



**HDC, CFHDC, SCFHDC,
FPHDC, LHDC, Y/KS/CF/C/H/HC/114/118,
BK1814**

**(High Efficiency Common Cabinet
Decathlon Fryers)**

**High Efficiency Decathlon (HD)
Series Gas Fryers
Service & Parts Manual**

DEAN[®]



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

PRINTED IN THE UNITED STATES
OF AMERICA

**24-Hour Service Hotline
1-800-551-8633**
EMAIL: fryservice@welbilt.com



01/2024

Please read all sections of this manual and retain for future reference.

This product has been certified as commercial cooking equipment and **MUST** be installed by professional personnel as specified. Installation, maintenance and repairs should be performed by your FRYMASTER AUTHORIZED SERVICER.

 **DANGER**

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

 **DANGER**

Instructions explaining procedures to be followed **MUST** be posted in a prominent location in the event the operator detects a gas leak. This information can be obtained from the local gas company or gas supplier.

 **WARNING**

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

 **DANGER**

Safe and satisfactory operation of your equipment depends on proper installation. Installation **MUST** conform with local codes, or in absence of local codes, with the National Fuel Gas Code, ANSI Z223.1; The Natural Gas Installation Code, CAN/CGA-B149.1; The Propane Installation Code, CAN/CGA-B149.2; or The latest edition of the National Electric Code, N.F.P.A. 70.

NOTICE

IF, DURING THE WARRANTY PERIOD, THE CUSTOMER USES A PART FOR THIS FRYMASTER DEAN 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**

The crumb tray in fryers equipped with a filter system must be emptied into a fireproof container at the end of frying operations each day. Some food particles can spontaneously combust if left soaking in certain shortening material. Additional information can be obtained in the filtration manual included with the system.

 **DANGER**

The front ledge of the fryer is not a step. Do not stand on the fryer. Serious injury can result from slips or contact with the hot oil.

⚠ WARNING

Drawings and photos used in this manual are intended to illustrate operational, cleaning and technical procedures and may not conform to on-site management operational procedures.

⚠ WARNING

No structural material on the fryer should be altered or removed to accommodate placement of the fryer under a hood. Questions? Call the Frymaster and Dean Service Hotline at 1-800-551-8633.

This equipment is to be installed in compliance with the basic plumbing code of The Building Officials and Code Administrators International, Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration.

COMPUTERS
FCC

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
1) This device may not cause harmful interference, and 2) This device must accept any interference received, including interference that may cause undesired operation. While this device is a verified Class A device, it has been shown to meet the Class B limits.

CANADA

This digital apparatus does not exceed the Class A or B limits for radio noise emissions as set out by the ICES-003 standard of the Canadian Department of Communications.

Cet appareil numérique n'émet pas de bruits radioélectriques dépassant les limites de classe A et B prescrites dans la norme NMB-003 édictée par le Ministre des Communications du Canada.

⚠ DANGER

THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND/OR BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

Operation, installation, and servicing of this product could expose you to airborne particles of glasswool or ceramic fibers, crystalline silica, and/or carbon monoxide. Inhalation of airborne particles of glasswool or ceramic fibers is known to the State of California to cause cancer. Inhalation of carbon monoxide is known to the State of California to cause birth defects or other reproductive harm.

⚠ WARNING

Do not bang fry baskets or other utensils on the fryer's joiner strip. The strip is present to seal the joint between the fry vessels. Banging fry baskets on the strip to dislodge shortening will distort the strip, adversely affecting its fit. It is designed for a tight fit and should only be removed for cleaning.

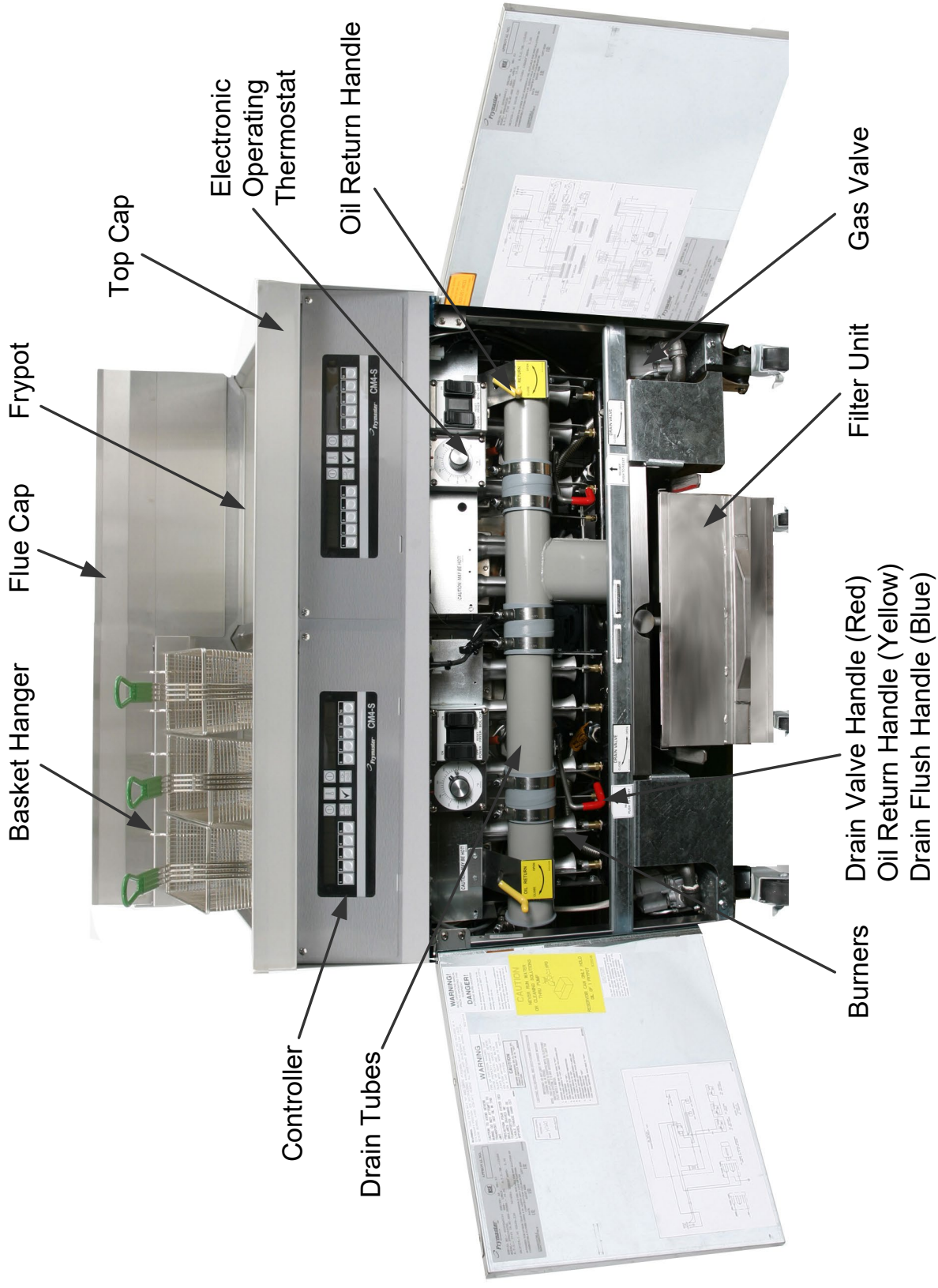


**High Efficiency Decathlon (HD) Series Gas Fryers
Service and Parts Manual**

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FINDING YOUR WAY AROUND THE DEAN HIGH EFFICIENCY DECATHLON



Note: The appearance of your fryer may differ slightly from that shown depending upon configuration and date of manufacture.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.1 Functional Description

High Efficiency Decathlon (HD) Series gas fryers contain a welded stainless steel frypot heated by gas flames diffused evenly through tubes built into the frypot.

Flames originate from orifices in a burner manifold positioned beneath cast-steel burners. The burners are positioned in the tube openings at the front of the frypot. The diameter of the orifices differs for natural and LP gas as indicated in the accompanying table.

GAS INFORMATION (Altitudes of 2000 feet or less)							
MODEL	INPUT (BTU)	GAS TYPE	ORIFICE MM (INCH)	ORIFICE PART NO.	QTY	EQUIPMENT PRESSURE	
						MBAR	INCH W.C.
HD50G	95	NAT LP	2.26(#43) 1.40(#54)	8102938 8102939	4 4	10	4
						27.5	10
HD60/63/65G	125	NAT LP	2.26(#43) 1.40(#54)	8102938 8102939	5 5	10	4
						27.5	10

An electromechanical gas valve regulates gas flow to the manifold. HD Series gas fryers are equipped with either a 24V valve system. Unit configurations include either a pilot ignition system or an electronic ignition system.

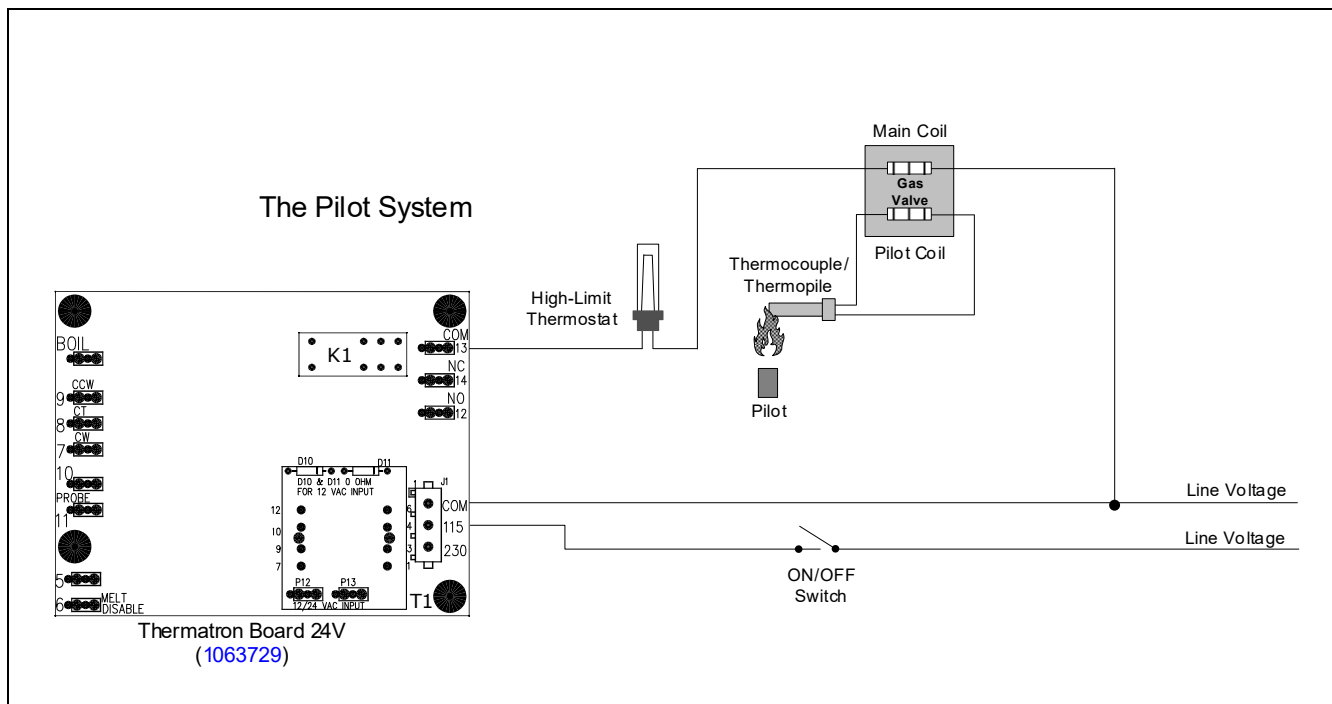
HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.1 Functional Description (cont.)

Pilot System Configuration

The pilot system is comprised of the pilot orifice, pilot hood, and a thermopile (some systems incorporate a thermocouple). The pilot serves two purposes: light the burner and heat the thermopile. In operation, the thermopile is in contact with the pilot flame and generates millivolts. The millivolt output energizes the gas valve pilot coil, which in turn opens the pilot valve. If the pilot flame is extinguished, the gas valve pilot coil loses voltage and the pilot valve closes. The main valve of the gas valve will not open if the pilot valve is not open. The pilot flame must be manually lit when the fryer is first placed into operation. A separate 24V circuit, activated by the fryer ON/OFF switch, provides voltage through the Thermatron to the gas valve main coil, which opens the main valve.



Electronic Ignition Configuration

In units configured for electronic ignition, an ignition module connected to an ignitor assembly replaces the pilot system. The ignition module performs three important functions: It provides an ignition spark, supplies voltage to the gas valve, and proofs the pilot flame.

The module contains a 90-second time delay circuit and a coil that activates the gas valve. The ignitor assembly consists of a spark plug, a pilot, and a flame sensor element.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

Electronic Ignition Configuration (cont.)

At start-up the ON/OFF switch is placed in the ON position, supplying 12 VDC to the heat control circuitry in the controller or controller and to one side of the heat relay coil on the interface board. If resistance in the temperature probe indicates the temperature in the frypot is below 180°F (82°C), the current flows through a melt cycle circuit where a timer switch alternately closes for 3 seconds and opens for 24 seconds. If the temperature is 180°F (82°C) or above, the current flows through a heat circuit, bypassing the timer switch. In either case, current is supplied to the other leg of the heat relay coil which then closes an electronic switch in the 24 VAC circuit to provide current to the ignition module. **NOTE:** The listed melt cycle times and exit temperature pertain to the Compu-Fry controller only.

Circuitry in the ignition module sends 24 VAC current to the gas valve via a normally closed high-limit switch and a drain safety switch. Simultaneously, the module causes the ignitor to spark for up to 90 seconds to light the pilot flame. A flame sensor verifies that the pilot is lit by measuring the flow of microamps through the flame. If the pilot does not light (or is extinguished), current to the ignition module is interrupted, preventing the main valve from opening, and the ignition module "locks out" until the power switch is turned OFF, then back ON.

A temperature probe monitors the temperature in the frypot. When the programmed setpoint temperature is reached, resistance in the probe causes the heat cycle circuitry in the controller to interrupt current flow through the heat relay. This in turn interrupts the 24 VAC current to the ignition module, resulting in closure of the gas valve.

NOTE: Unlike previous modules, microamp readings on these black modules will move up and down as the module pulses on and off and this is an indication that the module is functioning.

Control Options

HD Series gas fryers may be equipped with Thermatron controls, Compu-Fry controllers, 3-Lane controllers or FAST controllers.

In fryers equipped with Thermatron controls, the fryer is turned on and off by means of a rocker switch and the temperature is set by adjusting a potentiometer. An interface board is located in the component box (shield) behind the control panel (controller-equipped) or a Thermatron board is located in a component box inside the cabinet (Thermatron-equipped).

Interface Boards

The interface board provides a link between the controller/controller and the fryer's individual components without requiring excessive wiring, and allows the controller to execute commands from one central point. Two types of interface boards may be used in HD Series gas fryers; the type used depends on the fryer configuration.

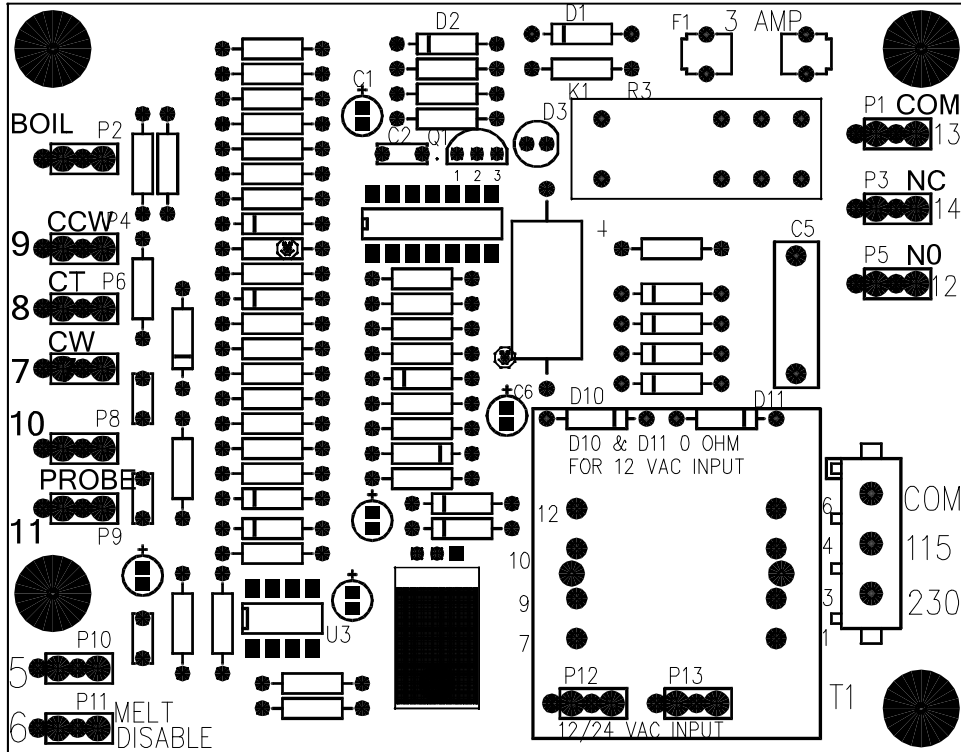
In units configured for electronic ignition and constant pilot, P/N [8262434](#) is used; in units configured with a manually lit pilot (non-electronic ignition), P/N [8262425](#) is used.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

Interface Boards (cont.)

106729 (24V): These boards are used in HD fryers equipped with Thermatron control systems.



THERMATRON BOARD P/N [1063729](#)

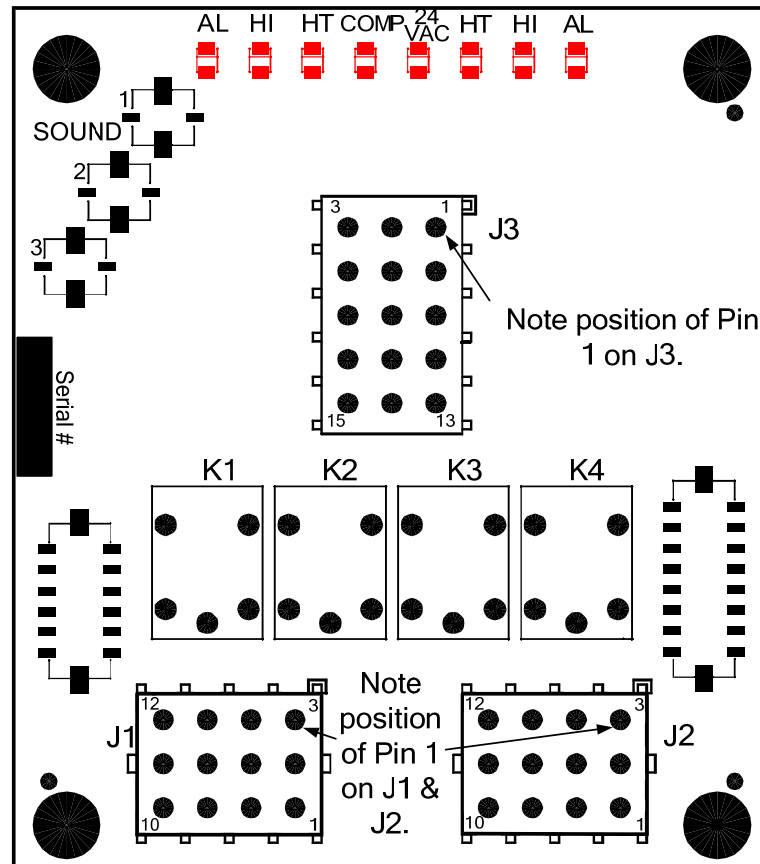
Thermatron systems incorporate a temperature probe, a potentiometer, and a temperature control circuit board. This system is more accurate and reliable than a standard thermostat. The temperature probe measures oil temperature via resistance (ohms); as oil temperature rises, resistance decreases. The potentiometer sets the oil temperature via resistance (ohms). The temperature control circuit board compares the resistance from the probe and potentiometer and cycles the burner on and off as necessary.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

Interface Boards (cont.)

8262434: These interface boards are used in HD fryers equipped with electronic ignition and constant pilot.



INTERFACE BOARD P/N [8262434](#)
Used on fryers equipped with electronic ignition and constant pilot.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS CHAPTER 1: SERVICE PROCEDURES

Interface Boards (cont.)

FREQUENTLY USED TEST POINTS FOR HIGH EFFICIENCY DECATHLON (HD) FRYERS 106-6669 INTERFACE BOARD			
Test	Meter Setting	Pins	Test Results
12VAC Power to Controller	50 VAC Scale	1 and 3 on J3	12-18
12VDC Power to Right BL Relay	50 VDC Scale	4 on J2 and 5 on J2	12-18
12VDC Power to Left BL Relay	50 VDC Scale	7 on J1 and 5 on J2	12-18
24VAC Power to High-Limit	50 VAC Scale	6 on J2 and GROUND	22-28
24VAC Power	50 VAC Scale	2 on J2 and GROUND	22-28
24VAC Power To 24VAC Gas Valve	50 VAC Scale	7 on J2 and GROUND	22-28
Probe Resistance*	R x 1000 Ohms	10 and 11 on J2	**
* Disconnect 15-pin harness from controller before testing probe circuit.			
** See Probe Resistance Chart at the end of this chapter.			

HIGH EFFICIENCY DECATHLON (HD) FRYER LED DIAGNOSTIC LIGHTS (1066669 INTERFACE BOARD)	
CMP	Indicates power from 12V transformer.
24V	Indicates power from 24V transformer.
HI	Indicates output (closed) from latch relay (K4).
HT	Indicates output from heat relay (K3).
AL	Indicates output (open) from latch relay (K4).

The board contains four relays. K3 is the heat relay and K4 is the latch relay. K1 and K2 are only used in "dual" or "split" pot applications.

NOTE: *On factory-original units not equipped with basket lifts and on service interface boards, the board will have no basket lift relays installed.*

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

Thermostats

Different types of thermostats are used in High Efficiency Decathlon Series gas fryers, depending on fryer configuration.

Fryers equipped with a *Thermatron* use a dial to adjust temperature. In this configuration, the probe resistance varies inversely with the temperature. *As the temperature rises, resistance decreases at a non-linear rate.* A chart is located at the end of this chapter.

Fryers equipped with controller controls have a *temperature probe*. In this configuration, the probe resistance varies directly with the temperature. *As the temperature rises, resistance increases at a rate of approximately 2 ohms for every 1°F (approximately 3.7 ohms for every 1°C).* Circuitry in the controller monitors the probe resistance and controls burner firing when the resistance exceeds or falls below programmed temperatures (setpoints). The temperatures are programmed by means of a keypad on the face of the controller.

All HD Series gas fryers are equipped with a *high-limit thermostat*. In the event that the fryer fails to control the oil temperature, the high-limit thermostat prevents the fryer from overheating to flash point. The high-limit thermostat acts as a normally closed power switch that opens when exposed to temperatures above 450°F/232°C.

1.2 Accessing Fryers for Service

 **DANGER**

Moving a fryer filled with cooking oil may cause spilling or splattering of the hot liquid. Follow the draining instructions included with the fryer before attempting to relocate a fryer for servicing.

1. Shut off the gas supply to the unit. Unplug the power cords. Remove any attached restraining devices.
2. Disconnect the unit from the gas supply.
3. Relocate the fryer for service accessibility.
4. After servicing is complete, reconnect the unit to the gas supply, reattach restraining devices, and plug in the electrical cords.

 **DANGER**

No structural material on the fryer should be altered or removed to accommodate placement of the fryer under a hood. Questions? Call the Frymaster Dean Service Hotline at 1-800-551-8633.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

Restraints

Once the fryer has been positioned at the frying station, use a carpenter's level placed across the top of the frypot to verify that the unit is level, both side-to-side and front-to-back.

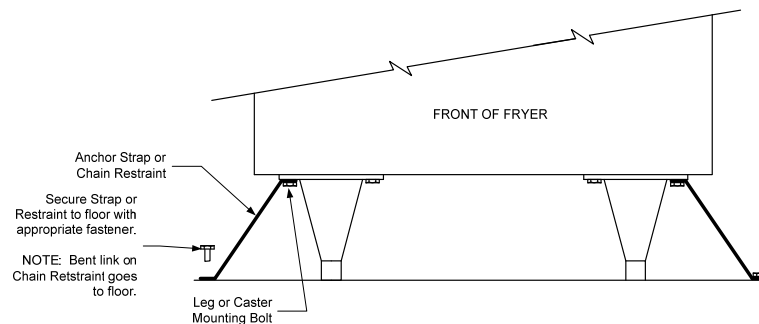
To level fryers equipped with legs, the bottom of the legs can be screwed out up to one inch for leveling. Legs should also be adjusted so that the fryer(s) are at the proper height in the frying station.

For fryers equipped with casters, there are no built-in leveling devices. The floor where the fryers are installed must be level.

When the fryer is leveled in its final position, install the restraints provided with the unit to limit its movement so that it does not depend on or transmit stress to the electrical conduit or connection. Install the restraints in accordance with the provided instructions (see illustration below). If the restraints are disconnected for service or other reasons, they must be reconnected before the fryer is used.

DANGER

Adequate means must be provided to limit the movement of this appliance without depending on or transmitting stress to electrical conduits or gas supply line. A restraint kit is provided with the fryer. If the restraint kit is missing contact your local Frymaster Factory Authorized Service Center (FASC) for part number 826-0900.



NOTE: If you need to relocate a fryer installed with legs, remove all weight from each leg before moving. If a leg becomes damaged, contact your service agent for immediate repair or replacement.

DANGER

Hot oil can cause severe burns. Avoid contact. Under all circumstances, oil must be removed from the fryer before attempting to move it to avoid oil spills, falls, and severe burns. This fryer may tip and cause personal injury if not secured in a stationary position.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.3 Cleaning the Gas Valve Vent Tube (if applicable)

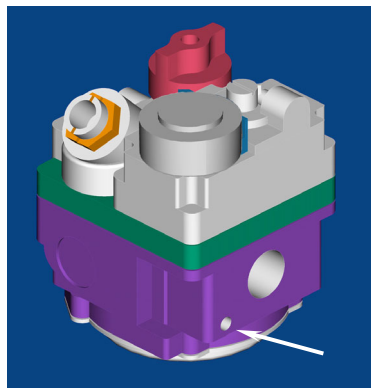
1. Set the fryer power switch and the gas valve to the OFF position.
2. Carefully unscrew the vent tube from the gas valve. **NOTE:** The vent tube may be straightened for ease in removal.
3. Pass a piece of wire through the tube to remove any obstruction. Remove the wire and blow through the tube to ensure it is clear.
4. Reinstall tube and bend so that the opening is pointing downward.

1.4 Adjusting Burner Manifold Gas Pressure

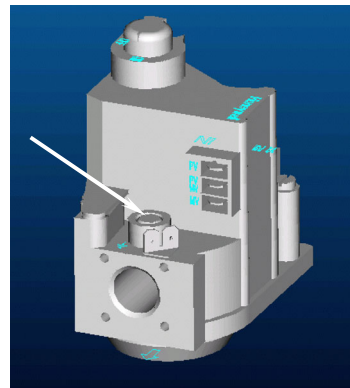


WARNING
This task should be performed by qualified service personnel only.

1. Ensure that the gas valve knob is in the OFF position.
2. Remove the pressure tap plug from the gas valve (see arrows in photos below for location).



Pilot Ignition Valve
(Line Voltage)



Electronic
Ignition Valve

3. Insert the manometer fitting into the pressure tap hole.
4. Place the gas valve in the ON position then place the fryer power switch in the ON position. When the burner lights and continues to burn, check the gas pressure reading against the table on page 1-1.
5. To adjust burner gas pressure, remove the cap from the gas valve regulator and adjust to correct pressure.
6. Place the fryer power switch and the gas valve in the OFF position. Remove the manometer fitting from the pressure tap hole and reinstall the pressure tap plug.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.5 Adjusting the Pilot Flame

1.5.1 Main Pilot

1. Remove the cap from the pilot adjustment screw hole on the gas valve.
2. Using a small, flat-tipped screwdriver, turn the pilot adjusting screw counterclockwise to increase length of flame or clockwise to decrease length of flame. Adjust to obtain a flame from 1 inch to 1½ inches long.
3. Reinstall the pilot adjustment screw cap.

1.5.2 Trailing Pilot

Unlike older Decathlon units, current production HD units do not have a trailing pilot adjustment.

1.6 Calibrating the Thermatron

1. Fill the frypot to the lower OIL-LEVEL line with cooking oil. If solid shortening is used, it must be melted before starting the calibration procedure.
2. Ensure the fryer ON/OFF switch is in the OFF position and light the pilot.
3. Place the fryer ON/OFF switch in the ON position. Set the potentiometer dial to 325°F (162°C).
4. Allow the oil to equalize at setpoint temperature. This is evident when the burners have cycled on and off several times.
5. Insert a thermometer or pyrometer into the frypot within 3 inches of the probe bulb. Ensure the tip of the thermometer/pyrometer does not touch the frypot burner tube.
6. If the temperature on the thermometer is higher or lower than 325°F (162°C), the knob is out of calibration.
7. Calibrate the knob by first loosening the setscrews and slowly turning the knob to match the temperature reading of the thermometer. Tighten the setscrews, ensuring the knob does not move on the shaft during tightening.
8. Allow burners to cycle on and off several times, then recheck oil temperature as described in Step 5. If the thermostat dial temperature matches the thermometer temperature, the thermostat is calibrated. If not, repeat Step 7.

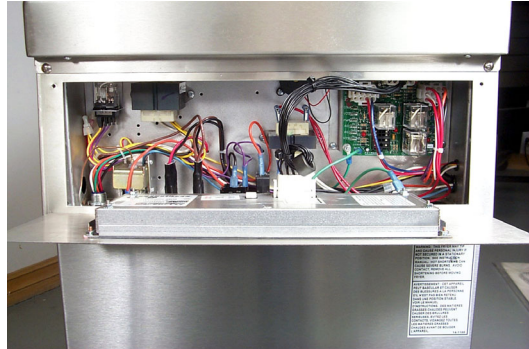
HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.7 Replacing Fryer Components

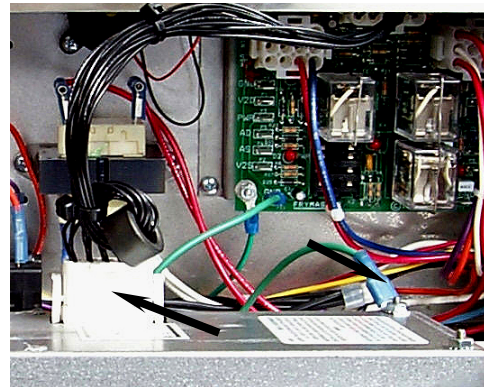
1.7.1 Replacing the Controller

1. Disconnect the fryer from the electrical supply.
2. Unscrew the two controller panel screws. The controller panel is hinged at the bottom and will swing open from the top.



Computer panel in “down” position.

3. Unplug the fryer wiring harness and ground wire from the back of the controller.
4. Remove the controller by lifting it from the hinge slots in the fryer control panel frame.
5. Reverse the procedure to install a new controller.



Disconnect the 15-pin connector and ground wire (arrows) from the computer.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 1: SERVICE PROCEDURES

1.7.2 Replacing Control Box Components including Ignition Module, Interface Board, Transformers, etc.

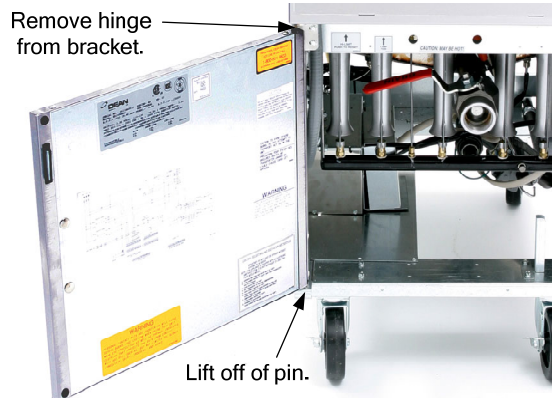
1. Disconnect the fryer from the electrical supply.
2. Unscrew the two controller panel screws. The controller panel is hinged at the bottom and will swing open from the top.
3. Locate the component to replace.
4. Mark the location of the wires to facilitate easy reassembly.
5. Disconnect the wires.
6. Remove the screws attaching the component to the control box.
7. Reverse steps to complete the replacement and return the fryer to service.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

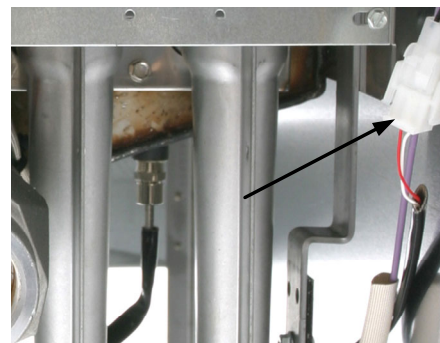
1.7.3 Replacing the Temperature Probe; Controller-equipped Fryers

1. Disconnect the fryer from the electrical supply.
2. Drain cooking oil from the frypot. Allow the frypot to cool completely before proceeding.
3. Remove fryer door for easier access to the temperature probe. First, remove top hinge from bracket. Then, lift door off bottom hinge pin.



Remove the fryer door for easier access to the temperature probe.

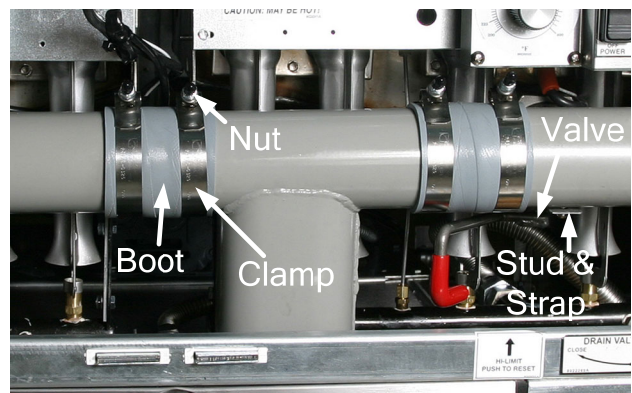
4. Disconnect the probe harness connector (arrow). Use a pin pusher to remove plug from probe wires (probe side only). Retain the plug for re-assembly on new probe.



Disconnect the two-pin probe harness connector (arrow).

5. Remove the drain manifold. Only the drain tubes directly blocking the frypot being replaced require removal.

- Remove the nuts holding the drain valve strap onto the drain tube stud.
- Disconnect the Teflon tube at the back of the center dump tube piece and any other components attached to the tubes, including drain flush flexlines.
- Loosen the nut on each clamp holding the rubber boots and drain sections together.
- Carefully remove the tubes by pulling down at an angle, straight out of the drain valves, and working them gently out of the rubber boots. Set aside for reassembly.



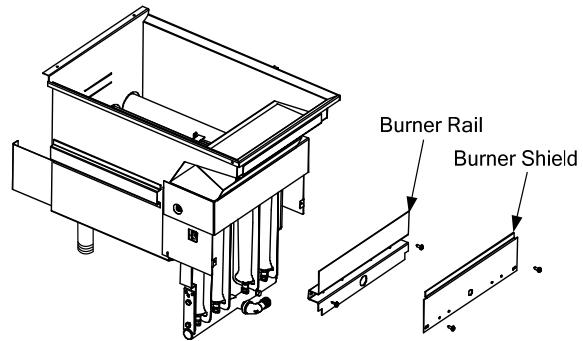
Remove the nuts, Teflon tube (not pictured), clamp, boot, and drain tubes.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

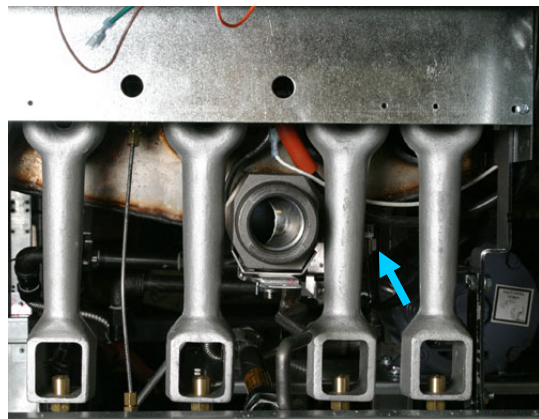
1.7.3 Replacing the Temperature Probe; Controller-equipped Fryers (cont.)

6. Remove the burner shield by loosening the screw on each end.
7. Remove the burner rail by loosening the screw on each end. The burner rail secures the burners in the burner manifold. Be careful to ensure that the burners do not fall out of the gas manifold, as they might be damaged and dented.



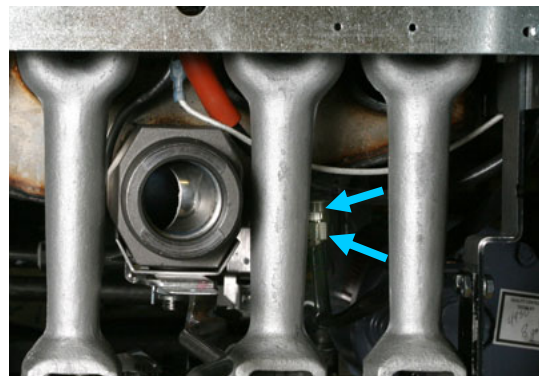
Remove the burner rail and burner shield.

8. Remove the burners to gain access to the temperature probe and to ease frypot removal. Lean each burner slightly away from the frypot to clear the burner seal (metal box attached to frypot). Then, pull the burner up and off of the orifice. The burners should be easy to remove and do not require force.



Remove burners to gain access to temperature probe (arrow).

9. Loosen and unscrew the compression nut and the pass-through nut completely from the frypot. Proceed to the next step before removing the probe from the frypot.



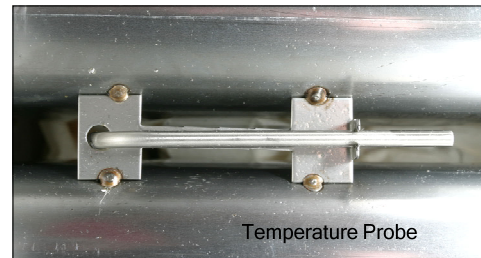
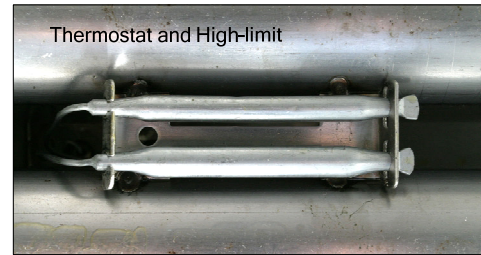
Loosen and unscrew completely the compression nut (bottom arrow), then the pass-through nut (top arrow).

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

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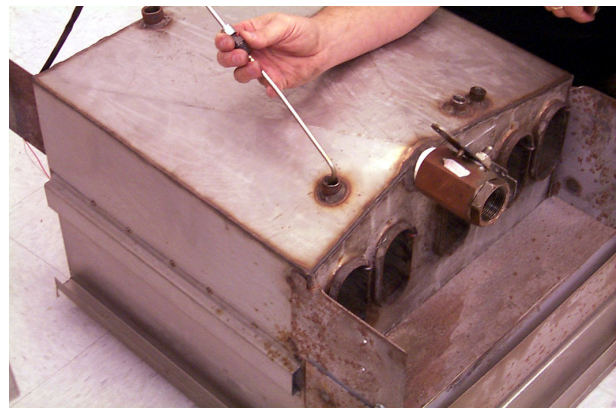
1.7.3 Replacing the Temperature Probe; Controller-equipped Fryers (cont.)

10. Locate the temperature probe inside the frypot.



Locate the temperature probe.

11. The temperature probe can be removed through the bottom of the frypot as follows: Ensure the two-pin connector has been removed from the probe wiring harness (step 4, above). Carefully bend the two tabs (one forward and toward the back) so the probe will clear the tabs. Remove the harness insulation. The probe can be pulled through the frypot from the bottom (complete step 7, above, prior to removing probe).



12. Carefully remove the probe from the frypot. As the probe is removed, tilt the probe at an angle to facilitate removal (curved probes only).

After removing the probe mounting hardware, the temperature probe can be removed through the bottom of the frypot. Retain the mounting hardware for reassembly.

13. Follow the steps on the next page to install the new temperature probe.

IMPORTANT: When installing new probe, use Loctite PST567 or equivalent pipe thread sealant on threads and ensure probe is positioned properly with the mounting hardware installed prior to tightening the compression nut. **Once tightened, the probe cannot be repositioned.**

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

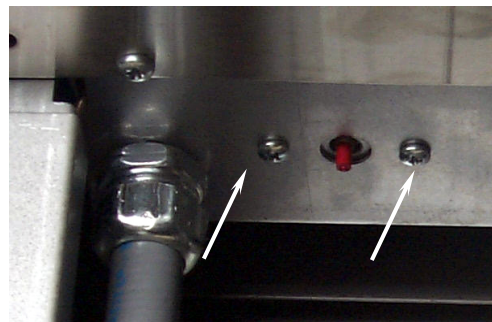
CHAPTER 1: SERVICE PROCEDURES

Installing the New Temperature Probe:

1. Feed the probe wire through the probe nipple from the top side of the frypot.
2. Loosely install the bladder nut.
3. Mount the probe into the mounting hardware. Carefully bend the two tabs back into alignment to retain probe.
4. Tighten the bladder nut.
5. Install the insulation and plug.

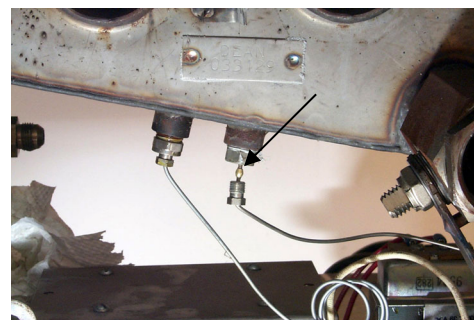
1.7.4 Replacing the High-limit Thermostat

1. Turn fryer off and drain oil from the frypot. Allow the frypot to cool completely before proceeding.
2. Perform steps 1-4 in Section 1.7.1, *Replacing the Controller*.
3. Remove fryer door for easier access to the temperature probe. First, remove top hinge from bracket. Then, lift door off bottom hinge pin.
4. Remove two screws securing the high-limit mounting-bracket. Do not disconnect wires from high-limit at this time.



Remove screws (arrows) securing high-limit to fryer.

5. Loosen and completely unscrew the compression nut, then the pass-through nut on the frypot bottom. Proceed to the next step before removing high-limit from frypot.



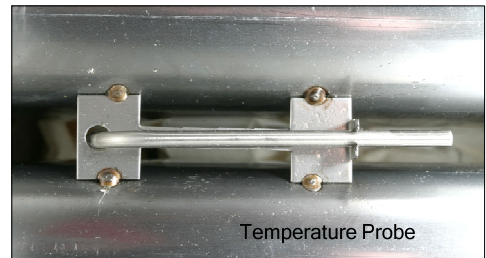
Compression nut unscrewed. Unscrew the pass-through nut (arrow).

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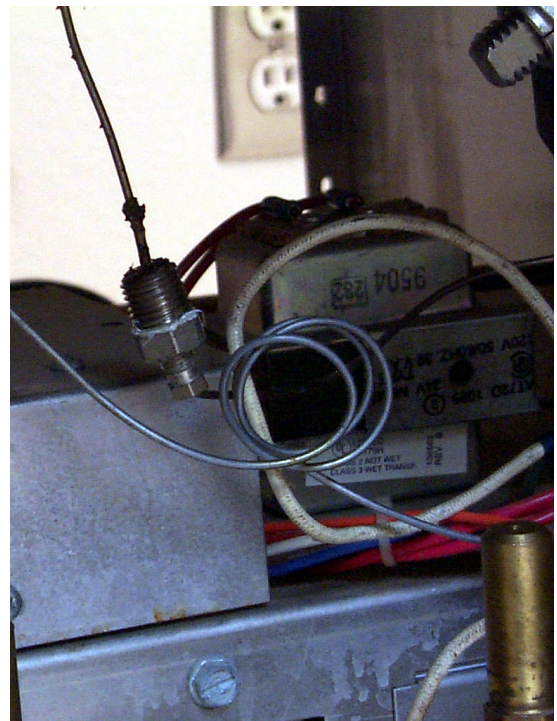
1.7.4 Replacing the High-limit Thermostat (cont.)

6. Locate the high-limit probe inside the frypot. Carefully bend the outer tab at the rear of the high limit until the high limit can slid back and out of the retaining bracket.



Locate the high-limit probe.

7. Carefully pull high-limit capillary tube and bulb out of the frypot from the bottom.



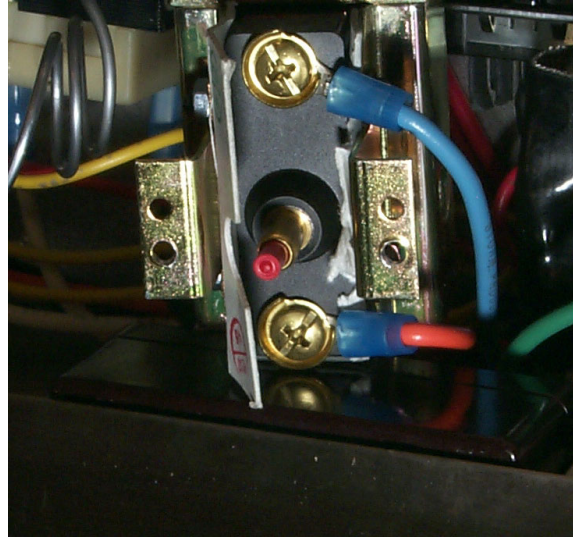
Remove high-limit capillary tube and bulb from the bottom of the frypot.

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1.7.4 Replacing the High-limit Thermostat (cont.)

8. Mark and disconnect wires at the high-limit in the component box.



Mark and disconnect high-limit wiring (arrows). Reconnect wires to the same terminals on the replacement high-limit.

9. Remove high-limit from fryer by pulling the capillary tube and bulb through the component box opening (arrow). This may require removal of the control panel frame.



10. Reverse the above steps for high-limit installation.

IMPORTANT: When installing new high-limit, ensure the capillary tube and bulb are positioned properly with tab back in alignment prior to tightening the compression nut. **Once tightened, the capillary tube cannot be repositioned.**

Component box opening (arrow).

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1.7.5 Replacing Rocker Switches

1. Disconnect the fryer from the electrical supply.
2. **If switches are located in a control box within the fryer**, remove the six screws securing the switch panel to the control box. Do not allow the switch panel to hang from the switch wiring harness or other wires.



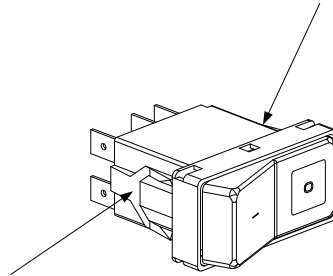
Remove the screws holding the plate in place, then depress the clips on each end to remove the switch.

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1.7.5 Replacing Rocker Switches (cont.)

3. Depress the retaining clips (see illustration below) and push the switch out of the slot. If there is a switch-guard present, retain it for installation of the replacement switch.



Depress clips on each side to remove switch from control panel.

4. Remove wires one at a time from the switch being removed and connect to the replacement switch until all wires are transferred.
5. Reverse the above steps for reassembly.

1.7.6 Replacing the Gas Valve



DANGER

Drain the frypot or remove the handle from the drain valve before proceeding further.

1. Disconnect fryer from electrical and gas supplies.
2. Disconnect the wires from the gas valve terminal block, marking each wire to facilitate reconnections. For 120VAC gas valves, disconnect the black wire from the high-limit, then remove the bobtail connecting the white wire.
3. Remove the high-limit thermostat wire from the gas valve pilot coil (all but 120 VAC valves).
4. Remove the pilot gas line fitting from the gas valve.
5. Remove the pipe union collars to the left and right of the gas valve and remove the valve.
6. Remove the pipefitting from the old gas valve and install on the replacement valve, using Loctite PST567 or equivalent pipe thread sealant on threads. Do not apply sealant to the first two pipe threads. Doing so will clog and damage the gas valve.
7. Reverse steps 1-5 to install the replacement gas valve.

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1.7.7 Replacing the Pilot Assembly

1. Remove the pilot tubing from the bottom of the pilot assembly.
2. If the pilot is an electronic ignition pilot, disconnect the ignition cable and the sense wire.
3. Remove the pilot mounting screw(s) from the pilot mounting bracket and remove the pilot.
4. Reverse the procedure to replace the pilot assembly.

NOTE: The above procedure is applicable to standing pilot, electronic ignition, and trailing pilot assemblies.

1.7.8 Adjusting the Ignitor Assembly

1. Disconnect the fryer from the electrical supply.
2. Remove the outer cover plate by removing two screws as shown in Figure 1.
3. Remove the air shutter plate if applicable by removing the four screws in the four corners as shown in Figure 2.
4. Gently bend the ignitor spark probe until the gap distance is approximately ¼" inch between the two points as shown in Figure 3.
5. Reverse steps to reassemble.

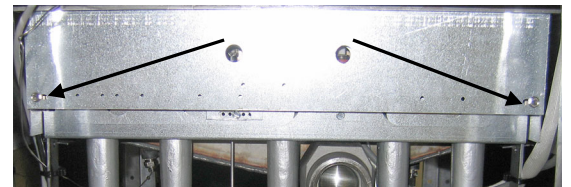


Figure 1

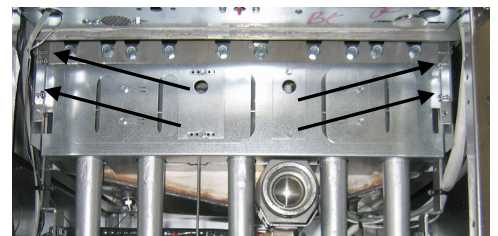


Figure 2

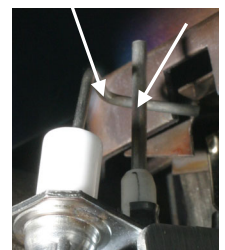


Figure 3

1.7.9 Replacing the Frypot

1. Open fryer doors and remove filter pan (if applicable). Ensure controller and all power switches are off. Drain and dispose of or store oil from all frypots prior to moving fryer.

⚠ DANGER

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.

2. Turn gas valve off, then turn gas off at supply valve or meter. Disconnect supply line from gas manifold at rear of fryer.

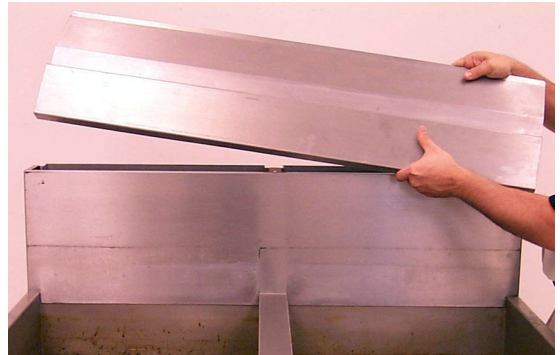
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NOTE: If restraints are installed on the fryer, disconnect restraints prior to disconnecting the gas supply line.

3. Unplug fryer from electrical supply source.
4. Remove fryer door for easier access to the temperature probe. First, remove top hinge from bracket. Then, lift door off bottom hinge pin.

5. Remove the basket hanger from the flue cap by lifting up and off of fryer. Some units may have a built-in flue deflector on the basket hanger. Units with basket lifts will require the removal of the lift arms prior to removing the basket hanger.



Removing the basket hanger from the flue cap.

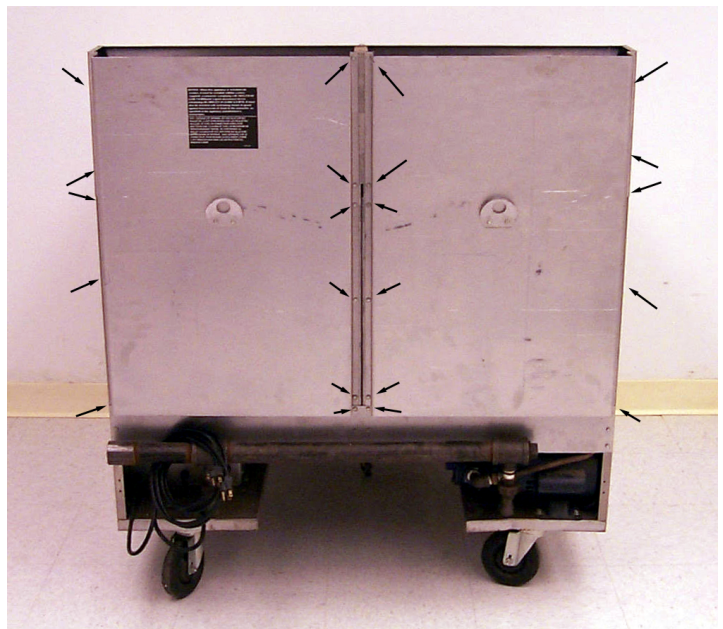
6. Remove the top cap. It is held in place by one screw on each side of the fryer. If the fryer has a controller on the front, the top cap may also be held in place by two screws on the front of each pot. FPHD65 units may have two screws on each end of the top cap.



Removing the joiner strip.

7. Remove the joiner strips on either side of the frypot. Be careful not to bend the joiner strip during removal.

8. Remove back panels of the fryer. There may be both upper and lower panels and several screws secure them. Screw location and orientation will vary according to fryer model.



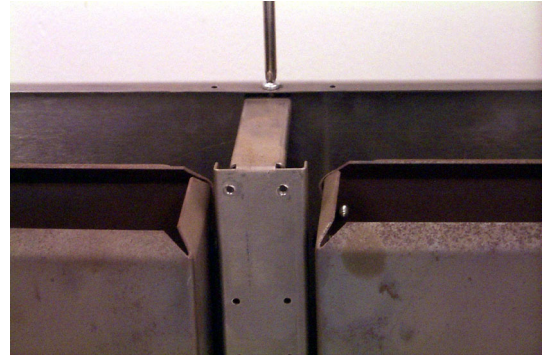
Typical screw locations on the back panel (may vary by model).

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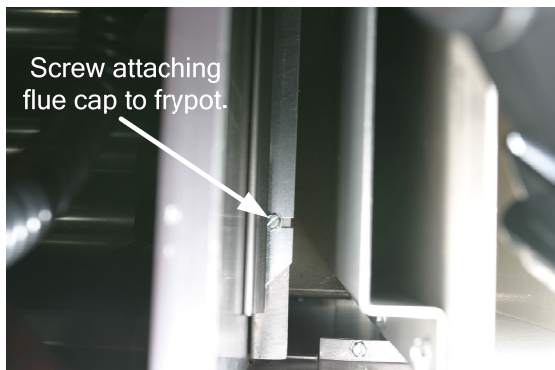
1.7.9 Replacing the Frypot (cont.)

9. Remove screw securing brace (and back panel) to the flue cap. Support the brace with hand while removing screw to prevent brace from falling away. Remove brace and set aside for reassembly.

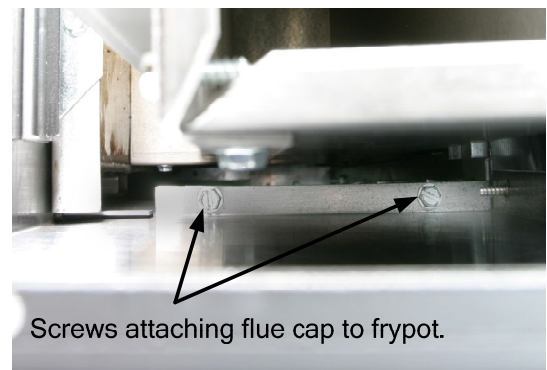


Removing brace holding back panel to flue cap.

10. Remove screws securing flue cap to frypot (access from above; a nut-driver with an extension or long screwdriver is required). Use care not to drop the screws into the flues. If this happens, the screws can be retrieved when the flue is removed (Step 12). Use a screwdriver or similar tool to free flue cap from frypots. Remove flue cap by lifting up and off of fryer.



Remove the screws (arrow) securing the flue cap to the frypot on the long edge. There will be two or three screws depending on configuration. (view from above, looking down into flue)



Remove the screws (arrows) securing the flue cap to the frypot on the short edge. There will be two screws on each end of the flue. (view from above, looking down into flue)

11. Remove gas manifold pipe for access to gas manifold shield by disconnecting at the unions. Ensure gas supply is shut off and supply line is disconnected prior to removing. Set gas manifold aside. Remove screws securing gas manifold shield. Remove shield to access oil-return plumbing components connected to the frypots.

NOTE: For units without built-in filtration skip the steps pertaining to removal and replacement of oil-return plumbing.



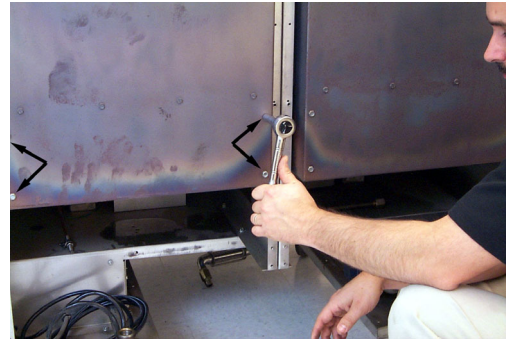
Removing gas manifold shield.

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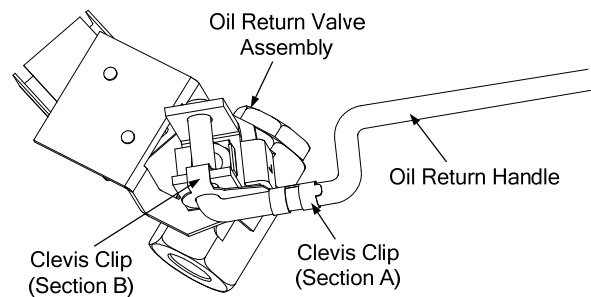
1.7.9 Replacing the Frypot (cont.)

12. Remove screws securing flue to frypot (access from above; a nut-driver with an extension or long screwdriver is required). Retrieve any screws dropped into the flue during removal of the flue cap and frypot bracket.



Removing bolts (arrows) securing flue to frypot.

13. Remove the clevis clip and oil return handle rod from the oil return valve at the rear of the fryer. Slip Section A of the clevis clip off of the oil return handle by pulling up on the rings. Slide the oil return handle out of the bracket and Section B of the clevis clip. Repeat for the drain flush handle (if applicable).



Disconnect oil-return handle from clevis clip and valve.

14. Loosen the two screws on the front of the oil return handle bracket at the front of the fryer. Remove the bracket and handle and set aside for reassembly. Repeat for the drain flush handle (if applicable).



Oil-return handle bracket and screws.

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1.7.9 Replacing the Frypot (cont.)

15. Remove the drain manifold. Only the drain tubes directly blocking the frypot being replaced require removal.

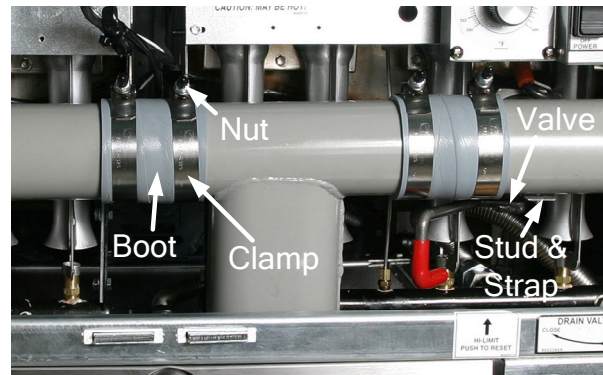
- Remove the nuts holding the drain valve strap onto the drain tube stud.
- Disconnect the Teflon tube at the back of the center dump tube piece and any other components attached to the tubes, including drain flush flexlines.
- Loosen the nut on each clamp holding the rubber boots and drain sections together.
- Carefully remove the tubes by pulling down at an angle, straight out of the drain valves, and working them gently out of the rubber boots. Set aside for reassembly.

16. Remove the nipple attaching the oil return line to the bottom of the frypot at the rear of the fryer using a wrench. This may require removal of other pieces of the oil return manifold, as needed.

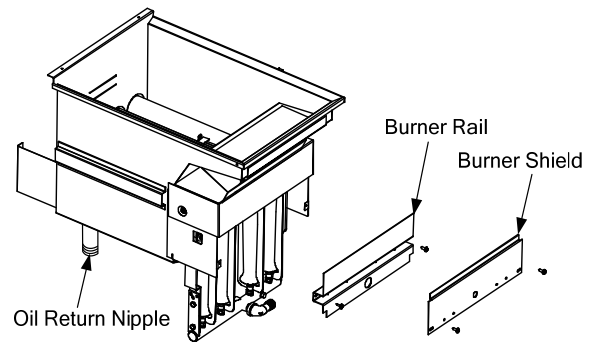
17. Remove the burner shield by loosening the screw on each end.

18. Remove the burners to gain access to the temperature probe and to ease removal. Remove one burner at a time. Loosen the two screws attaching the burner to the burner rail. Slide the burner up until the heads of the two screws reach the round key holes and lean it slightly toward from the frypot to clear the burner rail and seal (metal box attached to frypot). Then, pull the burner up and off of the orifice. The burners should be easy to remove and do not require force.

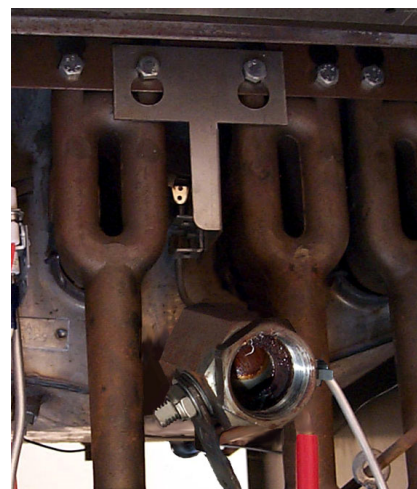
19. Remove the burner rail when all burners have been uninstalled. Loosen the screws on each end of the rail and set it aside.



Drain manifold parts.



Oil-return nipple, burner shield, and burner rail.



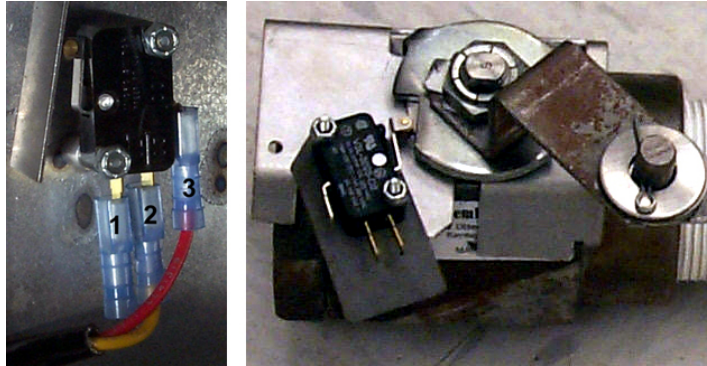
Remove drain valve handle and burners from fryer.

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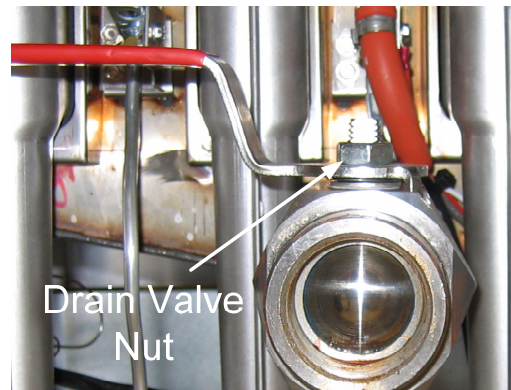
1.7.9 Replacing the Frypot (cont.)

20. If the fryer is equipped with drain-valve microswitches, mark the wires and microswitch terminals, then disconnect wires from the switch. Secure the wires to prevent damage when frypot is removed.



Left: Microswitch wires marked for removal (ensure microswitch terminals are marked the same as the wires removed). Right: Microswitch mounted to drain valve.

21. Remove the drain valve handle by loosening the drain valve nut and removing attached hardware. Depending on placement and configuration, the valve may be turned in a different direction than pictured.

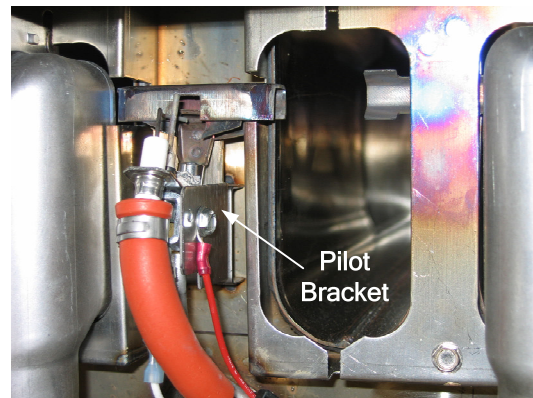


Remove the drain valve nut and attached hardware.

22. Remove the pilot assembly from the frypot.

- If trailing pilot, disconnect the pilot supply line from the trailing pilot valve on the burner manifold.

Remove the mounting screw(s) to detach the pilot assembly from the pilot bracket.



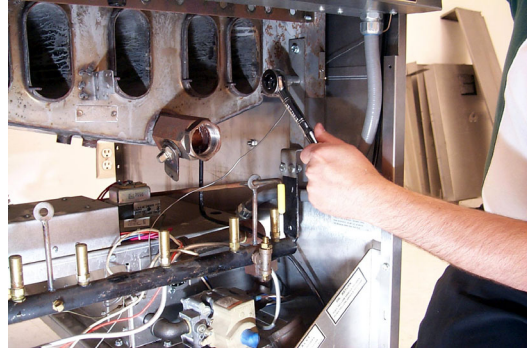
Remove the pilot assembly from the pilot bracket on the frypot.

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1.7.9 Replacing the Frypot (cont.)

23. Remove the temperature probe from frypot. (See Section 1.7.2, *Replacing the Temperature Probe: Controller-equipped Fryers*, for specific instructions.)
24. Remove the high-limit from the frypot (see Section 1.7.3, *Replacing the High-limit Thermostat*).
25. Remove bolts from brackets securing burner manifold to frypot. Leave the manifold in place.



Removing bolts (arrows) from burner manifold support brackets (both sides). Leave the burner manifold in place after removing bolts.

26. Using a sharp knife or box-cutter, cut the silicon seal around the frypot. Use care not to scratch stainless steel surfaces.



Cutting frypot seal prior to frypot removal.

27. Ensure wires and tubes will not be caught on the frypot when it is removed.

28. Remove frypot from fryer by lifting up and out.



Lifting frypot from fryer.

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1.7.9 Replacing the Frypot (cont.)

29. Position the frypot upside down on a suitable work surface.

30. Record position of the valve stem in relation to the frypot prior to removing the drain valve. If equipped, remove microswitches and mounting hardware from valve prior to removal. Using a suitable wrench, remove the drain valve from the frypot. Use Loctite PST567 sealant when installing drain valve on replacement frypot.



Removing drain valve from frypot.

31. Remove all other hardware and accessories from the frypot.

32. Reverse the above steps to install the replacement frypot.

33. Add a bead of silicon around the edges of the new frypot, sealing the seam where the frypot and the cabinet meet. Only do this when the frypot is completely installed.

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1.8 Troubleshooting and Problem Isolation

Because it is not feasible to include every issue that might occur, this section is intended to provide technicians with a general knowledge of the broad problem categories associated with this equipment and the probable causes of each. With this knowledge, the technician should be able to isolate and correct any problem encountered.

You are likely to encounter problems in these broad categories:

1. ignition failure,
2. improper burner function,
3. improper temperature control,
4. improper controller function,
5. improper filtration function,
6. frypot leakage, and
7. basket lift malfunction.

The probable causes of each category are discussed in the following sections. Troubleshooting guides are included in Section 1.9 to assist in identifying some of the more common problems.

1.8.1 Ignition Failure

Ignition failure occurs when the ignition module fails to sense a flame within the 60-second time delay period and locks out. Turn the fryer off, locate and fix the problem, then turn fryer back on to clear the module lock.

There are three primary reasons for ignition failure, listed in order of probability:

1. The gas and electrical power supplies,
2. The electronic circuits, or
3. The gas valve.

The Gas and Electrical Power Supplies

The main indicators that the gas or electrical power supply is the cause of ignition failure are as follows: an entire battery of fryers fails to light, and/or there are no indicator lights illuminated on the fryer experiencing ignition failure. Verify that the quick disconnect hose is properly connected, the fryer is plugged in, the main gas supply valve is open, and the circuit breaker for the fryer electrical supply is not tripped.

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1.8.1 Ignition Failure (cont.)

The Electronic Circuits

If gas and electrical power are supplied to the fryer, the next most likely cause of ignition failure is a problem in the 24 VAC circuit of fryers equipped with electronic ignition systems, or in the pilot system for those without electronic ignition. If the fryer is equipped with a SUFF/UFF filtration system, verify that the drain valve is fully closed. (The valve is equipped with a microswitch that must be closed for power to reach the gas valve. The valve handle can appear to be closed when the microswitch is open.) If the valve is fully closed, or the fryer does not have a filtration system, refer to the troubleshooting guides in this chapter.

The Gas Valve

If the problem is not in the 24 VAC circuit or pilot system, it is most likely in the gas valve. Before replacing the gas valve, refer to the troubleshooting guides in this chapter.

1.8.2 Improper Burner Function

In these instances, the burner ignites but exhibits abnormal characteristics, such as *popping*, incomplete lighting of the burner, fluctuating flame intensity, and flames “rolling” out of the fryer.

Popping indicates delayed ignition. In most cases, the main gas valve is opening, but the burner is not immediately lighting. When ignition does take place, excess gas ignites rapidly rather than smoothly.

The primary causes of popping are:

1. low or fluctuating gas pressure,
2. misdirected or weak pilot flame,
3. clogged burner orifices,
4. clogged burners,
5. inadequate make-up air,
6. heat damage to the controller or ignition module,
7. an out-of-adjustment igniter or broken ignition wire,
8. a defective ignition module,
9. missing or misaligned burners,
10. clogged vent tube (causing incorrect gas pressure), or
11. make-up air is blowing down the flue.

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1.8.2 Improper Burner Function (cont.)

If popping occurs only during peak operating hours, the problem may be incorrect or fluctuating gas pressure. Verify that the incoming gas pressure (pressure to the gas valve) is in accordance with the appropriate requirements listed in the Installation and Operation manual that came with the fryer, and that the pressure remains constant throughout all hours of usage. Refer to *Adjusting Burner Manifold Pressure* in Section 1.4 if burner manifold pressure is suspected of being incorrect.

If popping is consistent during all hours of operation, verify that the pilot is properly positioned above the burner orifice and that the pilot pressure is correct. Correct pilot pressure is indicated by a flame 1 to 1½" long. Also verify that igniter is properly adjusted (electrode tip 1/8" from pilot hood corner). Refer to Section 1.5 for pilot adjustment procedure.

Clogged burners or burner orifices are also likely causes of delayed ignition. Clogged burners are indicated by uneven flame or partial flame on the burner face. Clogged orifices are indicated by no flame.

Another cause of popping is an insufficient air supply or drafts that are blowing the pilot flame away from the burner. Check for "negative pressure" conditions in the kitchen area. If air is flowing into the kitchen area, this indicates that more air is being exhausted than is being replenished and the burners may be starved for air.

If the fryer's gas and air supplies are okay, the problem most likely is with one of the electrical components. Examine the ignition module for signs of melting, distortion, or discoloration due to excessive heat build-up in the fryer. Also, examine the controller for the same conditions. This condition usually indicates improper flue performance. A melted or distorted ignition module is automatically suspect and should be replaced, but unless the condition causing excessive heat in the fryer is corrected, the problem is likely to recur.

Next, ensure the ignition wire is tightly connected at both ends and examine it for obvious signs of damage. Again, if damage is due to excessive heat in the fryer, that problem must also be corrected.

Check for proper operation by disconnecting the wire from the igniter, inserting the tip of a screwdriver into the terminal, and holding it near the frame of the fryer as the power switch is placed in the "ON" position. A strong, blue spark should be generated for at least 60 seconds.



MAKE SURE YOU ARE HOLDING THE INSULATED HANDLE OF THE SCREWDRIVER AND NOT THE BLADE. THE SPARKING CHARGE IS APPROXIMATELY 25,000 VOLTS.

Ensure the gap setting of the igniter is correct (electrode tip 1/8" from pilot hood corner).

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1.8.2 Improper Burner Function (cont.)

Burners lighting on the left side only may be caused by a trailing pilot problem (four- and five-tube frypots) or improper burner manifold pressure.

Fluctuating flame intensity is normally caused by either improper or fluctuating incoming gas pressure, but may also be the result of variations in the kitchen atmosphere. Verify incoming gas pressure in the same way as for "popping," discussed in the preceding paragraphs. Variations in the kitchen atmosphere are usually caused by air conditioning and/or ventilation systems starting and stopping during the day. As air conditioning/ventilation systems start and stop, the pressure in the kitchen may change from positive or neutral to negative, or vice versa. Changes in airflow patterns may affect flame intensity.

Flames "rolling" out of the fryer are usually an indication of negative pressure in the kitchen and make up air blowing down the flue. Air is being sucked out of the fryer enclosure and the flames are literally following the air. If negative pressure is not the cause, check for high burner-manifold gas pressure in accordance with the procedures in Section 1.4. An obstructed flue, which prevents the fryer from properly exhausting, may also be the cause.

Excessively noisy burners may indicate that the burner gas pressure is too low, the tube diffusers are defective or burned out, or it may simply be that the gas valve vent-tube is blocked (if applicable). If the gas pressure is correct, the tube diffusers are intact and in good condition, and the vent-tube is unobstructed (if applicable), the gas valve regulator is probably defective.

1.8.3 Improper Temperature Control

Temperature control is a function of several interrelated components, including the melt cycle. Each must operate correctly. The principal component is the temperature probe. Depending upon the specific configuration of the fryer, other components may include the interface board, the controller/controller itself, and the ignition module.

Improper temperature control problems can be categorized into melt cycle problems and failure to control at setpoint.

In fryers equipped with a Thermatron, the problem will be with the thermostat. Possible causes are that the thermostat is out of calibration or defective. Refer to Section 1.6 for instructions on calibrating the thermostat.

In fryers equipped with controllers, the problem may be with the temperature probe, the interface board, or the controller. Refer to the troubleshooting guides in this chapter.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.8.4 Improper Controller Function

Sensitivity or "Stretch Time." Sensitivity—or stretch time—is a programmable feature that increases the cook time countdown based on variations in the oil temperature from the setpoint (e.g., when cold product is dropped into the oil, causing the oil temperature to drop).

The sensitivity for each product button has 10 settings (0 through 9). A "0" sensitivity setting will disable the feature (no change in cooking time), while a nine will provide the highest sensitivity or the most change. The correct sensitivity for any product is based on the product type, its density, the setpoint temperature, and the customer's own requirements.

Common Controller Complaints. Most problems concerning controllers have to do with programming them. There are four common complaints. The complaints, their causes, and corrective actions are as follows for the Dean Compu-Fry controller:

1. Fryer constantly displays "**HI**".

Cause: Setpoint incorrect or missing.

Corrective Action: Press 1 6 5 0, enter the correct setpoint using keypad, then press and then this to lock in the setpoint.

2. Temperature is displayed in Celsius.

Cause: Controller is programmed to display in Celsius.

Corrective Action: Press 1 6 5 8.

3. Temperature is constantly displayed.

Cause: Controller is programmed for constant temperature display.

Corrective Action: Press 1 6 5 L.

4. Controller times down too slowly or too quickly.

Cause: Controller is compensating for oil temperature via the sensitivity setting.

Corrective Action: Reprogram sensitivity setting for each product in accordance with programming instructions in the Compu-Fry Operation and Programming manual, P/N 819-5865.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.8.5 Improper Filtration Function

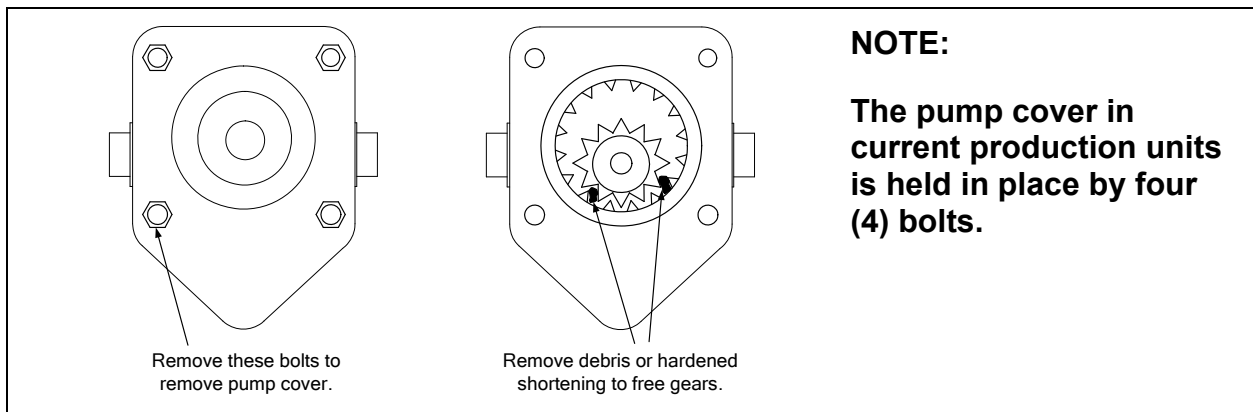
The majority of filtration problems arise from operator error. One of the most common errors is placing the filter paper on the bottom of the filter pan rather than over the filter screen. Anytime the pump is running, but no oil is being filtered, check the installation and size of the filter paper. Verify that the O-rings on the slip-connection are in good condition. Missing or worn O-rings allow the pump to suck air, decreasing its efficiency.

If the pump motor overheats, the thermal overload will trip and the motor will not start until it is reset. If the pump motor does not start, press the red reset switch located on the rear of the motor. Also, reset the filter circuit breaker located under the fryer control panel. If the pump then starts, something caused the motor to overheat. The pump most likely overheated for one of the following reasons:

- Shortening was solidified in the pan or filter lines.
- Multiple frypots were filtered one-after-another. Allow the pump to cool for 30 minutes before using again.
- The operator attempted to filter unheated oil. Cold oil is thick and will cause the pump motor to work harder and overheat.

If the motor runs, but the pump does not, the pump is blocked. Incorrectly sized or installed paper allows food particles and sediment to pass through the filter pan and into the pump. When sediment enters the pump, the gears bind and cause the motor to overheat, tripping the thermal overload. Solidified shortening in the pump will produce the same result. A pump seized by debris or hard shortening must be disassembled, cleaned, and reassembled in the following manner:

1. Disconnect power to the filter system.
2. Remove the front cover of the pump to access the gears inside, if the pump is accessible while still inside the cabinet. If the front cover is not accessible, the pump must be removed from the pump motor (disconnect input/output plumbing from the pump prior to removing it). Remove three setscrews to disengage the pump from the motor.
3. Prior to reassembly, the inside housing must be clean and free of any sediment or debris. If not, the gears will bind again after reassembly.



HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.8.5 Improper Filtration Function (cont.)

Incorrectly sized or installed paper will allow food particles and sediment to pass through and clog the suction tube on the bottom of the filter carriage. Particles large enough to block the suction tube may indicate that the crumb tray is not being used.

Pan blockage can also occur if shortening is left in the pan and allowed to solidify. Heater strips (if equipped) on the oil return plumbing are designed to prevent solidification of shortening left in the plumbing. Heater strips will not melt or prevent solidification of shortening in the pan.

Remove blockage by forcing it out with an auger or drain snake. DO NOT use compressed air or other pressurized gases to force out the blockage.

The SUFF/UFF filtration systems use microswitches attached to handles for each vat. They are wired in parallel and provide the 24 VAC required to activate the pump relay coil when the handles are moved to the ON position. The activated pump relay coil pulls the pump motor switch in, supplying power to the pump motor.

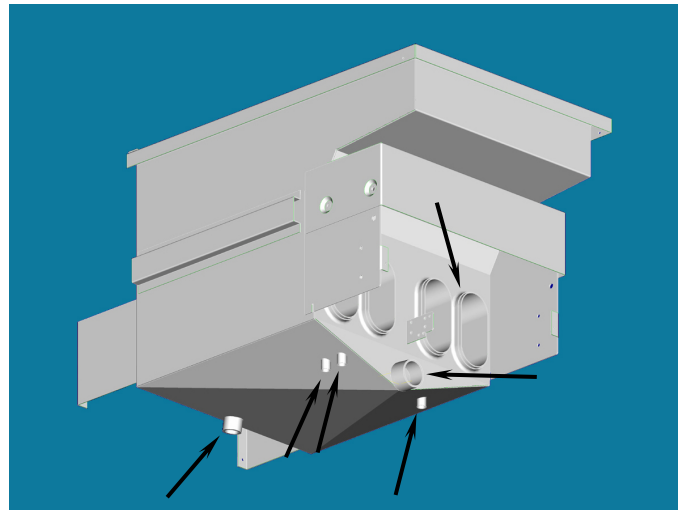
Filter systems equipped with oil-return heater tape are wired into the 120 VAC source, and remain energized as long as the unit is plugged in and power remains constant. Heater tape should receive constant power all day and all night; it should not be connected to a power supply that is turned off at night.

1.8.6 Frypot Leakage

Frypot leaks are almost always due to improperly sealed high-limit, thermostats/temperature probe and drain fittings. When installed or replaced, each of these components must be sealed with Loctite PST567 sealant or equivalent to prevent leakage. In very rare cases, a leak may develop along one of the welded edges of the frypot, or where the tube is welded to the frypot. When this occurs, the frypot must be replaced.

If the sides or ends of the frypot are coated with oil, the most likely cause is spillage over the top of the frypot rather than leakage.

Frypot locations (indicated by arrows) where potential leaks could occur.



HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.8.7 Improper Basket Lift Function

Bell-Crank Basket Lifts

Most High Efficiency Decathlon Series gas fryers are equipped with a **bell-crank style basket lift**. A cam and a bell crank are connected to the basket lift arm by a flat metal link. The cam is attached to a drive motor. The motor rotates the cam, raising or lowering the lift arm linked to the bell crank. A roller-activated microswitch is used to limit travel. When the roller in the microswitch is in contact with the cam, the motor is energized. As the cam rotates, the roller loses contact with the cam and the motor power circuit is broken, de-energizing the motor.

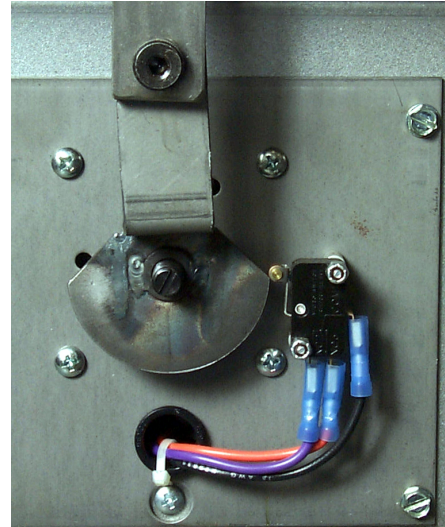
Timing circuitry in the controller initiates and stops basket lift operation. When the product button is pressed, the timing circuitry activates a coil in the basket lift relay to supply power to the motor. The microswitch stops the motor at the lift's lower travel limit and the switch contacts are reversed. At the end of the programmed cooking time, the timing circuit activates the coil once more and the lift rises until the microswitch again loses contact with the cam, opening the motor power circuit and stopping the motor.

Problems with the bell-crank basket lift system can be grouped into two categories:

- binds and jams or
- motor and gear wear.

Binds and jams. Noisy, jerky, or erratic lift movement is usually due to lack of lubrication. Apply a light coat of Lubriplate or similar lightweight white grease to the connection points to correct the problem.

Motor Problems. If power is reaching the motor but the motor fails to run, the motor is burned out and must be replaced.



Back view of bell-crank basket lift.



Bell-crank basket-lift arms.

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CHAPTER 1: SERVICE PROCEDURES

1.9 Troubleshooting Guides

The following troubleshooting guides are intended to assist service technicians in quickly isolating the probable causes of equipment malfunctions by following a logical, step-by-step process.

PROBLEM	PROBABLE CAUSES	CORRECTIVE ACTION
Burner will not ignite. Light in ON/OFF switch is not illuminated.	A. ON/OFF switch is off.	A. Turn ON/OFF switch on.
ON/OFF switch is on, but the switch light is not illuminated.	A. No voltage at switch.	A. Ensure line voltage is present at the switch.
ON/OFF switch is on and the switch light is illuminated, but there is no output to gas valve.	A. Drain microswitch circuit (filter-equipped units) is open.	A. Ensure drain valve is fully closed and microswitch is functioning. Replace microswitch if defective.
	B. Voltage is present at ON/OFF switch, but continuity of the switch in ON position is not "0."	B. ON/OFF switch is defective. Replace switch with a known working switch.
	C. Continuity of thermostat is not "0" (oil temperature is at least 15°F below electronic thermostat setting).	C. Thermostat(s) is/are defective. Replace defective thermostat with a known working thermostat.
	D. Gas valve is suspect.	D. Go to "No burner flame" section.
No burner flame.	C. Gas valve is known to be good, but there is not 24 VAC (120VAC on systems so equipped) at the gas valve terminals.	D. Inspect electronic sensor (while still in frypot) for damage. Replace if bent, dented, or cracked. Inspect leads for fraying, burning, breaks, and/or kinks. If found, remove and replace thermostat(s). Remove leads from terminal block, allow oil to cool 15°F (8°C) below thermostat setting, and check continuity. If continuity is not "0," then thermostat has failed. Replace thermostat(s).
Fluctuating or erratic lighting of burner flame.	A. Incoming gas supply pressures are not within range [Natural- 6-14" W.C. (1.49-3.49 kPa); Propane- 11-14" W.C. (2.74-3.49 kPa)]	A. Inspect gas supply to fryer. Repair and/or replace faulty components (defective supply shut-off valves, incorrect piping size, etc.)
	B. Air in gas supply lines (new installation).	B. Allow unit to cycle on and off for approximately 30 minutes to force air from gas manifold and lines.
Electronic/operating thermostat will not adjust to correct temperature.	A. Electronic/operating thermostat is out of calibration.	A. Calibrate electronic/operating thermostat. Replace if calibration is not possible.

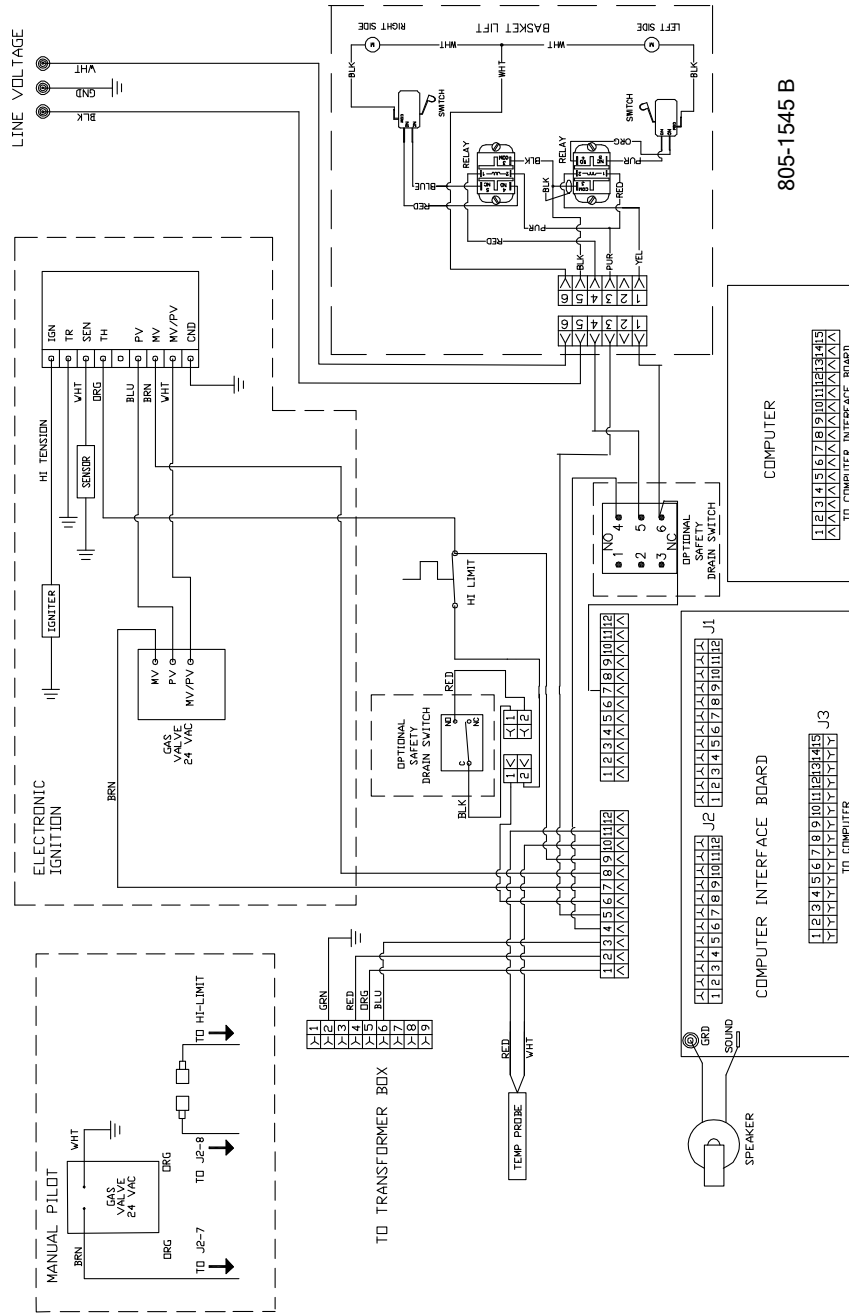
HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

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1.10 Wiring Diagrams

Note: The diagrams in this section depict wiring as of the date of manual publication. It may not reflect design changes made to the equipment after publication. Refer to the wiring diagram affixed to the unit when actually troubleshooting this equipment.

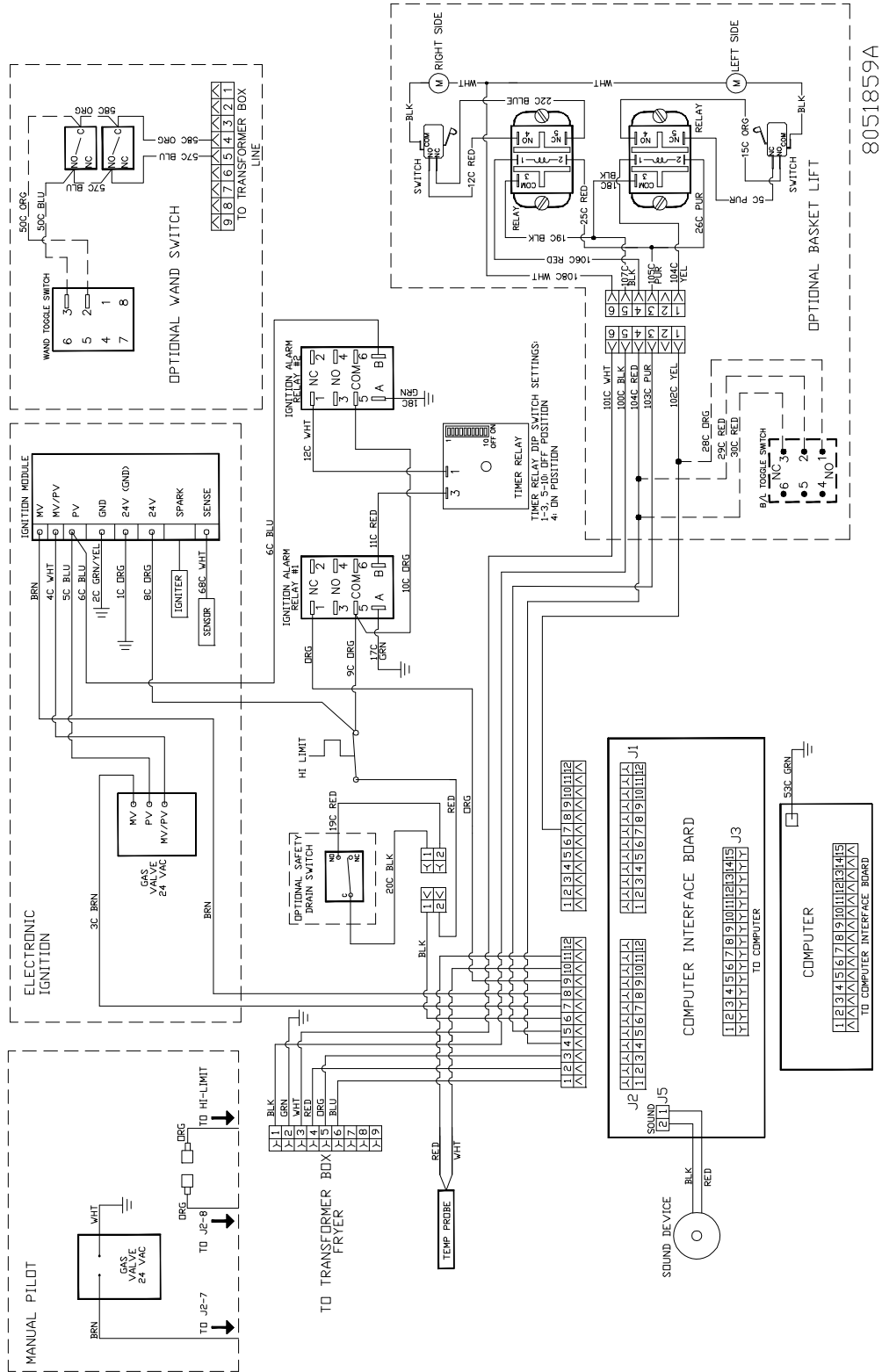
1.10.1 Controller Dean Common Cabinet



HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

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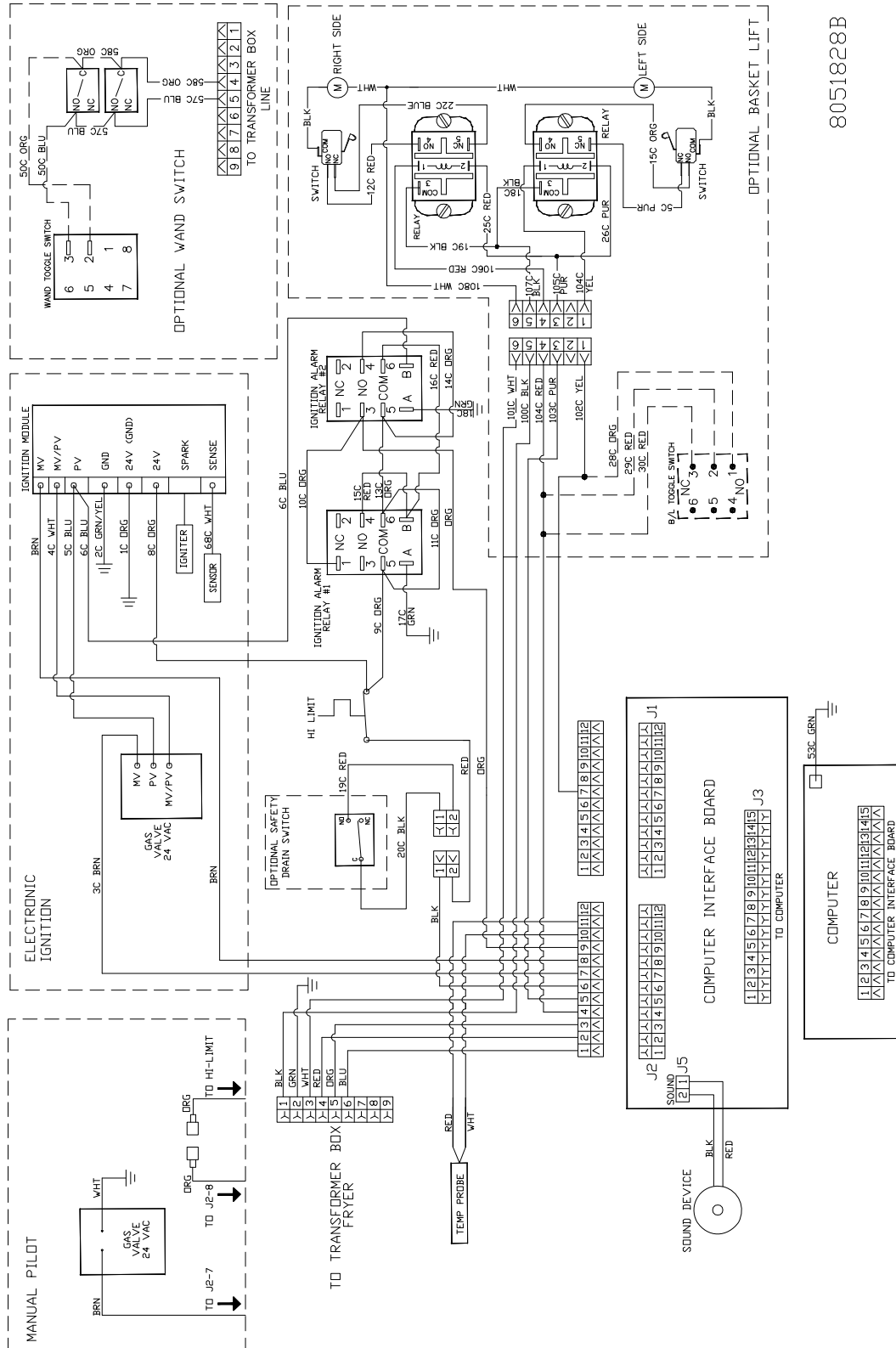
1.10.3 BK1814 Main Wiring Diagram prior after Sep. 2010



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1.10.4 BK1814 Main Wiring Diagram prior to Sep. 2010

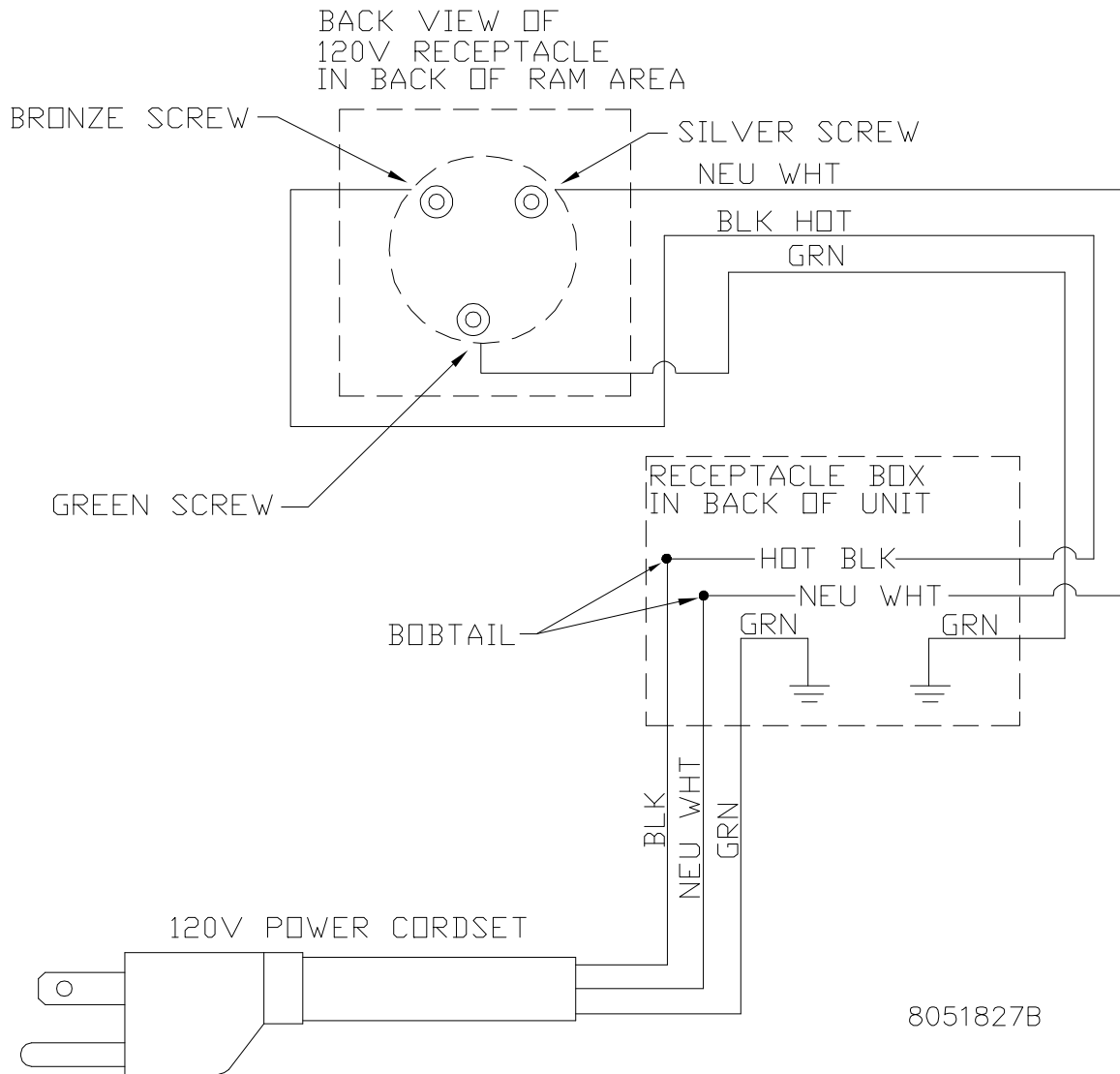


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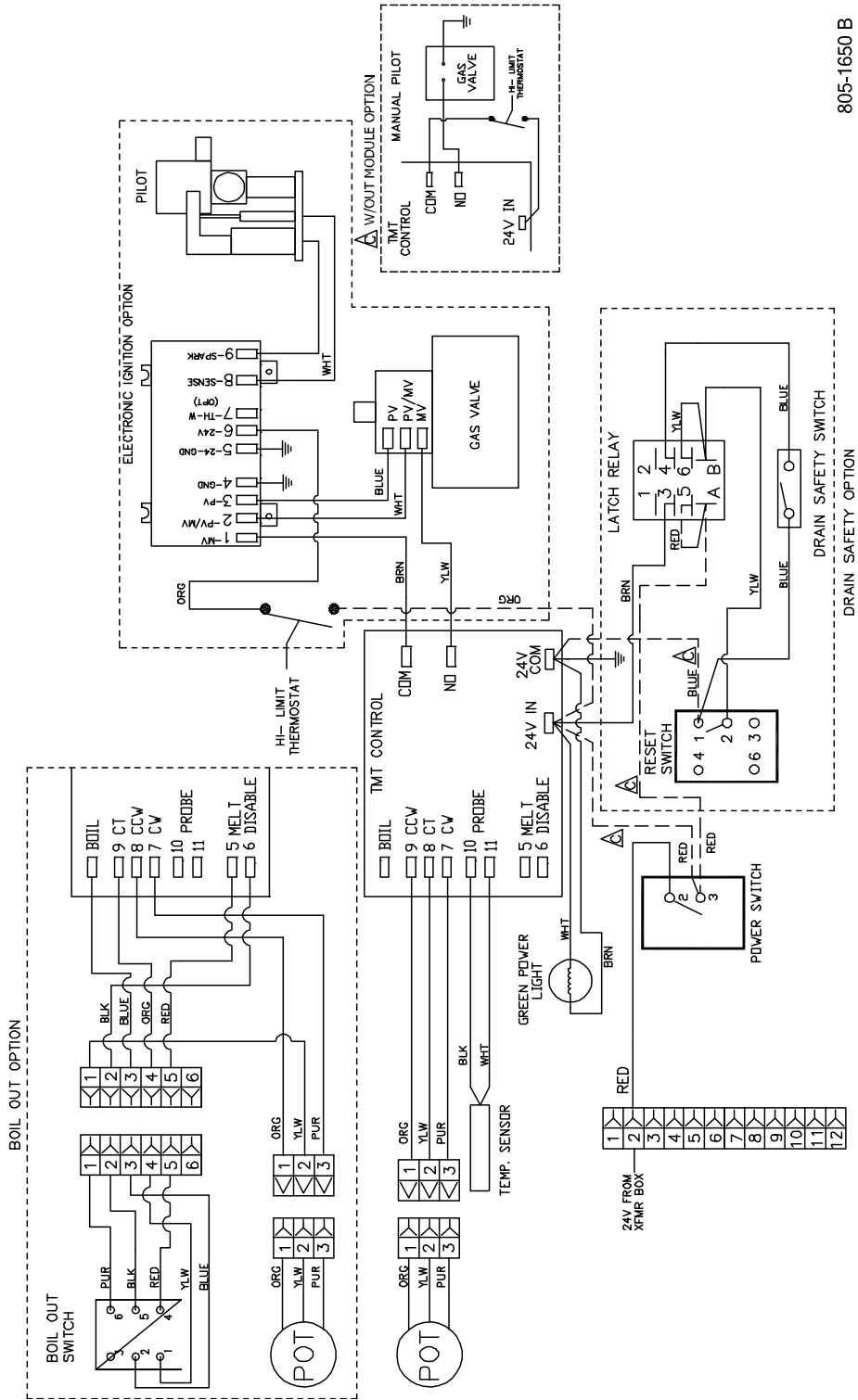
1.10.5 BK1814 RAM Wiring Diagram



HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.10.7 Thermatron Controller

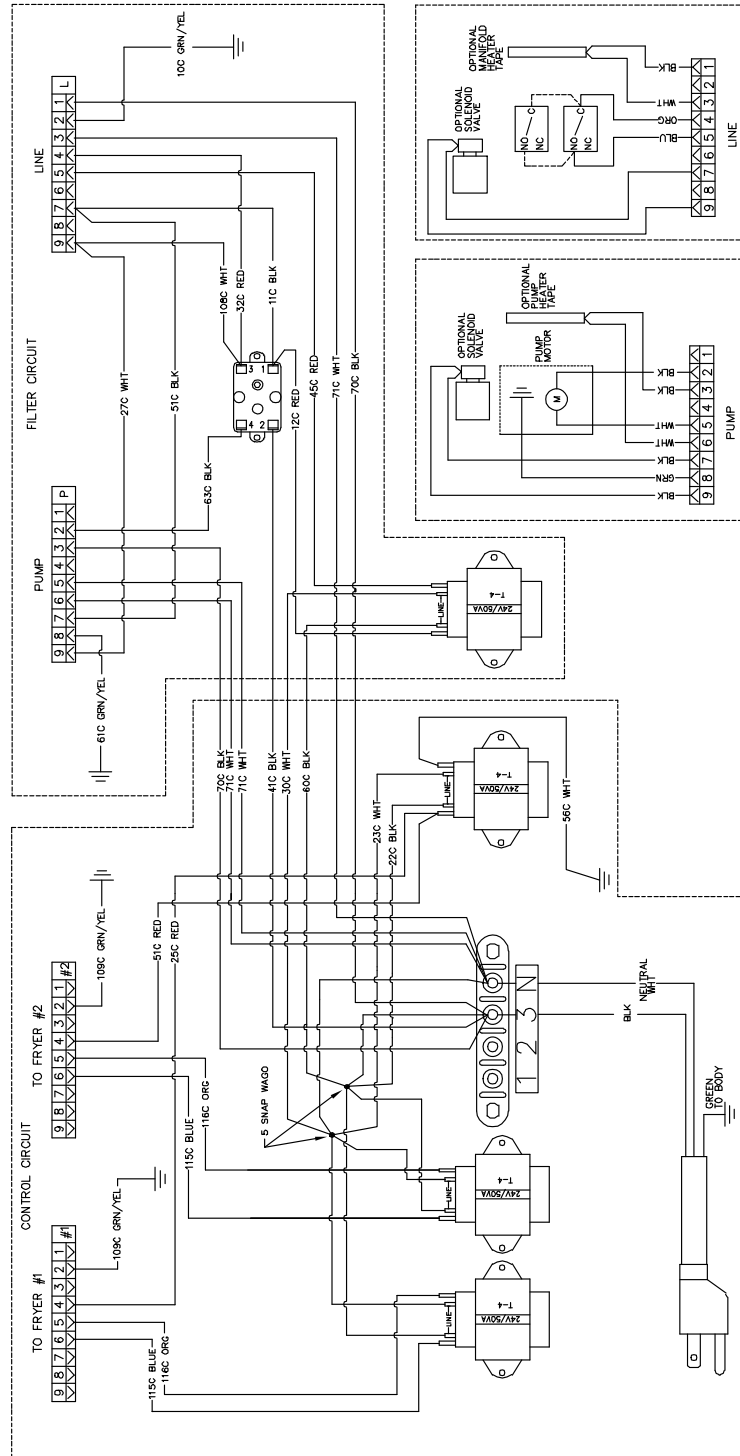


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1.10.8 FAST Controller prior to Feb 09

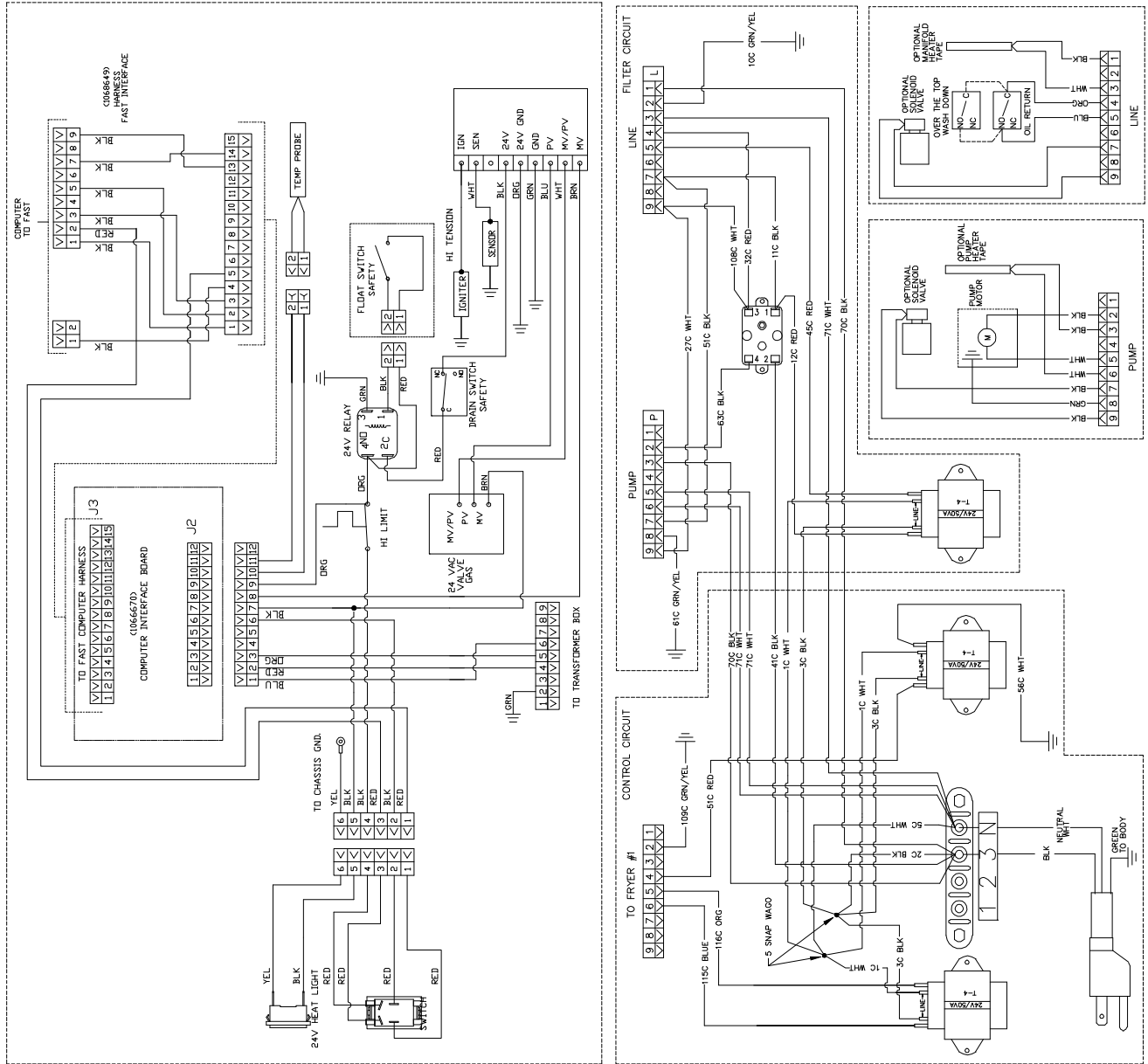


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1.10.9 FAST Controller Non-CE after Feb 09

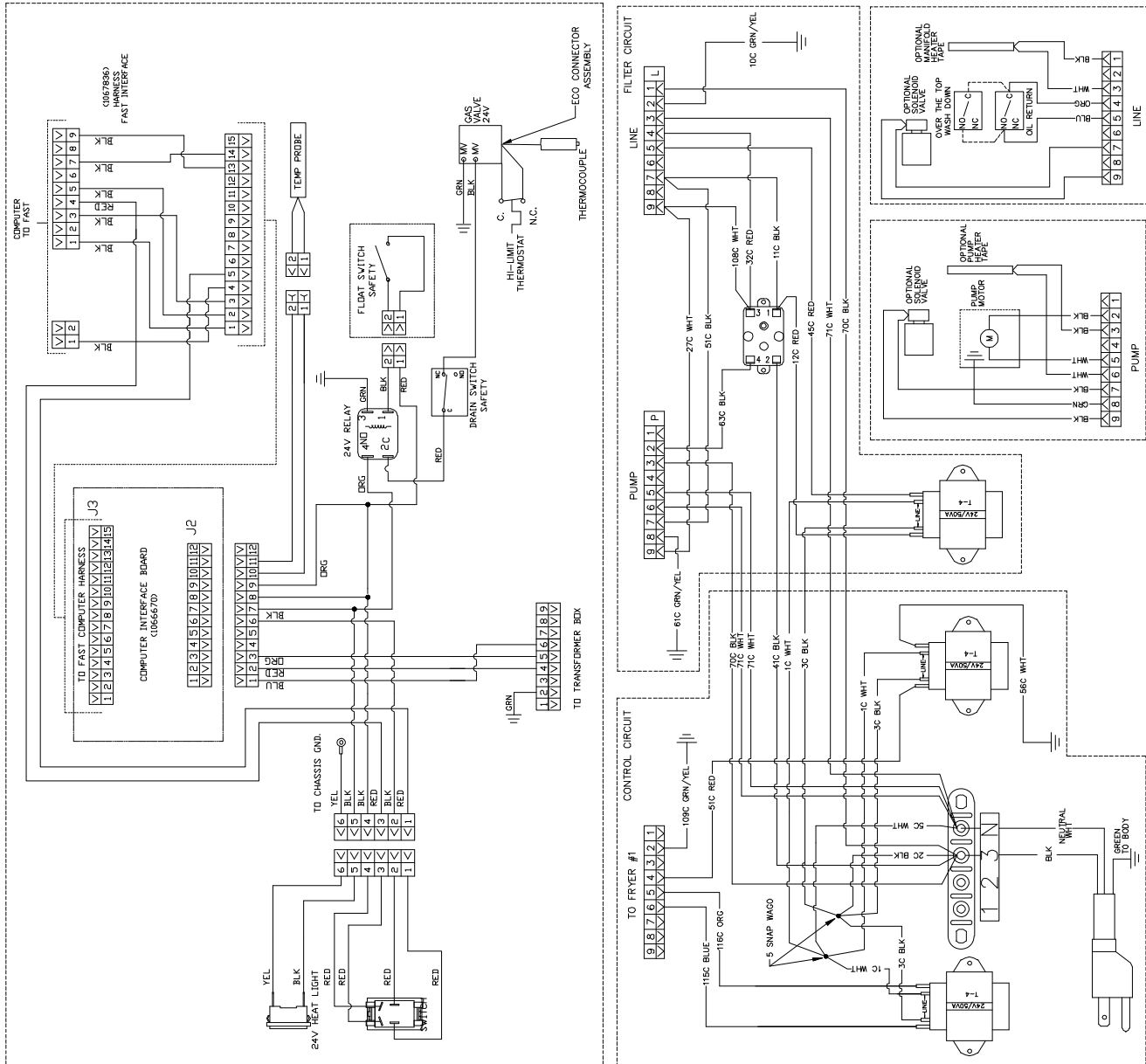


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HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

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1.10.10 FAST Controller CE after Feb 09

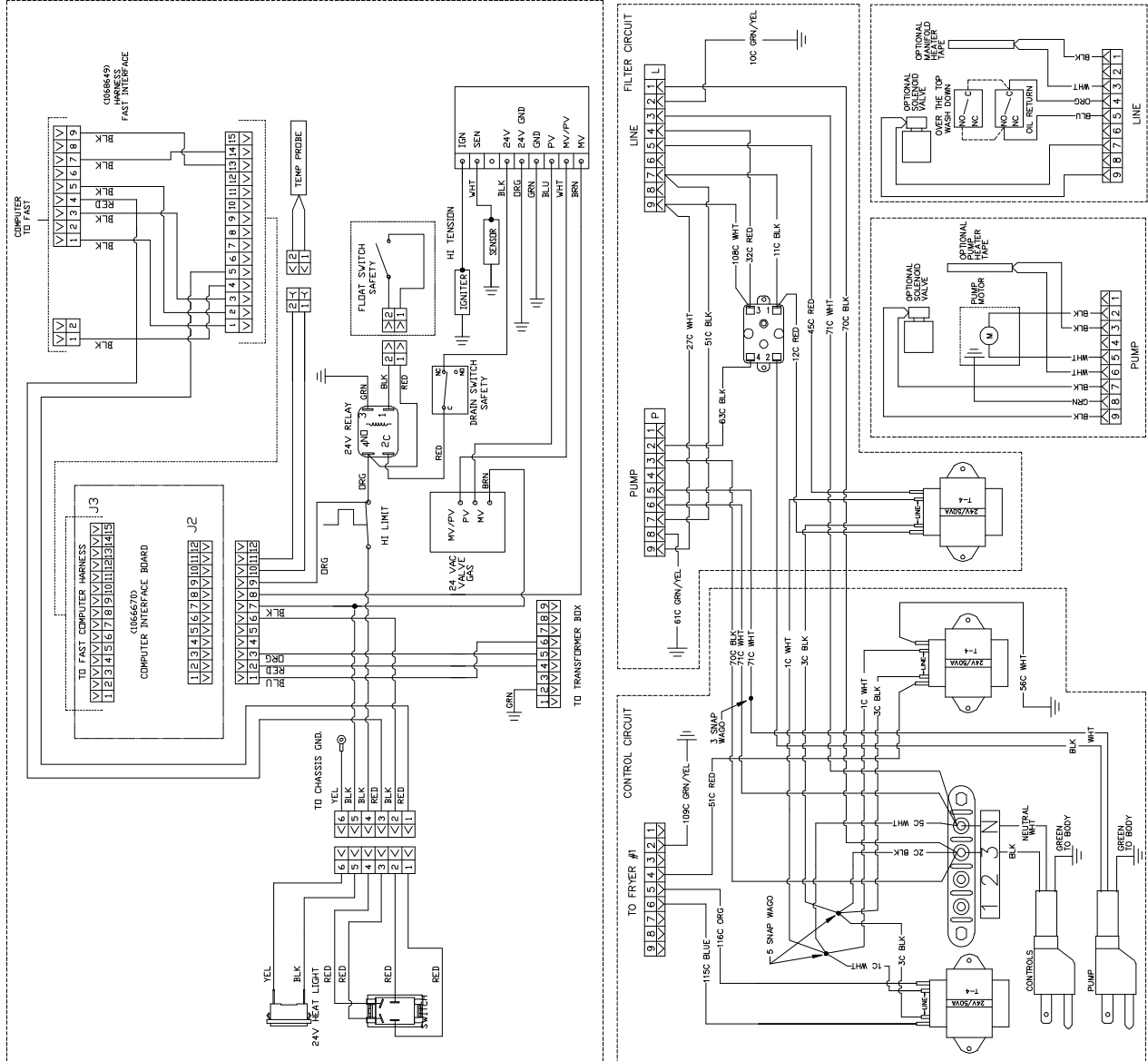


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HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.10.11 FAST Controller India

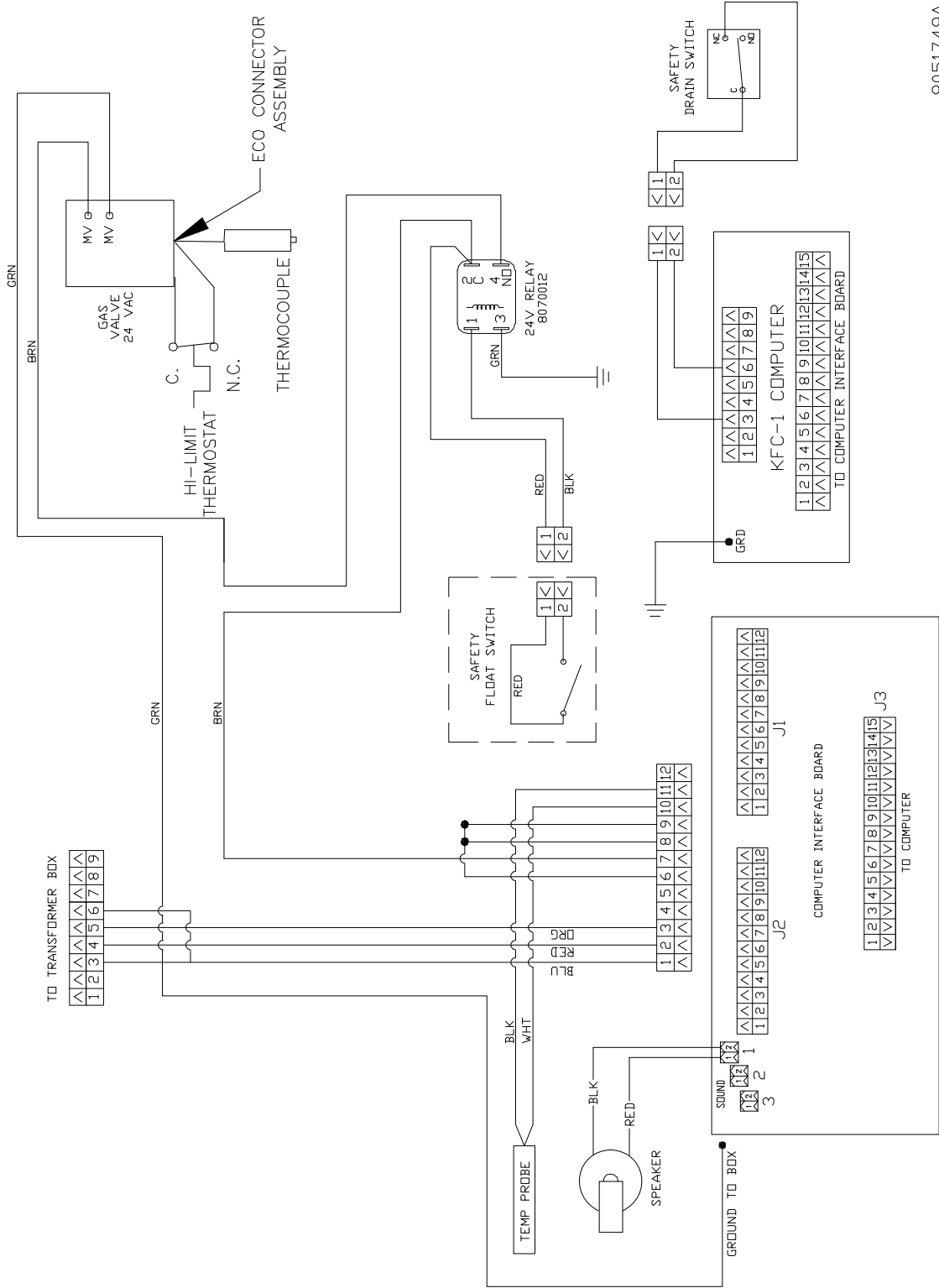


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HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.10.12 KFC-1 Controller

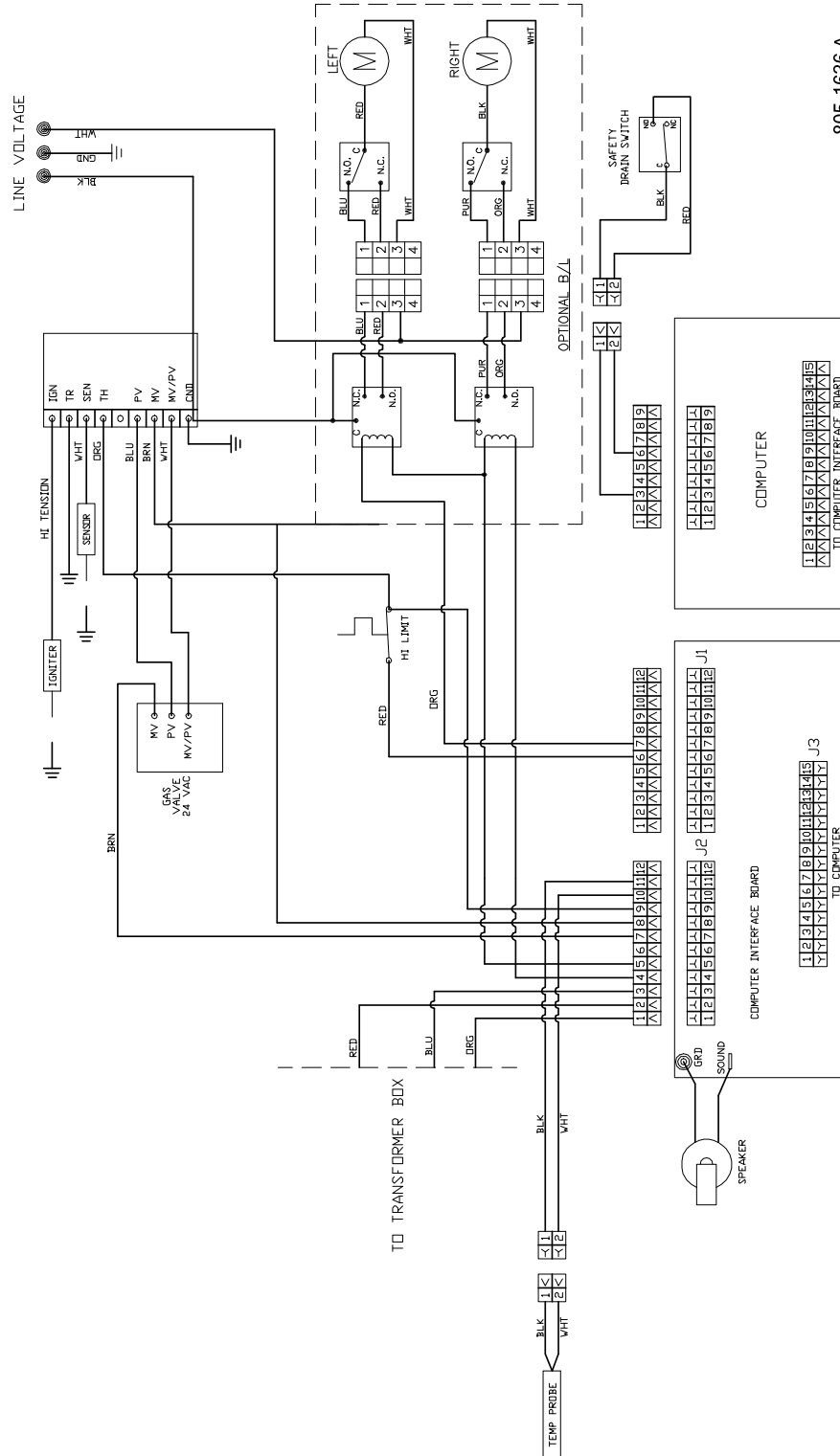


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HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.10.13 CM4S Controller

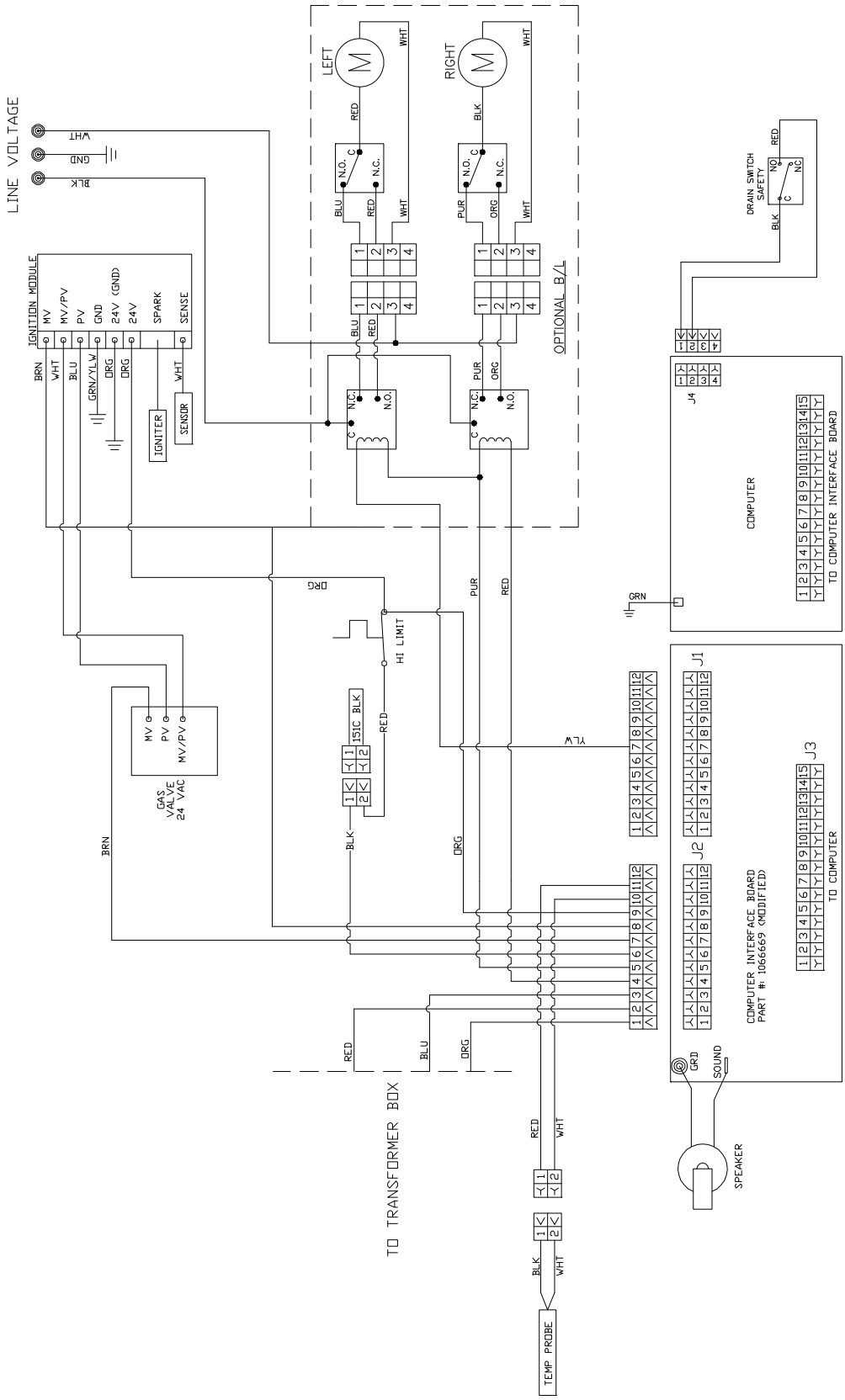


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HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 1: SERVICE PROCEDURES

1.10.14 3000 Controller - Domestic

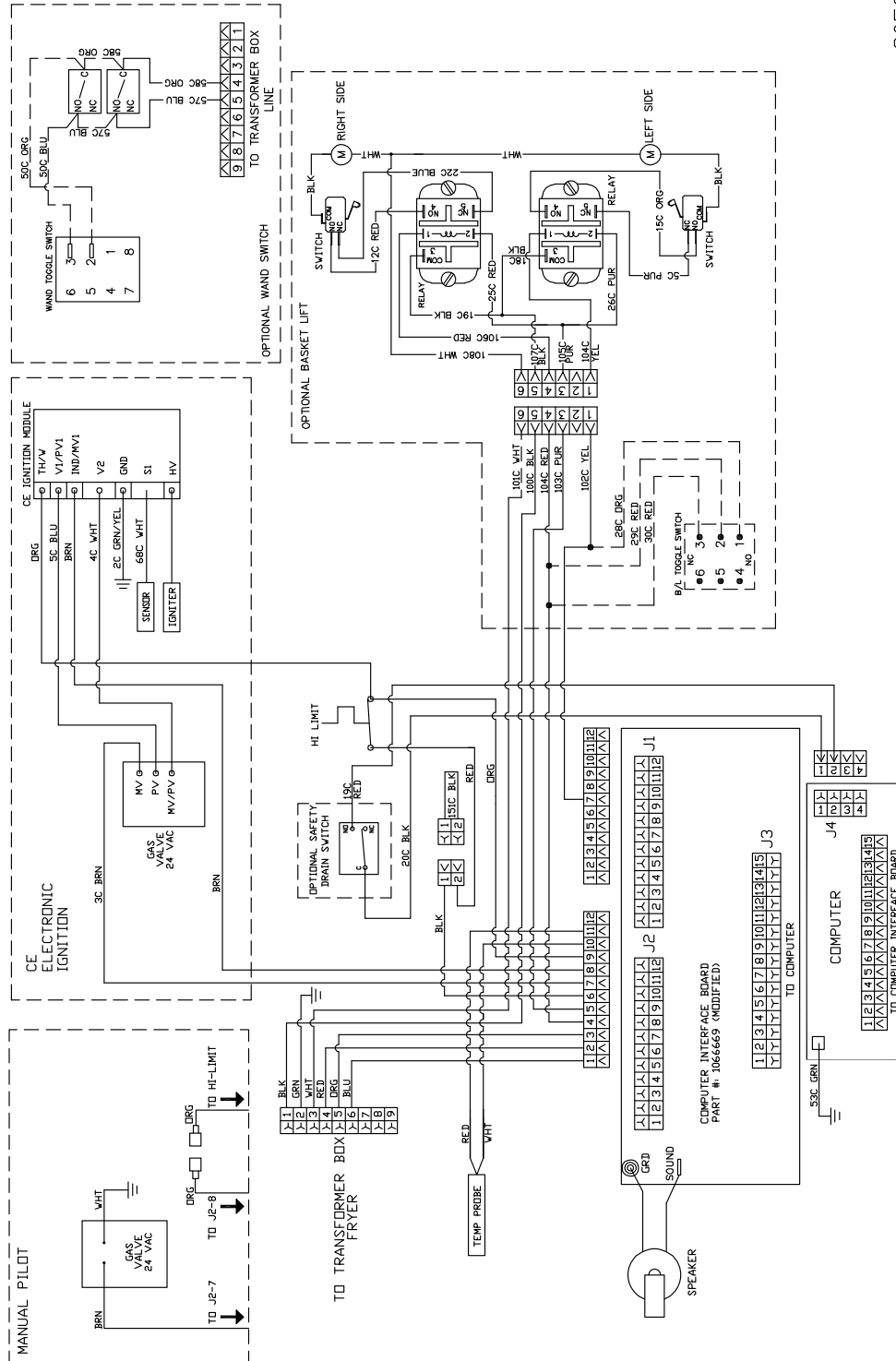


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HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

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1.10.14.1 K3000 Controller w/ Fenwal Module CE/Non-CE Export

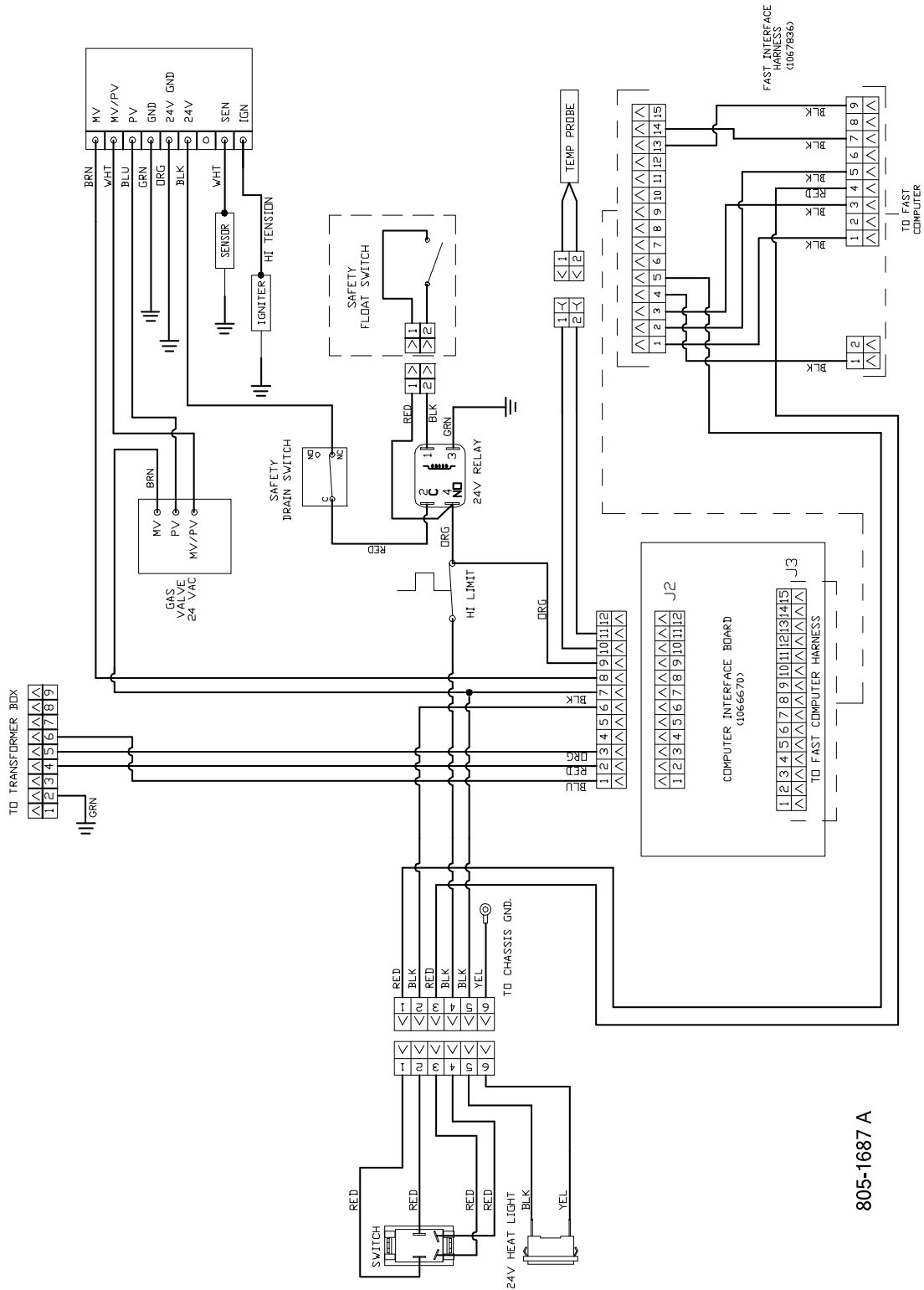


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HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

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1.10.15 Constant Pilot, FAST Ready



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HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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1.11 Probe Resistance Charts

Thermatron Probe Resistance Chart		
° 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

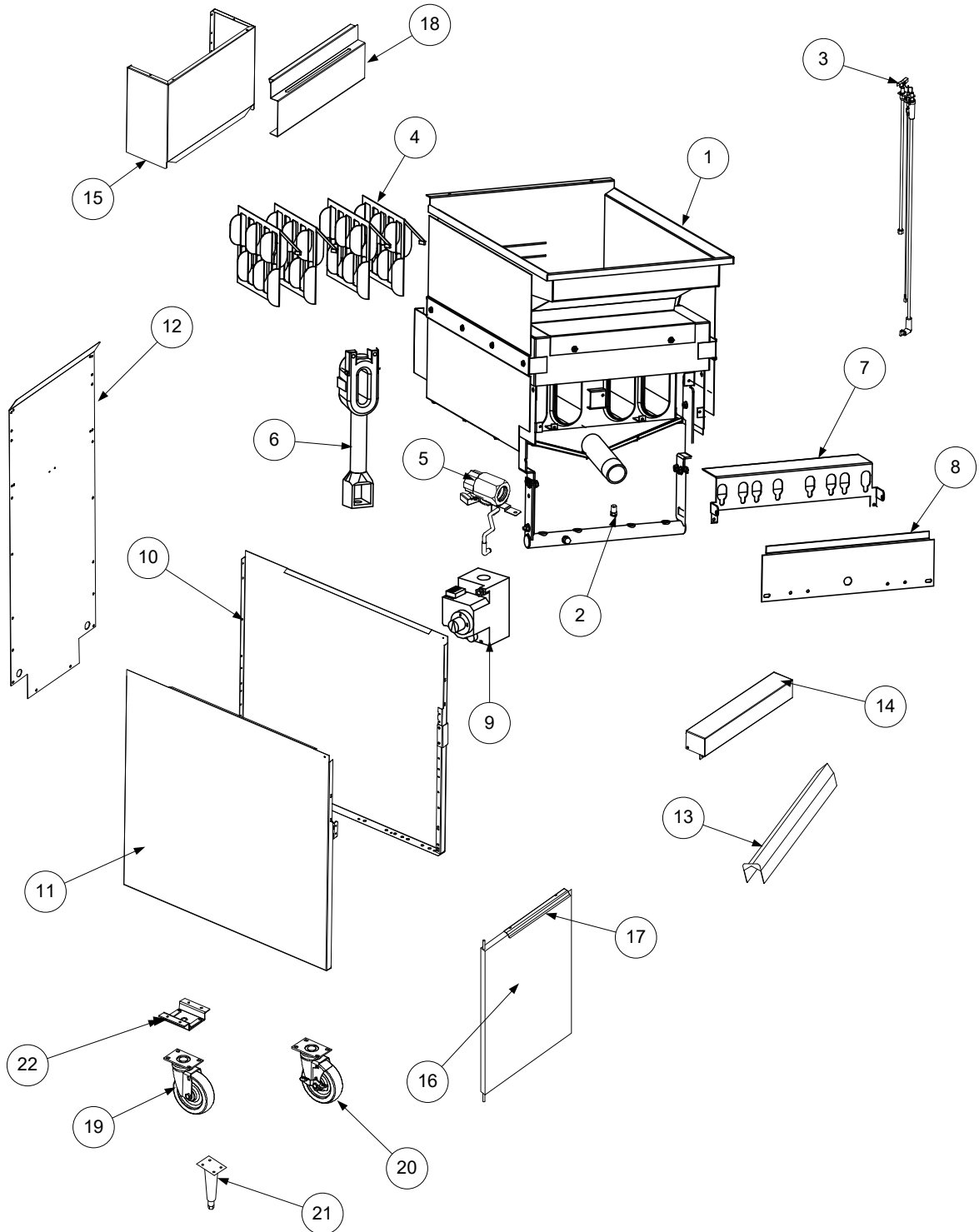
Controller Probe Resistance Chart		
° Celsius	° Fahrenheit	Ohms (±3%)
21	70	1080
27	80	1101
32	90	1122
38	100	1143
43	110	1164
49	120	1185
54	130	1206
60	140	1226
66	150	1247
71	160	1268
77	170	1289
82	180	1309
88	190	1330
93	200	1350
99	210	1371
104	220	1391
110	230	1412
116	240	1432
121	250	1453
127	260	1473
132	270	1493
138	280	1514
143	290	1534
149	300	1554
154	310	1574
160	320	1594
166	330	1614
171	340	1634
177	350	1654
182	360	1674
188	370	1694
193	380	1714
199	390	1734
204	400	1754

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 2: PARTS LIST

2.1 High Efficiency Common Cabinet Decathlon (HDC) Primary Components

2.1.1 Decathlon HD50 Primary Components



HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS CHAPTER 2: PARTS LIST

Each section is labeled by size (e.g., D50) and parts are not interchangeable between different sized fryers. The parts in this manual are for use on Common Cabinet style fryer.

If you have any questions, call the Frymaster and Dean 24-Hour Service Hotline, 1-800-551-8633.

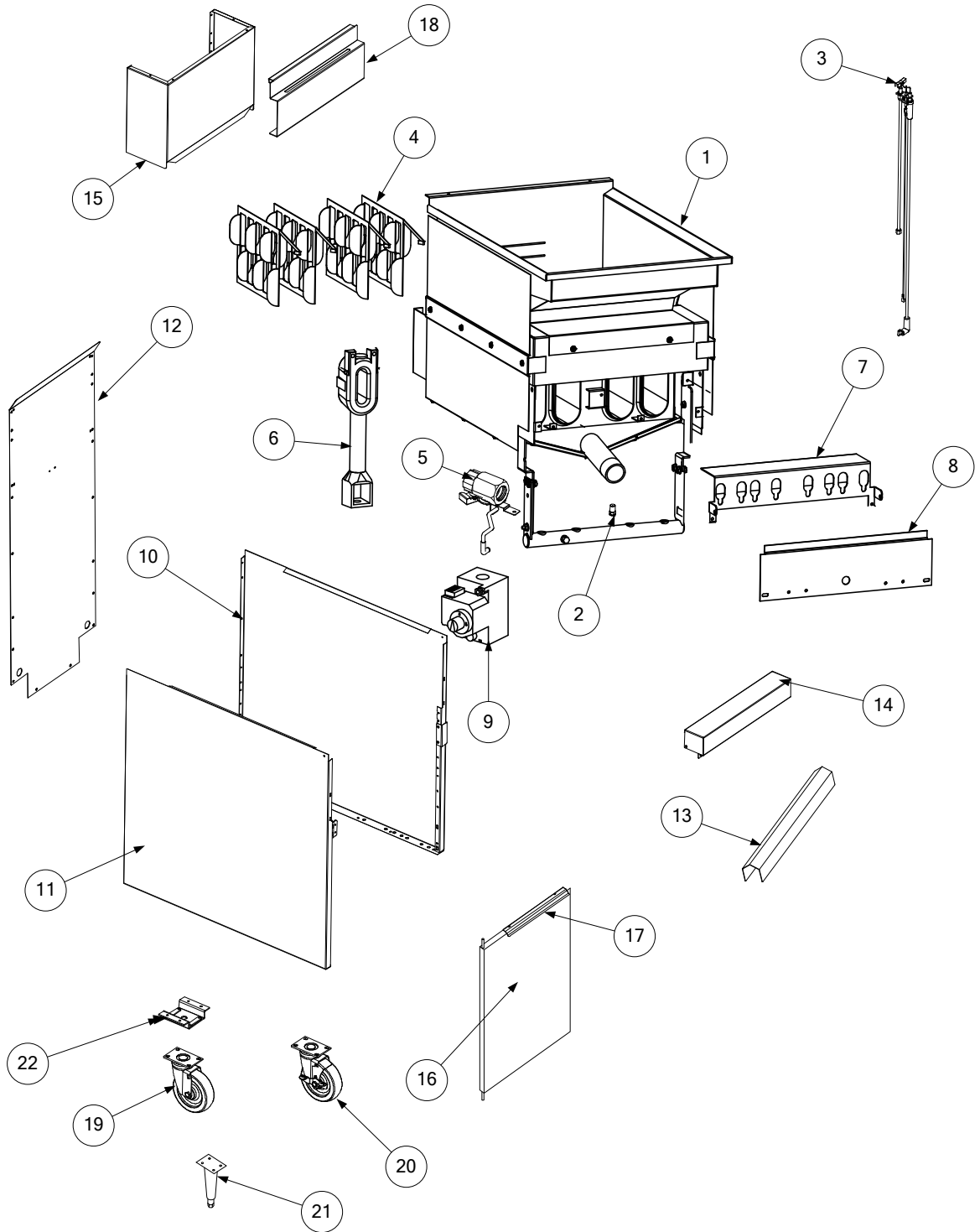
2.1.1 Decathlon HD50 Primary Components

ITEM	PART #	DESCRIPTION
1	8263009	Frypot - S/S (<i>Use 1083638 for Energy Star Frypot Assy.</i>)
2	▶▶▶	See Orifices, Section 2.2
3		See Additional Components and Controllers, Section 2.3
*	8100705	Tube, ¼" x 23" Pilot Gas Supply (one-piece gasline)
*	8100703	Tube, ¼" x 17½" Pilot Gas Supply (one-piece gasline)
4	2304900	Diffuser Assembly (<i>Use 2306887 for Energy Star</i>)
5	▶▶▶	See Drain Components, Section 2.4
6	8103356	Burner, High Efficiency
7	2205287	Bracket, Burner Mounting
8	2009063	Shield, Burner Heat (<i>Use 2209949 for Energy Star</i>)
9		See Additional Components and Controllers, Section 2.3
10	2312060	Side Panel, Left Side
11	2322060	Side Panel, Right Side
12		Cabinet Back
*	2201847	x1 (Single)
*	2201806	x2 (2-battery)
*	2201838	x3 (3-battery)
13	8235932	Joiner Strip
14		Top Cap
	1065433	x1 (Single)
	1065955	x2 (2-battery)
	1065956	x3 (3-battery)
	1066333	x4 (4-battery)
	1067631	x5 (5-battery)
15		Flue Cap
	2301848	x1 (Single)
	2301812	x2 (2-battery)
	2301841	x3 (3-battery)
	2301875	x4 (4-battery)
	2302434	x5 (5-battery)
16	1067542SP	Door Assembly (Left or Right)
17	2108077	Handle, Door
*	8102346	Magnetic Catch, Door
*	2304998	Hinge, One-piece
18		Basket Lifts
	2101595	Single (SCFHD50, 8234075 with deflector)
	2103131	Double (SCFHD50, 8234074 with deflector)
19	8100356	Caster, Plate-mount, 5" without Brake
*	8261117	Caster Kit, Plate-mount, 5" without Brake (includes mounting hardware)
20	8100357	Caster, Plate-mount, 5" with Brake
*	8261118	Caster Kit, Plate-mount, 5" with Brake (includes mounting hardware)
*	8100944	Caster, Plate-mount, 3" with Brake
*	8101494	Caster, Plate-mount, 4" without Brake
*	1067649	Cordset, 10' Power
21	8102411	Leg, Single Bolt Mount (black)
*	8103169	Leg Package, 4 Bolt Mount (4 per set)
22	8233248	Leg Support Assembly

* Not illustrated.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST

2.1.2 Decathlon HD60/63 Primary Components



**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

2.1.2 Decathlon HD60/63 Primary Components (cont.)

ITEM	PART #	DESCRIPTION
1	1069632	Frypot - S/S
*	1069634	Frypot - S/S (Single HD60 without filtration)
*	8235742SP	Frypot - S/S (Single HD60 without filtration, Red Robin)
*	1069638SP	Frypot - S/S (Single HD63 without filtration)
*	8236314	Frypot - S/S (Single HD63 without filtration, Red Robin)
2	▶▶▶	See Orifices, Section 2.2
3		See Additional Components and Controllers, Section 2.3
*	8100705	Tube, ¼" x 23" Pilot Gas Supply (one-piece gasline)
*	8100703	Tube, ¼" x 17½" Pilot Gas Supply (one-piece gasline)
*	8100703	Tube, Pilot Gas Supply, ¼" x 17.50" (one-piece gasline)
4	2301431	Diffuser Assembly
5	▶▶▶	See Drain Components, Section 2.4
6	8103356	Burner, High Efficiency
7	2205152	Burner Bracket
8	2008748	Shield, Burner Heat
9		See Additional Components and Controllers, Section 2.3
*	8100691	Vent Tube
10	2312311SP	Side Panel, Left Side
11	2322311SP	Side Panel, Right Side
*	2212737	Side Panel, Left Side (Filter Ready)
*	2222737	Side Panel, Right Side (Filter Ready)
*	8235744	Side Panel, with Splash Panel (660/363/663)
12		Cabinet Back (One-piece)
	2201851	x1 (Single)
	2201828	x2 (2-battery)
	220702	x2, without Deflector (2-battery)
	220-4518	x1, without Deflector (3-battery)
13	2103017	Joiner strip
14		Top Cap
	1065434	x1 (Single)
	1065953	x2 (2- and 6-battery)
	1066080	x3 (3- and 6-battery)
	1064683	x4 (4- and 6-battery)
15		Flue Cap
	2303078	x1 (Single)
	2301833	x2 (2-battery)
	2301890	x3 (3-battery)
	2301891	x4 (4-battery)
	2301890	x3 (6-battery)
	2301891	x4 (6-battery)
16	1064309SP	Door Assembly, left or right
17	2108077	Handle, Door
*	8102346	Magnet, Door
*	2304998	Hinge, One-piece

* Not illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

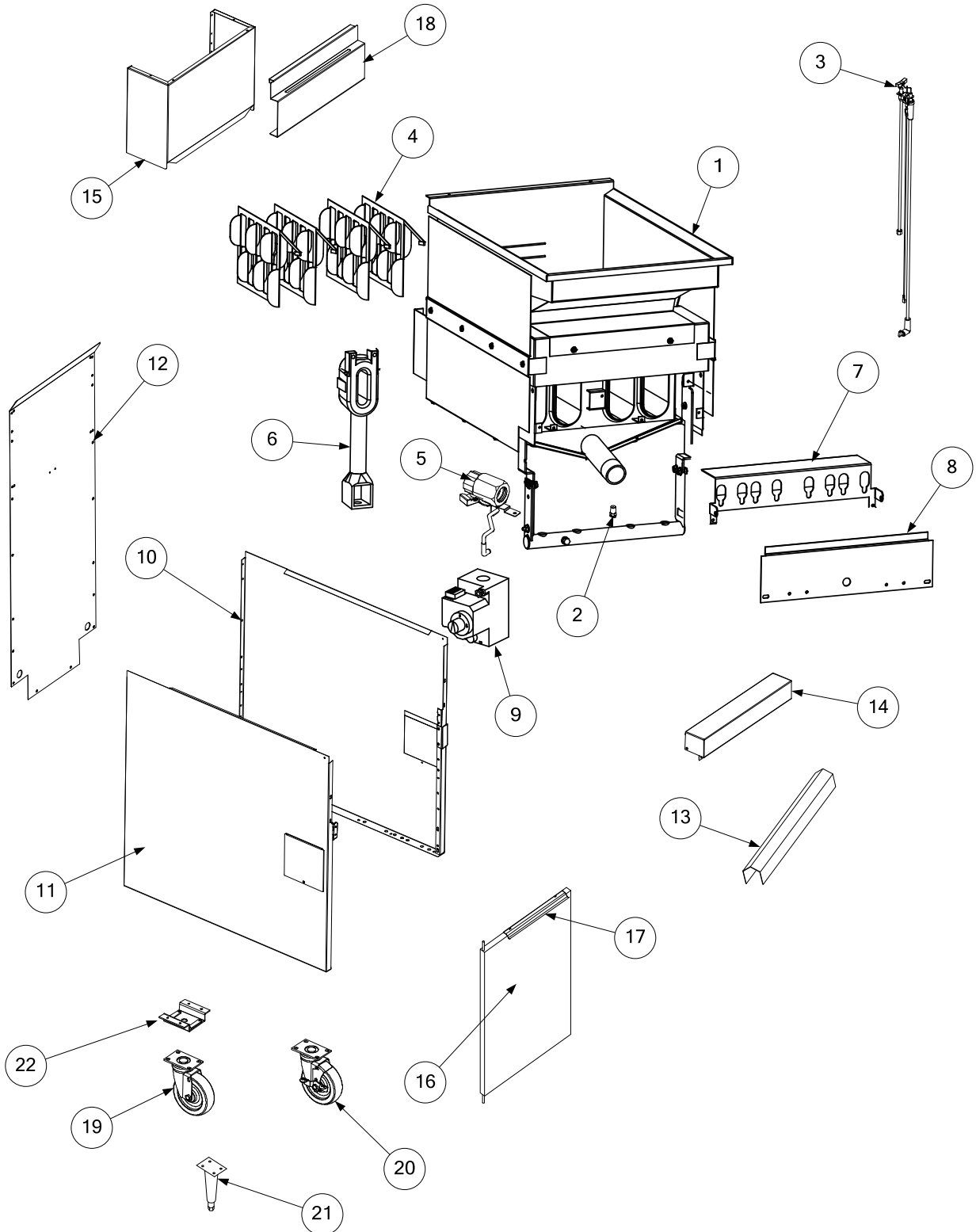
2.1.2 Decathlon HD60/63 Primary Components (cont.)

ITEM	PART #	DESCRIPTION
18		Basket Hanger
	2102737SP	Single (60/63/65, 8233649 with deflector)
	2106763	Single (Church's 63, 8236524 with deflector)
	8237219	Single (Raising Cane's)
	2106761	Double (Church's 63, 8236523 with deflector)
	2101482	Double (Chili's, 8234999 with deflector)
	8237152	Double (Raising Cane's)
19	8100356	Caster, Plate-mount, 5" without Brake
*	8261117	Caster Kit, Plate-mount, 5" without Brake (includes mounting hardware)
20	8100357	Caster, Plate-mount, 5" with Brake
*	8261118	Caster Kit, Plate-mount, 5" with Brake (includes mounting hardware)
*	8100944	Caster, Plate-mount, 3" with Brake
*	8101494	Caster, Plate-mount, 4" without Brake
*	1067649	Cordset, 10' Power
21	8102411	Leg, Single Bolt Mount (black)
*	8103169	Leg, 4 Bolt Mount, Package (4 per set)
22	8233248	Leg, Single Bolt Mount, Support Assembly

* Not illustrated.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST

2.1.3 Decathlon HD/FPHD65 Primary Components



**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

2.1.3 Decathlon HD/FPHD65 Primary Components (cont.)

ITEM	PART #	DESCRIPTION
1	1069633	Frypot - S/S
2	▶▶▶	See Orifices, Section 2.2
3		See Additional Components and Controllers, Section 2.3
*	8100705	Tube, Pilot Gas Supply, 1/4" x 23" (one-piece gasline)
*	8100703	Tube, Pilot Gas Supply, 1/4" x 17 1/2" (one-piece gasline)
4	2301431	Diffuser Assembly
5	▶▶▶	See Drain Components, Section 2.4
6	1082612SP	Burner, High Efficiency
7	2205152	Burner Bracket
8	2008748	Shield, Burner Heat
9		See Additional Components and Controllers, Section 2.3
*	8100691	Vent Tube
10		Side Panel, Left
	2210012	Side Panel, Left Side with Hole (unit exterior)
	2118078	Side Panel, Left Side (unit exterior)
	2312311	Side Panel, Left Side (Single 65)
11		Side Panel, Right
	2220012	Side Panel, Right Side with Hole (unit exterior)
	2128078	Side Panel, Right Side (unit exterior)
	2322311	Side Panel, Right Side (Single 65)
	8235789	Side Panel, with Splash Panel (565)
12		Cabinet Upper Back
	2202353	x2 (2-, 4-, 5-, and 6-battery)
	2200668	x3 (5-battery)
		Cabinet Lower Back
	2202354	x2 (2-, 4-, 5-, and 6-battery)
	2200667	x3 (5-battery)
		Cabinet Full Back
	2201851	x1 (one-piece)
	2201828	x2 (one-piece)
13	2301478	Joiner Strip
14		Top Cap
	1065434	x1 (Single)
	1065953	x2 (2-battery)
	8241871	x3 (3-battery)
	8235976	x4 (4-battery and 6-battery)
	8235975	x2 (5-battery and 6-battery)
	8236090	x3 (5-battery)
	2302472	x1 (HD marine edge)
15		Flue Cap
	2303078	x1 (Single)
	2301833	x2 (2-battery)
	2302323	x3 (3-battery and 5-battery)
	2302298	x2 (5-battery and 6-battery)
*	2003649	Deflector, Flue (Single, HD, non-S/S) (use screws 8090437)
*	2106525	Deflector, Flue (Single, Chili's, S/S) (use screws 8090437)

* Not illustrated.

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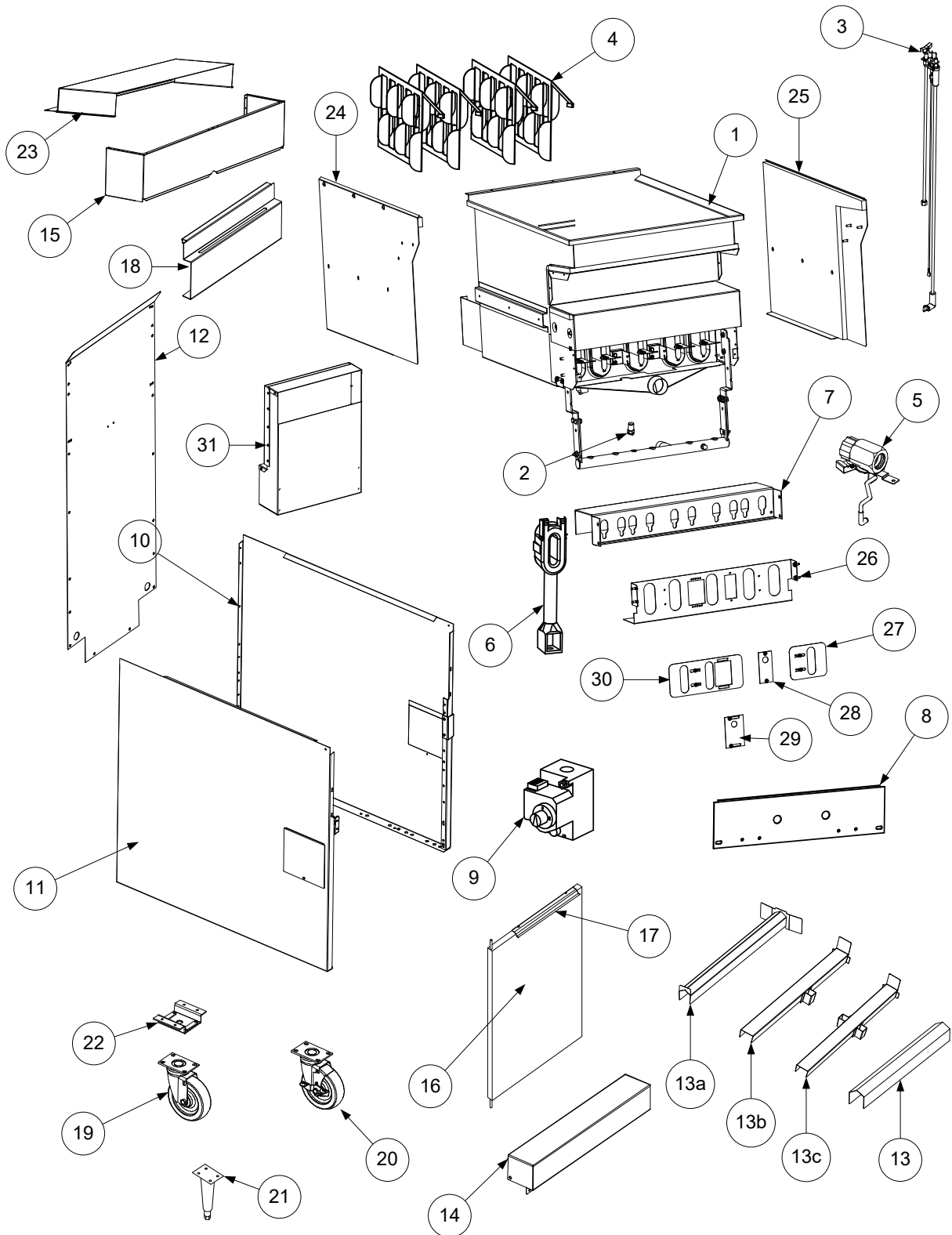
2.1.3 Decathlon HD/FPHD65 Primary Components (cont.)

ITEM	PART #	DESCRIPTION
16	1067710	Door Assembly, left or right
17	2108077	Handle, Door
*	8102346	Magnet, Door
*	2304998	Hinge, Lower
*	8235137	Hinge, Upper Right
*	8235136	Hinge, Upper Left
18	8235859	Basket Hanger, Church's (with Deflector)
*	8235801	Basket Hanger, Chili's Single System, 6" Splash Guard
*	8235856	Splash Guard (2-, 4-, 5-, and 6-battery)
19	8101494	Caster, Plate-mount 4" without Brake
20	8102406	Caster, Plate-mount 5" without Brake
*	8100944	Caster, Plate-mount 3" with Brake
*	8070154	Cordset, 10' Power
21	8102411	Leg, Single Bolt Mount (black)
*	8103169	Leg, 4 Bolt Mount, Package (4 per set)
22	8233248	Leg, Single Bolt Mount Support Assembly,

* Not illustrated.

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2.1.4 Decathlon LHDC65 Primary Components



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2.1.4 Decathlon LHDC65 Primary Components (cont.)

ITEM	PART #	DESCRIPTION
1	8237565	Frypot - S/S Filter
*	8237567	Frypot – S/S Non-Filter
2	▶▶▶	See Orifices, Section 2.2
3		See Additional Components and Controllers, Section 2.3
*	8100705	Tube, Pilot Gas Supply, ¼" x 23" (one-piece gas line)
*	8100703	Tube, Pilot Gas Supply, ¼" x 17½" (one-piece gas line)
4	2301431	Diffuser Assembly
5	▶▶▶	See Drain Components, Section 2.4
6	1082612SP	Burner, High Efficiency
7	2209905	Burner Bracket
8	2009948	Shield, Burner Heat
9		See Additional Components and Controllers, Section 2.3
*	8100691	Vent Tube
10		Side Panel, Left
	2210012	Side Panel, Left Side with Hole (unit exterior)
	2118078	Side Panel, Left Side (unit exterior)
	2312311	Side Panel, Left Side (Single 65)
11		Side Panel, Right
	2220012	Side Panel, Right Side with Hole (unit exterior)
	2128078	Side Panel, Right Side (unit exterior)
	2322311	Side Panel, Right Side (Single 65)
	8235789	Side Panel, with Splash Panel (565)
12		Cabinet Full Back
	2209325	Single
	2209485	Double (2-, 4-, 5-, and 6-battery)
	2209849	Triple (3-, and 5-battery)
		Joiner Strip
13	2301478	Connecting without pins
*	8235961	Connecting with pins (same as 230-1478 but with pins)
13a	8238776	Connecting without pin and without holsters
*	8237278	Connecting with pins and without holsters (same as 8238776 but with pins)
13b	8238829	Connecting with single holster on right
13c	8237917	Connecting with double holsters
14		Top Cap
	8242317	Single
	8242318	x2 (2-battery, 5-battery and 6-battery)
	8242319	x3 (3-battery and 5-battery)
	8232320	x4 (4-battery and 6-battery)
15		Flue Cap
	8242310	Single
	8242314	x2 (2-battery, 5-battery and 6-battery)
	8242315	x3 (3-battery and 5-battery)
	8242316	X4 (4-battery and 6-battery)
*	2003649	Deflector, Flue (Single, HD, non-S/S) (use screws 809-0437)
*	2106525	Deflector, Flue (Single, Chili's, S/S) (use screws 809-0437)
*	2309973	Cover, HD65 90° Flue

* Not illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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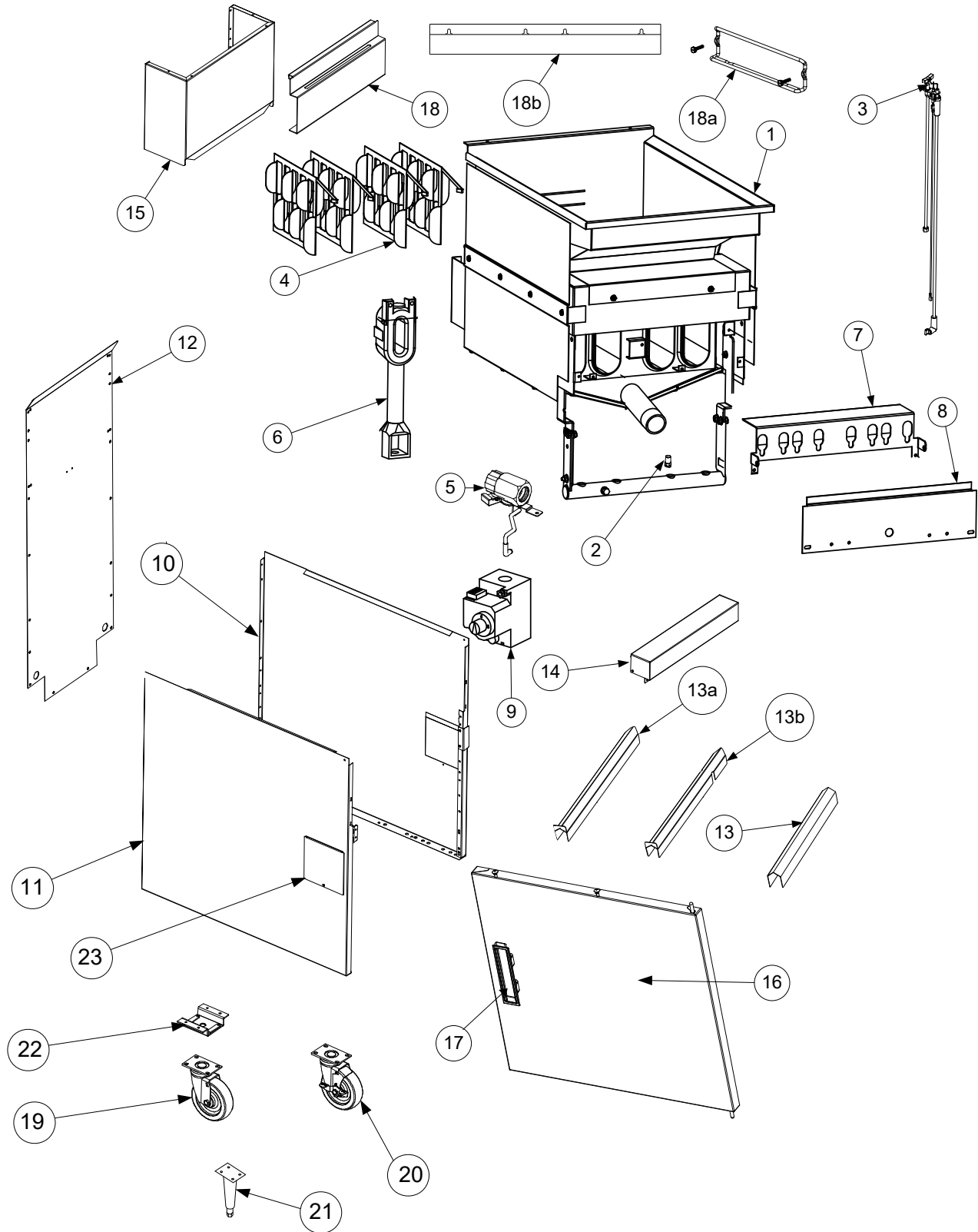
2.1.3 Decathlon LHDC65 Primary Components (cont.)

ITEM	PART #	DESCRIPTION
16	1067710	Door Assembly, left or right
17	2108077	Handle, Door
*	8102346	Magnet, Door
*	2304998	Hinge, Lower
*	8235137	Hinge, Upper Right
*	8235136	Hinge, Upper Left
18	8235859	Basket Hanger, Church's (with Deflector)
*	8235801	Basket Hanger, Chili's Single System, 6" Splash Guard
*	8235856	Splash Guard (2-, 4-, 5-, and 6-battery)
19	8101494	Caster, Plate-mount 4" without Brake
20	8102406	Caster, Plate-mount 5" without Brake
*	8100944	Caster, Plate-mount 3" with Brake
*	8070154	Cordset, 10' Power
21	8102411	Leg, Single Bolt Mount (black)
*	8103169	Leg, 4 Bolt Mount, Package (4 per set)
22	8233248	Leg, Single Bolt Mount Support Assembly,
23		Weldment, Vent
	8232309	Single and 5-battery
	8232311	2-battery, 5 battery and 6-battery
	8232312	3-battery and 5-battery
	8232313	4-battery and 6-battery
24	1084284	Side Assembly, Frypot with Insulation Left
25	1084285	Side Assembly, Frypot with Insulation Right
26	2209906	Box, Burner Air
27	2400319	Shutter, Burner
28	2208858	Door, Ignitor
29	2208865	Door, Ignitor Access
30	2400320	Shutter, Long Burner
31	1084062	Flue Assembly 90°
*	1085788	Cordset, 10' Power

* Not illustrated.

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2.1.5 Y/KSCF/C/HC Primary Components



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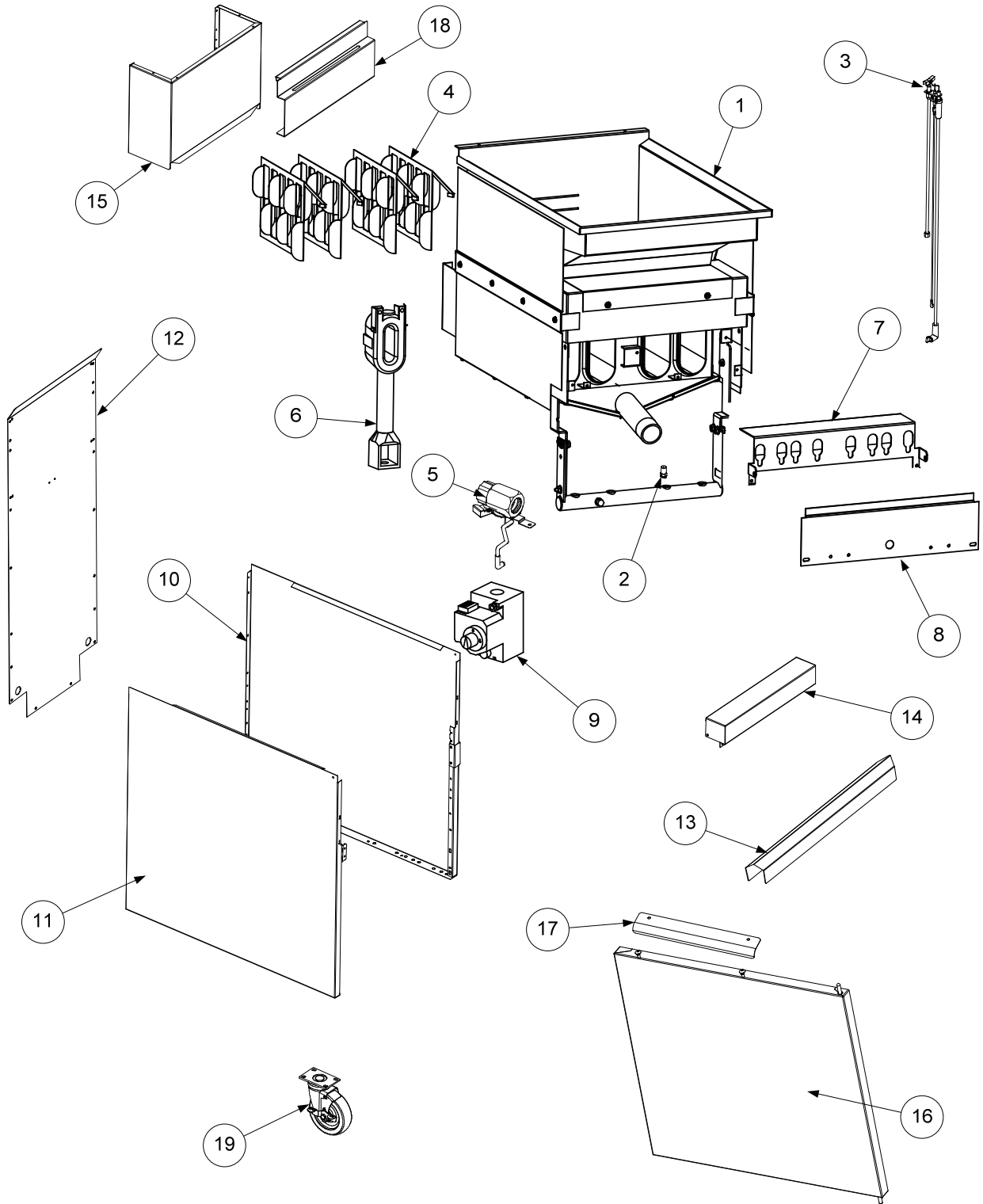
2.1.4 Y/KSCF/C/HC Primary Components (cont.)

ITEM	PART #	DESCRIPTION
1	8236138	Frypot – S/S (YSCFHC 14)
*	1069637	Frypot – S/S (YSCFHC 18)
*	8236367	Frypot – S/S (Y/KSCF/C/HC 18) India without hooks
*	8237879	Frypot – S/S (Y/KSCF/C/HC 18) India with hooks
2	▶▶▶	See Orifices, Section 2.2
3		See Additional Components and Controllers, Section 2.3
*	8100705	Tube, Pilot Gas Supply, ¼" x 23" (one-piece gasline)
*	8100703	Tube, Pilot Gas Supply, ¼" x 17½" (one-piece gasline)
4	2304900	Diffuser Assembly (use 2306888 for 8 row burner) (use 2307711 for India)
5	▶▶▶	See Drain Components, Section 2.4
6	8103356	Burner, High Efficiency
*	8102151	Burner, Left
*	8102149	Burner, Center
*	8102150	Burner, Right
7	2205152	Burner Mounting (use 2002738 for India)
8	2008748	Heat shield
9		See Additional Components and Controllers, Section 2.3
*	8100691	Vent Tube
10	2312060	Side Panel, Left Side (unit exterior) (use 2213272 for India) (use 2318145 for SS 318G) (use 2218141 318G Painted)
11	2322060	Side Panel, Right Side (unit exterior) (use 2223272 for India) (use 2328145 for SS 318G) (use 2228141 318G Painted)
12	2201828	Back Panel
13	2101355	Joiner Strip
13a	8236922	Joiner Strip
13b	8237924	Joiner Strip (India slotted for hooks)
14		Top Caps
	1067984	214
	1067985	314
	1067669	218 (use 1069625 for India)
	1069785	318
15		Flue Caps
	8236292	214
	8236300	314
	2301833	218 (use 8236880 for India before Feb. 11) (use 8237875 for India after Feb. 11)
	8236974	318 (use 2301890 for YSCFHC318G)
16	1068511	Door, left or right
17	8103335	Handle, Push-in
*	8102346	Magnet, Door
*	2304998	Hinge, One Piece
18	8102793	Basket Hanger, Double
18a	8102794	Basket Hanger, Double Wireform
18b	2308002	Basket Hanger, Double Keyholed (India)
	2308757	Basket Hanger, Triple Keyholed
19	8100356	Caster, Plate-mount 5" without Brake (use 8261138 for India)
20	8100357	Caster, Plate-mount 5" with Brake
*	1067649	Cordset, 10' Power
21	8102411	Leg, Single Bolt Mount (black)
*	8103169	Leg, 4 Bolt Mount, Package (4 per set) (use 8103168 for India)
22	8233248	Leg, Single Bolt Mount Support Assembly

* Not illustrated.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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2.1.6 BK1814 Primary Components



**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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2.1.5 BK1814 Primary Components (cont.)

ITEM	PART #	DESCRIPTION
1	8237554	Frypot (BK50)
*	8236997	Frypot (BK60)
2	▶▶▶	See Orifices, Section 2.2
3		See Additional Components and Controllers, Section 2.3
*	8100703	Tube, Pilot Gas Supply, ¼" x 17½" (one-piece gas line)
4	2306887	Diffuser (Baffle) Assembly
5	▶▶▶	See Drain Components, Section 2.4
6	8103356	Burner, High Efficiency Cast
7	2205152	Burner Mounting
8	2008748	Heat shield
9		See Additional Components and Controllers, Section 2.3
*	8100691	Vent Tube
10	2312060	Side Panel, Left Side (unit exterior)
*	2316259	Side Panel, Left Side BK RAM Inner
11	2322060	Side Panel, Right Side (unit exterior)
*	2326259	Side Panel, Right Side BK RAM Inner
12		Back Panels
	2206434	60/50 BK60/50/RAM/60 (use 2206432 for RAM/60 - RAM on right)
	2207150	50/60 BK60/RAM/50/60 (use 2207151 for 60/RAM - RAM on left)
	2206270	BK160
	2206754	BK260
	2207268	BK60/50/60
	2306427	RAM Back Cover with cutout for receptacle
13	8237515	Joiner Strip
14		Top Caps
	1080971	BK60/50 (BK1814 - 60/50/RAM/60)
	1081590	BK50/60 (BK1814 - 60/RAM/50/60)
	1080975	BK60/160
	1083606	BK260
	1081750	BK60/50/60
15		Flue Caps
	2306268	BK60/50 (BK1814 - 60/50/RAM/60)
	2306431	RAM/60 (BK1814 - 60/50/RAM/60)
	2307143	60/RAM (BK1814 - 60/RAM/50/60)
	2307142	BK50/60 (BK1814 - 60/RAM/50/60)
	2308800	BK160
	2306705	BK260
	2307238	BK60/50/60
16		Door, Left or Right
	1064309	BK60
	1067542	BK50
17	2108077	Handle
*	8102346	Magnet, Door
*	2307192	Hinge, One Piece
18		Basket Hanger
	8237773	BK60/50 or BK50/60 (BK1814 - 60/50/RAM/60 or 60/RAM/50/60)
	8237770	BK160 or RAM/60 (BK1814 - 60/50/RAM/60)
	8237774	60/RAM (BK1814 - 60/RAM/50/60)
	8237771	BK260
	8237772	BK60/50/60
19	8102280	Caster, Plate-mount 5" with Brake
*	1067649	Cordset, 120V 10' Power
*	8075003	Receptacle, RAM 15A 125V
*	1082582	Relay, Control Assy BK1814/HD50 includes 8074114 and wire harness
*	8122185SP	Relay, Time Delay

* Not illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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2.2 Orifices

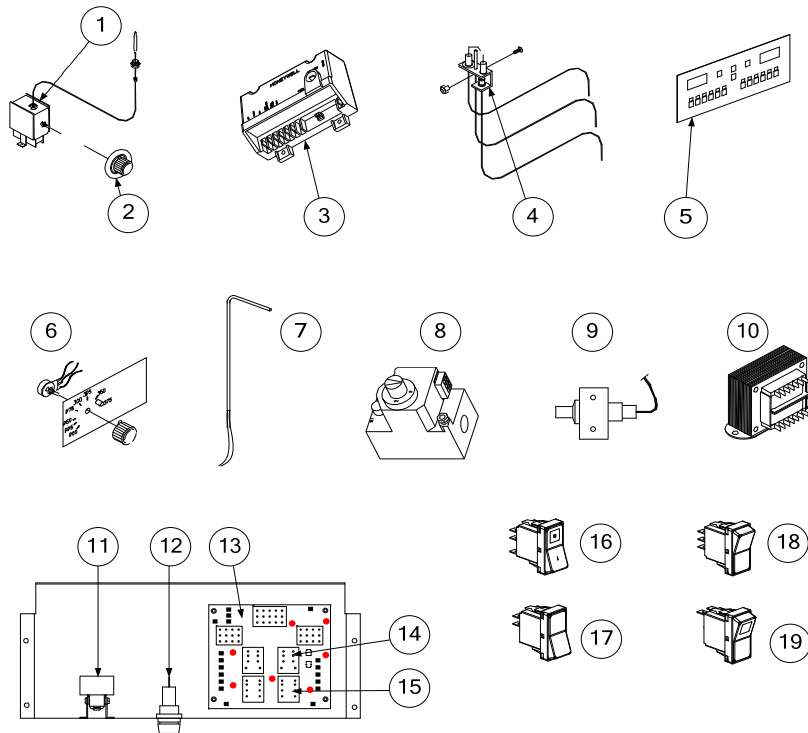
ITEM	PART #	COMPONENT
		Natural Orifices
*	8102060	2.40 mm CE
*	8103801	2.35 mm (China)
*	8103132	2.20 mm
*	8102938	0-1999 ft. 2.26mm
*	8103053	2000-3999 ft. 2.18mm
*	8103054	4000-5999 ft. 2.10mm
*	8102058	2.08mm used on LHDC65 #45
*	8104285	2.06mm used on LHDC65 #46
*	8103055	6000-7999 ft. 2.04mm
*	8103056	8000-8999 ft. 1.98mm
*	8103057	9000-10000 ft. 1.94mm
		Propane Orifices
*	8102939	0-1999 ft. 1.40mm
*	8102940	0-1999 ft. 1.32mm (LP-Butane Mix)
*	8103058	2000-3999 ft. 1.35mm
*	8102497	1.32mm used on LHDC65 #55
*	8103059	4000-5999 ft. 1.30mm
*	8103060	6000-7999 ft. 1.26mm
*	8103061	8000-8999 ft. 1.22mm
*	8103062	9000-10000 ft. 1.20mm
*	8100710	1.40 mm
*	8102059	1.51 mm (100% Butane India)

* Not illustrated.

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2.3 Additional Components and Controllers



ITEM	PART #	DESCRIPTION
1	8262013	Thermostat, Sunne
2	8102035	Knob, Thermostat
3	8262117	Spark Module (module, 8074383, and rajah connector, 8074375)
*	1067535SP	Ignition Cable (for controller operated fryers)
4		Pilot Assemblies
	1061839SP	Natural Gas, Electronic Ignition with Controller includes ignition cable Non-CE
	1082787	Natural Gas, Electronic Ignition with Controller includes ignition cable CE
	1061238SP	Natural Gas, Electronic Ignition without Controller Non-CE
	1082990	Natural Gas, Electronic Ignition without Controller CE
	1066752SP	Natural Gas, Trailing Pilot Non-CE
	1082785	Natural Gas, Trailing Pilot CE
	1061128SP	LP Gas, Electronic Ignition with Controller includes ignition cable Non-CE
	1082788	LP Gas, Electronic Ignition with Controller includes ignition cable CE
	KIT6627	LP Gas, Electronic Ignition without Controller Non-CE
	1082991	LP Gas, Electronic Ignition without Controller CE
	KIT8899	LP Gas, Trailing Pilot Non-CE
	1082786	LP Gas, Trailing Pilot CE
*	8071310	Flame Sensor
*	2204626	Air Shutter (screw, 8090931)
*	8074199	Cable Assembly, Controller to Interface Board (SMT)
5		Controllers
	1067141	Controller, Compu-Fry III.5, Full-vat
	8262413	Controller, Compu-Fry III.5 (HD60, Red Robin)
	8262304	Generic Digital Controller
	1066022	Controller, Analog
	8262858	Controller, Wingstreet
	1086883SP	Controller, Wingstreet K3000
	1084717	Controller, 3000 (Church's)
	1080376	Controller, CM4-S (with bezel)

* Not illustrated.

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2.3 Additional Components and Controllers (cont.)

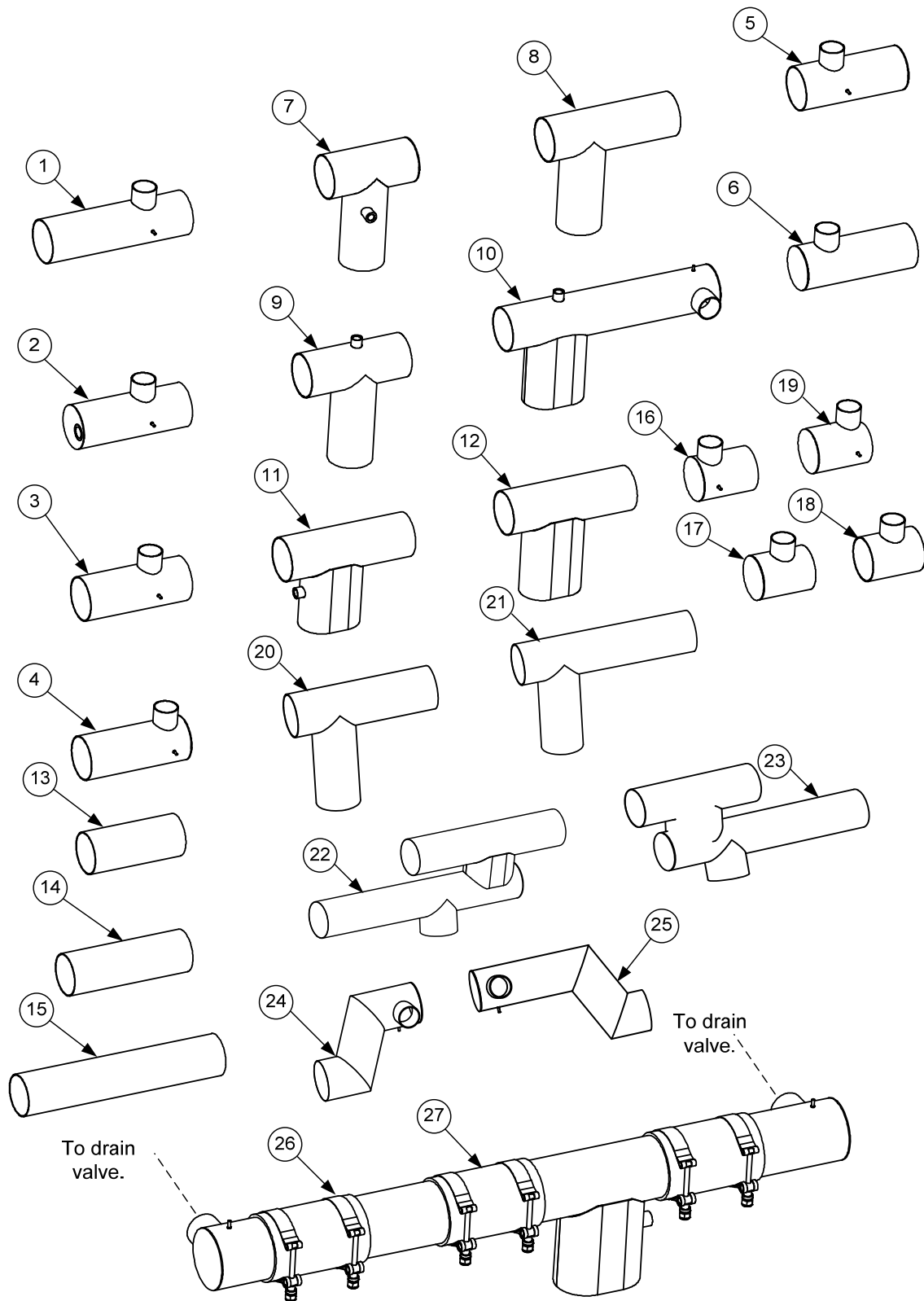
ITEM	PART #	DESCRIPTION
	8262323	Basket Lift Timer (General Market, HD60, Red Robin)
	8262385	Basket Lift Timer (HD63, Red Robin)
	1081351	Controller, 3-Lane (Burger King)
6	8262269	Potentiometer Kit, Dean
*	1063729	Kit, Thermatron, 24VAC, Extended Melt Cycle
*	8100110	Knob, Thermatron Controller
*	2304625	Face Plate, 3-switch, Thermatron
*	8103141	Sound Device
*	8063660	Sound Device, High Output
7	1065419SP	Probe Assembly, Temperature (Thermatron and FAST)
*	8262423	Probe Assembly, Temperature (Dean controller) (BK 3-Lane)
8		Gas Valves
	8073552	Natural Gas, Electronic Ignition
	8073628	Propane Gas, Electronic Ignition
	8073294	Natural Gas, Constant Pilot
	8073295	Propane Gas, Constant Pilot
	8072091	G20/25 (CE only)
	8072127	G31 (CE only)
9	8262786	Piezo Ignition Assembly
	8101001	Piezo Igniter (trigger)
	2001868	Piezo Bracket
	8073540	Electrode, Piezo
	8073650	Lead Wire, Piezo
10	8072176	Transformer, 100/120V-12/24 VAC Dual Voltage
*	8075129	Transformer, 208-240V-12/24 VAC Dual Voltage
*	8070800	Transformer, Primary 120V/24 VAC, 50/60Hz, 50VA
*	8070680	Transformer, Primary 208/240 VAC 24VAC, 50/60Hz, 43VA
11	8073680	High-limit Thermostat, Manual Reset 450° F (232° C)
*	2104628	Bracket, Frypot Sensors (requires tack welding to heat tube)
*	2104629	Bracket, Frypot Controller Probe (requires tack welding to heat tube)
12	8071321	Fuse Holder, Buss
*	8073843	Fuse, 3A Subminiature (250V)
*	8073592	Fuse, 2A Slow-blow (230V)
*	8073750	Fuse, 5A (120V)
13		Interface Boards
	8262434	Standing Pilot (use 1066670 for FAST)
	8262425	Basket Lift
	1069669	YUM/Wingstreet Interface Board
*	8074199	Cable Assembly, SMT Controller to Interface Board
*	8074597	Control Harness D-Series Wiring
14	8070834	Relay, 12VDC 15A SPDT (basket lift)
15	8070833	Relay, 12VDC 5A DPDT (latching)
*	8074114	Relay, 24VAC Coil, Reset
*	1066657	Pump Relay (includes 807-4114 and drain safety wiring)
*	8070012	Pump Relay 18 amp 24V coil
16	8073574	Switch, Power (green lens)
17	8073580	Switch, Rocker, Manual Filter Power
18	8073579	Switch, Six-terminal Boil-out
19	8073576	Switch, Fryer Reset (momentary)
*	8073578	Switch, 3-position, ON-OFF-ON
*	8073575	Switch, Blank Insert
*	8073577	Circuit Breaker, 7 amp
*	8074112	Indicator Light, Green, 24V
*	8074111	Indicator Light, White, 24V
*	8073581	Indicator Light, Red, 120V
*	8075159	Harness, Drain Switch (Connects to J4 connector-3000 Controller 36")

* Not illustrated.

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2.4 Drain System Components

2.4.1 3" Drain Manifold Components



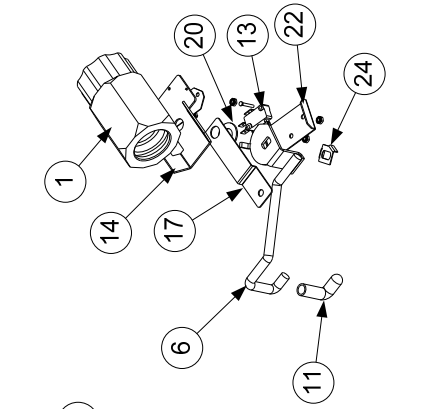
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2.4.1 3" Drain Manifold Components (cont.)

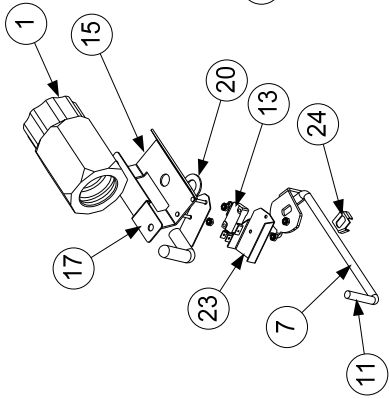
ITEM	PART #	DESCRIPTION
1	8235188	Tube, 3" Filter Right, 50/60/80
	8237664	Tube, 3" Drain Middle BK50 of BK60/50/60
	8238167	Tube, 3" Drain YSCFHC318
2	8234681	Tube, 3" Right Drain, 50/60/80
3	8234682	Tube, 3" Center Drain, 50/60/80
4	8121764	Tube, 3" Right Drain, KSCFH218G
5	8236315	Tube, 3" Left, SCFC50
6	8235911	Tube, 3" Right Drain, Wingstreet
7	8121998	Spout, 3" 50/60/80
8	8121901	Spout, 3" CF/BID80
9	8122006	Spout, 3" Wingstreet
10	8121908	Spout, 3" KSCFH218G
11	8236100	Spout, 3" HD65 (with fitting)
12	8235968	Spout, 3" SCFHD60/63/65
13	2006751	Tube, 3" Joiner, SCF50
14	2009365	Tube, 3" Joiner, Drain Filter Right
15	2006752	Tube, 3" Joiner, SCF50 (for matching cabinet)
	2206660	Tube, 3" Joiner, Under RAM BK60/50/RAM/60, BK60/RAM/50/60 (19.00")
16	8121999	Tube, 3" 50/60/80, Short, End Drain
	8237662	Tube, 3" Left End BK60/50/60 (3.17")
	8237452	Tube, 3" Left End BK60/50/RAM/60, BK260, BK50 on BK60/RAM/50/60 (4.00")
17	8122008	Tube, 3" Wingstreet, Short, Mid Drain
18	8235910	Tube, 3" Wingstreet, Short, Left Drain
19	8237633	Tube, 3" Right End BK260
20	8237663	Spout (Dump), 3" BK60/50/60, BK60/50/RAM/60, BK260, BK60/RAM/50/60 (10.06")
21	8237520	Spout (Dump), 3" BK260 (13.82")
22	8237667	Spout (Connecting Drain), 3" BK60/RAM/50/60
23	8237462	Spout (Connecting Drain), 3" BK60/50/RAM/60
24	8237668	Tube, 3" Left Drop BK60/RAM/50/60
25	8237461	Tube, 3" Right Drop BK60/50/RAM/60
26	8090969	Clamp, T-Bolt
27	8160729	Sleeve, Drain Connection

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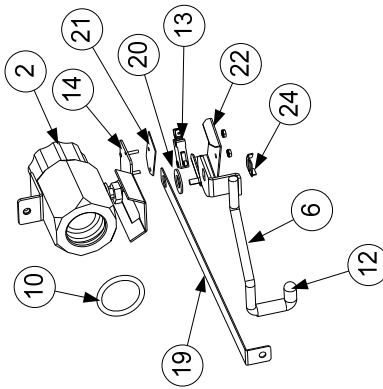
2.4.2 Drain Valve Assemblies



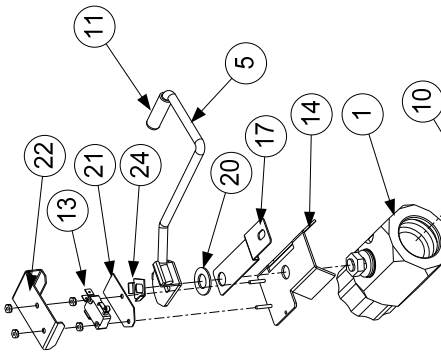
D
(CFHDC50, BK50
-BK60/50/60)



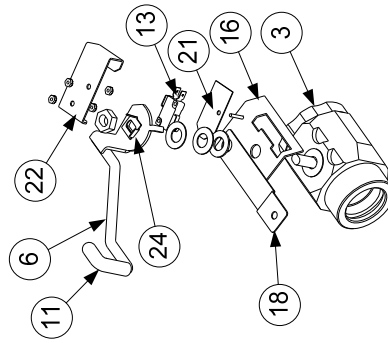
C
(CFHDC150)



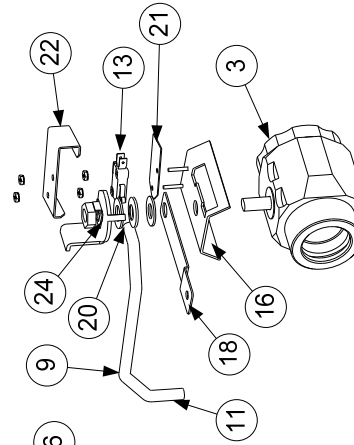
B
(YSCF14-Wingstreet)



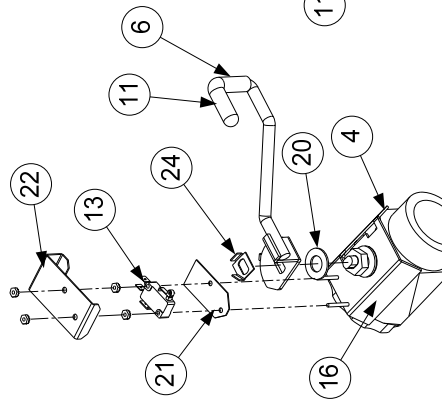
A
(BK50-BK60/50/RAM/60
and BK60/RAM/50/60)



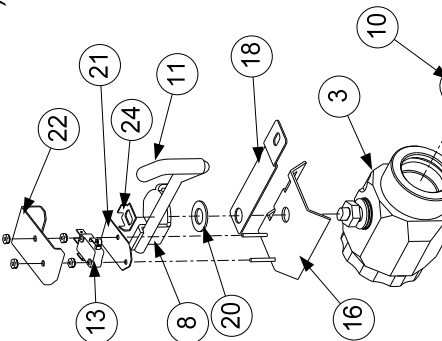
H
(60's - Raising Cains, HDC60's,
HDC 65's, BK260, 60's-BK60/
50/60, Rt. 60- BK60/50/RAM/60
& BK60/RAM/50/60)



G
(CFHD160, 118G, 60)



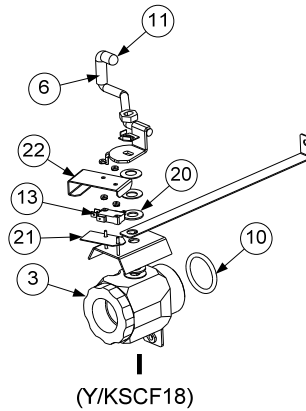
F
(BK160)



E
(Left BK60-BK60/50/RAM/60
and BK50-BK60/50/RAM/60)

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

2.4.2 Drain Valve Assemblies (cont.)

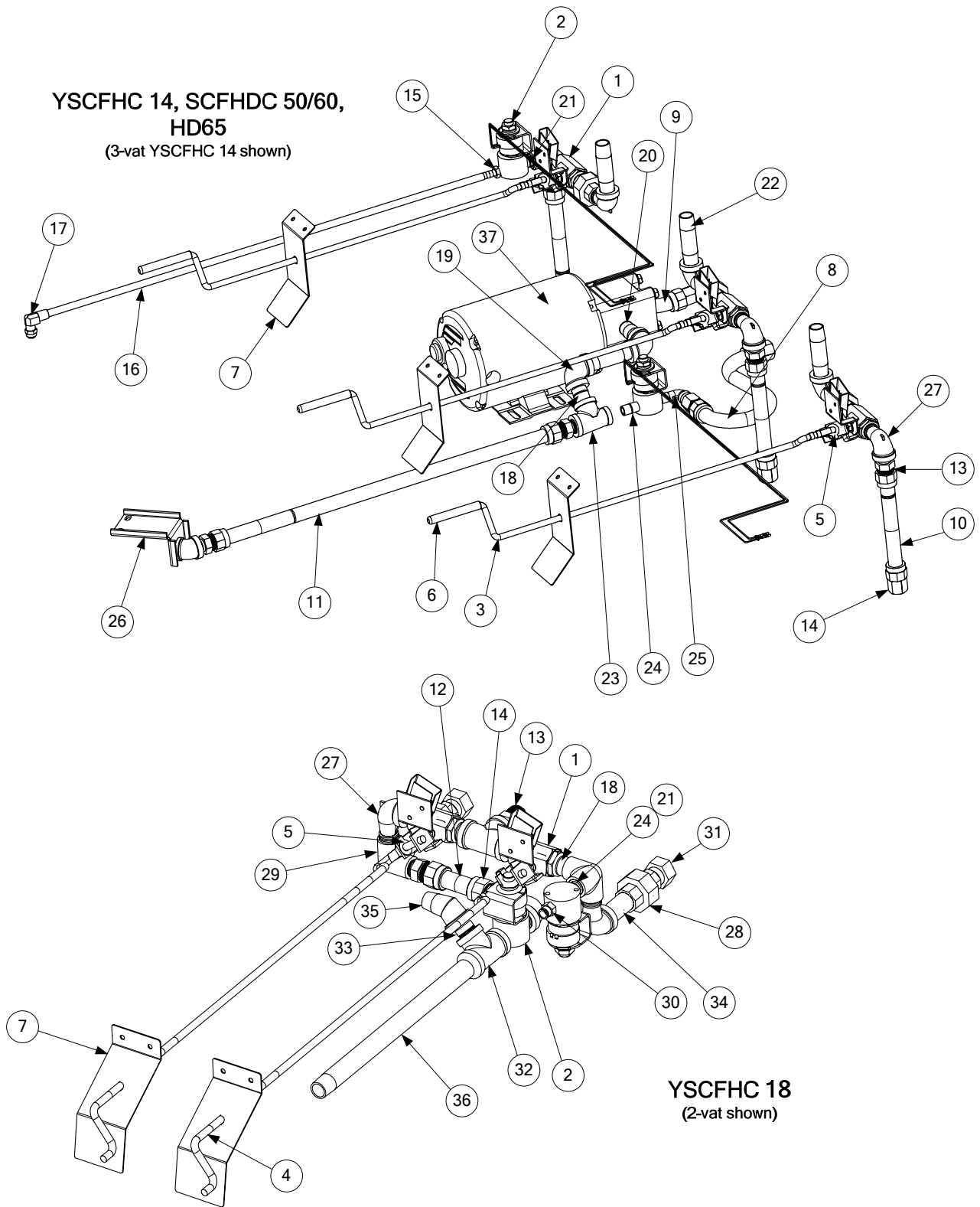


ITEM	PART #	DESCRIPTION
A	1081581	Valve Assy, 1 ¼" Drain (BK50 on BK1814-BK60/50/RAM/60 and BK60/RAM/50/60)
B	1068042	Valve Assy, 1 ¼" Drain (YSCF14-Wingstreet)
C	1068172	Valve Assy, 1 ¼" Drain (CFHDC150)
D	1063979	Valve Assy, 1 ¼" Drain (CFHDC50, BK50 on BK1814-BK60/50/60)
E	1081723	Valve Assy, 1 ½" Drain (Left BK60 on BK1814- BK60/50/RAM/60 and BK60/RAM/50/60)
F	1081559	Valve Assy, 1 ½" Drain (BK160)
G	1068401	Valve Assy, 1 ½" Drain (CFHD160, 118G, 60)
H	1063977	Valve Assy, 1 ½" Drain (60's – Raising Cains, HDC60's, HDC65's, BK260, 60's on BK60/50/60, Right 60 on BK1814- BK60/50/RAM/60 and BK60/RAM/50/60)
*	1083474	Valve Assy, 1 ½" Drain (GM1814) (use 1083475 for 1 ¼" drain GM1814)
I	1080448	Valve Assy, 1 ½" Drain (Y/KSCF 18)
1	8102784	Valve, 1 ¼" Full Port Drain(includes item # - O-ring)
2	8235075	Valve , 1 ¼" W/A, Drain Wingstreet
*	8102126	Valve, 1 ¼" Full Port Drain(includes handle)
3	8102783	Valve, 1 ½" Full Port Drain (use 8235053 for Y/KSCF18G)
4	8102127	Valve, 1 ½" Full Port Drain
5	8237426	Handle W/A, BK50 Drain Valve
6	8236262	Handle W/A, HD50/Y/KSCF18G Drain Valve
7	8236340	Handle W/A, CF150 Drain Valve
8	8237632	Handle W/A, BK60 Drain Valve
9	8236424	Handle W/A, Rotating 118G Drain Valve
10	8160544	O-Ring Seal
11	8160547	Cap, Vinyl Red
12	8160549	Cap, Vinyl Blue
13	8072104	Switch, CE Micro Roller Lever
14	1066020	Bracket Assy 1 ¼" Drain Valve (use 1083706 on GM1814)
15	1068173	Bracket Assy 1 ¼" Drain Valve CF150
16	1065511	Bracket Assy 1 ½" Drain Valve HE50 (use 1083701 on GM1814)
17	2006795	Strap, 1 ¼" Drain Valve Connecting
18	2006116	Strap, Round Drain Connecting (use 2205155 for Y/KSCF18)
19	2008796	Bracket, Drain KSCF218
20	8090988	Washer, 1.00 OD x .525 ID Teflon
21	8160220	Insulation, RF Switch
22	2200143	Guard, BID180 Microswitch Drain
23	9012348	Cover, DV Safety Switch
24	2001257	Retainer, Drain Valve Nut
*	8121717SP	Nipple, Drain (BK160 Non-Filter)

* Not illustrated.

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2.5 Oil Return System



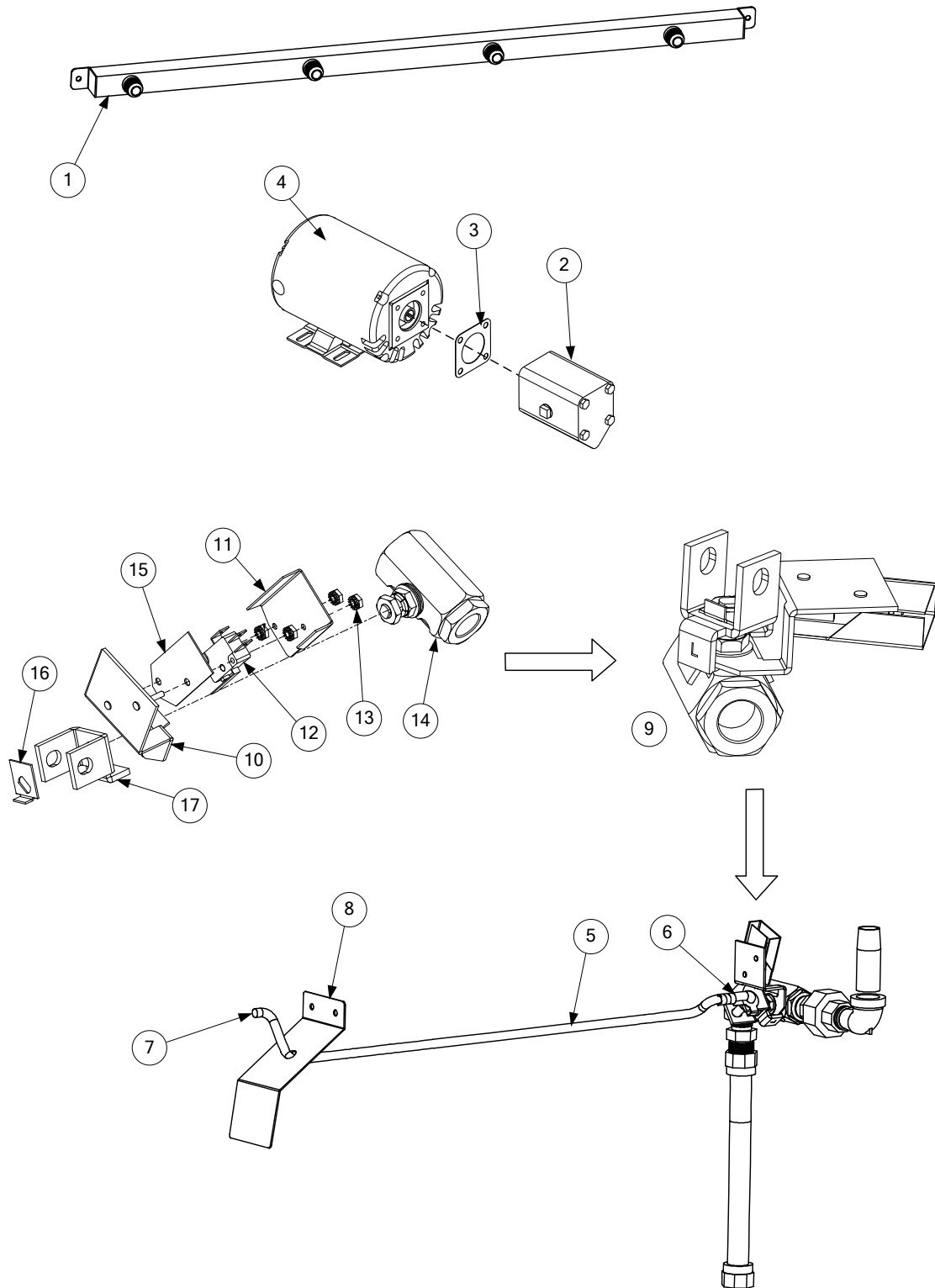
**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

2.5 Oil Return System (cont.)

ITEM	PART #	DESCRIPTION
1	1064006SP	Valve Assembly, 1/2" Oil Return (see Section 2.6 for components)
2	1067598SP	Valve, Solenoid with Female Pins
3	2009295	Handle, Oil Return (YSCFC 14, SCFHDC 50/60, HD 65)
4	2008929	Handle, Oil Return (YSCFC 18)
5	8090601	Clip, Clevis (to attach handle to Item 1)
6	8160639	Cap, Red Vinyl (grip for end of handle)
7	2108790	Bracket, Oil Return Handle
8	8101057	Flexline, 5/8" OD x 13.00" Long
9	8101067	Flexline, 5/8" OD x 8.50" Long
10	8101680	Flexline, 5/8" OD x 6.50" Long
11	8101400	Flexline, 5/8" OD x 21.00" Long
12	8101160	Flexline, 5/8" OD x 3.00" Long
13	8101668	Adapter, Male, 5/8" OD x 1/2"
14	8101669	Adapter, Female, 7/8" OD x 1/2"
15	8103199	Fitting, 1/4" NPT x 3/8", Hose Barb
16	8121838	Tubing, 3/8" OD, 27.00" Long
17	8101372	Fitting, 1/4" NPT x 3/8" OD, 90° Tube
18	8130022	Nipple, 1/2" NPT Close, Black Metal
19	8130062	Elbow, 1/2", 90°, Black Metal
20	8130298	Nipple, 1/2" x 2.00" NPT, Black Metal
21	8130304	Bushing, 1/2" x 1/4", Flush, Black Metal
22	8130460	Nipple, 1/2" x 3.00" NPT, Black Metal
23	8130530	Tee, Reducing, 1/2" x 1/4" x 1/2"
24	8130838	Nipple, 1/4" NPT Close, Black Metal
25	8130919	Elbow, 1/4" Street, 90°, Stainless Steel
26	8237800	Bracket, Disconnect (Use 8238001 for 2-Battery) (Use 8237997 for BK21814/HD50) (Use 8237998 for BK units with RAM)
27	8130165	Elbow, 1/2" x 1/2" Street, 90°
28	8130173	Union, 1/2" NPT, 150#
29	8130331	Elbow with Side Outlet, 1/2" NPT
30	8102492	Fitting, Straight, Quick Connect
31	8103160	Adapter, 1/2" NPT x 15/16"
32	8130003	Tee, 1/2" x 1/2" x 1/2", Black Metal
33	8130087	Nipple, 1/2" x 1.50" NPT
34	8130265	Nipple, 1/2" x 2.50" NPT, Black Metal
35	8130342	Elbow, Street, 45°, 1/2" NPT
36	8130515	Nipple, 1/2" x 12.00" NPT
37	▶▶▶	See Additional Oil Return Components, Section 2.6

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST

2.6 Additional Oil Return Components



**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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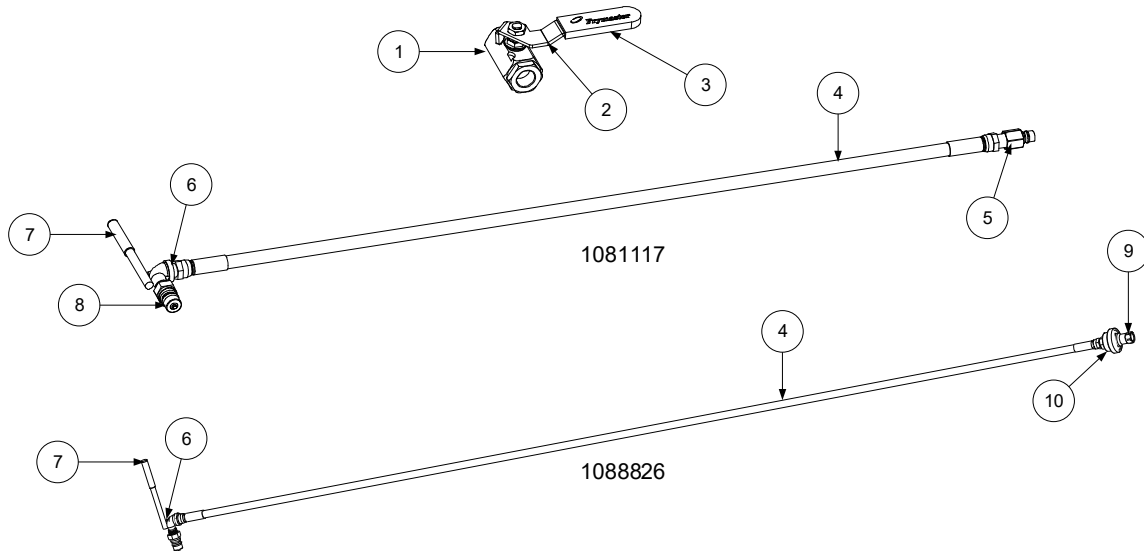
2.6 Additional Oil Return Components (cont.)

ITEM	PART #	DESCRIPTION
1		Oil Return Manifold
	8103113	314/350
	8103117	214/250
	8103118	260/460/665/63/218G
	8103120	460
	8103121	360/318G
	8103734	BK1814 -60/50/60
	8103555	BK1814 – 60/50/RAM/60 or 60/RAM/50/60
	8103170	550
2		Pump
	8103346	4 GPM, Viking
	8261264	4 GPM, 2-piece
	8103347	8 GPM, Viking
*	80711973	Viking Pump Seal Kit
3	8160093	Gasket (Pump/Motor) (included with motor)
4		Motor and Gasket Kit
	8261785	100V 50/60Hz
	8261712	115V 50/60Hz
	8261270	230V 50/60Hz
5	2008929	Handle, Oil Return (use 2009295 BK1814)
6	8090601	Clip, Clevis, Rod End
7	8160638	Cap, Vinyl Yellow ⁵ / ₁₆ " x 3"
*	8160637	Cap, Vinyl Blue ⁵ / ₁₆ " x 3"
*	8160639	Cap, Vinyl Red ⁵ / ₁₆ " x 3"
8	2108790	Bracket, Oil Return Handle (use 2306575 BK60/50) (use 2307305 for 318G)
9	1064006SP	Valve Assembly, Oil Return
10	1063962	Bracket, ½" Switch Flush
11	2202459	Cover, Safety Switch ½"
12	8072103	Microswitch, Straight Lever
13	8261366	Nut, 4-40 Keps Hex (with External Teeth)
14	8100278	Valve, ½" Ball
15	8160220	Insulation, Microswitch
16	9002935	Retainer, Oil Return Valve
17	9012772	Handle Bracket, Valve

* Not illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

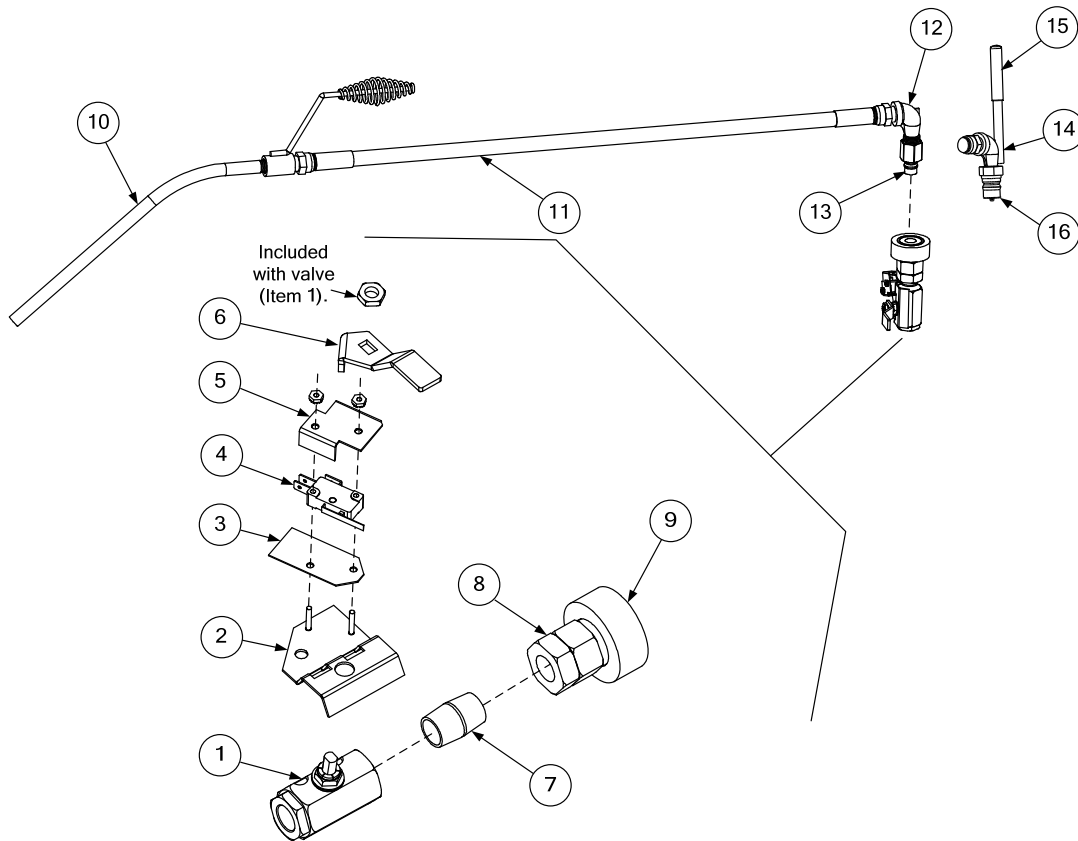
2.7 Oil Disposal Plumbing (Popeye's and Church's)



ITEM	PART #	DESCRIPTION
	1081121	Valve, Oil Disposal
1	8100278	Valve
2	9005953	Handle
3	8140047	Sleeve
	1081117	Oil Disposal Assembly
4	8102379	Hose, 107.5", 1/2" x 1/2"
5	8130699	Nipple, Snaptite, 1/2"
6	8237153	Handle
7	8160631	Sleeve/Cap, Handle
8	8100487	Coupling, Male
	1082226	Oil Disposal Assembly
9	8100487	Coupling Male
10	8100490	Quick Disconnect 1/2" Female

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST

2.8 Oil Return Wand

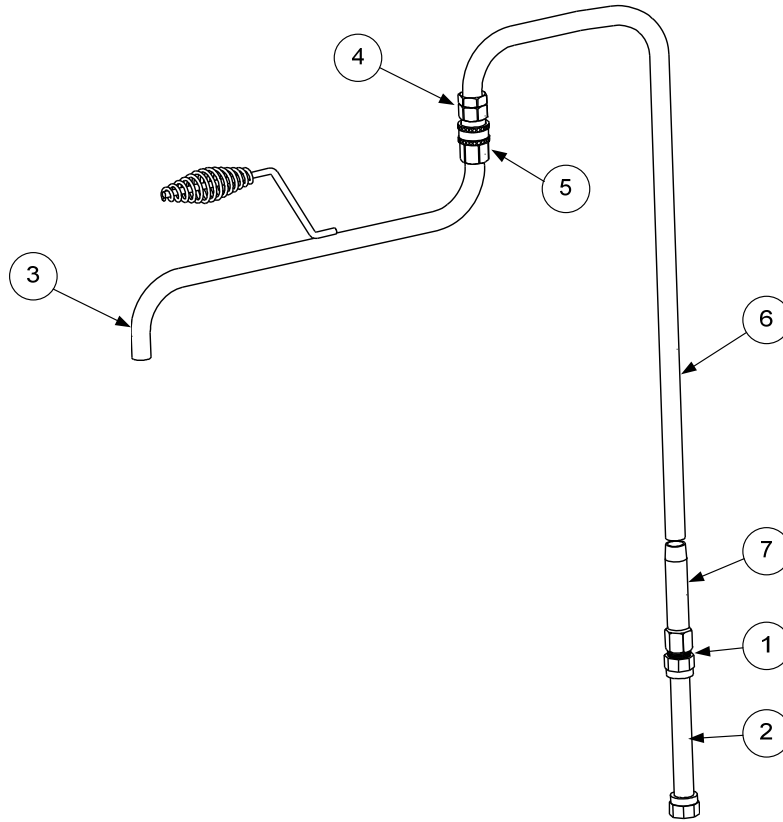


ITEM	PART #	DESCRIPTION
	1063997	Wand Valve Assembly
1	8100278	Valve, 1/2" Ball
2	8069128	Bracket, Microswitch
3	8160220	Insulation, Microswitch
4	8072103	Microswitch, CE Micro-roller, Straight Lever
5	9002849	Cover, Microswitch
6	9002839	Handle, Wand Valve
7	8130022	Nipple, 1/2" x Close NPT
8	8102283	Quick Disconnect, 1-3/8" (#VHC8-8F)
9	8102282	Collar, Quick Disconnect, 1-3/8" Hole
	1062568SP	Wand Hose Assembly (Generic)
	1080528	Wand Hose Assembly (Church's, Popeye's, Raising Cane's)
10	1061454SP	Nozzle Assembly, Hose with Handle (part of 1062568 and 1080528)
11	8101434	Hose Assembly, Standard, 5 1/2 feet (part of 1062568 and 1080528)
12	8130165	Elbow, Street, 1/2" NPT, 90° (part of 1062568)
13	8130699	Nipple, Snaptite, 1/2" (#PHN8-8F) (part of 1062568)
14	8237153	Handle, Wash Down Hose (part of 1080528)
15	8160631	Cap, Red Vinyl, 1/2" x 3" (part of 1080528)
16	8100487	Coupling, Male (part of 1080528)
*	8130368	Nipple, 1/2" NPT x 16" Black Metal
*	8130345	Elbow, 1/2" NPT, 45° Black Metal
*	8130087	Nipple, 1/2" NPT x 1.5" Black Metal
*	8102043	Clamp, Pipe, 1/2" (Jiffy H-40)
*	2304773	Bracket, Side

* Not illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

2.9 Over-the-Top Oil Return System

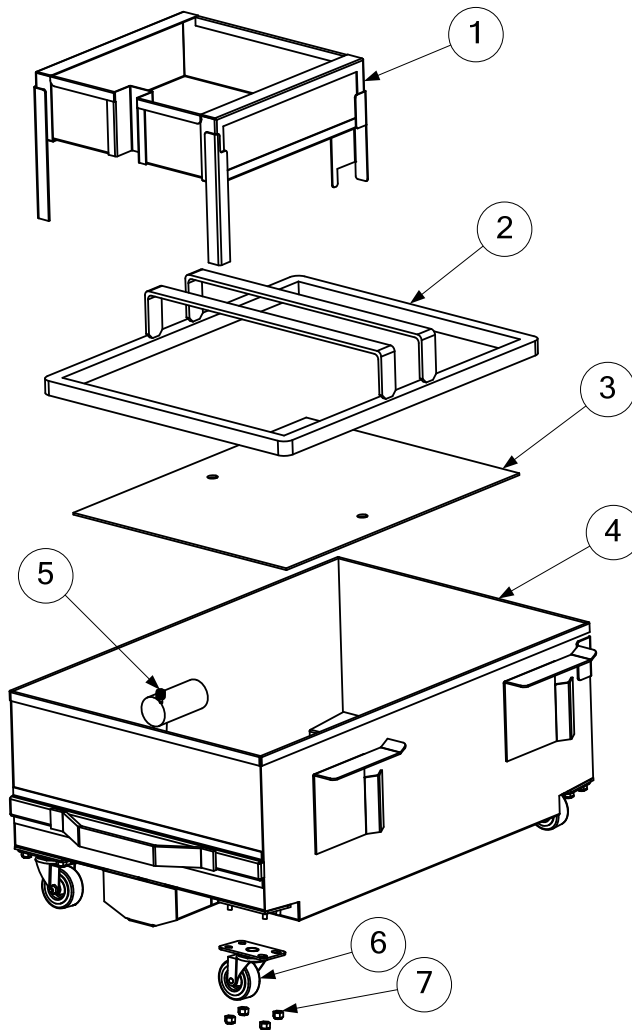


ITEM	PART #	DESCRIPTION
1	8101669	Adapter, Female $\frac{7}{8}$ " O.D. x $\frac{1}{2}$ "
2	8101680	Flexline, $\frac{5}{8}$ " I.D. x 6.50" Long
3	8102513	Tubing, Faucet Upper
4	8102699	Coupling, Quick Disconnect, Snaptite
5	8102700	Nipple, Quick Disconnect, Snaptite
6	8103234	Tubing, Faucet Rear
7	8130093	Nipple, $\frac{1}{2}$ " x 4" NPT BM

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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2.10 Filtration Components

2.10.1 Filtration Components; SCFHDC50 Series and BK1814 Fryers

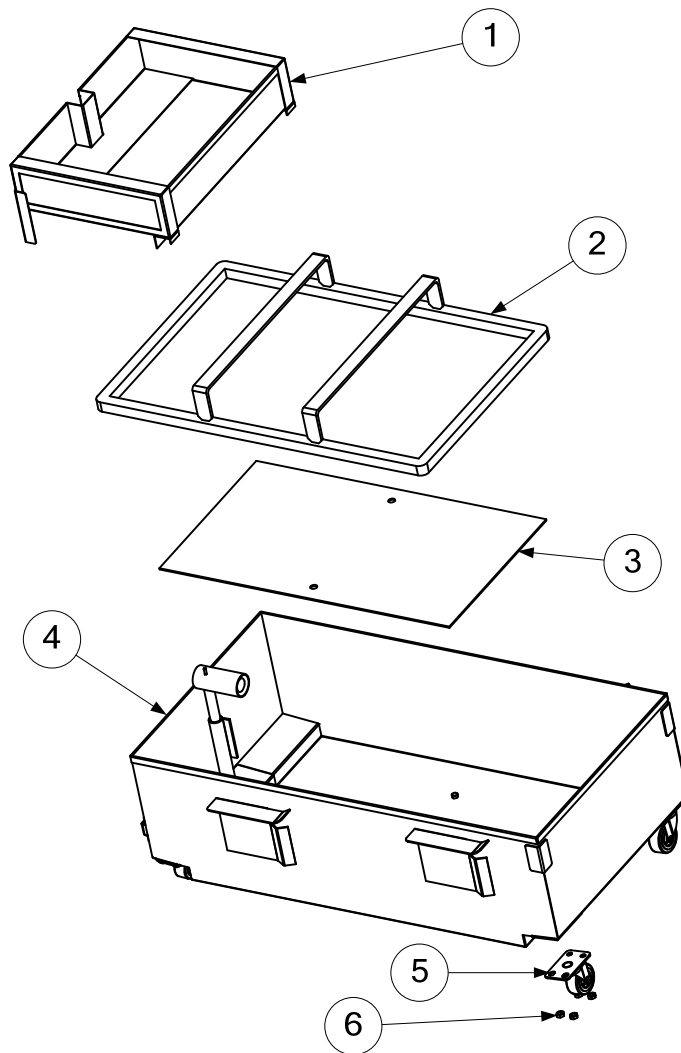


ITEM	PART #	DESCRIPTION
1	8236366	Basket, Crumb
	8237425	Basket, Crumb (BK1814)
2	8103541	Ring, Hold-down
3	2008003	Screen, Sana Grid
4	8237294	Pan, Filter
5	8130568	Plug, 1/8" NPT Socket-Head Pipe
6	8102805	Caster, 2" Filter Pan
7	8090823	Nut, Nylock, 1/4-20
*	8236603	Lid (mounted in frame)
*	8237652	Lid (mounted in frame) BK60/50/RAM/60, BK260
*	8237418	Lid (mounted in frame) BK60/50/60
*	8237627	Lid (mounted in frame) BK50/RAM/50/60

* Not illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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2.10.2 Filtration Components; SCFHDC60 Series Fryers

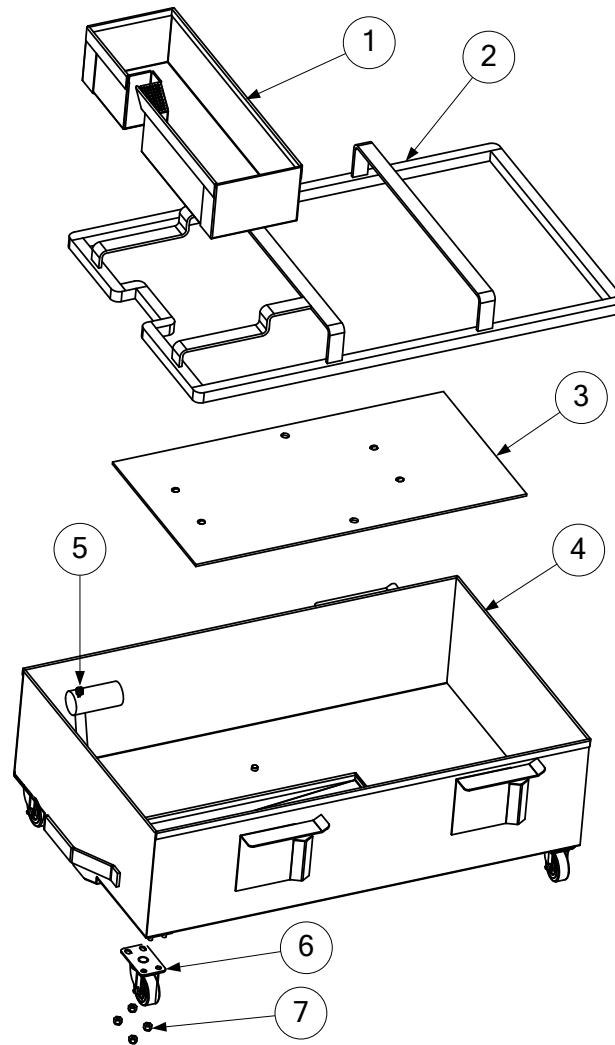


ITEM	PART #	DESCRIPTION
1	8236018	Basket, Crumb
*	8237110	Basket, Crumb (Raising Cane's)
2	8103540	Ring, Hold-down
3	2005726	Screen, Sana Grid
4	8236338	Pan, Filter
5	8102805	Caster, 2" Filter Pan
6	8090070	Nut, 1/4-20 Hex, S/S
*	8236403	Lid (mounted in frame)

* Not illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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2.10.3 Filtration Components; Y/K/SCF/C/HC218 and 63 Series Fryers

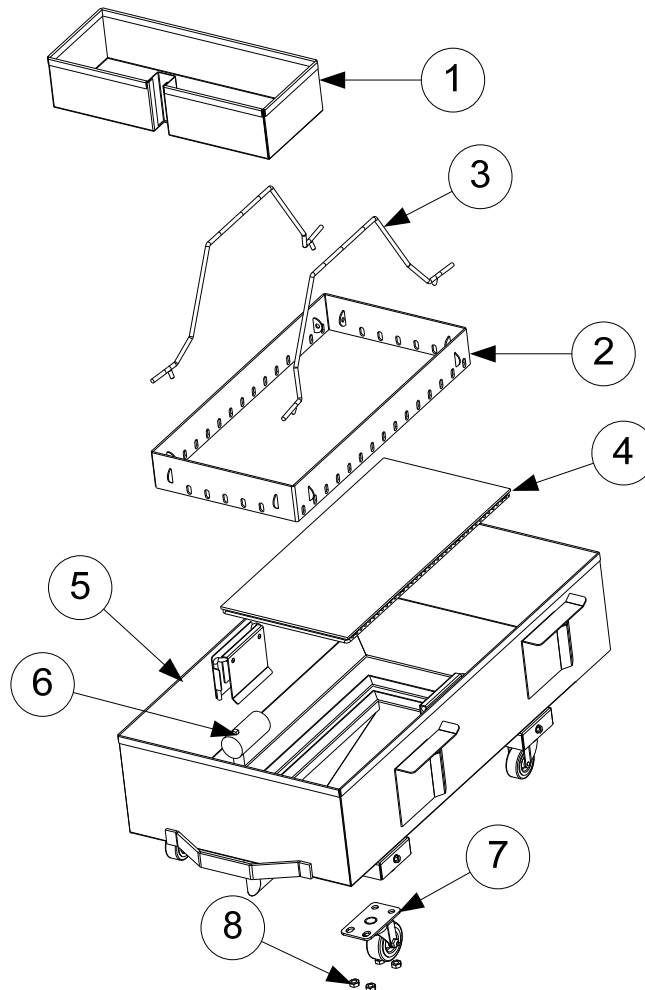


ITEM	PART #	DESCRIPTION
1	8236172	Basket, Crumb
2	8103195	Ring, Hold-down
3	1067330SP	Screen Assembly, Filter
4	8237534	Pan, Filter
5	8130568	Plug, 1/8" NPT, Socket-Head
6	8102805	Caster, 2" Filter Pan
7	8090823	Nut, Nylock, 1/4-20
*	8236507	Lid (mounted in frame)

* Not illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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2.10.4 Filtration Components; Y/KSCF/C/HC218 Export (India) Series Fryers prior to May 2010

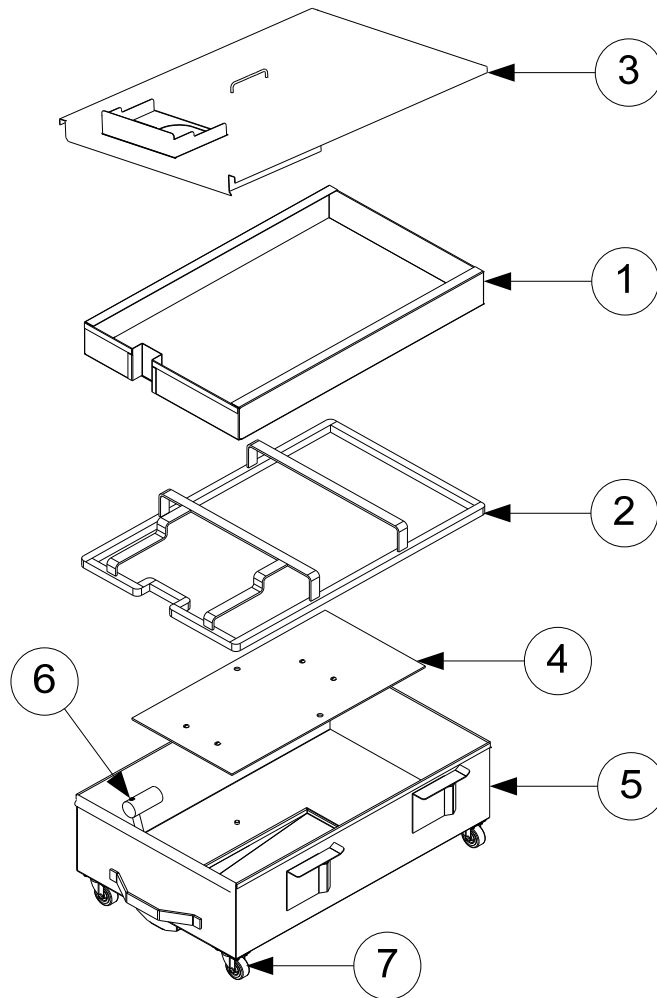


ITEM	PART #	DESCRIPTION
	1081023SP	Filter Pan Assembly XKSCFC218
1	8235427	Basket, Crumb
2	8234470	Ring, Hold-down
3	8234471	Handle Hold Down Ring
4	1067912SP	Screen Assembly, Filter
5	1081022SP	Pan, Filter
6	8130679	Plug, 1/8" SS NPT, Sq-Head
7	8102805	Caster, 2" Filter Pan
8	8090823	Nut, Nylock, 1/4-20
*	8130704	Plug, 3/8" SS Hex Head
*	8236911	Lid (mounted in frame)

* Not illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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2.10.5 Filtration Components; Y/KSCF/C/HC218 Export (India) Series Fryers after May 2010

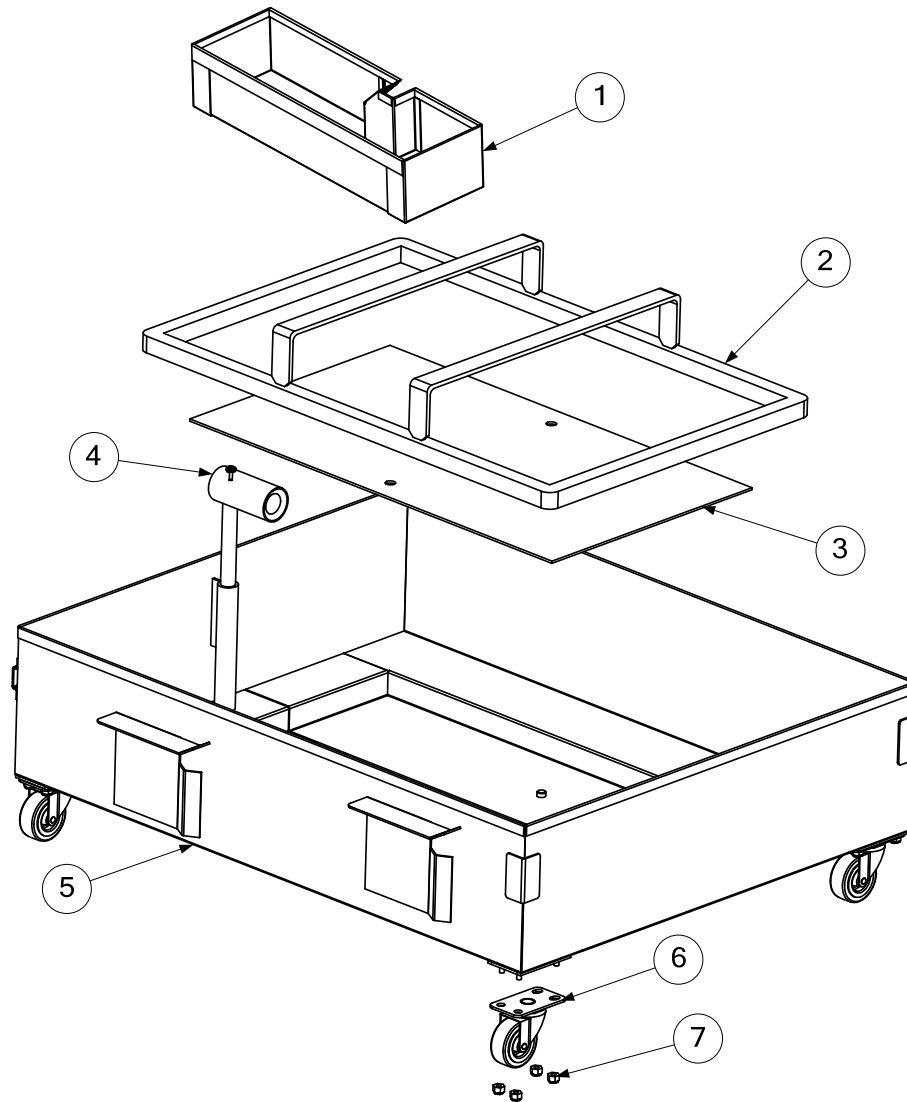


ITEM	PART #	DESCRIPTION
1	8237904	Basket, Crumb
2	8103195	Ring, Hold-down
3	8237834	Lid
4	1067330SP	Screen Assembly, Filter
5	8237534	Pan, Filter
6	8130568	Plug, 1/8" SS NPT, Sq-Head
7	8102805	Caster, 2" Filter Pan
*	8090823	Nut, Nylock, 1/4-20

* Not illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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2.10.6 Filtration Components; 65 Series Fryers (Filter Paper Option)

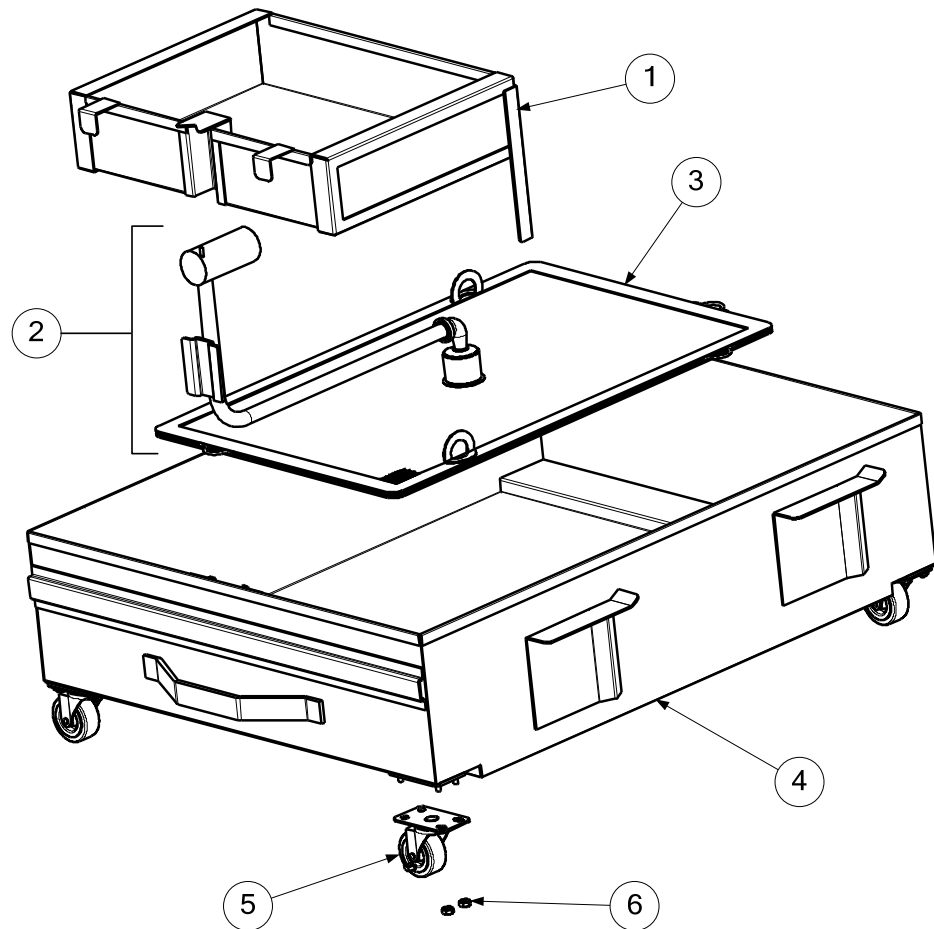


ITEM	PART #	DESCRIPTION
1	8236018	Basket, Crumb
2	8103540	Ring, Hold-down
3	2005726	Screen, Sana Grid
4	8130568	Plug, 1/8" NPT, Socket-Head Pipe
5	8236304	Pan, Filter
6	8102805	Caster, 2" Filter Pan
7	8090823	Nut, Nylock, 1/4-20
*	8235857	Lid (mounted in frame)

* Not Illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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2.10.7 Filtration Components; 65 Series Fryers (Filter Leaf Option)

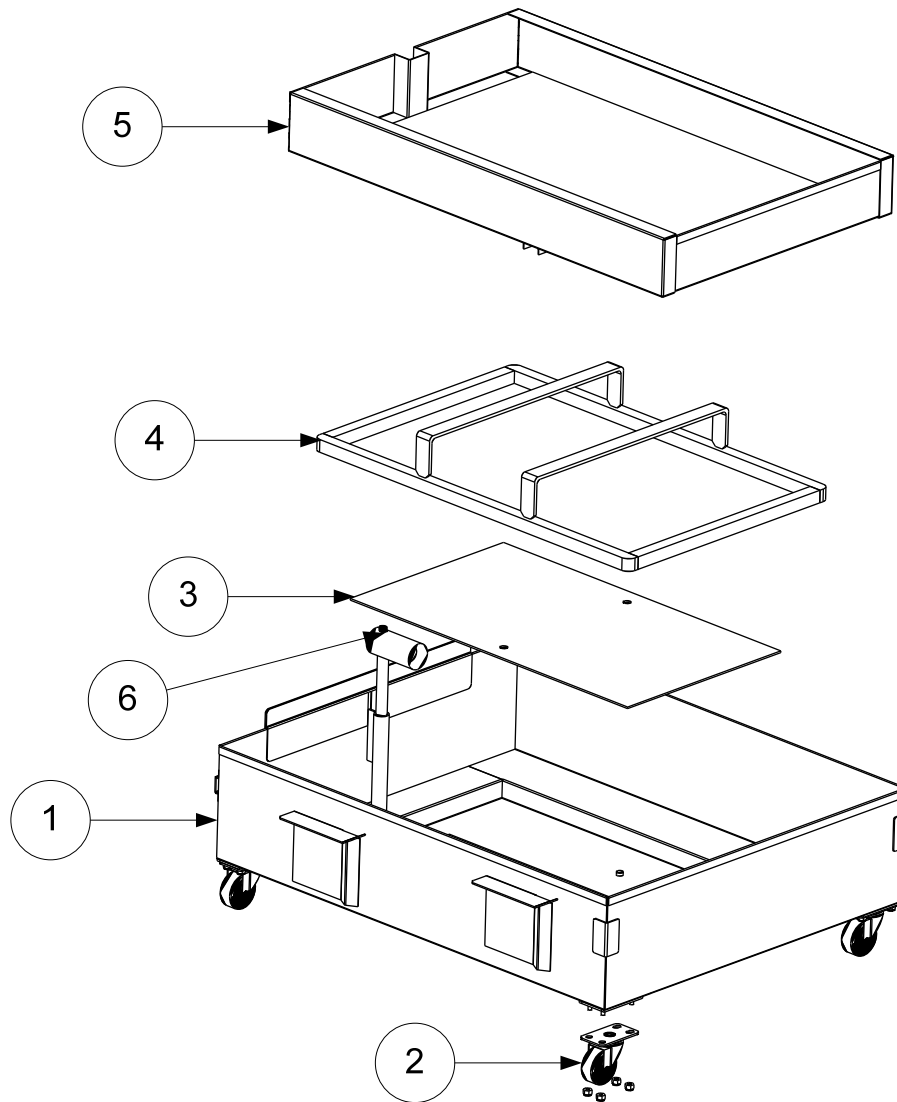


ITEM	PART #	DESCRIPTION
1	8235851	Basket, Crumb
2	1066466SP	Filter Leaf with Suction Tube Assembly
3	1068399	Filter Leaf (screen only)
4	8235258SP	Filter Pan
5	8102805	Caster, 2"
6	8090070	Nut, 1/4"-20 Hex
*	8235857	Lid (mounted in frame)

* Not Illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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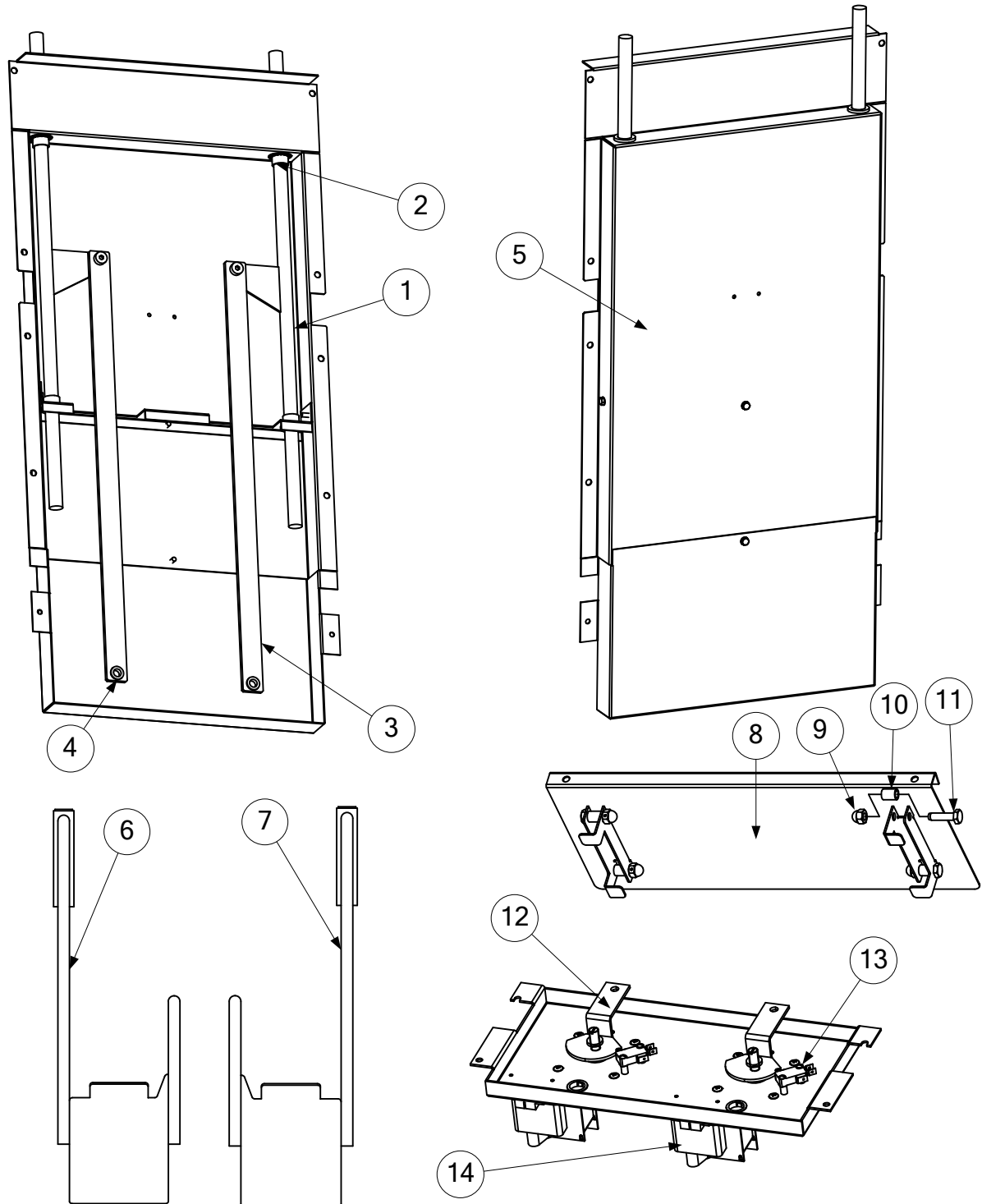
2.10.8 Filtration Components; 65 Series Fryers (Popeye's / Church's Filter Paper Option)



ITEM	PART #	DESCRIPTION
1	8237769SP	Filter Pan SCFHD65
2	8102805	Caster, 2"
3	2005726	Screen, Sana Grid UFF60
4	8103540	Ring, Hold-down UFF60
5	8238659	Basket, Crumb 65
6	8130568	Pipe Plug 1/8 NPT Socket Head

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
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2.11 Basket Lift Components



**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

2.11 Basket Lift Components (cont.)

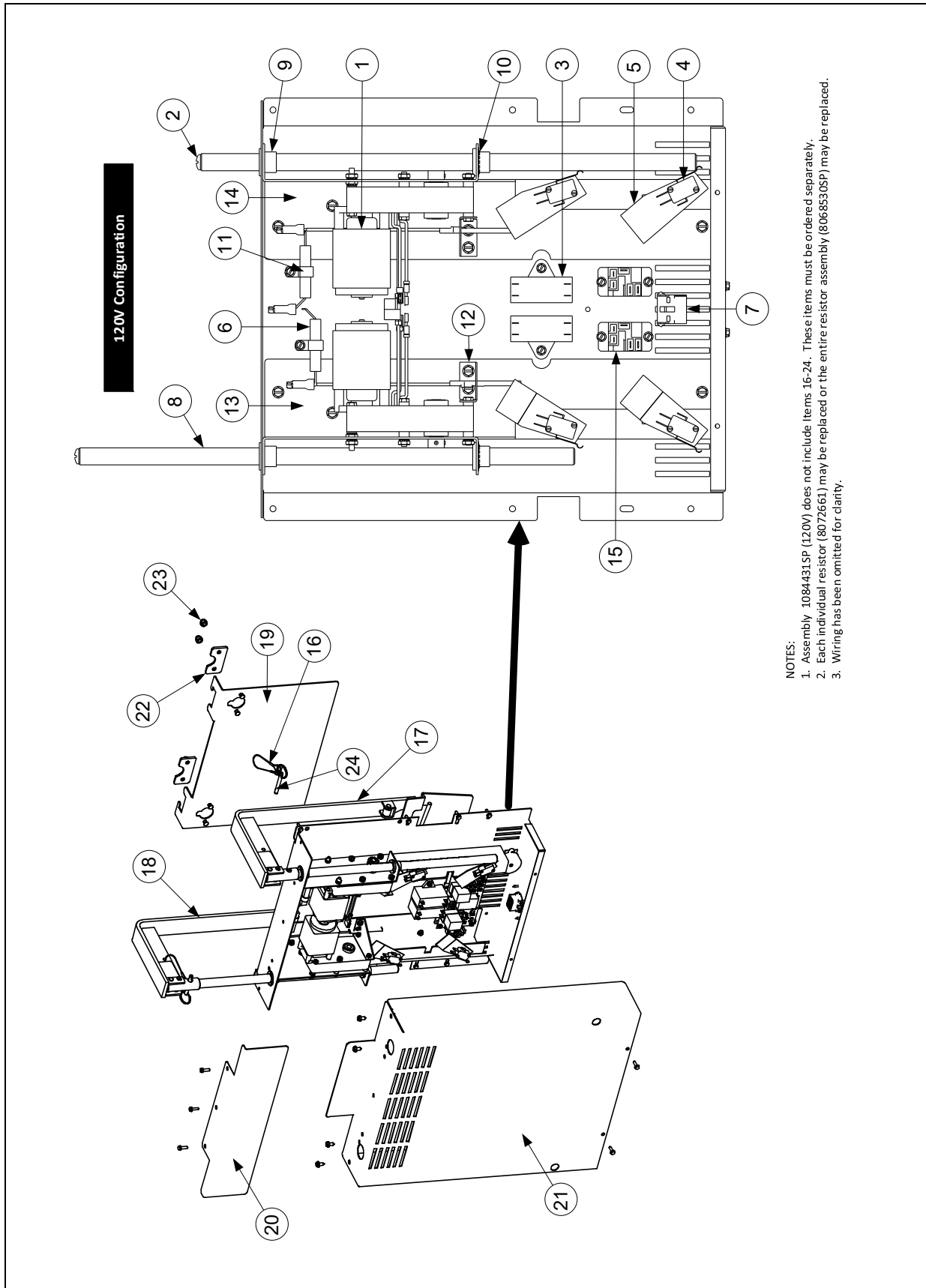
ITEM	PART #	DESCRIPTION
HDC50 Models (1067702)		
1	8233625	Lift Rod
2	8130035	Bushing, Bronze
3	2002069	Lift Bar
4	2102140	Bushing, 3/8" x 1/2"
5	8241783	Back, Upper
*	8240991	Back, Lower
6	8236871	Lift Assembly, Left
7	8236870	Lift Assembly, Right
8	1068370	Lift Guide Assembly
9	8090990	Nut, Low Crown, 1/4" x 20"
10	8103307	Roller
11	8091018	Bolt, 1/4" x 20" x 1" S/S
12	8233626	Switch, Limit Cam
13	8072104	Microswitch, Micro Roller Lever
14	8070107	Gear Motor, 120V
HDC60/63 Models (1068058)		
1	8236309	Lift Rod
2	8130035	Bushing, Bronze
3	2203060	Lift Bar
4	8102140	Bushing, 3/8" x 1/2"
5	8241834	Back
6	8236588	Lift Assembly, Left
7	8236589	Lift Assembly, Right
8	1068368	Lift Guide Assembly
9	8090990	Nut, Low Crown, 1/4" x 20"
10	8103307	Roller
11	8091018	Bolt, 1/4" x 20" x 1" S/S
12	8236312	Switch, Limit Cam (HD63 Red Robin)
*	8233626	Switch, Limit Cam (HD60 Red Robin)
13	8072104	Microswitch, Micro Roller Lever
14	8070107	Gear Motor, 120V
*	1061870SP	Lift Assembly, D60/63 Basket (Red Robin)
*	8233625	Lift Assembly, Basket (Red Robin)
*	2303069	Arm, Basket Lift Cam (Red Robin)
*	8091019	Bolt, 3/8" x 5/16" Shoulder (Red Robin)

*Not illustrated.

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

CHAPTER 2: PARTS LIST

2.11.1 Basket Lift Assembly and Components - HD50 - 120V After Oct. 2012



**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

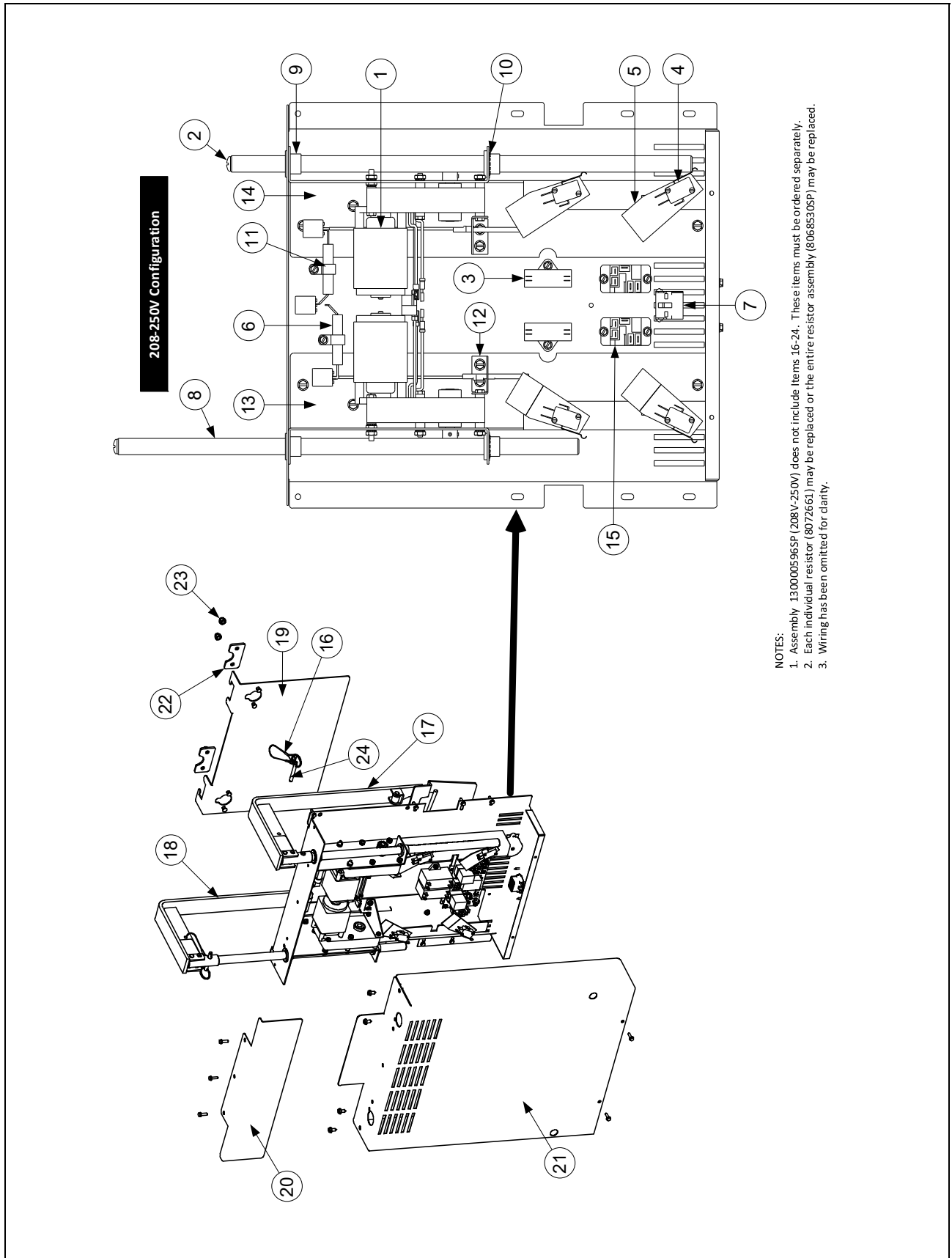
2.11.1 Basket Lift Assembly and Components - HD50 - 120V After Oct. 2012

ITEM	PART #	COMPONENT
		Basket Lift Assemblies (see Note 1 in illustration)
A	1084431SP	Basket Lift Assy, 120VAC (Items 1-15)
1	1084181SP	Motor Assy, 120VAC Modular Basket Lift
2	8090129	Screw, 1/4-20 X 5/8 Slotted Round Head
3	8072513	Capacitor, Motor Run 12.5 MFD 330VAC
4	8072572	Microswitch
5	8120442	Insulation, Microswitch Box
6	8068530SP	Resistor Assembly (see Note 2 in illustration)
7	8070159	Connector, 12 Pin Plug Housing
8	8101012	Rod, Modular BL
9	8130035	Bushing, Bronze
10	8090082	Ring, Bushing Retainer 3/4 Truarc
11	8090810	Clamp, Nylon
12	2209678	Gusset, Reversing Basket Lift Motor
13	2229938	Chassis, D50/FPGL Modular Basket Lift
14	2219938	Chassis, D50/FPGL Modular Basket Lift
15	8071683	Relay, 12VDC
16	8104854	Lanyard, w/Ring
17	8238584	Arm, Left (Illustration May Slightly Differ)
18	8238585	Arm, Right (Illustration May Slightly Differ)
19	2602157	Guide, B/L Arm (Illustration May Slightly Differ)
20	2401693	Shield, Rear Modular B/L Cover
21	2401707	Cover, Modular B/L (Illustration May Slightly Differ)
22	2601474	Cover, Basket Hanger Rivet B/L
23	8090047	Nut, Cap 1/4" -20
24	8104852	Pin, 1/4" X 1-5/16" Quick Release

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

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2.11.2 Basket Lift Assembly and Components - HD50 - 208-250V - After Mar. 2022



**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

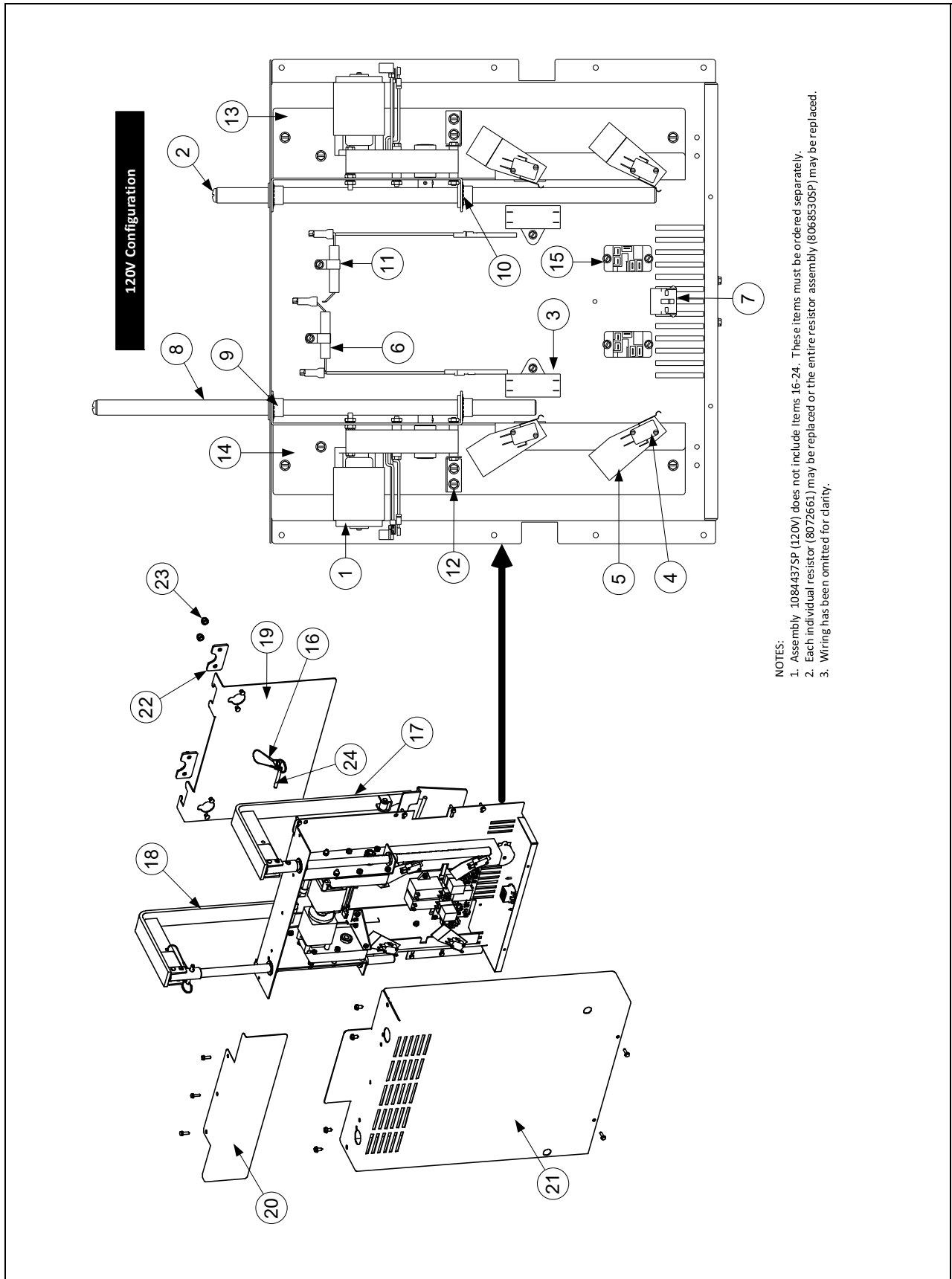
2.11.2 Basket Lift Assembly and Components - HD50 - 208-250V - After Mar. 2022

ITEM	PART #	COMPONENT
		Basket Lift Assemblies (see Note 1 in illustration)
A	130000596SP	Basket Lift Assy, 208-250VAC (Items 1-15)
1	1085031SP	Rev Motor Assy, Basket Lift w/Gear 208-250V
2	8090129	Screw, 1/4-20 X 5/8 Slotted Round Head
3	8076253	Capacitor, Motor Run 4.0 MFD 440VAC
4	8072572	Microswitch
5	8120442	Insulation, Microswitch Box
6	8068530SP	Resistor Assembly 120V (see Note 2 in illustration)
7	8070159	Connector, 12 Pin Plug Housing
8	8101012	Rod, Modular BL
9	8130035	Bushing, Bronze
10	8090082	Ring, Bushing Retainer 3/4 Truarc
11	8090810	Clamp, Nylon
12	2209678	Gusset, Reversing Basket Lift Motor
13	2229938	Chassis, D50/FPGL Modular Basket Lift
14	2219938	Chassis, D50/FPGL Modular Basket Lift
15	8071683	Relay, 12VDC
16	8104854	Lanyard, w/Ring
17	8238584	Arm, Left (Illustration May Slightly Differ)
18	8238585	Arm, Right (Illustration May Slightly Differ)
19	2602157	Guide, B/L Arm (Illustration May Slightly Differ)
20	2401693	Shield, Rear Modular B/L Cover
21	2401707	Cover, Modular B/L (Illustration May Slightly Differ)
22	2601474	Cover, Basket Hanger Rivet B/L
23	8090047	Nut, Cap 1/4" -20
24	8104852	Pin, 1/4" X 1-5/16" Quick Release

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS

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2.11.3 Basket Lift Assembly and Associated Parts - HD60 - 120V - After Oct. 2012



- NOTES:
1. Assembly 1084437SP (120V) does not include items 16-24. These items must be ordered separately.
 2. Each individual resistor (8072561) may be replaced or the entire resistor assembly (8068530SP) may be replaced.
 3. Wiring has been omitted for clarity.

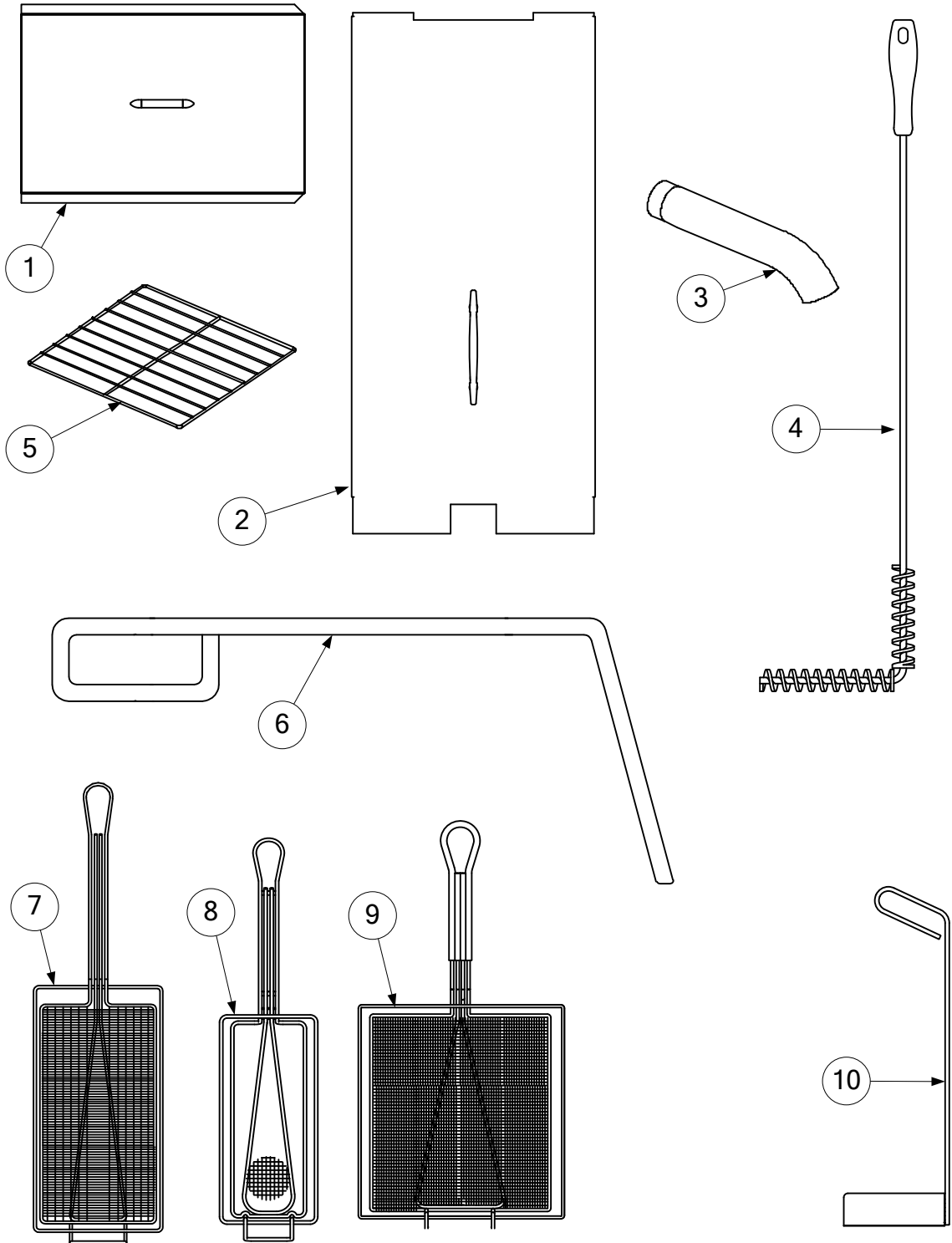
**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

2.11.3 Basket Lift Assembly and Associated Parts - HD60 - 120V - After Oct. 2012

ITEM	PART #	COMPONENT
		Basket Lift Assemblies (see Note 1 in illustration)
A	1084437SP	Basket Lift Assy, 120VAC (Items 1-15)
1	1084181SP	Rev Motor Assy, 120VAC Modular Basket Lift
2	8090129	Screw, 1/4-20 X 5/8 Slotted Round Head
3	8072513	Capacitor, Motor Run 12.5 MFD 330VAC
4	8072572	Microswitch
5	8120442	Insulation, Microswitch Box
6	8068530SP	Resistor Assembly (see Note 2 in illustration)
7	8070159	Connector, 12 Pin Plug Housing
8	8101012	Rod, Modular BL
9	8130035	Bushing, Bronze
10	8090082	Ring, Bushing Retainer 3/4 Truarc
11	8090810	Clamp, Nylon
12	2209678	Gusset, Reversing Basket Lift Motor
13	2420177	Chassis, D/HD60 Basket Lift
14	2410177	Chassis, D/HD60 Basket Lift
15	8071683	Relay, 12VDC
16	8104854	Lanyard, w/Ring
17	8238583	Arm, Left (Illustration May Slightly Differ)
18	8238583	Arm, Right (Illustration May Slightly Differ)
19	2602154	Guide, B/L Arm (Illustration May Slightly Differ)
20	2401715	Shield, Rear Modular B/L Cover
21	2401712	Cover, Modular B/L (Illustration May Slightly Differ)
22	2601474	Cover, Basket Hanger Rivet B/L
23	8090047	Nut, Cap 1/4" -20
24	8104852	Pin, 1/4" X 1-5/16" Quick Release

HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST

2.12 Accessories



**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

2.12 Accessories (cont.)

ITEM	PART #	DESCRIPTION
1	1061637SP	Cover, Full-vat (HD50/BK50)
2	1062585SP	Cover, Split-vat (HD60)
*	1061447SP	Cover, Full-vat (HD60)
*	1081872	Cover, Full-vat (BK60)
*	1061479SP	Cover, Full-vat (Raising Cane's)
*	1062897SP	Cover (FPHD65/Church's)
*	1066494	Cover (HD56)
*	8100180	Handle, Vat Cover (Full- and Split-)
3	8121226SP	Drain Nipple, extension 1 ¼"
*	8121717SP	Drain Nipple, extension 1 ½"
4	8030278	L-shaped Brush
5	8030277	Grid Assembly
*	8102552	Mesh grid assembly
*	8102235	Grid assembly, rack
6	8030197	Fryer's Friend
7	8030304	Basket, Twin (KFC)
*	8030392	Basket, Twin (Raising Cane's)
8	8030271	Basket, Twin
9	8030099	Basket, Full
*	8030337	Basket, 6" x 8 ¾" x 16 ¾"
10	8233938	Crumb Scoop
*	1062631SP	Sediment Tray
*	8233947	Chicken Crisper
*	8030293	Gloves (pair)
*	8242043	Workshelf, 260 (Raising Cane's)
*	8242044	Workshelf, 360 (Raising Cane's)
*	8241992	Workshelf, 460 (Raising Cane's)

* Not illustrated.

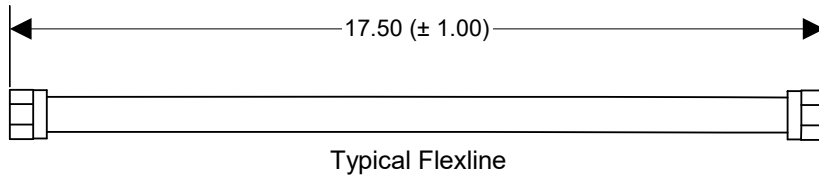
2.13 Fasteners (Screws, Nuts, Bolts)

ITEM	PART #	DESCRIPTION
*	8090417	Nut, Flange ¼-20 Serrated
*	8090766	Nut, Keps 10-32 SS Hex
*	8261366	Nut, 4-40 Keps Hex (with External Teeth, pkg. of 25)
*	8090247	Nut, 8-32 Hex Keps (Zinc Plated)
*	8090863	Nut, Nylock, 5/16"-18 Hex
*	8090169	Screw, #12 x ¾" Hex Washer Slotted Head
*	8090428	Screw, ¼-20 x ½" Hex Head
*	8261389	Screw, ¼-20 x ¾" Hex Head (pkg. of 10)
*	8090918	Screw, 10-24 x ½" Slotted Head
*	8090845	Screw, 10-32 x 3/8" Hex Slotted Head
*	8090846	Screw, 4-40 x 1"
*	8090918	Screw, 10-24 x ½" Round Slotted Head
*	8090167	Screw, Sheet Metal 10 A x 5/8" B
*	8090475	Screw, #10 x 3/8" Hex Washer Head
*	8091019	Screw, .375 x ½" Shoulder
*	8261379	Screw, #10 x ½" Phillips Truss Head (pkg. of 10)
*	8090962	Screw, 8-32 x 1-5/8" Phillips Truss Head
*	8090191	Washer, ¼" Spring-lock

* Not illustrated.

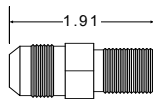
HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS CHAPTER 2: PARTS LIST

2.14 Flexlines

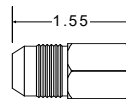


LENGTH	PART NUMBER	LENGTH	PART NUMBER
3.0-inch	8101160	13.0-inch	8101057
4.5-inch	8101339	17.5-inch	8101369
5.0-inch	8101159	21.0-inch	8101400
6.5-inch	8101680	21.5-inch	8101068
8.5-inch	8101067	29.5-inch	8101069
9.5-inch	8101043	53.5-inch	8101056
11.5-inch	8101055		

Flexlines come with a 7/8-inch female fitting on each end. Adapters (listed below) are required to fit them to standard 1/2-inch NPT pipe nipples of fittings. Add 3/4-inch to the overall length of the flexline for each adapter used.



8101668



8101669

NOTE: Be aware that these are *flexible metal* lines. Consequently, the length of a particular line can vary as much as ± 1/2 inch on shorter lines and ± 1 inch on longer lines, depending upon whether the line has been stretched or compressed in handling.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

Appendix: Pre-Common Cabinet HD65 Parts List

ITEM	PART #	COMPONENT
*	8235243	Frypot - S/S
*	8102072	Gas Manifold (weld assembly)
*	8102032	Pilot Burner, Natural/G20/25 Gas (primary and trailing)
*	8102155	Pilot Burner, LP/G31 Gas (primary and trailing)
*	8121674	Pilot Burner, Mod. Natural Gas (electronic ignition)
*	8121677	Pilot Burner, Mod. LP Gas, Electronic Ignition
*	8100705	Tube, Pilot Gas Supply, 1/4" x 23" (one-piece gasline)
*	8100703	Tube, Pilot Gas Supply, 1/4" x 17 1/2" (one-piece gasline)
*	2201231	Bracket, Manifold Support (right or left)
*	2301431	Diffuser Assembly
*	8102785	Burner, High Efficiency
*	2008748	Heat Shield, Lower
*	2008053	Heat Shield, Vessel
*	2302057	Support, Burner
*	8073552	Gas Valve, Natural Gas, Electronic Ignition, 24 VAC
*	8073628	Gas Valve, LP Gas, Electronic Ignition, 24 VAC
*	8073294	Gas Valve, Natural Gas, Standing Pilot, 24 VAC
*	8073295	Gas Valve, LP Gas, Standing Pilot, 24 VAC
*	8102156	Gas Valve, Natural Gas, 120 VAC
*	8102323	Gas Valve, LP Gas, 120 VAC
*	8072091	Gas Valve, G20/G25 Gas, 24 VAC (CE only)
*	8072127	Gas Valve, G31 Gas, 24 VAC (CE only)
*	8100691	Vent Tube
*	8233347	Frame, Slide Base
*		Channel, Base
	1067441	265
	1067357	465
	1066851	565, 665
*	8234894	Hinge, Lower Left
*	8234895	Hinge, Lower Right
*	8235136	Hinge, Upper Left
*	8235137	Hinge, Upper Right
*	2118078	Side Panel, Left Side (unit exterior)
*	2128078	Side Panel, Right Side (unit exterior)
*	2210012	Side Panel, Left Side with Hole (unit exterior)
*	2220012	Side Panel, Right Side with Hole (unit exterior)
*	2014237	Panel, Inner Left (divider located over filter unit)
*	2024237	Panel, Inner Right (divider located over filter unit)
*		Cabinet Upper Back
	2202474	x1 (Single)
	2202353	x2 (2-, 4-, 5-, and 6-battery)
	2200668	x3 (5-battery)
*		Cabinet Lower Back
	2202483	x1 (Single)
	2202354	x2 (2-, 4-, 5-, and 6-battery)
	2200667	x3 (5-battery)
*	8241195	Wireway, Control Panel

* Not illustrated.

**HIGH EFFICIENCY DECATHLON SERIES GAS FRYERS
CHAPTER 2: PARTS LIST**

Appendix: Pre-Common Cabinet HD65 Parts List (cont.)

ITEM	PART #	COMPONENT
19		Top Cap
*	8241781	x1 (for single)
*	8236010	x2 (for 2-battery)
*	8236011	x4 (for 4-battery)
*	8236090	x3 (for 5-battery)
*	8235975	x2 (for 5- and 6-battery)
*	8235976	x4 (for 6-battery)
*	8241656	x3, with work shelf
*	2302472	x1, HD Marine
*	1064375	Flue Box Assembly
*	2008220	Front, Flue Box
*	2008221	Back, Flue Box
*	2008219	Shield, Flue Box
*	2003649	Deflector, Flue (Single, HD, non-S/S) <i>(use screws 8090437)</i>
*	2106525	Deflector, Flue (Single, Chili's, S/S) <i>(use screws 8090437)</i>
*		Flue Cap
	2302473	x1 (Single)
	2302298	x2 (2-battery)
	2302323	x3 (3- and 5-battery)
	2302344	x4 (4- and 6-battery)
*	1064309SP	Door Assembly, with Liner <i>(also used for HD63 fryers)</i>
*	2008076	Panel, Door, Inner
*	2108075	Panel, Door, Outer
*	2108077	Handle, Door, Chrome
*	8102346	Magnet, Door
*	8030337	Fry Basket, 6 x 8 ³ / ₄ " x 16 ³ / ₄ "
*	8030149	Grid Assembly, Mesh
*	8102235	Grid Assembly, Rack
*	8235859	Basket Hanger, Church's with Deflector
*	8235801	Basket Hanger, Chili's Single System, 6" Splash Guard
*	8235856	Splash Guard (2-, 4-, 5-, and 6-battery)
*	8101494	Caster, Plate-mount 4" without Brake
*	8102406	Caster, Plate-mount 5" without Brake
*	8121226SP	Drain Nipple, Extended
*	8070154	Cordset, 10' Power
*	2109416	Cover, Outlet Duct
*	8102411	Leg, Single Bolt Mount (black)
*	8103169	Leg Package, 4 Bolt Mount (4 per set)
*	8233248	Leg Support Assembly
*	2008835	Burner Mounting Rail
*	2008168	Post, Door
*	2102804	Duct, Door Access

* Not illustrated.

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