



Flatbottom Series Electric Fryers
(Models 1824E, 2424E and Combinations)
Service & Parts Manual



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

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

*** 8196115 ***

SEPTEMBER 2011

NOTICE

IF, DURING THE WARRANTY PERIOD, THE CUSTOMER USES A PART FOR THIS MANITOWOC FOOD SERVICE 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 SERVICER.

 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 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.

Flatbottom Series Electric Fryers

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FLATBOTTOM SERIES ELECTRIC FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.1 General

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

When electrical wires are disconnected, it is recommended that they be marked to facilitate reassembly.



Hot cooking oil will cause severe burns. Never attempt to move this appliance when filled with hot cooking oil, or to transfer hot cooking 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.

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

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

A Thermatron system incorporates a temperature-control circuit board, a potentiometer, and a temperature probe.

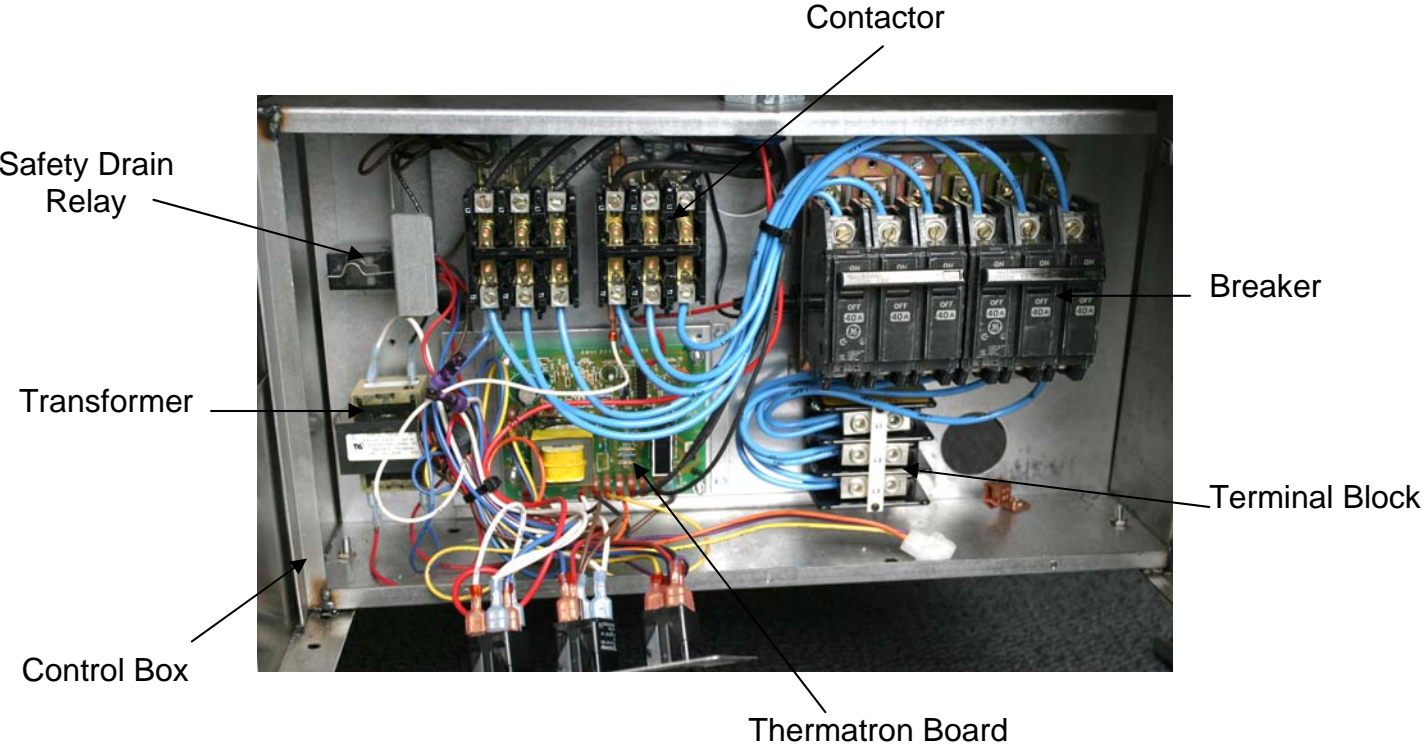
1. Thermatron with Melt Cycle Option Enabled: Set Thermatron to the working temperature. The elements will cycle on approximately 5 seconds, and off for approximately 15 seconds until the temperature reaches 66°C (150°F). The Thermatron will then switch to normal operation.

1.2 Thermatron Calibration

If the Thermatron controller requires adjustment, do the following:

1. Set Thermatron controller dial to the desired shortening temperature and wait for the shortening temperature to stabilize.
2. When shortening temperature reaches setpoint (elements will cycle on and off, indicating setpoint temperature has been reached), check the temperature with a high-quality immersion thermometer.
3. Loosen the knob setscrew and rotate the knob to the correct temperature setting on the Thermatron faceplate.
4. Check the temperature again with a high-quality immersion thermometer to confirm that the setting is correct.
5. Re-tighten the knob setscrew at the calibrated position.

IDENTIFYING PARTS



1.3 Accessing the Control Box Electronics (Interface Board, Transformer, Contactor, Breakers, Transformer and Relay)

1. Unplug all power cords.
2. Open front door of cabinet and remove the two bolts holding down the drain nipple extension bracket.
3. Remove the three screws from bottom of control box access panel.
4. Remove the four screws in the corner of rocker switch access panel. Twist the rocker panel and push through the access panel opening.
5. Unplug the Thermatron connector and remove access panel and set aside.

1.4 Replace Thermatron Board

1. Unplug all power cords. Perform Procedure 1.3, Steps 1-5, Accessing Control Box Electronics.
2. Remove all wiring from the terminals of the Thermatron board, ensuring that each wire is marked for reattachment.
3. Remove the nuts from each corner of the Thermatron temperature control board and slide the board from the studs. Ensure that standoffs remain in place on studs, prior to installing new board. Install the new board by reversing the previous procedures. Ensure that wiring and wire harnesses are connected to the proper terminals.

1.5 Replace Transformer

1. Unplug all power cords. Perform Procedure 1.3, Steps 1-5, Accessing Control Box Electronics.
2. Remove all wiring from the terminals of the transformer to be replaced.
3. Remove the screws that secure the transformer to the component box.
4. Install the new transformer by reversing the preceding procedures. Make sure you reconnect the wiring to the proper terminals and the harnesses to the correct connectors.

1.6 Replace Contactor

1. Unplug all power cords. Perform Procedure 1.3, Steps 1-5, Accessing Control Box Electronics.
2. Identify faulty contactor. Remove all wiring connected to the contactor terminals inside the component box. Tape wire-pairs together and mark each wire-set or wire for reassembly.
3. Remove contactor-mounting screws and remove the contactor.
4. Install the new contactor and connect the wiring removed in Step 2.
5. Reassemble in reverse order.

1.7 Replace Safety Drain Relay

1. Unplug all power cords. Perform Procedure 1.3, Steps 1-5, Accessing Control Box Electronics.
2. The safety drain relay is located in the top left corner of the access cabinet.
3. Carefully remove the relay hold down spring.
4. Pull relay to the left and out of the socket.
5. Install the new relay by reversing the preceding procedures.

1.8 Replace Breakers

1. Unplug all power cords. Perform Procedure 1.3, Steps 1-5, Accessing Control Box Electronics.
2. Identify faulty breaker. Remove all wiring connected to the breaker terminals inside the component box. Tape wire-pairs together and mark each wire-set or wire for reassembly.
3. Remove breaker-mounting screws and remove the breaker.
4. Install the new breaker by reversing the preceding procedures.

1.9 Replace Thermatron Potentiometer

1. Unplug all power cords.
2. Open front door of cabinet and remove the four screws in corners of potentiometer panel.
3. Unplug connector.
4. Install the new potentiometer by reversing the preceding procedures.

1.10 Replace Temperature Sensor and High-Limit Thermostat Probes

1. Unplug all power cords.
2. Drain the cooking oil from the frypot and leave the drain open.
3. Lift up and remove the element guardplate.
4. Remove the two screws from the bottom of the faceplate cover.
5. After removing screws, gently tilt up and lower faceplate. Note that when lowering the faceplate, the door will lower and swing out to be set aside as well.
6. Remove the six screws from the top access cover.
7. After removing screws, remove panel by lowering down the front of the frame and pushing in on the high-limit reset switch so that it will slide down. To make reassembly easier, push out the black grommet and snap back in when completely reassembled.
8. Remove the screws securing the probe bracket to the elements and remove the probe bracket.
9. Remove the metal clamps securing the probe to the elements.
10. Disconnect the wire plug containing the probe wiring.
11. Using an open end wrench, loosen the temperature probe. Thread the probe wire through the hole and remove the probe.

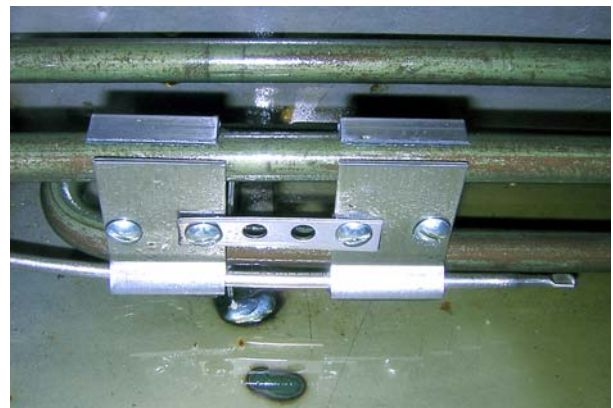


Element Guardplate



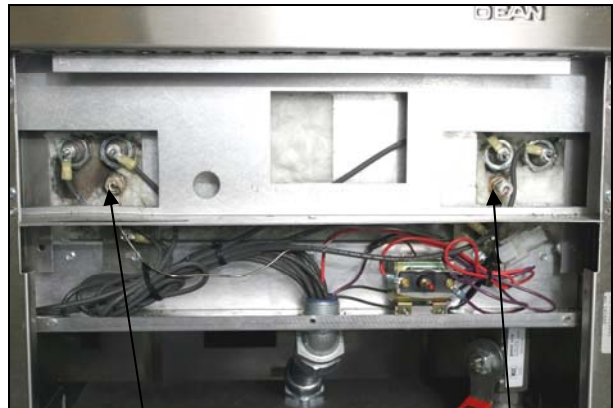
Underside of faceplate has two screws.

Top access cover has six screws.



Remove the screws from probe brackets.

12. Thread the new probe wire through the hole in front of the fryer. The probe assembly should be oriented in the same manner as the probe being replaced. Place the new probe assembly onto the element, and ensure that the probe extends 1" beyond the front of the bracket before securing the bracket. Also ensure that the springs are on each probe under each bracket.
13. Apply Loctite PST567 sealant to replacement threads.
14. Screw the replacement probe into the frypot and tighten 170-180 inch-pounds torque. DO NOT OVERTIGHTEN.
15. Reattach the connector and reassemble in reverse order.



High-Limit Thermostat

Temperature Sensor

1.11 Replace Heating Elements inside Frypot

1. Perform Procedure 1.10, Replace Temperature Probe, Steps 1-9.
2. Remove the four screws from the two brackets in the rear of the frypot that secure the element to the frypot.
3. Remove wires from the elements by loosening and removing the nuts.
4. Remove element using an open-end wrench or other suitable tool to loosen the compression fitting.
5. Gently remove the element by sliding out into the frypot and lifting up as you remove it.
6. Insert new element and reassemble in reverse order.



Remove screws here.

1.12 Replace Heating Element under the Frypot

1. Perform Procedure 1.10, Replace Temperature Probe, Steps 1-9.
2. Remove the wires from the element by removing the nuts on each end of the element.
3. Remove the screws attaching the element bracket to the cabinet.
4. Gently slide the element out by pulling towards the front of the fryer.
5. Insert new element and reassemble in reverse order.

1.13 Replace Frypot

1. Perform Procedure 1.10, Replace Temperature Probe, Steps 1-9.
2. Perform Procedure 1.3, Accessing the Control Box Electronics, Steps 1-5.
3. Perform Procedure 1.8, Replace High-Limit, Steps 1-4.
4. Disconnect the element wires.
5. Remove the screws holding the back panels to the frame.
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. Install high-limit into the new frypot.
10. Follow the preceding steps in reverse to install the new frypot into the fryer.
11. NOTE: Apply Loctite Sealant PST 567 to all pipefittings prior to installation.

1.14 Cleaning a Seized Pump

If the pump motor overloads, a circuit breaker will trip and the motor will not start until the breaker is reset. If the pump motor does not start, press the white reset button located under the component box, inside the cabinet.

If the pump starts after resetting the breaker, then something is causing the motor to overload. A major cause of overload is filtering several frypots sequentially, creating thermal overload on the

motor. Allow the pump motor to cool at least 30 minutes before resuming operation, and allow time for the motor to cool between frypots.

Motor overload can be caused by:

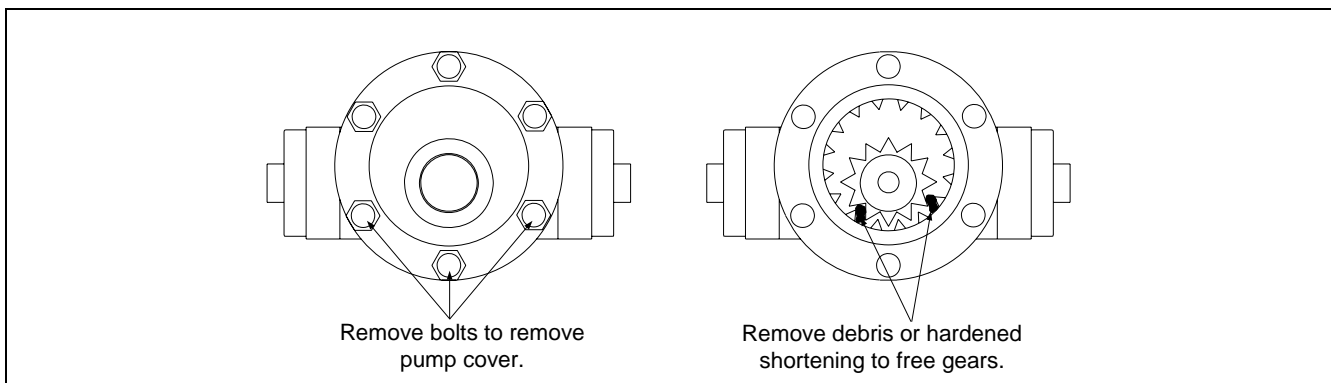
- Solidified shortening in the pan or filter lines,
- or
- Attempting to filter unheated oil.

Cold oil is more viscous, causing the pump motor to trip a breaker. Always filter with the oil at operating temperature [$\sim 350^{\circ}\text{F}$ (177°C)].

If the motor runs but the pump does not, there is a blockage in the pump or lines. Incorrectly sized or installed paper/pads will allow food particles and sediment to pass through the filter pan and into the pump. When sediment enters the pump, the gears bind, causing the motor to overload, again tripping the breaker. Shortening that has solidified in the pump will produce the same result.

A pump seized by debris or hard shortening must be disassembled, cleaned, and reassembled. Use the following procedure:

1. Disconnect power to the filter system.
2. Remove the front cover of the pump to access the gears inside (see illustration below- 8-GPM pump shown), if the pump is accessible inside the cabinet.



3. If the front cover is not accessible, the pump must be removed from the pump motor (remove input/output plumbing from the pump prior to removing pump). Remove three setscrews from the pump-shaft housing to disengage the pump from the motor. Remove the gears and thoroughly clean all internal components. Ensure the inside of the pump housing is free of any debris or hardened shortening before reassembling. *Failure to completely clean the inside housing and ring gear will cause gear binding after reassembly.*

Filter paper/pads that are the wrong size or installed incorrectly will also allow food particles and sediment to pass through and clog the suction tube in the bottom of the filter pan. Particles large enough to block the suction tube may indicate that the crumb tray is not being used.

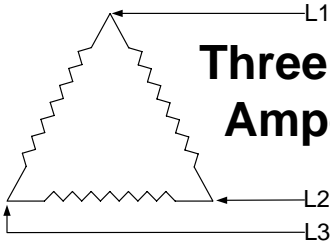
1.15 Probe Resistance Chart

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

Probe Resistance Chart		
Current-Style Thermatron Systems (Probe wire color: Two Black Wires or Two Brown Wires)		
° Celsius	° Fahrenheit	Ohms (± 3%)
21	70	108130
27	80	84606
32	90	66721
38	100	53020
43	110	42452
49	120	34206
54	130	27735
60	140	22641
66	150	18588
71	160	15349
77	170	12741
82	180	10635
88	190	8925
93	200	7527
99	210	6391
104	220	5470
110	230	4705
116	240	4030
121	250	3441
127	260	2967
132	270	2583
138	280	2255
143	290	1977
149	300	1729
154	310	1496
160	320	1320
166	330	1170
171	340	1051
177	350	942
182	360	840
188	370	750
193	380	676
199	390	605
204	400	541

1.16 Element Wattage/Amperage Calculation Charts

Use the charts below when changing voltages or determining amperage for a given element configuration.



Three Phase Amperage

To determine Three Phase Amperage, solve for Single Phase first:

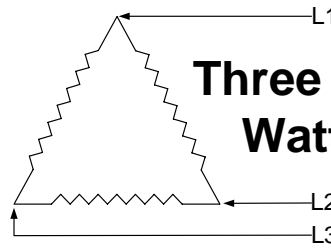
$$\frac{\text{Wattage}}{\text{Voltage}} = \text{Single Phase Amps}$$

Then divide the Single Phase Amperage by 1.73 to determine Three Phase Amperage.

Example:

$$\frac{17,000\text{W}}{240\text{V}} = \frac{70.833 \text{ Amps}}{1.73}$$

= 40.944 Amps per Phase



Three Phase Wattage

To compute the New Wattage Rating of an element if a different voltage is applied, use the following formula:

$$\left[\frac{\text{New Voltage}}{\text{Old Voltage}} \right]^2 \times \text{kW Listed}$$

= New Wattage Rating

Example:

If 208V supply is applied to a 17 kW element rated for 240V, the calculation is as follows:

$$\left[\frac{208\text{V}}{240\text{V}} \right]^2 \times 17,000 \text{ Watts}$$

= 12.77 kW

1.17 Troubleshooting

1.17.1 Control and Heating Problems

Problem	Probable Causes	Corrective Action
Controller won't activate.	A. Power cord is not plugged in or circuit breaker is tripped.	A. Plug power cord in and verify that 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.
	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.

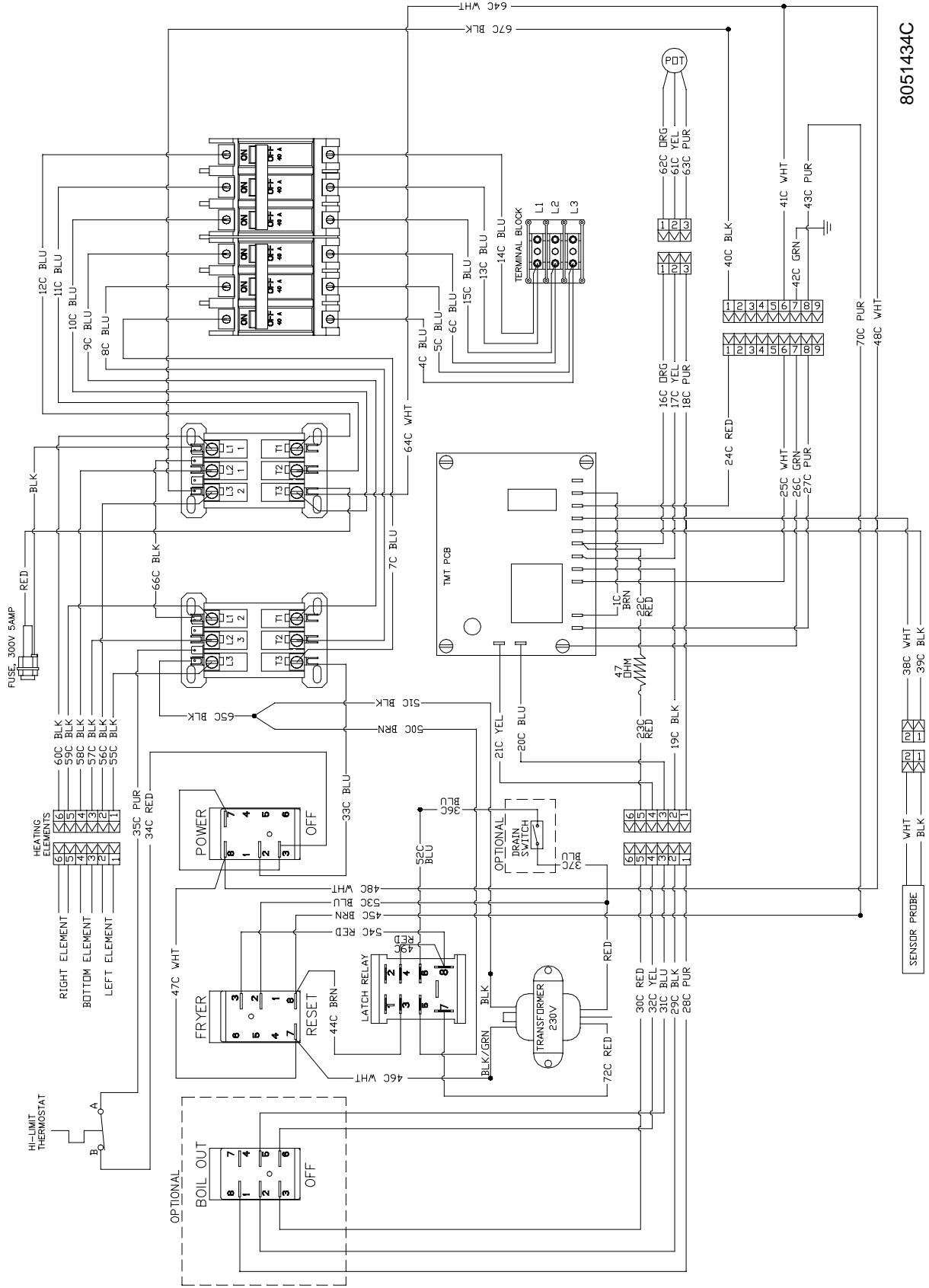
Problem	Probable Causes	Corrective Action
Fryer does not heat.	A. Controller has failed.	A. If available, substitute a controller known to be working for the suspect controller. If the substitute controller functions correctly, order a new controller.
	B. One or more other components have failed.	B. 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.
Fryer repeatedly cycles on and off when first started.	Fryer is in melt-cycle mode.	In fryers equipped with Thermatron controllers, burners cycle on approximately 5 seconds and off for 15 seconds until the temperature reaches 66°C (150°F).
Fryer heats until high-limit trips with heat indicator ON.	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. If the substitution of the controller does not resolve the problem, the most likely cause is a failed temperature probe.
Fryer heats until high-limit trips without heat indicator ON.	Contactor, element 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 FAS. 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 an element that has failed.
Fryer stops heating with heat indicator ON.	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.

1.17.2 Filtration Problems

Problem	Probable Causes	Corrective Action
<p>Filter pump won't start.</p>	<p>A. Power cord is not plugged in or circuit breaker is tripped.</p>	<p>A. Verify that the power cord is fully plugged in. If so, verify that circuit breaker is not tripped.</p>
	<p>B. Blockage in filter pump.</p> <p>Test: Close the drain valve and pull the filter pan out from the fryer. Activate the pump. If the pump motor hums for a short time then stops, the probable cause is blockage of the pump itself.</p>	<p>B. Pump blockages are usually caused by sediment buildup in the pump due to improperly sized or installed filter paper and failure to use the crumb screen.</p>

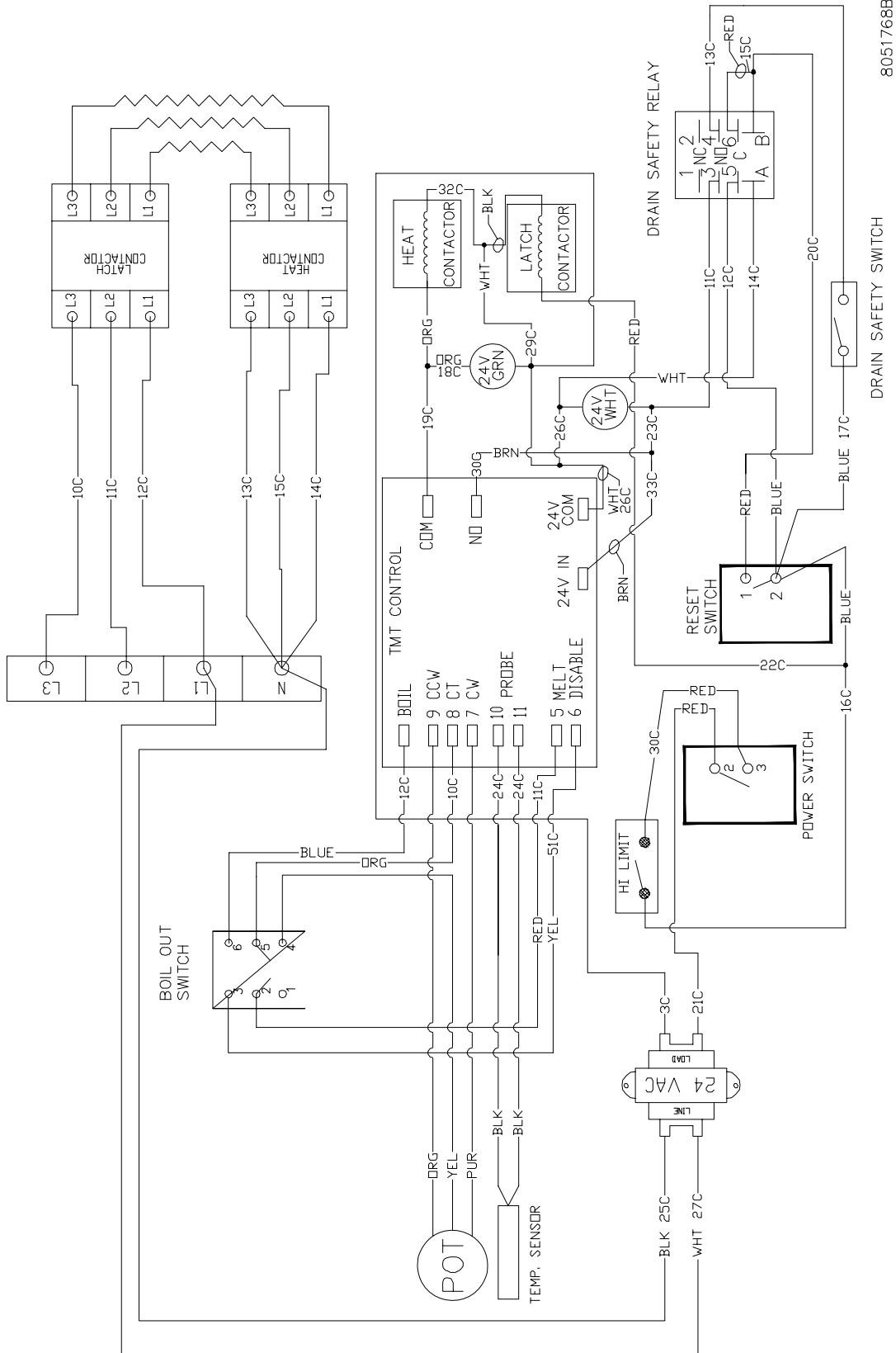
1.18 Wiring Diagram

1.18.1 240V prior to June 2008



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1.18.2 24V after June 2008



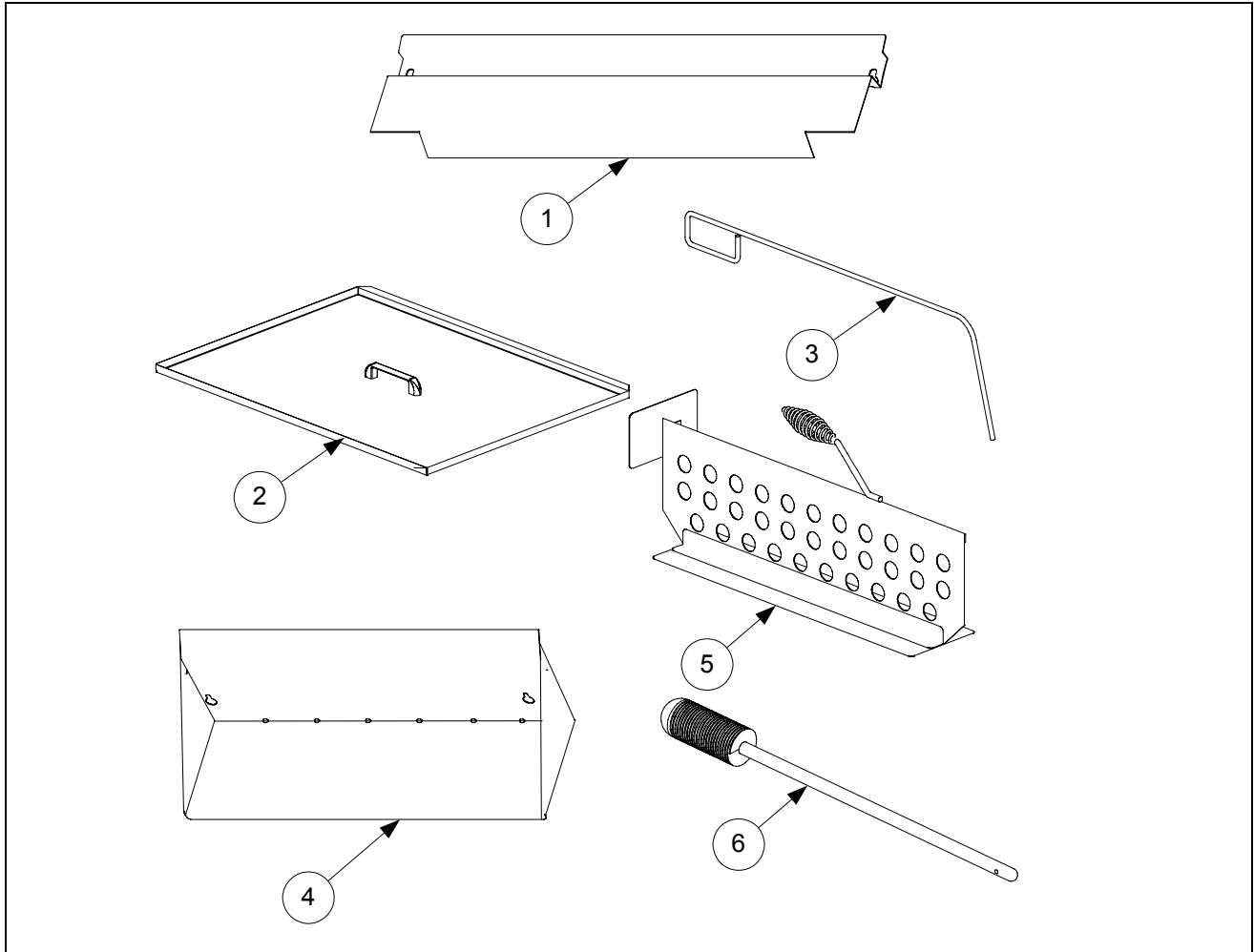
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DRAIN SAFETY SWITCH

FLATBOTTOM SERIES ELECTRIC FRYERS

CHAPTER 2: PARTS LIST

2.1 Accessories

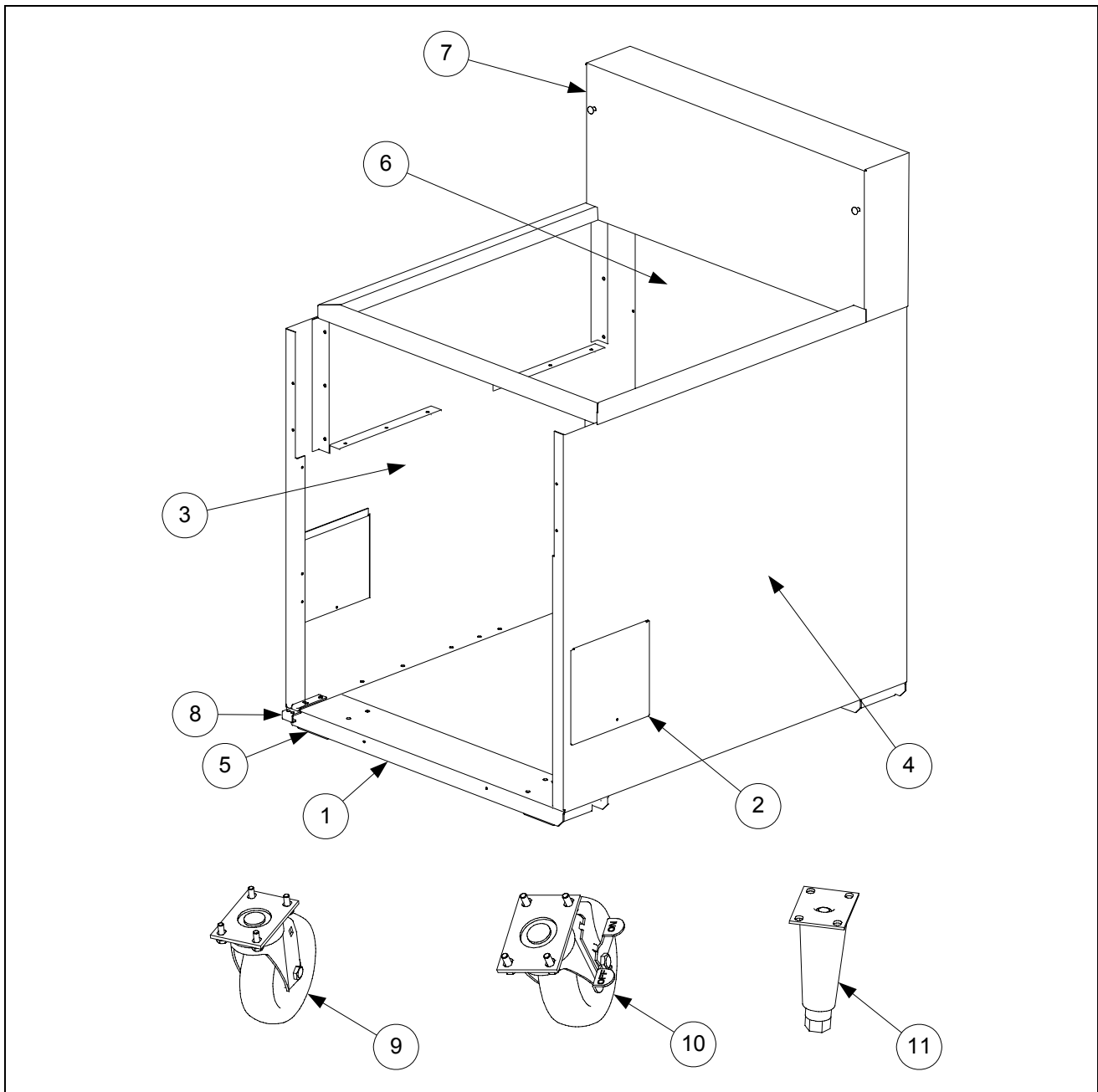


Item	Part Number	Description
1	210-3703	Hanger, Basket 2424E
2	106-2840SP	Cover Assembly, Frypot 1824
	106-2839SP	Cover Assembly, Frypot 2424
3	803-0197	Fryer Friend 27" (Cleanout Rod)
4	823-4127	Crumb Tray
5	823-3934	Vessel Divider
6	803-0209	Brush, Frypot Cleaning
*	823-3660	Crumb Scoop

* Not Illustrated

2.2 Cabinetry

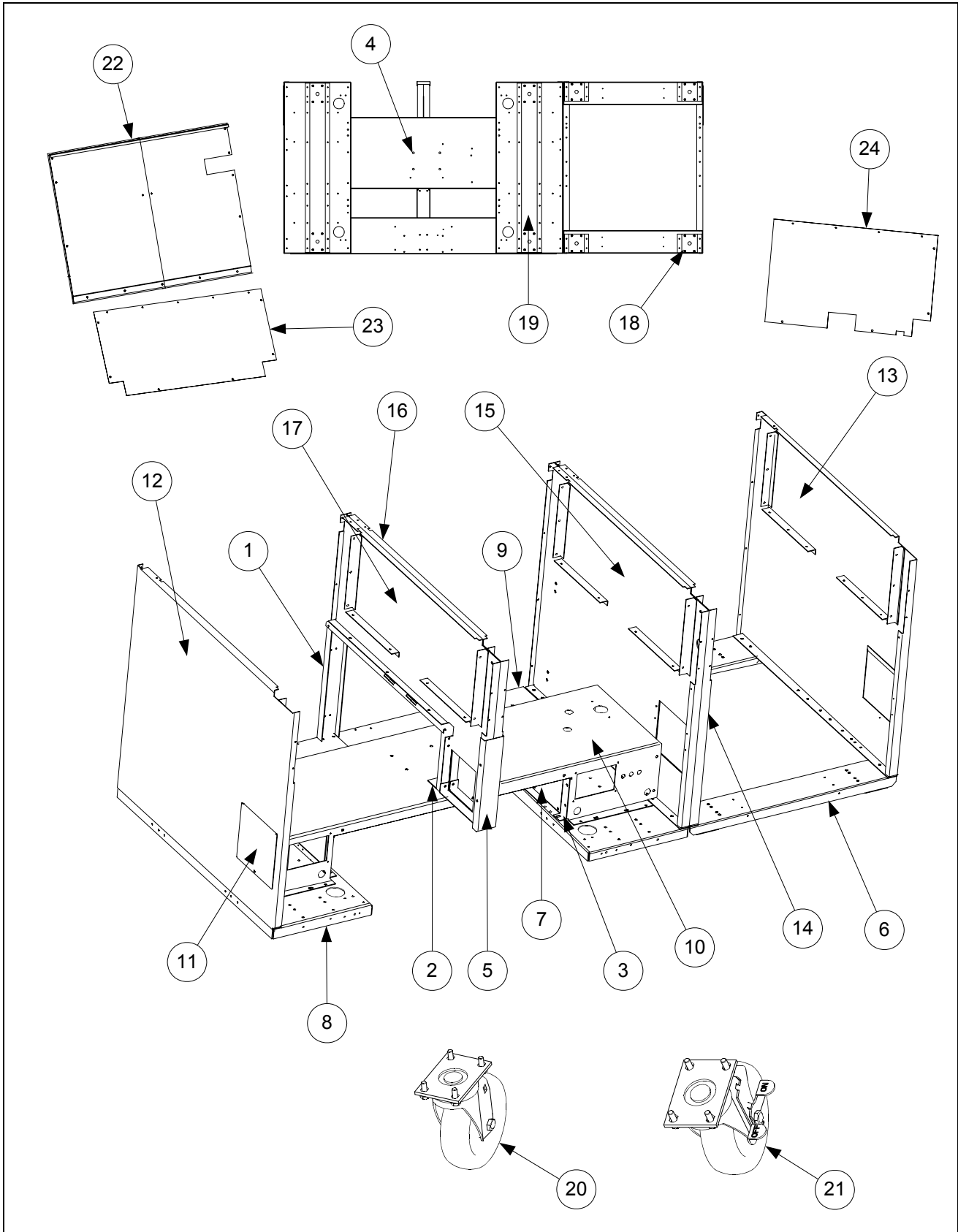
2.2.1 Backs, Bases, Casters, Sides, Etc. (11824E, 12424E Non-Filter)



Item	Part Number	Description
	106-2176	Cabinet Assembly, 11824E Non-Filter
	106-2175	Cabinet Assembly, 12424E Non-Filter
1	200-2903	Channel, Base 1824
	200-2971	Channel, Base 2424
2	210-3341	Door, Duct Access
3	823-3725	Side, 18 S/S LH Cabinet
	823-4276	Side, 24 S/S LH Cabinet
	823-4266	Side, 24 ALZ LH Cabinet
4	823-3727	Side, 18 S/S RH Cabinet
	823-4277	Side, 24 S/S RH Cabinet
	823-4267	Side, 24 ALZ RH Cabinet
5	823-4063	Support, Caster
6	200-2005	Back, Structural
	200-1500	Back, Structural
7	210-9276	Upper Cap 1824E
	210-9277	Upper Cap 2424E
8	200-4511	Hinge, Door
9	826-1117	Caster Assembly, 5" Wheel w/o Brake
	810-0356	5" Wheel w/o Brake
*	826-1389	Screw, 1/4-20x 3/4 Hex Head ZP (Pkg. of 10)
*	809-0191	Washer, Lock 1/4 Spring ZP
10	826-1118	Caster Assembly, 5" Wheel w/ Brake
	810-0357	5" Wheel w/ Brake
*	826-1389	Screw, 1/4-20x 3/4 Hex Head ZP (Pkg. of 10)
*	809-0191	Washer, Lock 1/4 Spring ZP
11	810-2053	Leg, Black Adjustable w/Mount Plate
*	826-1362	Nut, 1/4-20 Hex ZP (Pkg. of 10)
*	826-1389	Screw, 1/4-20x 3/4 Hex Head ZP (Pkg. of 10)
*	809-0191	Washer, Lock 1/4 Spring ZP

* Not Illustrated

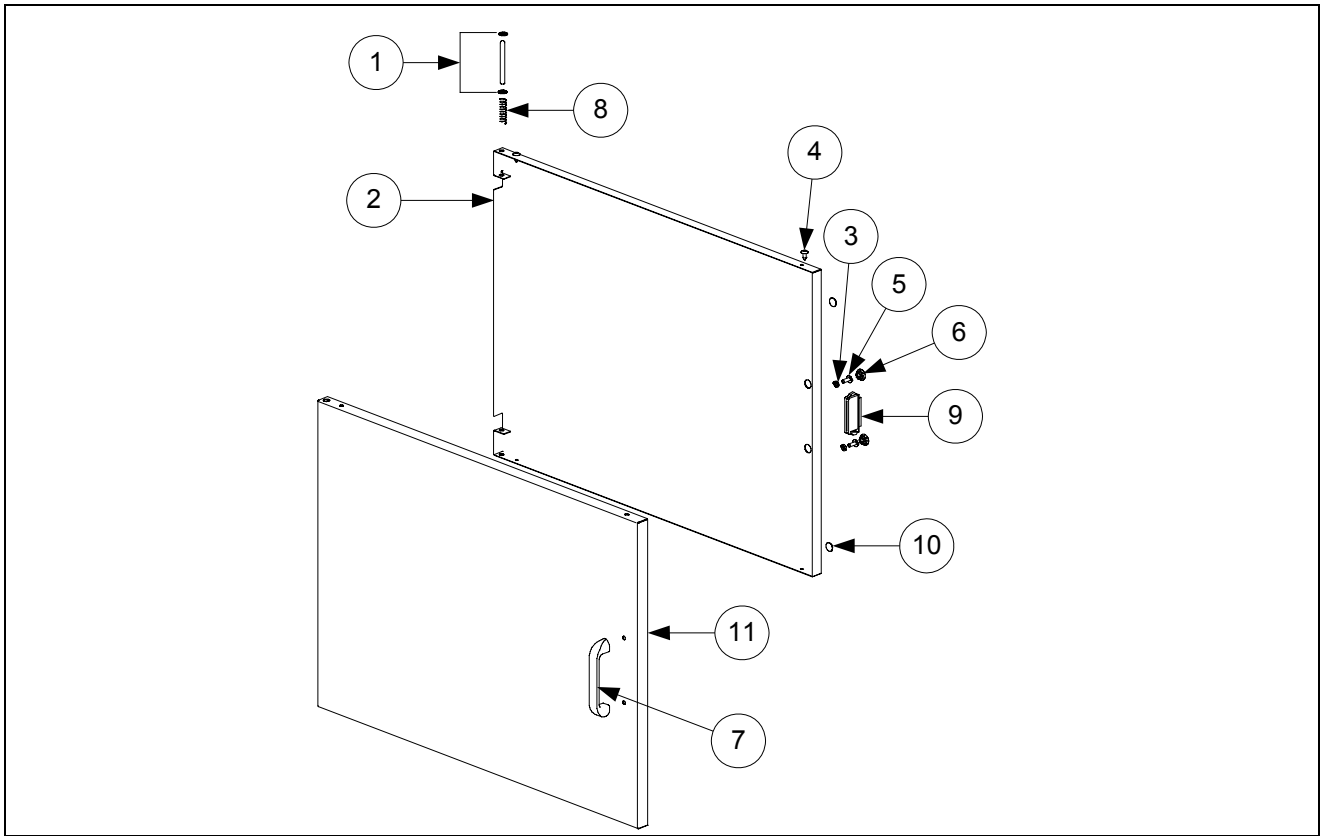
2.2.2 Backs, Bases, Casters, Sides, Etc. (SCF 22424E and 32424E)



Item	Part Number	Description
	106-2206	Cabinet Assembly, U224E
	106-2204	Cabinet Assembly, SCF32424E
	106-3136	Cabinet Assembly, 2424E SS
1	200-2624	Upright, Rear
2	200-2632	Support, Inner Panel
3	200-2643	Base Frame Lower Plate
4	200-2717	Support, Pump Motor D180
5	200-2935	Post, 2424 Door
6	200-2971	Channel, Base 32424
	200-4696	Channel, Base 2424
7	200-3356	Cover, Lower Base Frame
8	200-4696	Channel, Base 2424
9	200-5209	Brace, 2424 Rear Cross Aluminized
10	200-5210	Bridge, Base 2424
11	210-3341	Door, Duct Access
12	823-3725	Side W/A, 1824E S/S LH Cabinet
	823-4276	Side W/A, 2424E S/S LH Cabinet
13	823-3727	Side W/A, 1824E S/S RH Cabinet
	823-4277	Side W/A, 2424E S/S RH Cabinet
14	823-3728	Side W/A, 1824E LH Cabinet Aluminized
15	823-3729	Side W/A, 1824E RH Cabinet Aluminized
16	823-3730	Panel W/A, U224E Cabinet LH Inside
	823-4271	Panel, W/A, 2424E Cabinet LH Inside
17	823-3731	Panel W/A, U224E Cabinet RH Inside
	823-4272	Panel, W/A, 2424E Cabinet RH Inside
18	823-4063	Caster Support
19	823-4064	Caster Channel Support
20	826-1117	Caster Assembly, 5" Wheel w/o Brake
	810-0356	5" Wheel w/o Brake
*	826-1389	Screw, 1/4-20x 3/4 Hex Head ZP (Pkg. of 10)
*	809-0191	Washer, Lock 1/4 Spring ZP
21	826-1118	Caster Assembly, 5" Wheel w/ Brake
	810-0357	5" Wheel w/ Brake
*	826-1389	Screw, 1/4-20x 3/4 Hex Head ZP (Pkg. of 10)
*	809-0191	Washer, Lock 1/4 Spring ZP
22	200-4150	Back, Upper Cabinet 2424
23	200-4152	Back, Lower Cabinet 2424
24	200-4154	Back, Lower L/R Cabinet 2424

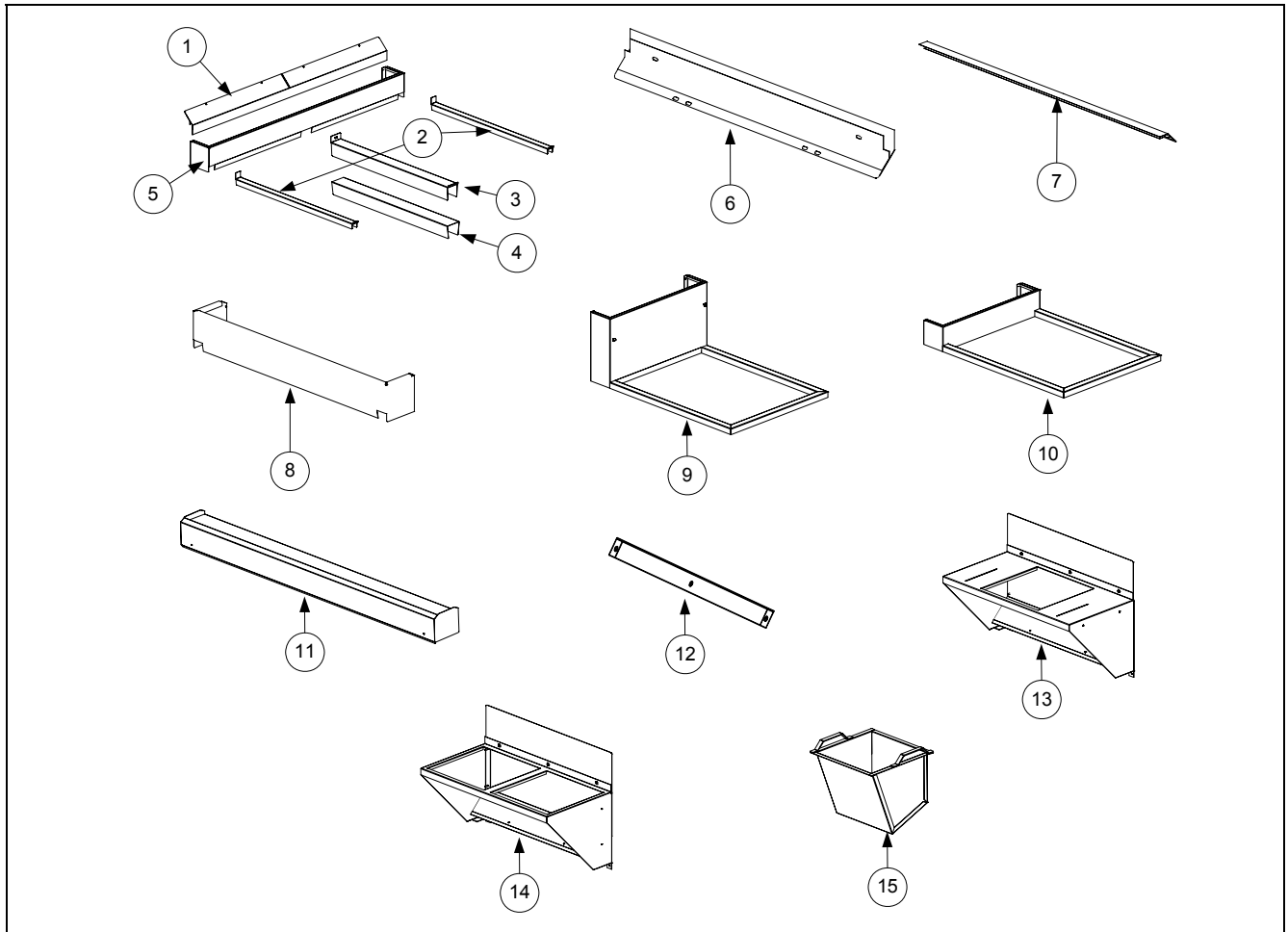
* Not Illustrated

2.2.3 Door Assembly and Component Parts



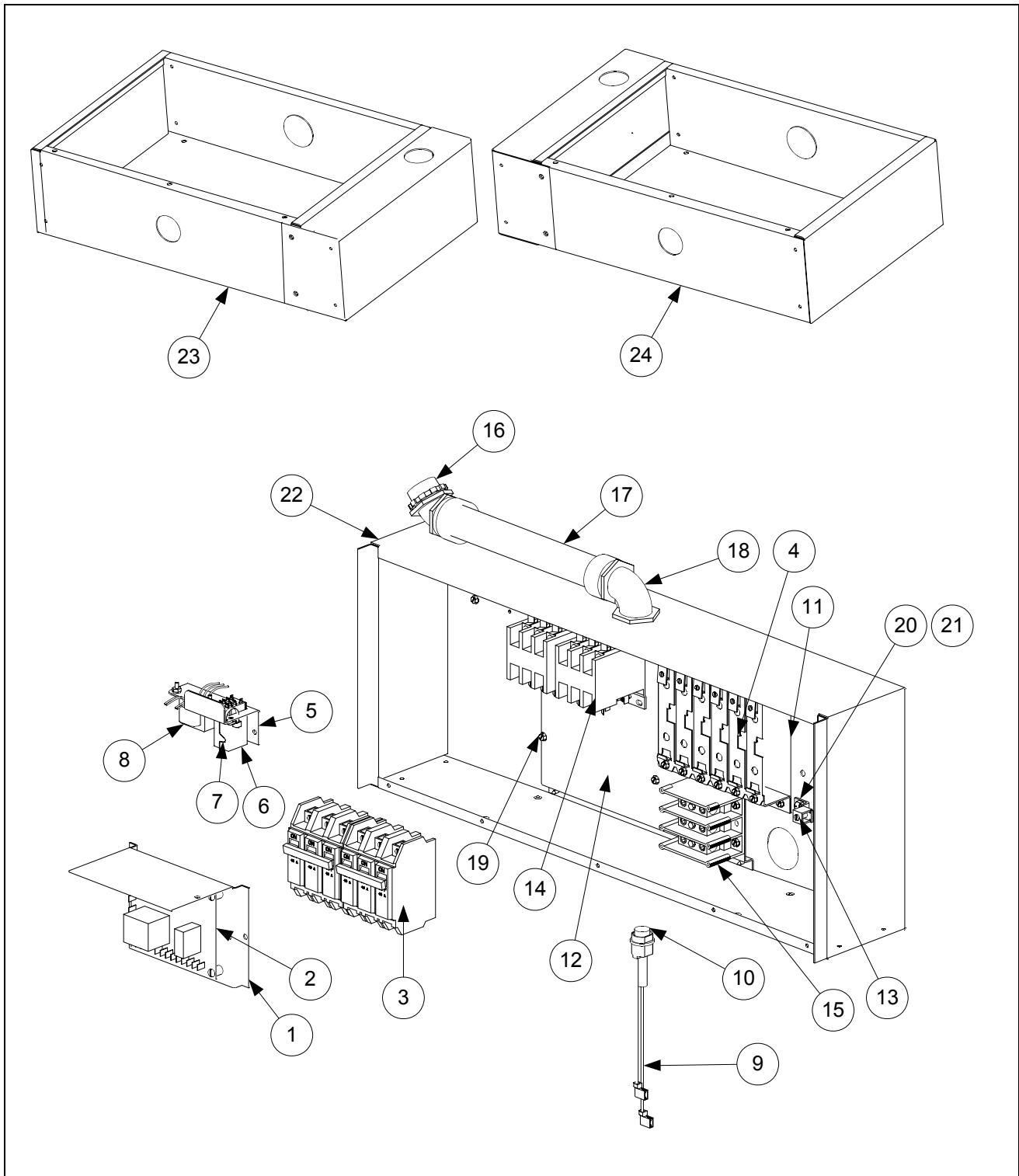
Item	Part Number	Description
	106-2788	Door Assembly 1824
	106-2784	Door Assembly 2424
1	106-4067SP	Pin Assembly, Door
	806-4487SP	Pin, Hinge Cover & Door
	810-0658	Retaining Ring (Unplated)
2	200-4588	Liner, Inner Door 1824
	200-4577	Liner, Inner Door 2424
3	809-0191	Washer, 1/4" Lock Spring ZP
4	809-0266	Screw, #10-1/2" Phil TR Head ZP
5	809-0918	Screw, #10-24 X 1/2"
6	810-0179	Button Plug 1/2"
7	810-0180	Handle, Door
8	826-1343	Spring, Door Hinge Lock
9	810-1105	Magnet, (Offset) Door
10	816-0529	Bumper, Rubber Self Adhesive
11	824-1150	Panel, W/A Outer Door 1824
	824-1149	Panel, W/A Outer Door 2424

2.2.4 Flue Caps, Top Caps, and Related Components



Item	Part Number	Description
1	823-4100	Deflector, 2424 Oil
2	210-4317	End Strip, 24L 18R Oil
3	210-4313	Joiner Strip (Joins frypots within a system)
4	210-4598	Joiner Strip, 18/2424 (Joins one fryer system to another)
5	823-4684	Fluecap, 2-2424
6	823-3474	Deflector, 2424 Short Oil
7	823-4101	Deflector, 24L 18R Oil
8	210-4802	Fluecap, 1-2424
9	823-3699	Top Assembly, One-Piece Standard Flue 1824 <i>(use 823-3264 for 2424)</i>
10	823-3622	Top Assembly, One-Piece Short Flue 1824 <i>(use 823-3473 for 2424)</i>
11	823-4916	Marine Edge 1824 <i>(use 823-4917 for 2424)</i>
12	210-9276	Upper Cap 1824E <i>(use 210-9277 for 2424)</i>
13	106-3253SP	Frame Assembly, Single Crumb Dump
14	106-1638SP	Frame Assembly, Double Crumb Dump
15	823-4125	Insert, Crumb Dump

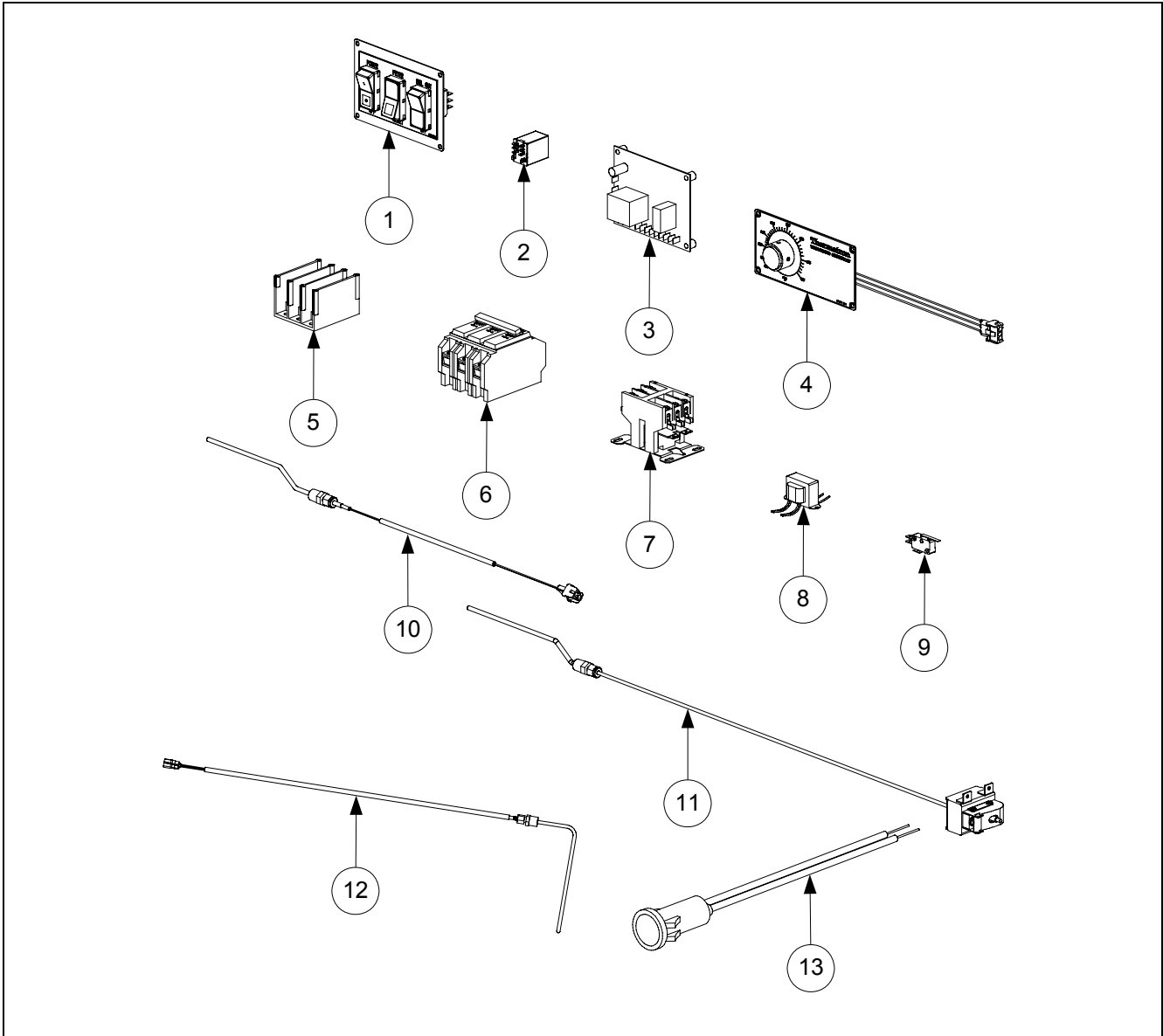
2.3 Control Panels, Wireways, and Related Components



Item	Part Number	Description
1	106-2046	Plate Assembly, SCF2 Thermatron PCB Component
	826-2031	Thermatron Kit, 115/220V includes 106-0165
2	106-0165	PCB, SCF2 Thermatron Board 115/230
	106-3729	PCB, Thermatron Extended Melt Cycle 24V
	106-2108	Breaker Assembly, 3-Pole 240VAC Circuit
3	807-3748	Breaker, 3-Pole 240VAC Circuit
4	810-2342	Plate, Circuit Breaker Mounting
5	106-2119	Relay/Transformer Bracket Assembly, 208/240VAC (Non-CE Units)
6	807-3611	Relay, 24 VAC Coil
7	807-3613	Spring, Relay Hold Down
8	807-3682	Transformer, 230V
	807-2180	Transformer, 208-240V/24V 50VA
9	106-2120SP	Fuse Assembly, 5 Amp w/Leads
10	807-3750	Fuse, 300V 5 Amp
	826-1988	Fuse Holder, with Fuse 300V 5 Amp
11	200-1921	Support, Circuit Breaker
12	200-3237	Plate, Control Box Mounting
13	807-0070	Terminal, Ground Lug
14	807-0074	Contact, 3 Pole 600 V 40 Amp
15	807-3610	Block, Dean Terminal 1501-AL-9CU
16	807-3622	Connector, 1" X 45 Degree
17	807-3625	Conduit, 1" Liquid-Tite Flex
18	807-3744	Connector, 1" X 90 Degree
19	826-1371	Screw, Drill #8 x 1/2 Hex HD ZP (package of 25)
20	809-0428	Bolt, 1/4-20 x 1/2 Hex HD ZP GR5
21	809-0825	Nut, KEPS, 1/4 -20, Hex HD SS
22	823-3694	Control Box, 2424E
23	823-3717	Control Box, SCF224E RH
24	823-3691	Control Box, SCF224E LH
*	823-3719	Control Box, 1824E
*	816-0574	Bushing, Heyco 1.375 - 16

* Not Illustrated

2.4 Electronic Components

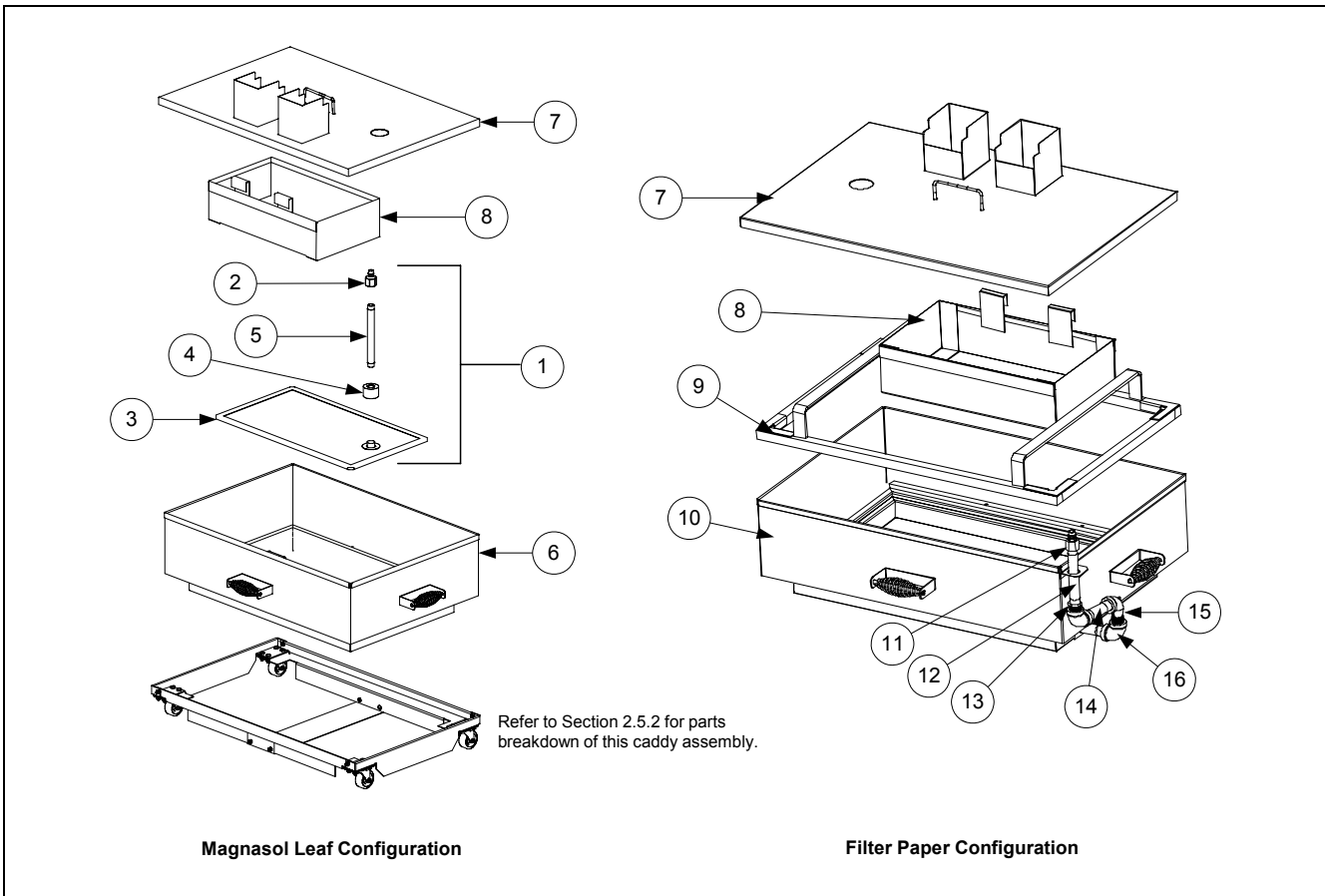


Item	Part Number	Description
1	106-2135SP	Panel Assembly, Power/Reset/Boil-Out
	807-3574	Switch, Power
	807-3576	Switch, Reset
	807-3579	Switch, Boil-Out
2	807-3611	Relay, 24VAC Coil (Optional Safety Drain Relay)
3	826-2031	PCB Board, 115/230V (Thermatron Board Kit)
4	106-3777	Faceplate Assembly, Thermatron
	106-1955	Harness Assembly, SCF32424 Potentiometer
	807-3536	Pot, Dean Temp Control 1k Ohm
	802-2052	Label, Thermatron Face Plate
*	106-3309	Faceplate Assembly, TMT 1824E/2424E
	802-2052	Label, TMT Dial
	816-0534	Knob / Go Control (PS-125-PL-2)
*	106-0850	Faceplate Assembly, Thermatron /14G
	802-2134	Label, Thermatron "Go" Face
	210-3377	Face Plate, Thermatron Retro
5	807-3610	Block, Dean Terminal 1501-AL-9CU
6	807-3748	Breaker, 3-Pole 240VAC Circuit
7	807-0074	Contactora, 40 amp 208/240VAC coil 50/60Hz
	807-2284	Contactora 50 amp 24VAC coil 50/60Hz
	810-1202	Contactora 40 amp 3 pole
8	807-3682	Transformer, 230VAC
	810-2180	Transformer, 208-240V/24V 50VA
9	807-2103	Microswitch, CE Straight Lever
10	106-2148	Probe Assembly, 1824E/2424E Temperature
11	807-3759	Thermostat, High-Limit w/Manual Reset
12	106-2607SP	Go Sensor Assembly (90° Bend)
	807-3567	Sensor Probe (Go)
	813-0617	Fitting $\frac{3}{16}$ " CCX $\frac{1}{4}$ " NPT
13	807-3905	Light, Green Indicator 250V
	807-3906	Light, Red Indicator 250V

* Not Illustrated

2.5 Filter Components

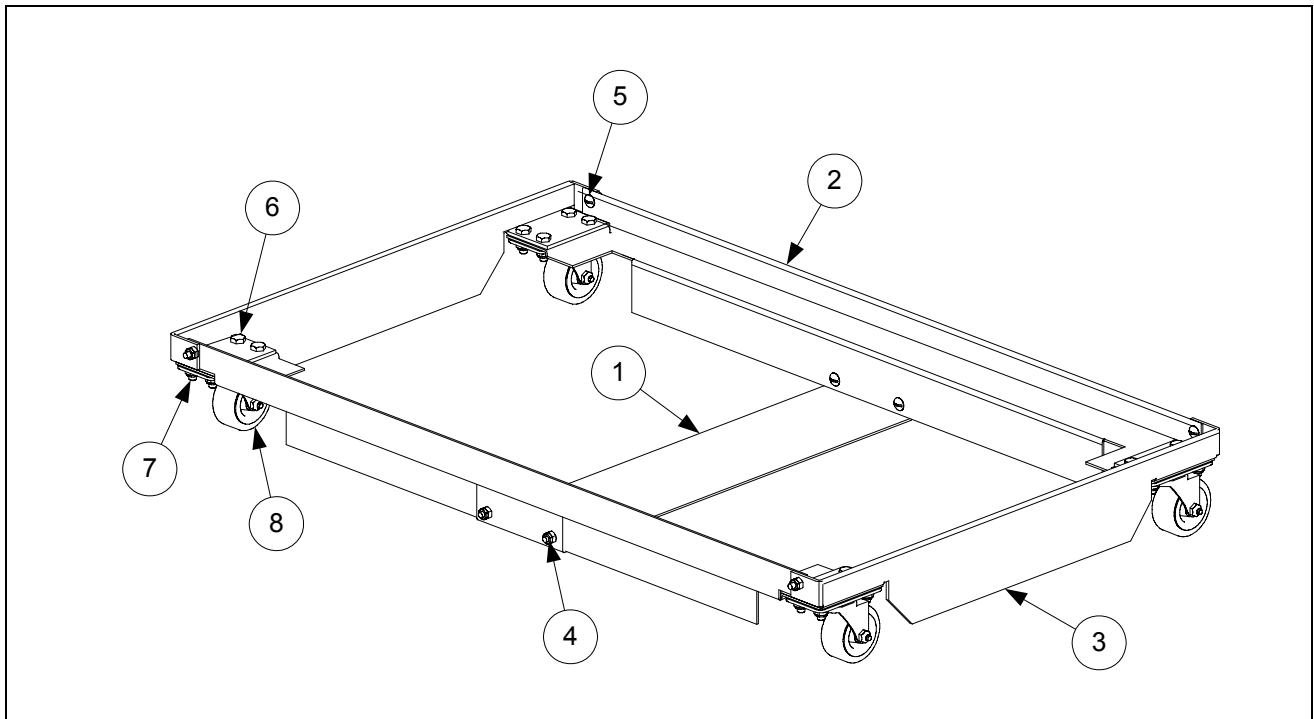
2.5.1 Filter Pan Assembly



Item	Part Number	Description
1	106-3675SP	Filter Screen Assembly, 2424
	810-2237	Magnasol Leaf w/ 11x19 Retrofit includes hose
2	810-2700	Nipple, Quick Disconnect Snaptite
3	810-2759	Filter, Screen 2424
4	810-2760	Compression Cap
5	813-0867	Nipple, 3/8 X 6 1/2 SS
6	823-3480SP	Pan W/A, BI-18 Portable/Stationary
7	823-3492	Lid W/A, SCF2424 LJS
	823-4885	Lid W/A, Flatbottom 3" Drain
8	823-3509	Crumb Basket W/A, LJS-UFF
*	810-2100	Motor, Pump 120/230 V 1/3 HP
*	810-2098	Pump, 8 GPM Filter
9	823-4280	Ring W/A, Hold Down SCF22424E
10	823-4274	Pan W/A, Filter 2424E
11	810-2172	Disconnect, Male Quick Release
12	813-0851	Nipple 3/8 X 5" BM
13	813-0006	Bushing, Hex 1/2 to 3/8 NPT BM
14	813-0460	Nipple, 1/2 x 3" NPT BM Pipe
15	813-0165	Elbow St 1/2 x 1/2 NPT 90° BM
16	813-0062	Elbow, 1/2 BM 90°

* Not Illustrated

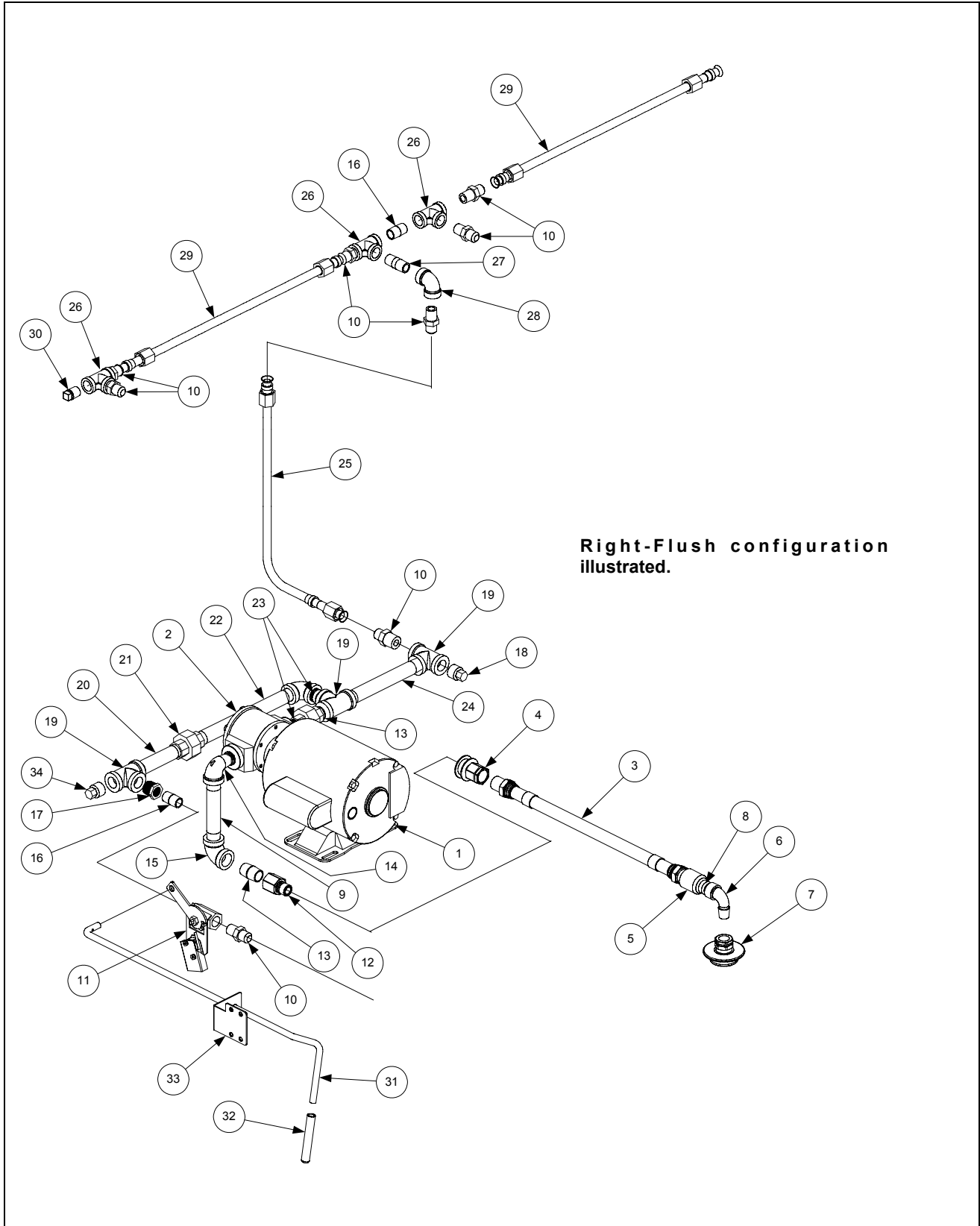
2.5.2 Filter Pan Caddy Assembly



Item	Part Number	Description
	106-1693SP	Filter Pan Caddy Assembly SCF2424
1	200-2627	Brace, Cross
2	200-2641	Filter Frame Side, 2424SCF
3	200-2642	Filter Frame Front & Rear
4	809-0054	Nut, Elastic Stop, 10-32 Zn Pl
5	809-0767	Screw, 10-32 X 1/2 Phil Tr Hd SS
6	809-0823	Nut, Nylock, 1/4-20
7	810-2805	Caster, 2" Filter Pan
8	826-1389	Screw, 1/4-20x 3/4 Hex Head ZP (package of 10)

* Not Illustrated

2.5.3 Under Fryer Filter (UFF) Components

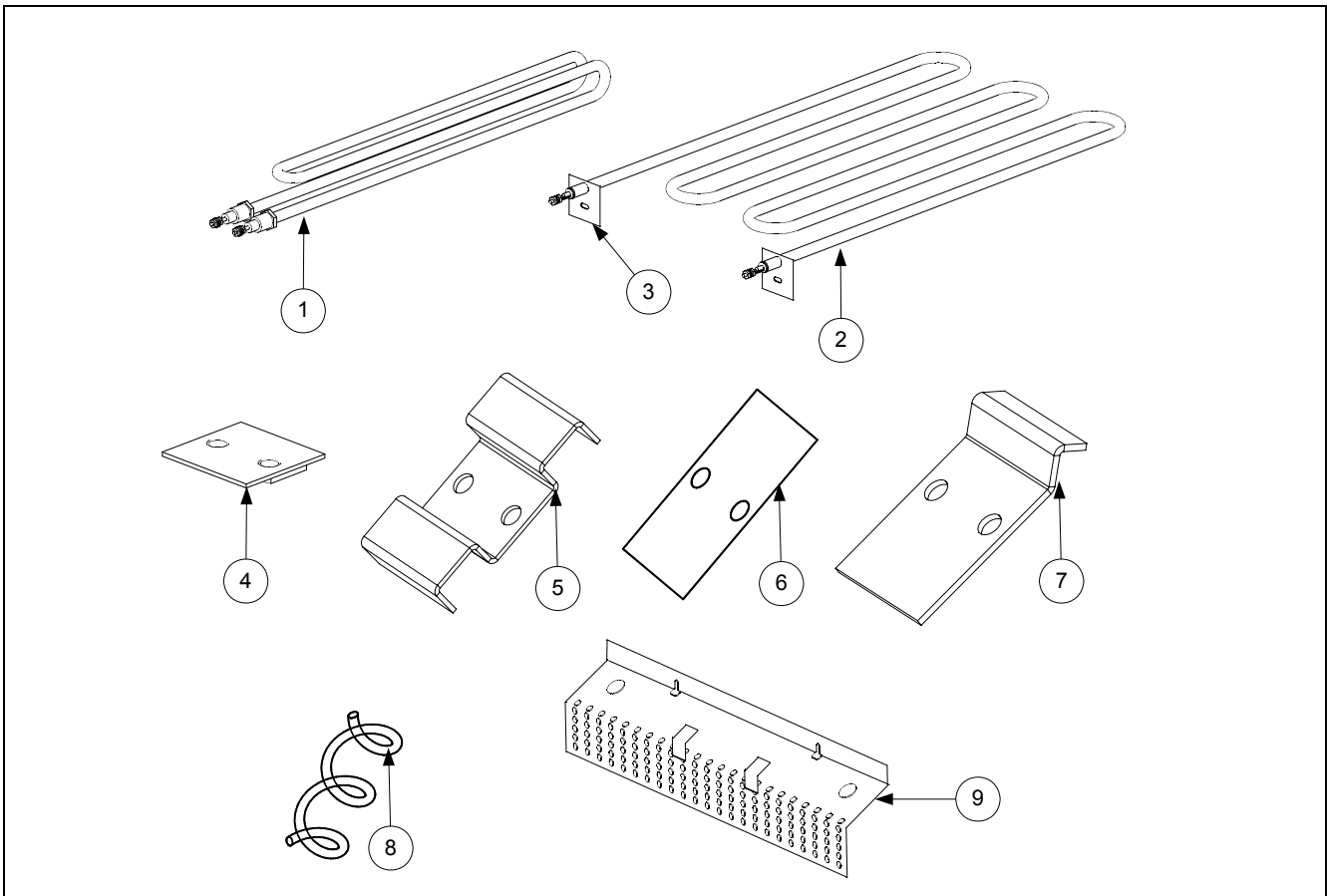


Item	Part #	Component
1	810-2100	Motor, 120-230VAC 1/3-HP Filter Pump
2	810-2098	Pump, 8 GPM Filter
3	810-2245	Hose, 16 3/4-inch Filter Pan to Pump
4	810-2173	Disconnect- Female, 1/2-inch
5	813-0735	Reducer, 1/2-inch to 3/8-inch NPT Bell
6	813-0869	Elbow, 3/8-inch NPT Street
7	810-2762	Disconnect, 3/8-inch Female with Radial Collar
8	813-0625	Nipple, Black 3/8-inch NPT
9	813-0251	Nipple, 1/2 -inch X 4.5-inch NPT
10	813-0614	Fitting, 1/2-inch X 3/8-inch 37° Flare
11	106-3659SP	Flush Valve Assembly, Complete
	810-2125	Valve, 3/8-inch Flush
	200-6089	Actuator Handle, Flush Valve (Left-Oriented Flush Valves Only) [†]
	200-6202	Actuator Handle, Flush Valve (Right-Oriented Flush Valves Only) [†]
	106-3604SP	Bracket Assembly, Microswitch
	807-2103	Microswitch, Straight Lever
	816-0220	Insulation, Microswitch
	901-2348	Cover, Microswitch (Left-Oriented Flush Valves Only) [†]
	902-2348	Cover, Microswitch (Right-Oriented Flush Valves Only) [†]
12	810-2170	Disconnect, 1/2-inch Male
13	813-0022	Nipple, 1/2-inch X Close NPT
14	813-0165	Elbow, 1/2-inch X 90° NPT Street
15	813-0062	Elbow, 1/2-inch X 90° NPT
16	813-0625	Nipple, 3/8-inch X Close NPT
17	813-0006	Bushing, 1/2-inch to 3/8-inch NPT Hex
18	813-0613	Plug, 1/2-inch NPT Hex
19	813-0003	Tee, 1/2-inch NPT
20	813-0093	Nipple, 1/2-inch X 4-inch NPT
21	813-0173	Union, 1/2-inch NPT
22	813-0673	Nipple, 1/2-inch X 8.5-inch NPT
23	813-0087	Nipple, 1/2-inch X 1.5-inch NPT
24	813-0833	Nipple, 1/2-inch X 15.5-inch NPT
*	813-0368	Nipple, 1/2-inch X 16-inch NPT
25	810-2270	Tubing, Filter Pump to Rear Oil Return
26	813-0730	Tee, 3/8-inch NPT
27	813-0644	Nipple, 3/8-inch X 1.5-inch NPT
28	813-0631	Elbow, 3/8-inch X 90° NPT
29	810-2262	Tubing, Rear Oil Return
30	813-0452	Plug, 3/8-inch NPT Pipe
31	810-2757	Handle, Drain Flush
32	816-0549	Sleeve, Blue Vinyl (Drain Flush Handle Cover)
33	200-6135	Bracket, Flush Handle (Mounts to Inner Panel)
34	813-0463	Plug, Pipe 1/2 NPT BM

* Not Illustrated

[†] Valve stem pointing to left- left-oriented; Valve stem pointing to right- right oriented.

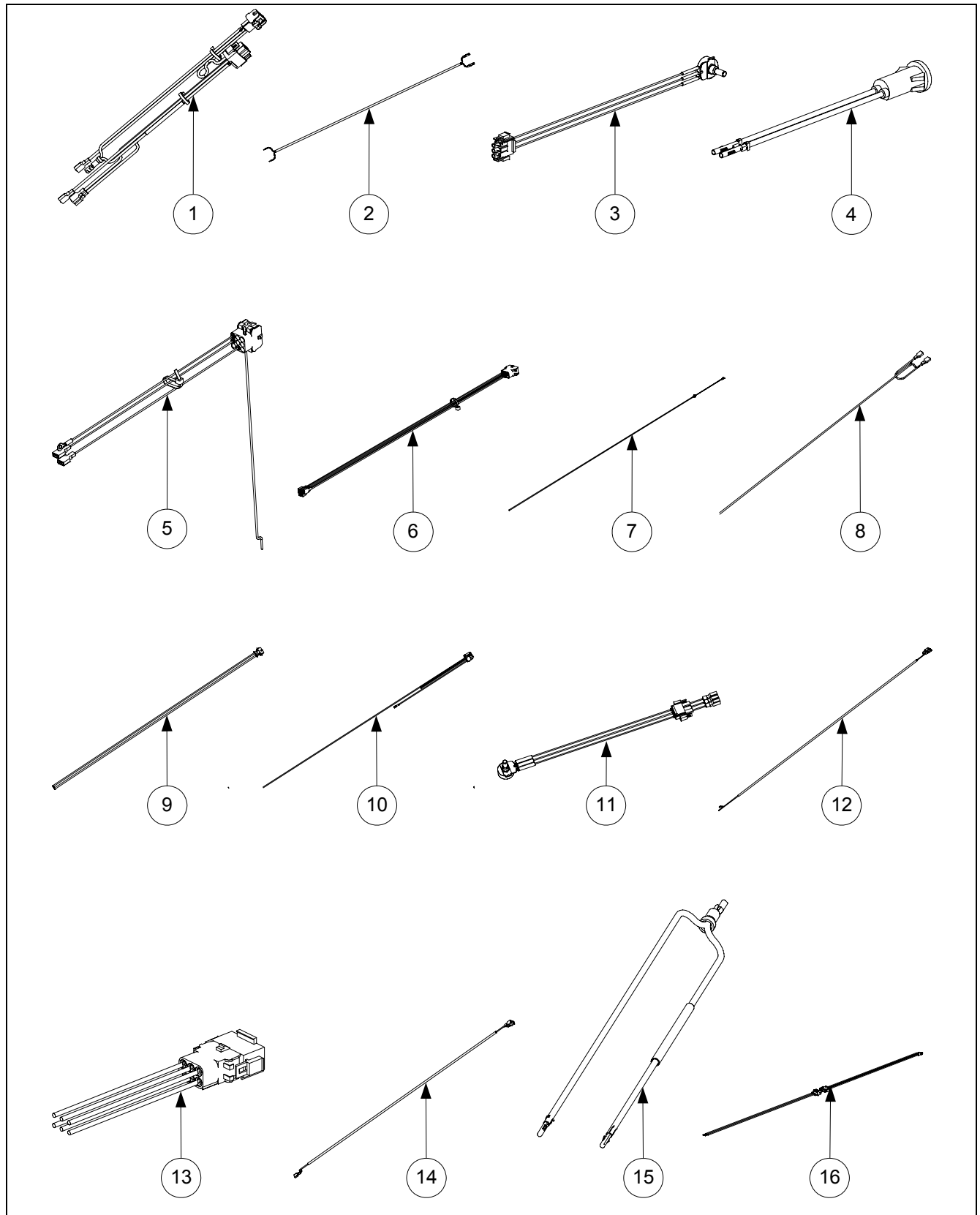
2.6 Elements and Related Components



Item	Part Number	Description
1	826-1831	Element, 240V/6.3kw Heating (includes mounting hardware)
	826-1805	Element, 208V/6.3kw Heating (includes mounting hardware)
2	823-3760	Heater W/A, 208V/6.3kw Element
	823-3836	Heater W/A, 240V/6.3kw Element
3	200-1376	Bracket, Restraining
4	823-4573	Plate, Element Retaining
5	210-3320	Heating Element Spacer
6	210-3322	Heater Support Plate
7	210-3321	High Limit Clamp
	210-4265	Thermostat Clamp
8	810-2164	Spacer Spring 3/16"
9	823-3885	Plate W/A, Element Guard
*	809-0840	Screw, 10-32 x 1/2 Rd SL HD ZP
*	KIT7594	Flatbottom Electric Element Bracket Modification Kit

* Not Illustrated

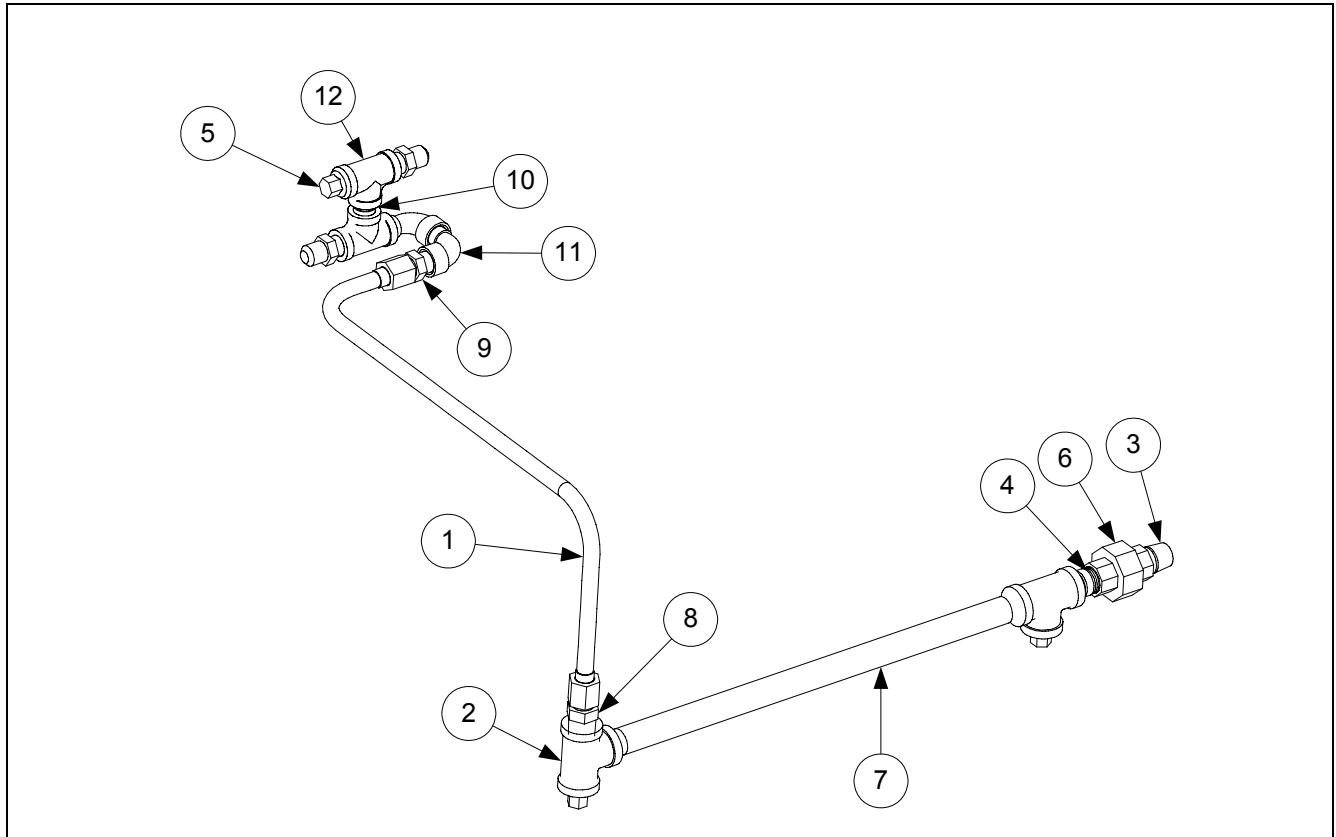
2.7 Harnesses



Item	Part Number	Description
1	106-1262	Harness Assembly, Boil Out Board
2	106-1652	Harness, Drain Valve MSW-WW
3	106-1955	Harness Assembly, FB Thermostat
4	106-1978	Harness Assembly, 2424 Heat Light
5	106-2122	Harness Assembly, 208VAC Go Board
6	106-2132	Harness Assembly, Boil Out
	106-2139	Wire Assembly, Power Switch
7	106-2134	Harness Assembly, Drain Valve
8	106-2138	Wire Assembly, Power
9	106-2141	Harness Assembly, Element
10	106-2145	Harness Assembly, 208VAC Ext
11	106-2146	Harness Assembly, Potentiometer
12	106-2159	Harness Assembly, Oil Return MSW-CBX/Add On
13	106-2191	Harness Assembly, SCF24E Heater Strip
14	106-2331	Harness Assembly, Oil Return MSW-CBX/Add On
15	106-2332	Wire Assembly, 48.7 Ohms Complete
16	106-2825	Harness Assembly, Pump Motor
*	108-2095	Assembly, Wire Flat bottom Electric Relay
*	108-2096	Assembly, Wire Flat bottom

* Not illustrated

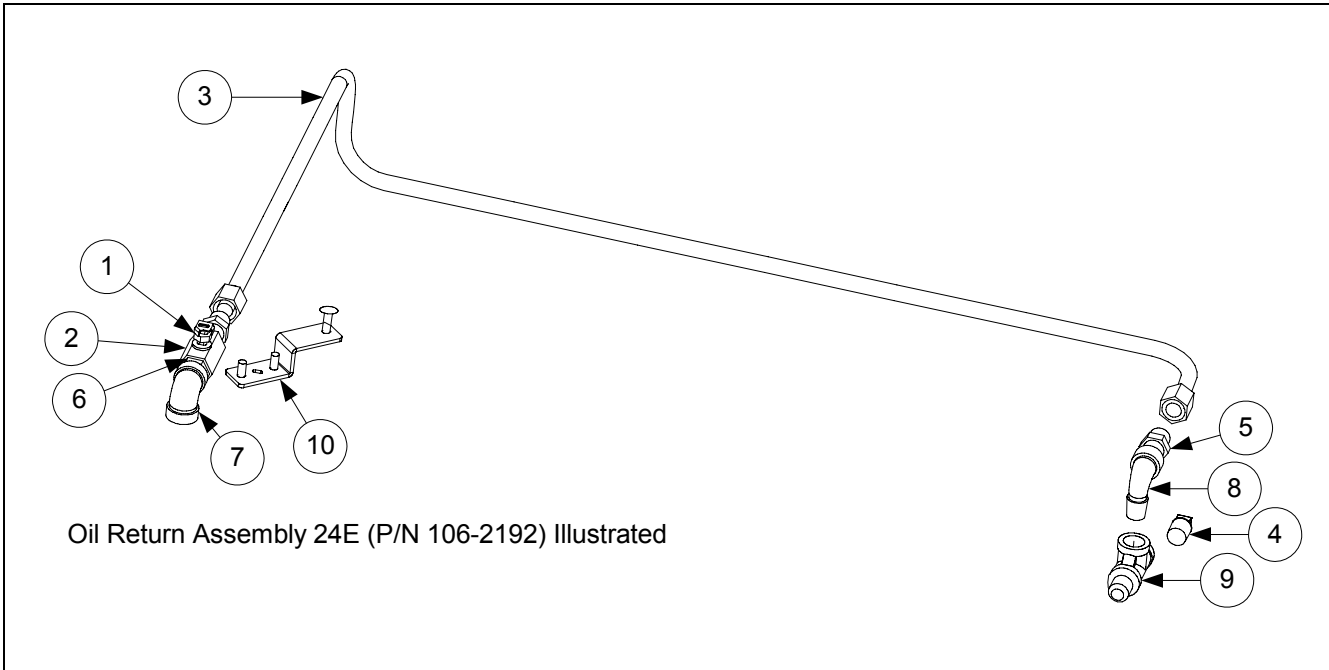
2.8 Oil Discharge Assembly



Item	Part Number	Description
	106-2184	Oil Discharge Assembly, SCF 2424E <i>includes 106-2194 and 106-2192</i>
	106-2194	Oil Discharge Assembly, 2424E Component
1	810-2357	Tubing, 24E Flush Line
2	813-0003	Tee, ½ NPT BM
3	813-0022	Nipple, ½ x Close NPT BM
4	813-0087	Nipple, ½ NPT X 1 ½ BM
5	813-0156	Plug, ½ NPT Hex Head BM Pipe
6	813-0173	Union, ½ NPT BM
7	813-0368	Nipple, ½ NPT X 16.00 BM
8	813-0613	Flare Fitting ½ -37 Degree X ½
9	813-0614	Flare Fitting, ½ -37 Degree X ¾
10	813-0625	Nipple, Black, ¾ X Close NPT BM
11	813-0632	Elbow, Street, ¾ -90 Deg
12	813-0730	Tee, ¾ NPT Black
*	816-0548	Cap, Vinyl Yellow

* Not Illustrated

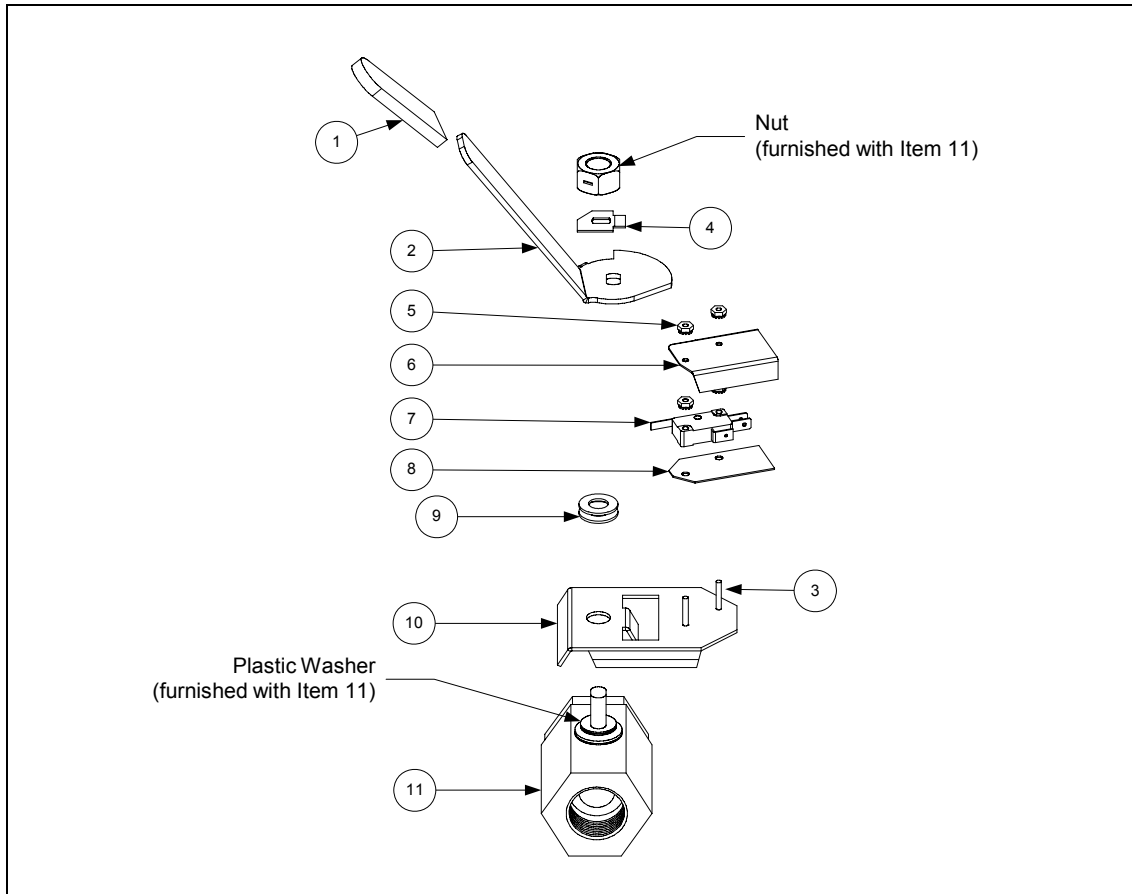
2.9 Oil Return Assembly



Item	Part Number	Description
	106-2188	Oil Return Assembly 1824E LH
	106-2183	Oil Return Assembly 1824E RH
	106-2192	Oil Return Assembly 24E LH
	106-2189	Oil Return Assembly 24E RH
	106-3130	Oil Return Assembly 2424E LH
	106-3131	Oil Return Assembly 2424E RH
1	200-1143	Retainer, Oil Return Valve Nut
2	810-2125	Ball Drain Valve $\frac{3}{8}$ "
3	810-2363	Tubing, Rear Vessel Flush Line 24E
	810-2671	Tubing, Rear Vessel Flush Line 2424E
	810-2362	Tubing, Rear Vessel Flush Line 1824E
	810-2316	Tubing, Flare 14.73" 3" Drains
4	813-0452	Plug, Pipe $\frac{3}{8}$ NPT BM
5	813-0614	Flare Fitting, $\frac{1}{2}$ -37degree X $\frac{3}{8}$
	813-0613	Flare Fitting $\frac{1}{2}$ -37 Deg x $\frac{1}{2}$ 3" drains
6	813-0625	Nipple, Black, Close $\frac{3}{8}$ NPT BM
7	813-0631	Elbow $\frac{3}{8}$ X 90 Degree
8	813-0632	Elbow, Street, $\frac{3}{8}$ -90 Degree
9	813-0730	Tee, $\frac{3}{8}$ NPT Black
10	823-3713	Lever W/A, Oil Return FB Electric
	823-4270	Lever, W/A, Oil Return 2424E
*	810-2262	Tubing, Oil Drain Valve UFF 50
*	810-2673	Tubing, Flush Line Pot-To-Pot 2424E

* Not Illustrated

2.10 Drain Valve and Associated Parts

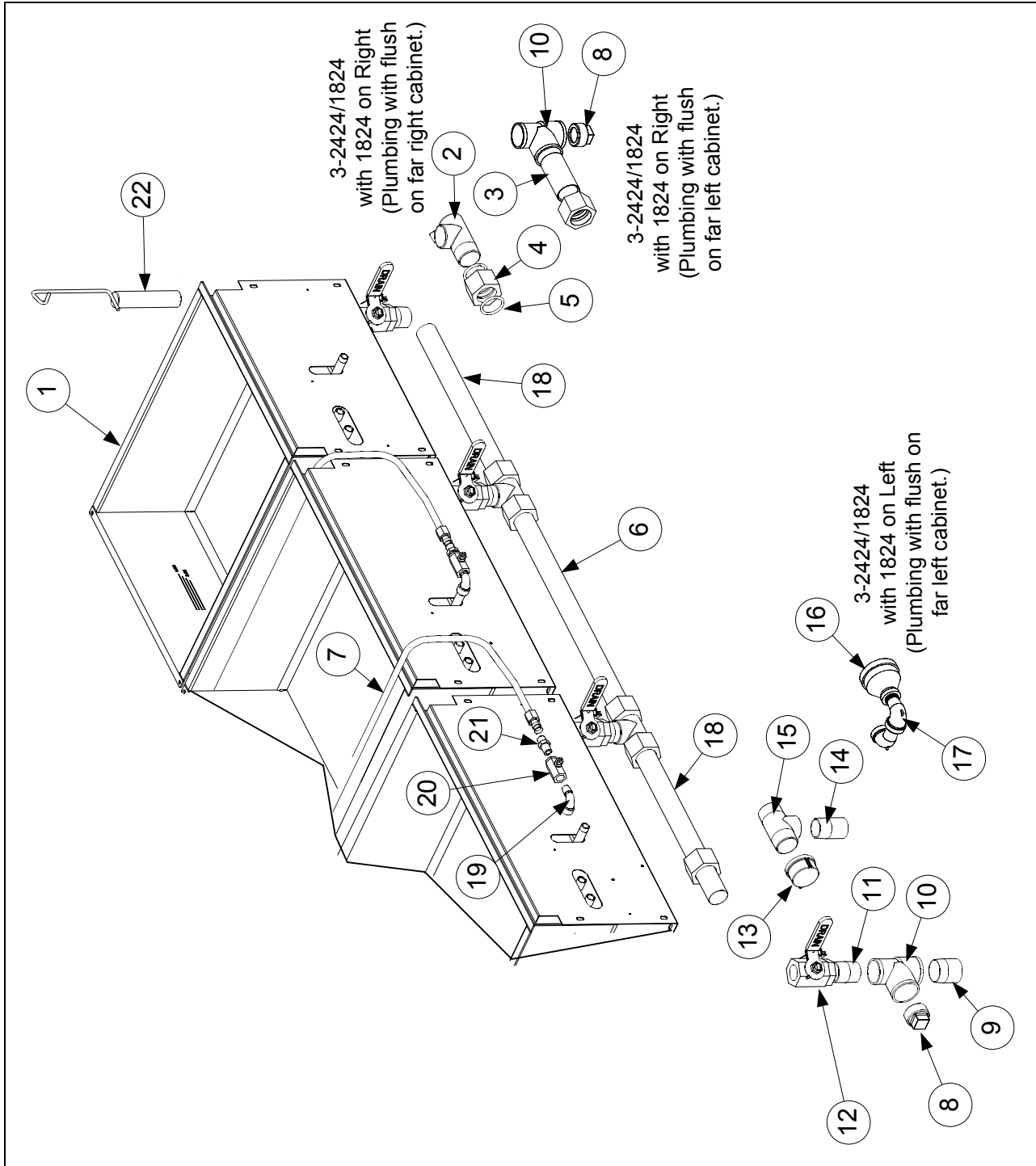


Item	Part Number	Description
1	816-0211	Sleeve, Red Drain Valve Handle
2	210-8558	Handle, 2424 Drain Valve
3	809-0564	Stud, ¼ - 20 x 1 ½
4	200-1257	Retainer, Drain Valve Nut
5	826-1366	Nut, 4-40 KEPS HX (Pkg. of 25)
6	901-2348	Cover, Safety Switch LH
	902-2348	Cover, Safety Switch RH
7	807-2103	Switch, CE Micro Straight Lever
8	816-0220	Insulation, RF Switch
9	809-0988	Washer, Nylon
10	106-3604	Bracket Assembly, Switch
11	810-2052	Valve, Drain 1¼" w/ Nut
*	823-3463	Valve w/ Microswitch Holder, 1¼" Drain (Older Units)
*	814-0047	Sleeve, Red Handle Drain Valve (Older Units)
*	807-2104	Microswitch, Drain Valve Roller Lever (Older Units)

* Not Illustrated

2.11 Drain and Oil Return Components

2.11.1 Standard 1 1/2" Drains

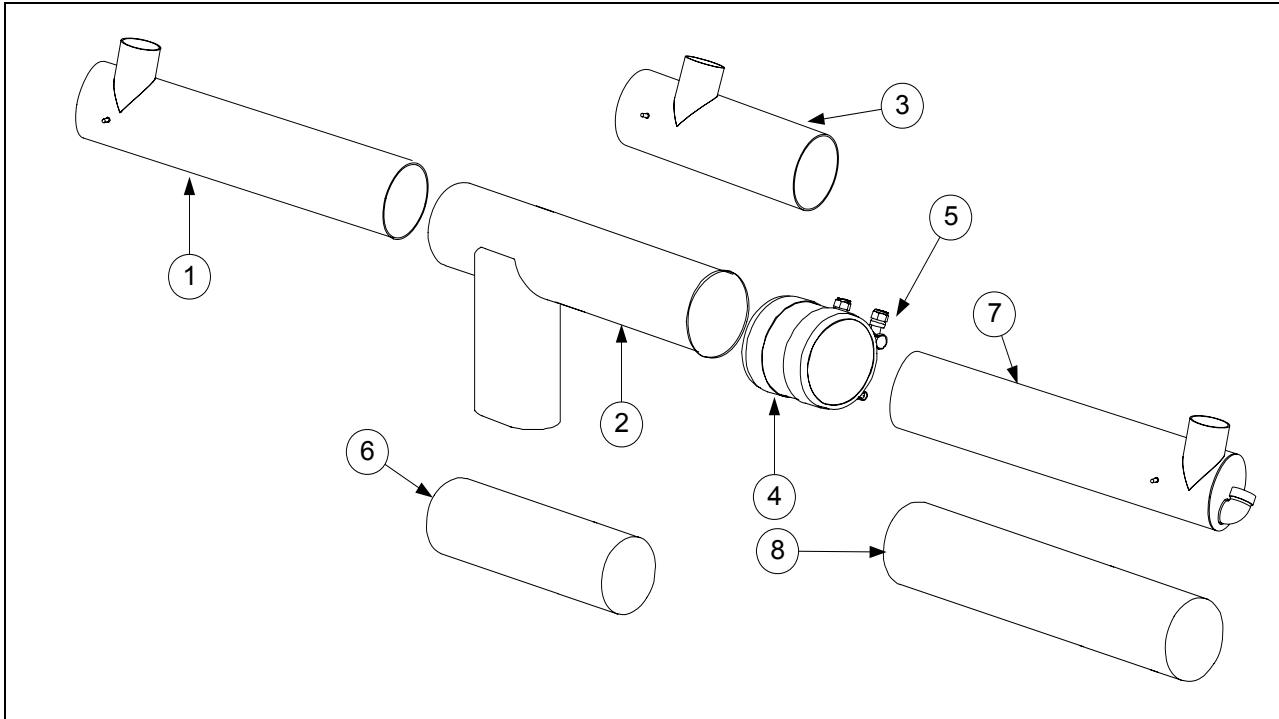


2.11.1 Standard 1 1/2" Drain and Oil Return Components Parts List

ITEM	PART #	COMPONENT
	826-1824	Frypot Kit, 2424E (No Front Return)
1	823-3732SP	Frypot Assembly, 1824ECF Electric
	823-3721SP	Frypot Assembly, 2424ECF Electric
2	813-0768	Tee, 1824 Right Drain Flush
3	810-2276	Nipple, UFF Drain Line
4	809-0884	Nut, Slip-Joint
5	816-0544	O-Ring
6	200-1845	Tube, 1 5/8-inch X 24 1/2-inch Drain Manifold
7	810-2556	Tube, Front Oil Return
8	813-0868	Plug, 1 1/2-inch NPT Pipe
9	813-0732	Nipple, 1 1/2-inch X 2-inch NPT Toe
10	813-0765	Tee, 1 1/2-inch X 1 1/4-inch X 1 1/2-inch
11	813-0391	Nipple, 1 1/4-inch X Close NPT
12	810-2052	Valve, Drain 1 1/4-inch
13	813-0659	Cap, 1 1/2-inch NPT Pipe
14	813-0143	Nipple, 1 1/4-inch X 2 1/2-inch NPT Toe
15	813-0760	Tee, 1 1/2-inch X 1 1/4-inch X 1 1/2-inch NPT Drain
16	813-0686	Cap, Drain Flush End (1824G Left)
17	813-0165	Elbow, 1/2-inch X 90° NPT Street
18	200-1838	Tube, 1 5/8-inch X 17 1/2-inch Drain Manifold
19	813-0632	Elbow, 3/8-inch X 90° NPT Street
20	810-2125	Valve, 3/8-inch Oil Return Ball
*	823-3465	Handle, UFF Oil Return
*	816-0548	Cap, Yellow Vinyl Oil Return Handle
21	813-0614	Fitting, 1/2-inch X 3/8-inch 37° Flare
22	823-3174	Plug, Frypot Drain

* Not illustrated.

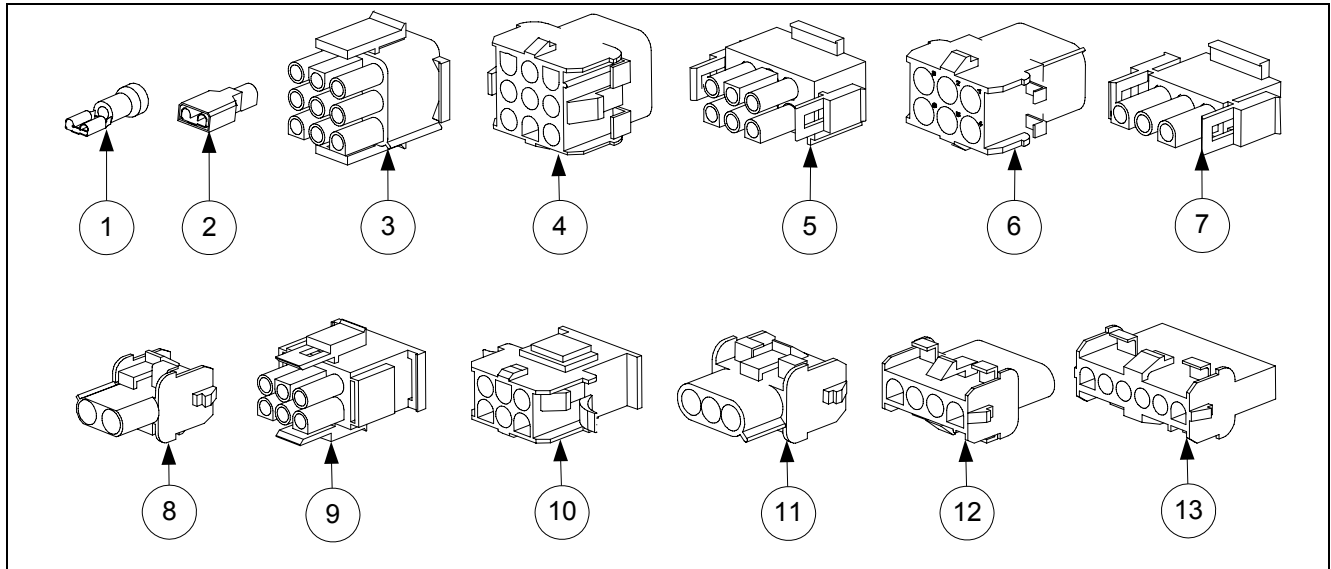
2.11.2 Euro-Look 3" Round Drains and Components



Item	Part Number	Description
1	823-4853	Tube W/A, 3" Flatbottom Left Drain w/ Drain Flush
2	823-4876	Tube W/A, 3" Flatbottom Down Spout
3	823-4854	Tube W/A, 3" Flatbottom Middle Drain
4	816-0625	Sleeve 3"
5	809-0969	Clamp 3"
6	200-8131	Tube, 2424 3" Middle Down Spout Connector 9.21"
	200-8135	Tube, 1824 3" Middle Connector 10.38"
	200-8129	Tube, 2424 3" Middle Down Spout Connector 8.71"
7	823-4850	Tube W/A, 3" Flatbottom Right Drain w/ Drain Flush
8	200-8128	Tube, 2424 3" Drain Connector 16½ "
	200-8130	Tube, 24 3" Right Drain Connector 16"
	200-8132	Tube, 18 3" Right End Connector 9.88"
*	823-4883	Handle W/A, Drain Flatbottom 3" Drains
*	816-0630	Cap, Vinyl Black

* Not Illustrated

2.12 Wiring Connectors, Pin Terminals and Power Cords



Item	Part Number	Description
1	807-3530	Terminal, Push-On Insulated
2	807-3537	Terminal, Push-On Fully Insulated
3	807-0155	9-Pin Male
4	807-0156	9-Pin Female
5	807-0157	6-Pin Male
6	807-0158	6-Pin Female Panel Mount
7	807-1062	3-Pin Male
8	807-1068	2-Pin Cap 94V-2 White M&L
9	807-2135	6-Pin Hi-Amp Male
10	807-2136	6-Pin Hi-Amp Female
11	807-2360	3-Pin Female
12	807-3232	4-Pin M&L Female Cap
13	807-3557	6-Pin Housing Cap
*	807-3618	9-Pin Male
*	807-3619	4-Pin Female
*	106-3636	Power Cord Assembly

* Not Illustrated

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