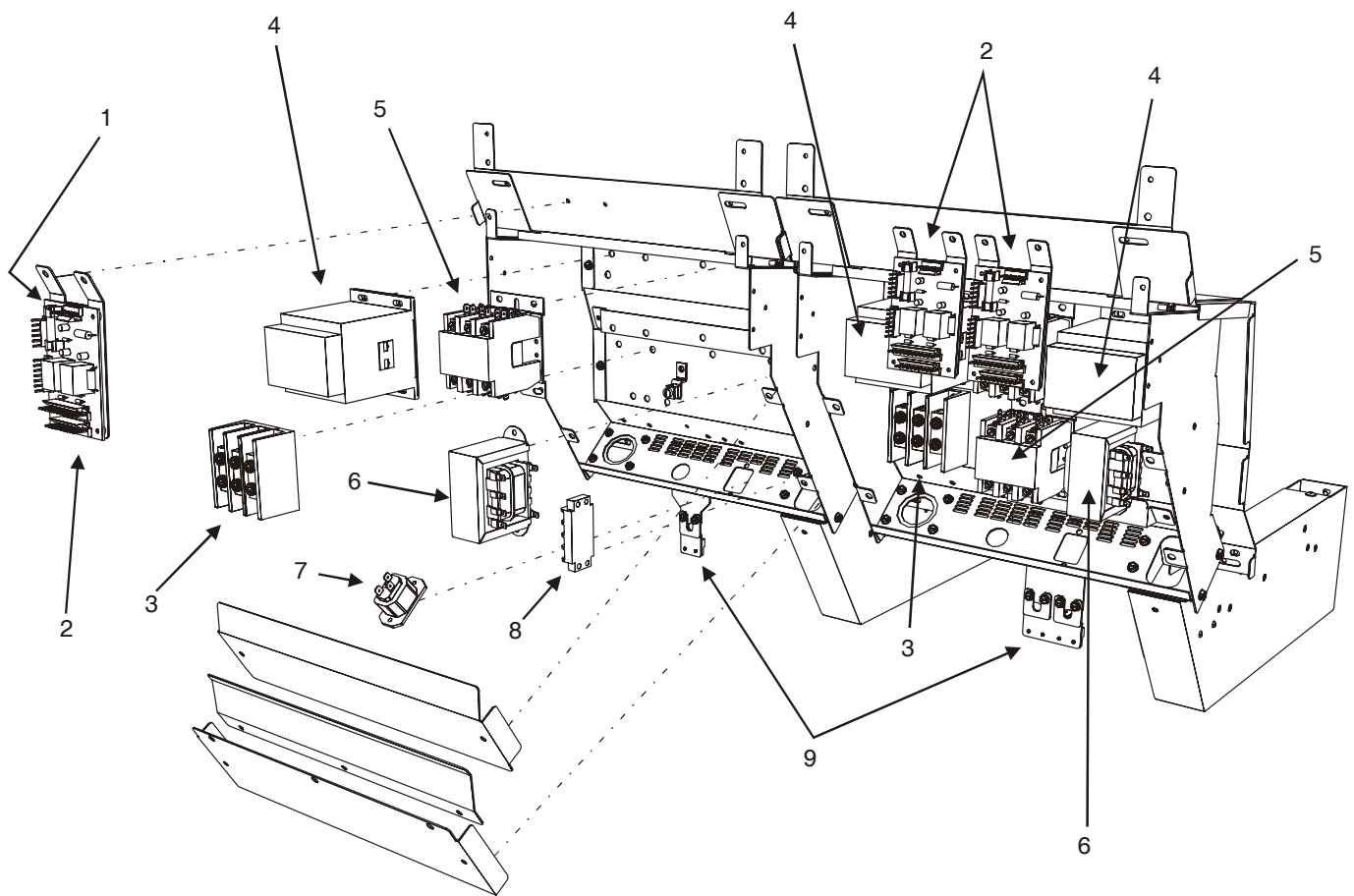


Figure 3

Table 4
Pump Assembly and Filter Pan

Item#	Part#	Part Description
1	B4004802	Full/Right Split Return Handle
	B4004801	Left Split Return Handle
2	P0190200	Cotter Pin 1/16"x3/4"
3	60131901	Washer, Spring 5/8" with 5/16" Hole
4	P0080750	Washer, Flat 5/16"
5	PP10266	4-40 x 1/4" Screw
6	B5305001	DVI Return Switch
7	PP10266	4-40 x 1/4" Screw
8	PP10263	DVI Return Actuator
9	PP10266	4-40 x 1/4" Screw
.....	10	60130806 115/220VAC Pump & Motor Assembly
	60130807	240VAC Pump & Motor Assembly
	60130810	208VAC Pump & Motor Assembly
	60130804	115/220V Motor Only
	60130804	240VAC Motor Only
	60130809	208VAC Motor Only
	PP10417	5 GPM Pump Only
11	P6071516	3/4" x 4" NPT Nipple
12	PP11104	1" x 1.18" viton O-ring (3 required)
13	A7027602	Pickup Tube Receiving Block
14	P7036603	3/4" NPT Coupling
15	60132201	Hose, Teflon Swivel FxMPT
16	60128008	Tbg, Flex Return Line 0.5" x 15.5"
	60128009	Tbg, Flex Return Line 0.5" x 19"
	60128010	Tbg, Flex Return Line 0.5" x 22"
	60128011	Tbg, Flex Return Line 0.5" x 10"
17	60131801	Return Valve
18	60130001	End Cap
19	60130101	Tank Return Fitting
20	B6671201	Pickup Tube Strainer
21	A7008302	Paper Support
22	B6673501	Paper Hold Down
23	60131401	Rigid Caster
24	B6673401	Filter Pan Only (no casters)
<u>Additional Parts Not Shown</u>		
	PP11273	Filter Paper
	60133503	120V Heat Tape (pump)
	60133504	230/240V Heat Tape (pump)
	60133501	120V Heat Tape (flush hose)
	60133502	230/240V Heat Tape (flush hose)

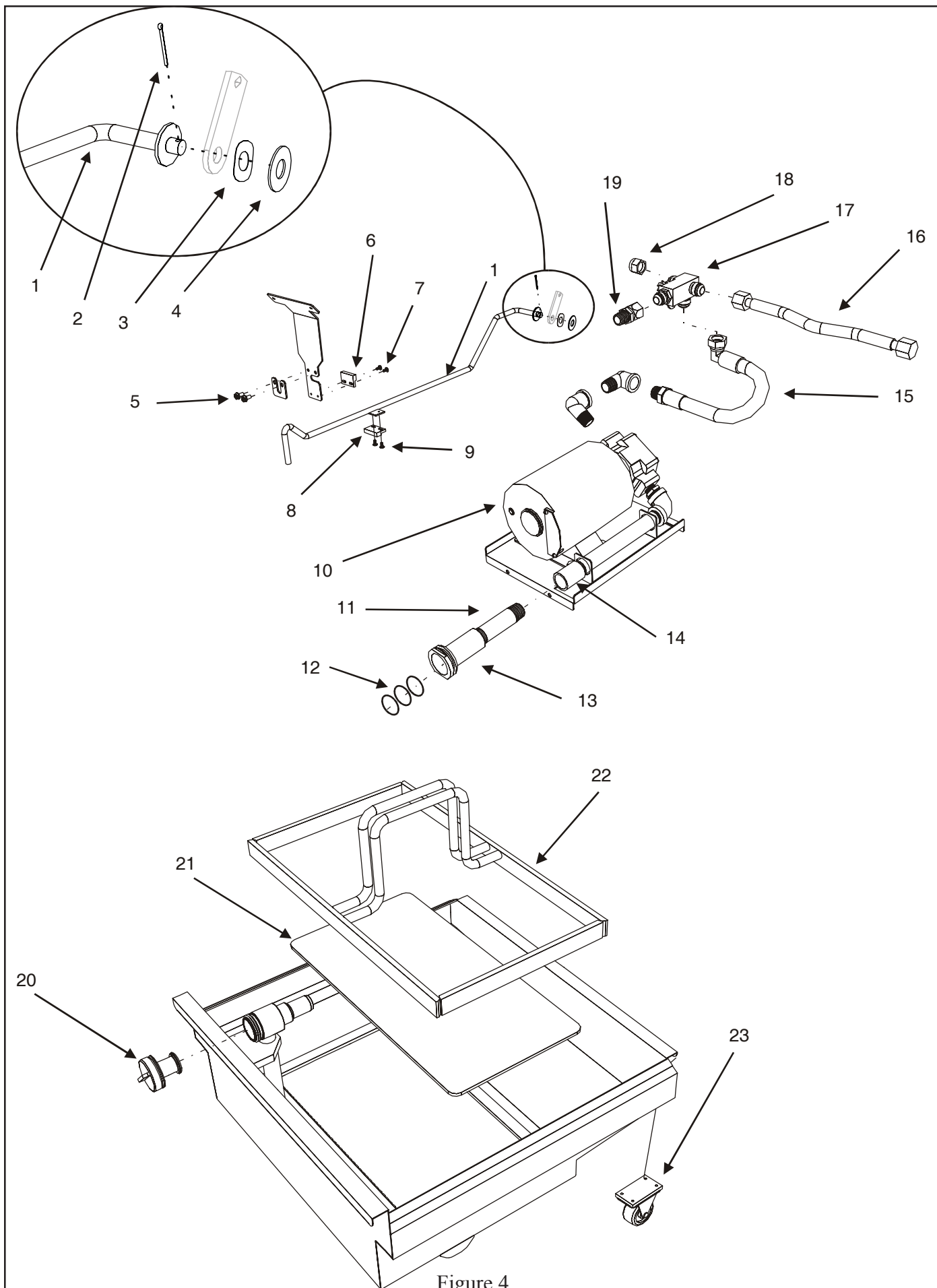
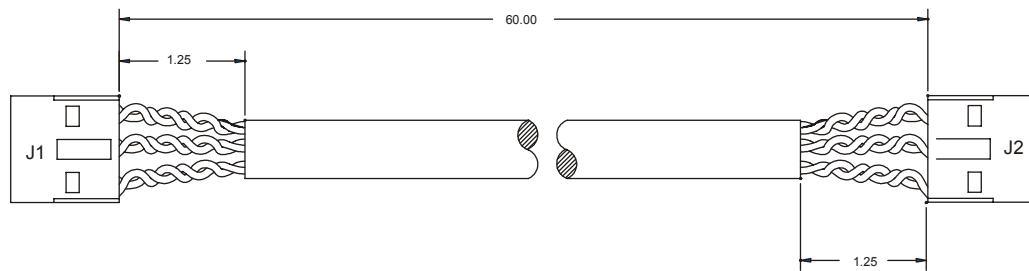
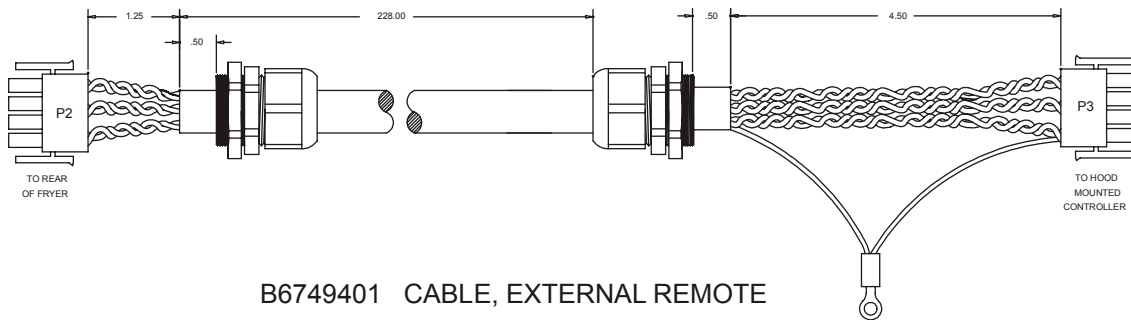


Figure 4



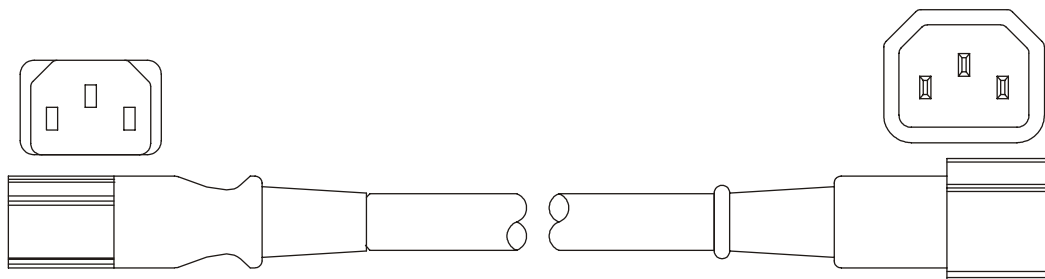
B6749301 CABLE, INTERNAL REMOTE

J	SCHEMATIC	J
10		10
11		11
1	BK	1
2	GR	2
3	BK	3
4	W	4
5	BK	5
6	R	6
7	BK	7
8	BL	8
9	BK	9
12	Y	12

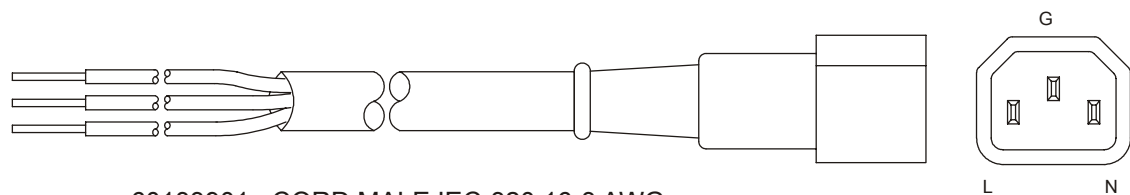


B6749401 CABLE, EXTERNAL REMOTE

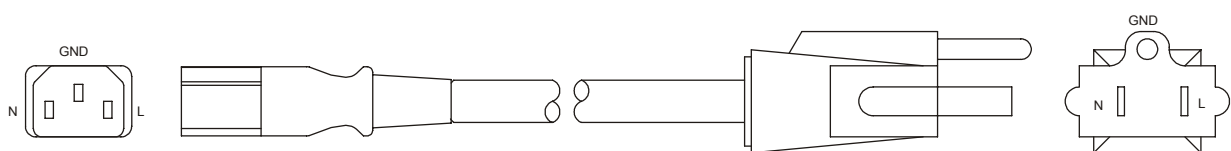
P2	SCHEMATIC	P3
10		10
11		11
1	BK	1
2	GR	2
3	BK	3
4	W	4
5	BK	5
6	R	6
7	BK	7
8	BL	8
9	BK	9
12	Y	12



60128403 CORD, M-F JUMPER IEC-320X34"



60133901 CORD, MALE IEC-320 16-3 AWG
60133902 CORD, 16-3 W/IEC320 MALE 66"



60128501 CORD, FEMALE IEC/NEMA 5-15

Figure 6



In the event of problems with or questions about your order, please contact the Pitco Frialator factory, from 8:00 a.m. - 5:00 p.m., Eastern Standard Time, Monday through Friday, toll-free at:

(800) 258-3708 US and Canada only or
(603) 225-6680

In the event of problems with or questions about your order, please contact the Pitco Frialator Authorized Service and Parts representative (ASAP) covering your area, through Pitco at:

(800) 258-3708 US only, 24 hours