



**Super Runner Electric Series  
SR114E**

**Super Runner Series Electric Fryers  
Service & Parts Manual**



NON-CE &



Dean, a member of the Commercial Food Equipment Service Association, recommends using CFESA Certified Technicians.

**\* 8196109 \***

**24-Hour Service Hotline 1-800-551-8633**

**FEB 2007**

**NOTICE**

IF, DURING THE WARRANTY PERIOD, THE CUSTOMER USES A PART FOR THIS ENODIS EQUIPMENT OTHER THAN AN **UNMODIFIED** NEW OR RECYCLED PART PURCHASED DIRECTLY FROM FRYMASTER DEAN, OR ANY OF ITS AUTHORIZED SERVICE CENTERS, AND/OR THE PART BEING USED IS MODIFIED FROM ITS ORIGINAL CONFIGURATION, THIS WARRANTY WILL BE VOID. FURTHER, FRYMASTER DEAN AND ITS AFFILIATES WILL NOT BE LIABLE FOR ANY CLAIMS, DAMAGES OR EXPENSES INCURRED BY THE CUSTOMER WHICH ARISE DIRECTLY OR INDIRECTLY, IN WHOLE OR IN PART, DUE TO THE INSTALLATION OF ANY MODIFIED PART AND/OR PART RECEIVED FROM AN UNAUTHORIZED SERVICE CENTER.

** DANGER**

Copper wire suitable for at least 167°F (75°C) must be used for power connections.

** DANGER**

The electrical power supply for this appliance must be the same as indicated on the rating and serial number plate located on the inside of the fryer door.

** DANGER**

This appliance must be connected to the voltage and phase as specified on the rating and serial number plate located on the inside of the fryer door.

** DANGER**

All wiring connections for this appliance must be made in accordance with the wiring diagrams furnished with the equipment. Wiring diagrams are located on the inside of the fryer door.

** DANGER**

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

** WARNING**

Do not attach accessories to this fryer unless fryer is secured from tipping. Personal injury may result.

** WARNING**

Frymaster Dean fryers equipped with legs are for permanent installations. Fryers fitted with legs must be lifted during movement to avoid damage and possible bodily injury. For a moveable or portable installation, Frymaster optional equipment casters must be used.

Questions? Call 1-800-551-8633

** WARNING**

Do not use water jets to clean this equipment.

** DANGER**

All wiring connections for this appliance must be made in accordance with the wiring diagrams furnished with the equipment. Wiring diagrams are located on the inside of the fryer door.

** WARNING**

This equipment is intended for indoor use only. Do not install or operate this equipment in outdoor areas.



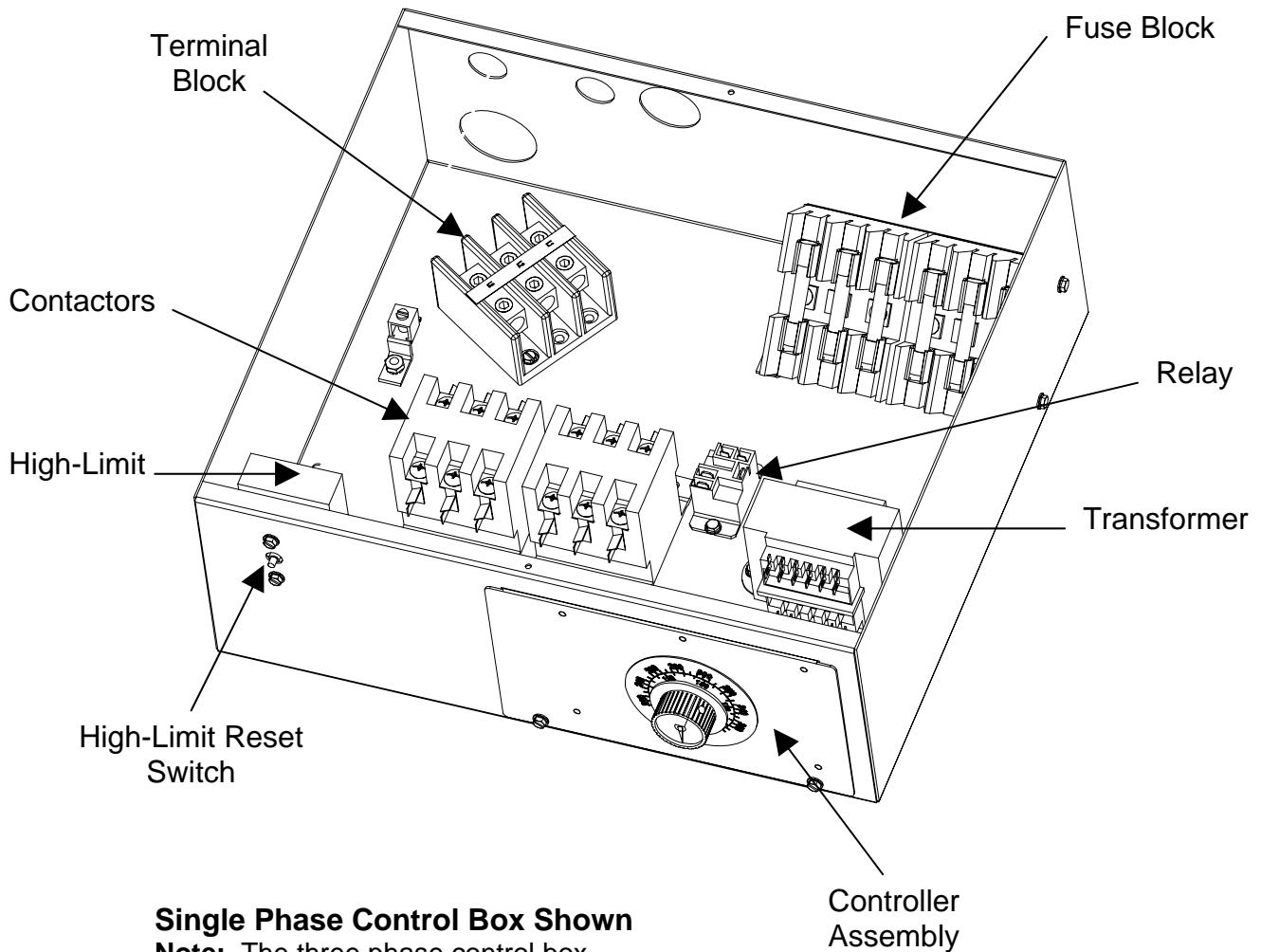
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## ELECTRICAL POWER SPECIFICATIONS

Use copper wire ONLY, suitable for at least 170°F (75°C)						
MODEL	VOLTAGE	PHASE	WIRE SERVICE	MINIMUM WIRE SIZE		AMPS (per leg)
				AWG	mm	
14 kW	208	Single	3	3	(5.83)	68
14 kW	208	3	3	6	(4.11)	39
14 kW	240	Single	3	4	(5.19)	59
14 kW	240	3	3	8	(3.26)	34
14kW	230/400	3	4	6	(4.11)	21

### Interior View of the Control Box



**Single Phase Control Box Shown**

**Note:** The three phase control box differs from the single phase by eliminating the fuse block and terminal block.

# SUPER RUNNER SERIES ELECTRIC FRYERS

## CHAPTER 1: SERVICE PROCEDURES

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### 1.1 General

Before performing any maintenance on your Dean Super Runner Electric fryer, you must disconnect the electrical power supply.

When electrical wires are disconnected, it is recommended that they be marked in such a way as to facilitate re-assembly.



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



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

**Disconnect all power cords before servicing.**

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

### 1.2 Temperature Control Knob Calibration

If the temperature controller knob requires adjustment, do the following:

1. Set the temperature controller dial to the desired oil temperature and wait for the temperature to stabilize.
2. When the oil temperature reaches operating temperature, let the heating elements cycle at least four times (indicated by the HEAT light going out and coming back on).
3. Insert a thermometer or pyrometer probe near the temperature-sensing probe approximately three inches deep into the oil. When the heating elements cycle on for the fourth time, the temperature should read within  $\pm 5^{\circ}\text{F}$  ( $\pm 3^{\circ}\text{C}$ ) of the temperature control knob setting.
4. Loosen the knob setscrew and rotate the knob to the correct temperature setting on the faceplate.
5. Check the temperature again with a high-quality immersion thermometer to confirm that the setting is correct.
6. Re-tighten the knob setscrew at the calibrated position.

### **1.3 Accessing the Control Box Electronics (Transformer, Contactor and Relay)**

1. Unplug the power cord.
2. Open front door of cabinet and remove the two screws from the top of the control box cover to remove the cover.

### **1.4 Replacing a Temperature Control Board**

1. Unplug the power cord. Perform Procedure 1.3, Steps 1-2, Accessing the Control Box Electronics.
2. Remove the 2 screws from the bottom of the controller faceplate.
3. Remove the setscrew from the controller knob.
4. Unplug the connector from the controller board.
5. Remove the nuts from each stud on the control board and slide the board from the studs. Ensure that standoff nuts remain in place on studs, prior to installing new board. Install the new board by reversing the previous procedures.
6. Perform Procedure 1.2 to recalibrate the temperature control knob.

### **1.5 Replacing a Transformer, Contactor or Relay**

1. Unplug the power cord. Perform Procedure 1.3, Steps 1-2, Accessing the Control Box Electronics.
2. Remove all wiring from the terminals of the transformer, contactor or relay to be replaced, ensuring that each wire is marked for reattachment.
3. Remove the screws that secure the transformer, contactor or relay to the control box.
4. Install the new transformer, contactor or relay by reversing the preceding procedures. Make sure you reconnect the wiring to the proper terminals.

## **1.6 Replacing a Power Switch or Indicator Lamp**

1. Unplug the power cord.
2. Remove the two screws on the bottom of the faceplate. Pull out and lift up slowly. Note that when lowering the faceplate, the door will lower and swing out to be set aside.
3. Mark wires for reattachment as you disconnect them.
4. Remove the old switch or lamp.
5. Install new switch or lamp and reassemble in reverse order.

## **1.7 Replacing a Temperature Probe or High-Limit Thermostat**

1. Unplug the power cord.
2. Drain the cooking oil from the frypot and leave the drain open.
3. Remove the two screws from the top control box cover.
4. Remove the screws from the back fryer cover.
5. If replacing the temperature probe, disconnect the wire plug containing the probe wiring.
6. Using an open end wrench, loosen the temperature probe or high-limit probe. Pull the probe through the hole and remove the probe.
7. If replacing the high-limit thermostat, remove the two screws that attach the high-limit reset switch to the control box. Remove the two wires attached to the high-limit reset switch. Pull the probe through the bushing in the rear of the control box. Attach new high-limit reset switch to the control box and reattach wires. Thread through the bushing in the rear of the control box.
8. Thread the new probe through the proper hole in the rear of the frypot. Ensure that the probe is aligned with the holes on the bracket attached to the element.
9. Apply Loctite PST567 sealant to replacement threads.
10. Screw the replacement probe into the frypot and tighten 170-180 inch-pounds torque. **DO NOT OVERTIGHTEN.**
11. Reattach the connector and reassemble in reverse order.

## **1.8 Replacing a Heating Element**

1. Perform Procedure 1.7, Replace Temperature Probe, Steps 1-4.
2. Mark wires of the elements before disconnecting from the contactor to facilitate easy reassembly. Pull the wires through the conduit.
3. Remove element using an open-end wrench or other suitable tool to loosen the compression fitting.
4. Gently remove the element by sliding out into the frypot and lifting up as you remove it.
5. Insert new element and reassemble in reverse order. Ensure that the element wires are correctly attached to the contactor.

## **1.9 Replacing a Frypot**

1. Perform Procedure 1.3, Accessing the Control Box Electronics, Steps 1-2.
2. Perform Procedure 1.7, Replacing a Temperature Probe, Steps 1-7.
3. Perform Procedure 1.8, Replacing a Heating Element, Steps 1-4.
4. Remove the screws holding the fluecap to the side panels.
5. Remove the screws attaching the faceplate bracket and heatshield to the front of the frypot
6. Remove the screws securing the frypot to the front frame of the fryer.
7. Carefully lift the frypot from the cabinet.
8. Remove the drain valve from the old frypot and install on the new frypot.
9. Apply Loctite Sealant PST 567 to the high-limit threads, temperature probe threads and element threads. Install high-limit, temperature probe and elements into the new frypot.
10. Follow the preceding steps in reverse to install the new frypot into the fryer.

## 1.10 Probe Resistance Chart

Use the chart below when testing temperature probes and probe circuits for proper operation.

Probe Resistance Chart																	
F	OHMS	C	F	OHMS	C	F	OHMS	C	F	OHMS	C	F	OHMS	C	F	OHMS	C
60	1059	16	130	1204	54	200	1350	93	270	1493	132	340	1634	171			
65	1070	18	135	1216	57	205	1361	96	275	1503	135	345	1644	174			
70	1080	21	140	1226	60	210	1371	99	280	1514	138	350	1654	177			
75	1091	24	145	1237	63	215	1381	102	285	1524	141	355	1664	179			
80	1101	27	150	1247	66	220	1391	104	290	1534	143	360	1674	182			
85	1112	29	155	1258	68	225	1402	107	295	1544	146	365	1684	185			
90	1122	32	160	1268	71	230	1412	110	300	1554	149	370	1694	188			
95	1133	35	165	1278	74	235	1422	113	305	1564	152	375	1704	191			
100	1143	38	170	1289	77	240	1432	116	310	1574	154	380	1714	193			
105	1154	41	175	1299	79	245	1442	118	315	1584	157	385	1724	196			
110	1164	43	180	1309	82	250	1453	121	320	1594	160	390	1734	199			
115	1174	46	185	1320	85	255	1463	124	325	1604	163	395	1744	202			
120	1185	49	190	1330	88	260	1473	127	330	1614	166	400	1754	204			
125	1195	52	195	1340	91	265	1483	129	335	1624	168	405	1764	207			

## 1.11 Troubleshooting

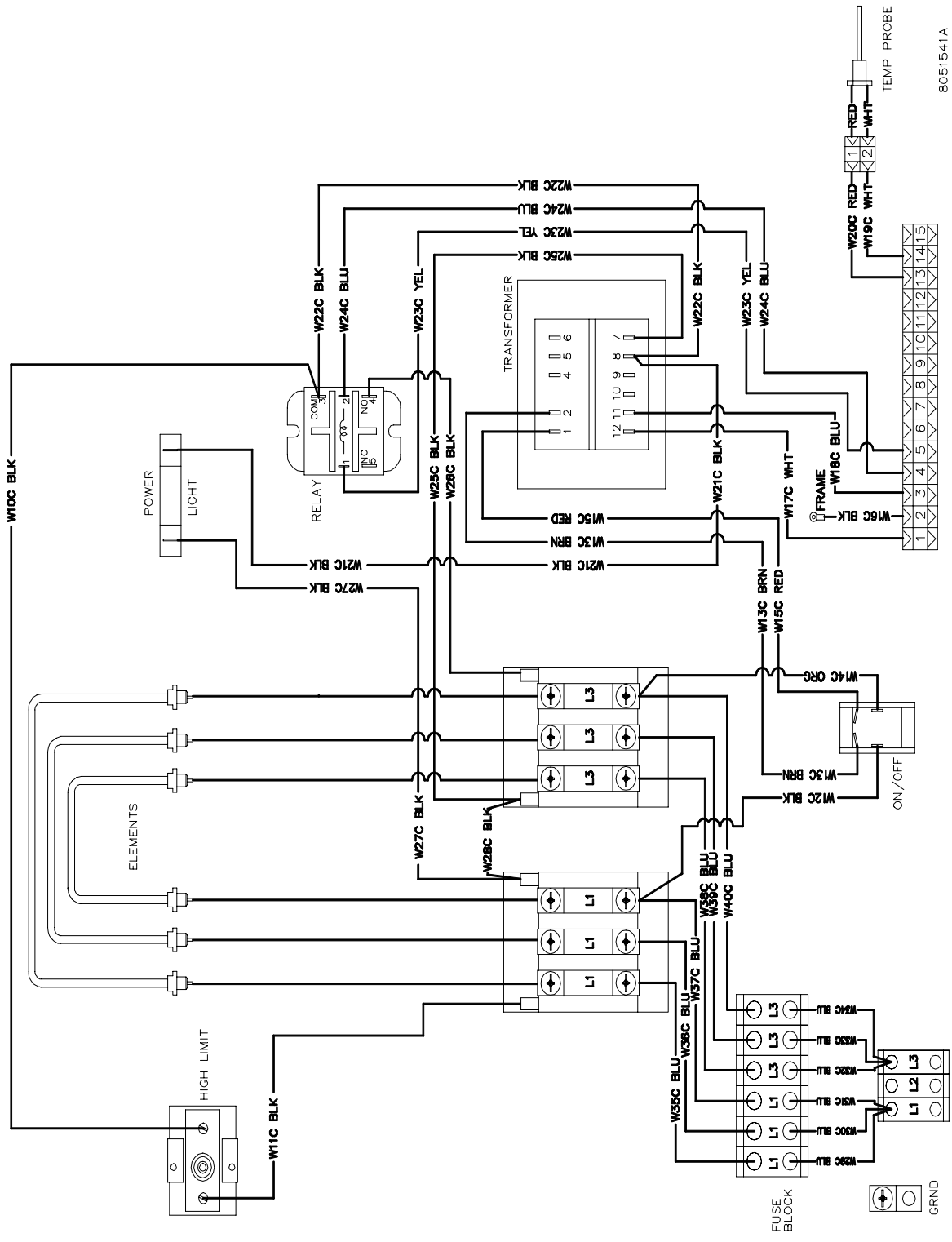
### 1.11.1 Control and Heating Problems

Problem	Probable Causes	Corrective Action
<b>Controller won't activate.</b>	A. Power cord is not plugged in or circuit breaker is tripped.	A. Plug power cord in and verify that the circuit breaker is not tripped.
	B. Controller has failed.	B. If available, substitute a controller known to be working for the suspect controller. If the substitute controller functions correctly, order a new controller from a FASC.
	C. Power supply component or temperature control board has failed.	C. If any of the components in the power supply system (including the transformer and temperature control board) fail, power will not be supplied to the controller and it will not function.
<b>Fryer does not heat.</b>	A. Controller has failed.	A. If available, substitute a controller known to be working for the suspect controller. If the substitute controller functions correctly, order a new controller from a FASC.

(continued on following page)

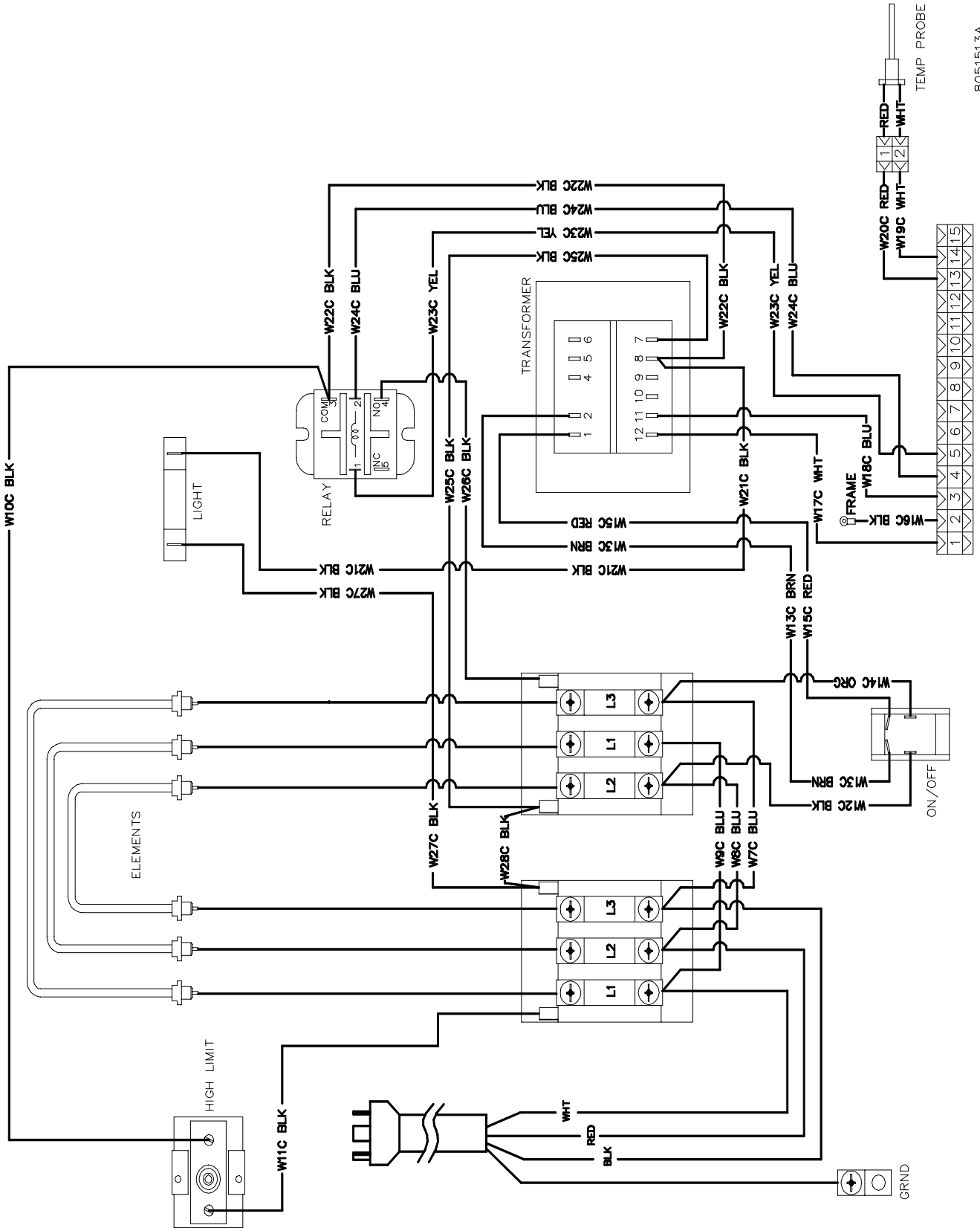
Problem	Probable Causes	Corrective Action
<b>Fryer does not heat.</b>	B. One or more other components have failed.	B. If the circuitry in the fryer control system cannot determine the frypot temperature, the system will not allow the element to be energized or will de-energize the element if it is already energized. If the contactor, element, or associated wiring fails, the element will not energize.
<b>Fryer heats until high-limit trips with heat indicator ON.</b>	Temperature probe or controller has failed.	If available, substitute a controller known to be working for the suspect controller. If the substitute controller functions correctly, order a new controller from FASC. If substitution of the controller does not resolve the problem, the most likely cause is a failed temperature probe.
<b>Fryer heats until high-limit trips with heat indicator OFF.</b>	Contactor, controller or element has failed	If available, substitute a controller known to be working for the suspect controller. If the substitute controller functions correctly, order a new controller from FASC. If the substitution of the controller does not resolve the problem, the most likely cause is a contactor that has failed in the closed position or a bad element.
<b>Fryer stops heating with heat indicator ON.</b>	The high-limit thermostat or contactor has failed.	The fact that the heat indicator is ON indicates that the controller is functioning properly and is calling for heat. The high-limit thermostat functions as a normally closed switch. If the thermostat fails, the "switch" opens and power to the elements is shut off. If the contactor fails to close, no power is supplied to the elements.

# 1.12.1 Wiring Diagram SR114E Single Phase



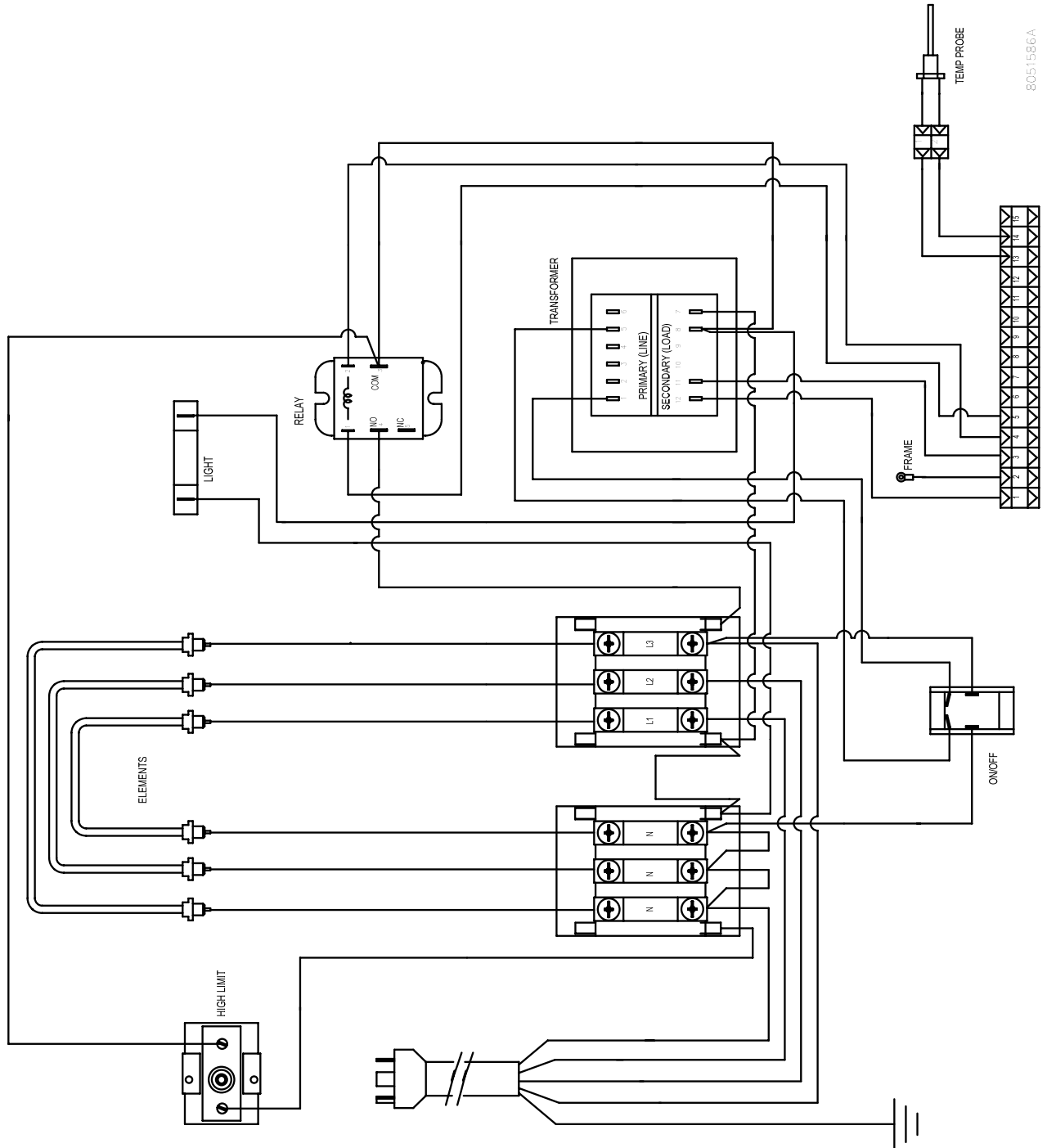
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# 1.12.2 Wiring Diagram SR114E 3 Phase



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### 1.12.3 Wiring Diagram SR114E WYE

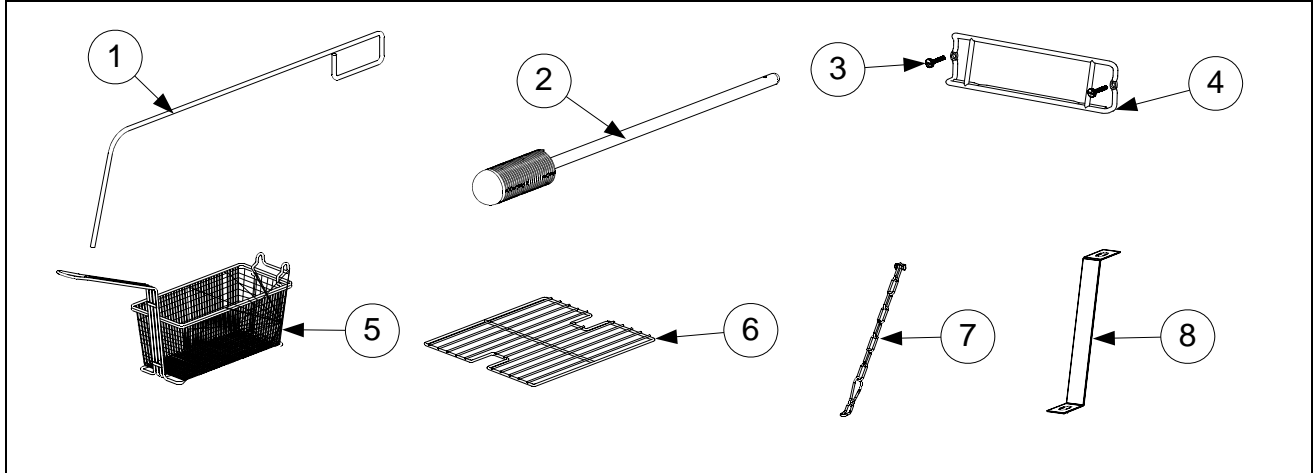


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# SUPER RUNNER SERIES ELECTRIC FRYERS

## CHAPTER 2: PARTS LIST

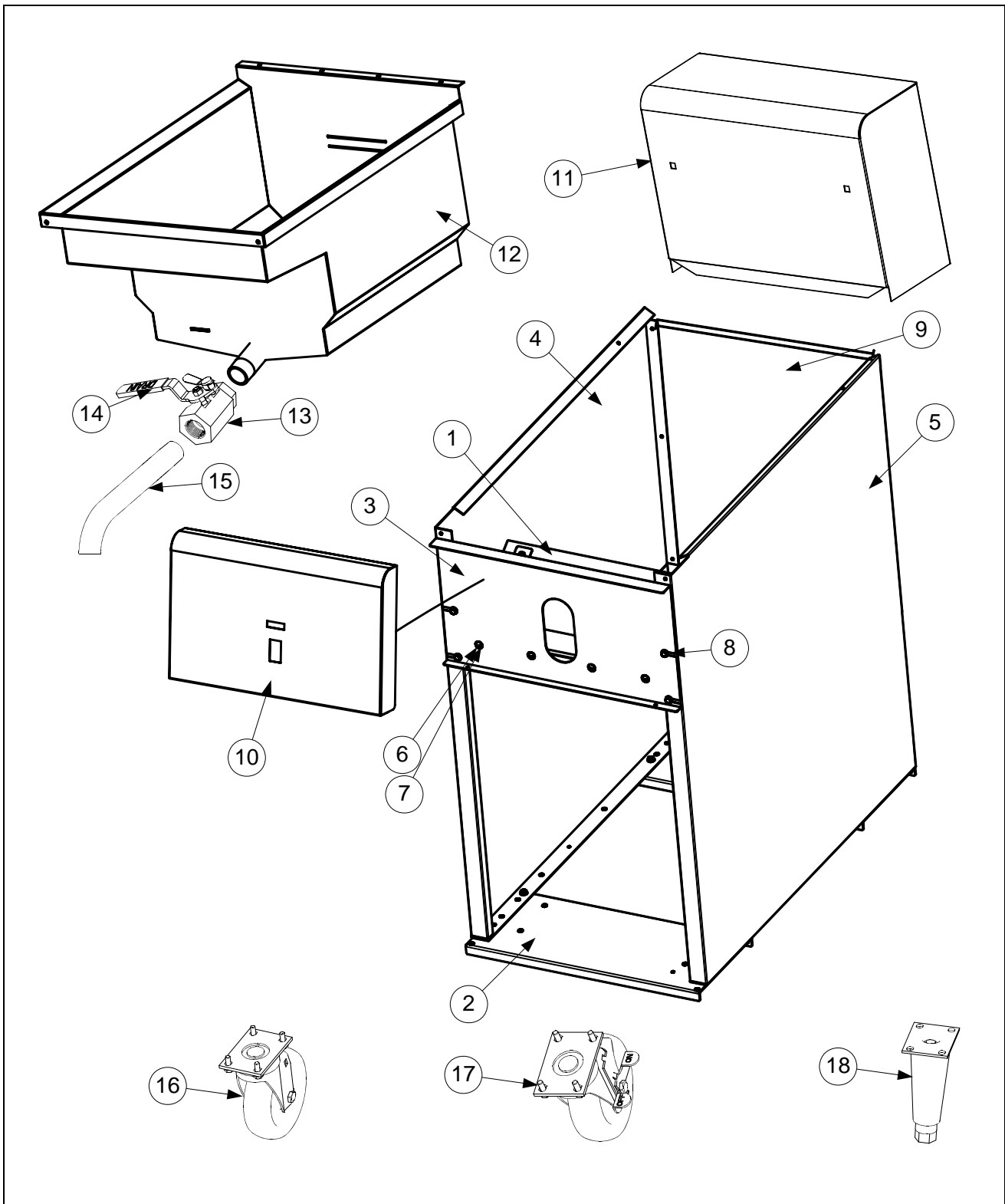
### 2.1 Accessories



Item	Part Number	Description
1	803-0197	Fryer Friend 27" (Cleanout Rod)
2	803-0209	Brush, Frypot Cleaning
3	809-0171	Thumbscrew, 1/4-20 X 1 3/8-inch Basket Hanger
4	810-2793	Hanger, Basket
5	803-0019	Basket, Twin
6	803-0132	Basket Support Rack, Full Vat
7	826-0900	Kit, Chain Restraint for Casters
8	826-1095	Kit, Anchor Strap for Legs

## 2.2 Cabinetry

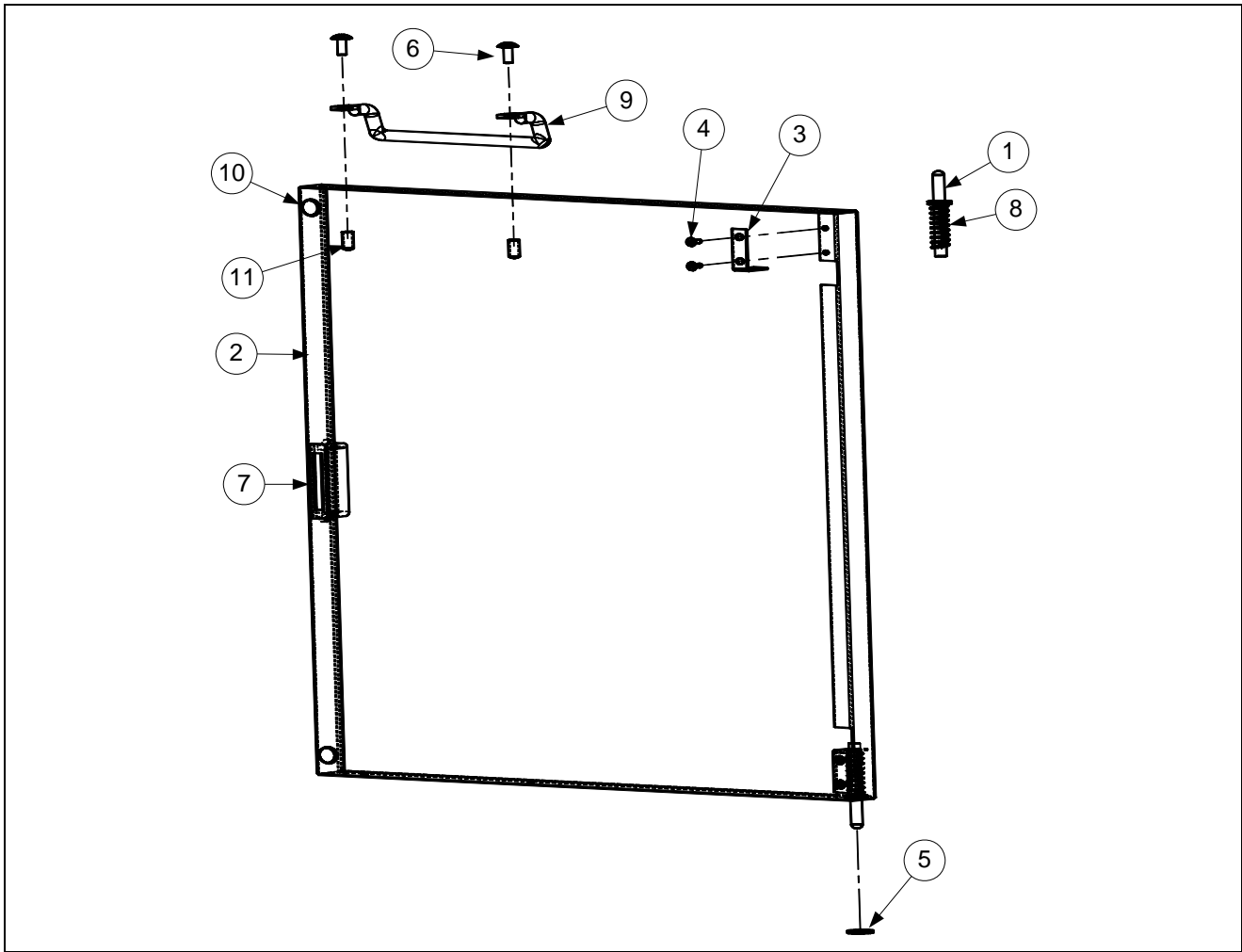
### 2.2.1 Back, Base, Casters, Sides, Fluecap, Top Cap and Frypot



Item	Part Number	Description
	106-3528	Cabinet Assembly, Economy Electric SR114E
1	106-4419	Assembly, Heat Shield
2	200-5998	Channel, Base
3	200-8378	Brace, Cabinet Front
4	201-5802	Side, Cabinet Left
5	202-5802	Side, Cabinet Right
6	809-0117	Screw, 10-32 x 3/8 SLTD TR HD SS
7	809-0256	Nut, KEPS 10-32 HX ZP
8	809-0412	Screw, #10 – 1/2 HX HD
9	200-5810	Back, Cabinet
10	210-8401	Panel, Front
11	210-5803	Fluecap
12	106-4423	Frypot Assembly
13	810-1338	Valve, 1" Universal Ball
14	810-1567	Handle, Drain Valve Red w/ Lock Pin
15	812-1227	Nipple, Drain 1"
16	810-0356	Caster, 5" Wheel w/o Brake
	826-2003	Mounting Hardware SR114E Casters
*	809-0428	Screw, 1/4-20x 1/2 Hex Head ZP
*	809-0071	Nut, 1/4-20 HX ZP
*	809-0191	Washer, Lock 1/4 Spring ZP
17	810-0357	Caster, 5" Wheel w/ Brake
	826-2003	Mounting Hardware SR114E Casters
*	809-0428	Screw, 1/4-20x 1/2 Hex Head ZP
*	809-0071	Nut, 1/4-20 HX ZP
*	809-0191	Washer, Lock 1/4 Spring ZP
	826-1903	Leg Accessory Pack, Includes 810-2053 and hardware below
18	810-2053	Leg, Black Adjustable w/Mount Plate
*	809-0131	Screw, 1/4-20x 3/4 Hex Head ZP
*	809-0071	Nut, 1/4-20 Hex ZP
*	809-0191	Washer, Lock 1/4 Spring ZP

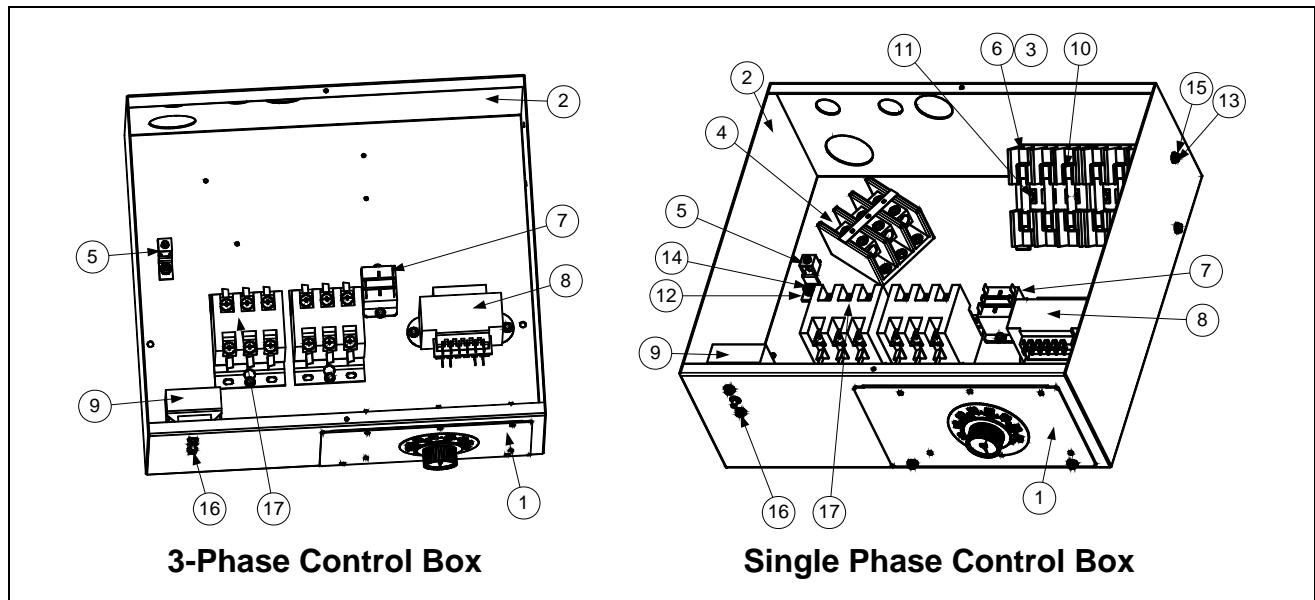
\* Not Illustrated

## 2.2.2 Door Assembly and Component Parts



Item	Part Number	Description
	106-3586	Door Assembly
1	106-4067	Pin Assembly, Door
	809-0216	Pin, Hinge Cover & Door
	810-0658	Retaining Ring (Unplated)
2	210-9491	Panel, Door
3	210-9544	Bracket, Door Hinge
4	809-0083	Rivet, Pop Al 1/8" Dia
5	809-0193	Washer, Flat 1/4" Nylon
6	809-0266	Screw, #10-1/2" Phil TR Head ZP
7	810-0066	Catch, Magnetic Door
8	810-0275	Spring, Door Hinge
9	810-1422	Handle, Door
10	816-0529	Bumper, Rubber Self Adhesive
11	816-0630	Cap, Vinyl 172 x .500

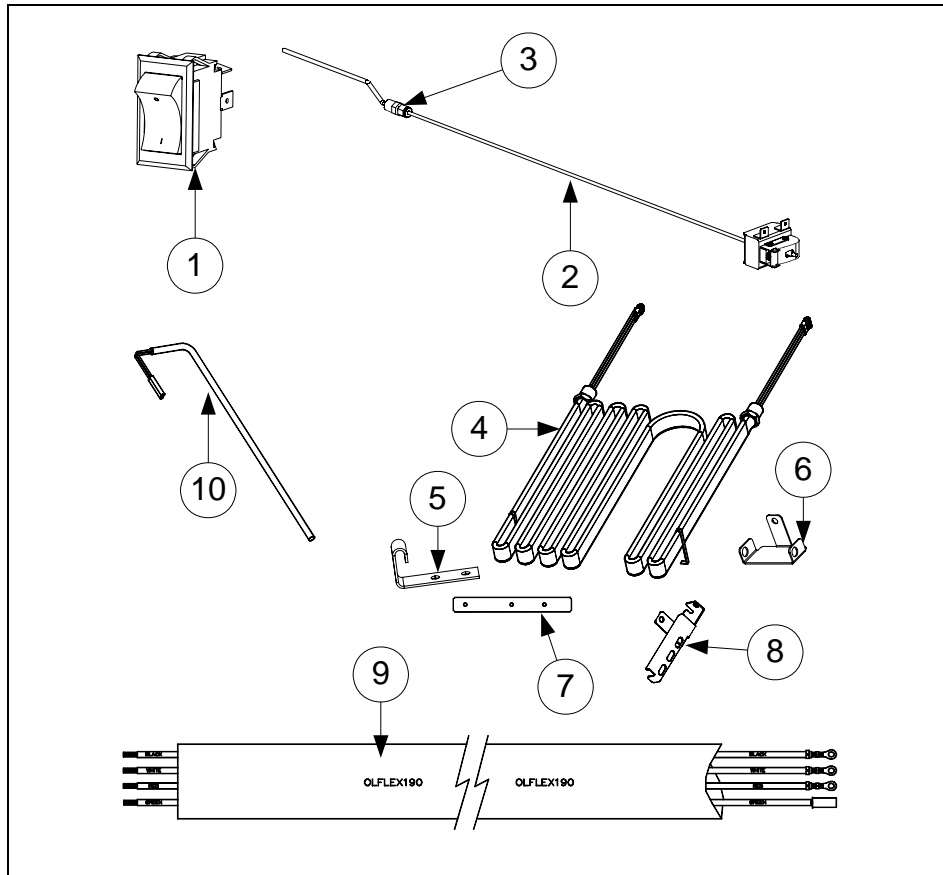
## 2.3 Control Boxes



Item	Part Number	Description
	106-3747	Control Box Assembly, Single Phase
	106-3583	Control Box Assembly, 3 Phase
1	106-3748	Controller Assembly
	802-2198	Label, Thermatron Dial
	810-0387	Control Knob
2	200-8240	Box, Control
3	200-8369	Mount, Fuse Economy
4	807-0065	Block, Terminal Field
5	807-0070	Terminal Ground Lug
6	807-0501	Fuse Block, Buss #2968 3-Pole
7	807-1683	Relay, 12 VDC
8	807-1999	Transformer, V&T Dual Voltage, 208/222/230/240V
9	807-3559	High-Limit, 435°F w/ Manual Reset
*	807-3560	High-Limit, 410°F (210°C) w/Manual Reset (CE)
10	807-4017	Fuse, 50 AMP 480VAC, 300VDC
11	809-0112	Screw, 8-32 x 1 ¼ TR SL HD SS
12	809-0117	Screw, 10-32 x 3/8 SLTD TR HD SS
13	809-0247	Nut, 8-32 HEX KEPS ZP
14	809-0256	Nut, KEPS 10-32 HX ZP
15	809-0359	Screw, #8 x ¼ HX HD Washer Slotted HD ZP
16	809-0361	Screw, Drill #8 x ½ HX HD ZP
17	810-1202	Contact, 3 Pole 600V 40 AMP
*	200-8241	Cover, Control Box

\* Not Illustrated

## 2.4 Electronic Components, Elements and Cable



Item	Part Number	Description
1	807-4036	Switch
*	807-1525	Light, White 24V Front Panel Indicator
2	807-3559	High-Limit, 435T w/ Manual Reset
3	813-0617	Probe Fitting, 3/16" CC x 1/4" NPT Compression
4		Elements
	807-4031	Element, 208V / 14KW
	807-4331	Element, 220V / 14KW
	807-4072	Element, 240V / 14KW
	807-4340	Element, 230V/ 14KW
5	210-8392	Clamp, Element
6	210-8393	Bracket, Mount Hi-Limit
7	210-8390	Mount, Element Support
*	809-0518	Screw, 8-32 x 3x8" Slotted Head
8	910-5022	Bracket, Element Probe
9	807-4110	Cable, 3 Phase 4 Wire 208-240V
10	826-2222	Probe, Temperature includes compression fitting

\* Not Illustrated



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