KSCF18G Cool Zone Series Gas Fryers

Installation & Operation Manual

PARTS LIST INCLUDED

Frymaster®

NON-CE &

CE

CFESA
Commercial Food Equipment Service Association

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

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

Price: $10.00
819-5712
11-01

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

NOTICE

This appliance is intended for professional use only and is to be operated by qualified personnel only. A Dean Factory Authorized Service Center (FASC) or other qualified professional should perform installation, maintenance, and repairs. Installation, maintenance, or repairs by unqualified personnel may void the manufacturer's warranty. See Chapter 1 of this manual for definitions of qualified personnel.

NOTICE

This equipment must be installed in accordance with the appropriate national and local codes of the country and/or region in which the appliance is installed.

NOTICE

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

NOTICE TO OWNERS OF UNITS EQUIPPED WITH COMPUTERS

U.S.

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 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 numerique n'emet pas de bruits radioelectriques depassany les limites de classe A et B prescrites dans la norme NMB-003 edictee par le Ministre des Communications du Canada.

⚠ DANGER

Improper installation, adjustment, maintenance or service, and unauthorized alterations or modifications can cause property damage, injury, or death. Read the installation, operating and service instructions thoroughly before installing or servicing this equipment. Only qualified service personnel may convert this appliance to use a gas other than that for which it was originally configured. See Chapter 1 of this manual for definition of qualified service personnel.

⚠ DANGER

Adequate means must be provided to limit the movement of this appliance without depending upon the gas line connection. Single fryers equipped with legs must be stabilized by installing anchor straps. All fryers equipped with casters must be stabilized by installing restraining chains. If a flexible gas line is used, an additional restraining cable must be connected at all times when the fryer is in use.

⚠ 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.

⚠ DANGER

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

⚠ DANGER

Instructions to be followed in the event the operator smells gas or otherwise detects a gas leak must be posted in a prominent location. This information can be obtained from the local gas company or gas supplier.

⚠ 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.

⚠ WARNING

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

⚠ 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 frypot. 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.

IMPORTANT

Safe and satisfactory operation of Dean equipment depends upon its proper installation. Installation MUST conform with local codes, or in the absence of local codes, to European Community (CE) Standards.

KSCF18G Cool Zone Gas Fryers

INSTALLATION & OPERATION MANUAL

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CHAPTER 1: INTRODUCTION

1.1 Applicability and Validity

The KSCF18G Cool Zone Series gas model family has been approved by the European Union (EU) for sale and installation in the following EU countries: AT, BE, KE, KD, ES, FI, FR, GB, IE, IT, LU, NL, NO, PT and SE.

This manual is applicable to and valid for all KSCF18G gas units sold in English-speaking countries, including those in the European Union. Where conflicts exist between instructions and information in this manual and local or national codes of the country in which the equipment is installed, installation and operation shall comply with those codes.

This appliance is only for professional use and shall be used by qualified personnel as defined in Section 1.7.

1.2 After Purchase

In order to improve service, have the following chart filled in by the Frymaster Authorized Service Technician who installed this equipment.

Authorized Service Technician/FASC	_____
Address	_____
	_____
Telephone/Fax	_____
Model Number	_____
Serial Number	_____
Gas Type	_____

1.3 Ordering Parts

Customers may order parts directly from their local factory authorized service center. For this address and phone number, contact your factory authorized service center or call the Frymaster Service Hotline phone number, 1-800-551-8633.

To speed up your order, provide the model number, serial number, gas type, part needed, item part number (if known), and quantity needed.

1.4 Service Information

Call the Frymaster Service Hotline, 1-800-551-8633, for the location of your nearest factory authorized service center. To assist you more efficiently, always provide the service technician with the model number, gas type, serial number, and the nature of the problem.

1.5 Computer Information

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. While this device is a verified Class A device, it has been shown to meet the Class B limits. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of the equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

If necessary, the user should consult the dealer or an experienced radio and television technician for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

1.6 Safety Information

Before attempting to operate your unit, read the instructions in this manual thoroughly.

Throughout this manual, you will find notations enclosed in double-bordered boxes similar to the ones below.

⚠ CAUTION

CAUTION boxes contain information about actions or conditions that ***may cause or result in a malfunction of your system.***

⚠ WARNING

WARNING boxes contain information about actions or conditions that ***may cause or result in damage to your system***, and which may cause your system to malfunction.

1.6 Safety Information (cont.)

⚠ DANGER

DANGER boxes contain information about actions or conditions that ***may cause or result in injury to personnel***, and which may cause damage to your system and/or cause your system to malfunction.

1.7 Service Personnel

1.7.1 Definitions

A. Qualified and/or Authorized Operating Personnel

1. Qualified/authorized operating personnel are those who have carefully read the information in this manual and have familiarized themselves with the equipment functions, or have had previous experience with the operation of equipment covered in this manual.

B. Qualified Installation Personnel

1. Qualified/authorized personnel are those who have carefully read the information in this manual and have familiarized themselves with the equipment functions, or who have had previous experience with the operation of the equipment covered in this manual.

C. Qualified Service Personnel

1. Qualified service personnel are those who are familiar with Frymaster equipment and have been authorized by Frymaster to perform service on Frymaster equipment. All authorized service personnel are required to be equipped with a complete set of service parts manuals and stock a minimum amount of parts for Frymaster equipment. A list of Frymaster Factory Authorized Service Centers (FASCs) was included with the fryer when shipped from the factory. ***Failure to use qualified service personnel will void the Frymaster warranty on your equipment.***

2.1 Receiving and Unpacking Equipment

A. Check that the container is upright. Use an outward prying motion - ***no hammering*** - to remove the carton. Unpack the fryer carefully and remove all accessories from the carton. Do not discard or misplace these, as they will be needed.

B. After unpacking, immediately check the equipment for visible signs of shipping damage. If damage has occurred, contact the carrier and file the appropriate freight claims. Do not contact the factory. Shipping damage responsibility is between the carrier and the dealer.

If your equipment arrives damaged:

1. File claim for damages immediately, regardless of extent of damage.

2. Visible loss or damage: Be sure this is noted on the freight bill or express receipt and is signed by the person making the delivery.

3. Concealed loss or damage: If damage is unnoticed until equipment is unpacked, notify freight company or carrier immediately, and file a concealed damage claim. This should be done within fifteen (15) days of date of delivery. Be sure to retain container for inspection.

NOTE: Frymaster Does Not Assume Responsibility for Damage or Loss Incurred in Transit.

C. **Frying systems with built-in filtration:** Take off the filter support brace and remove the filter pan from the cabinet.

D. Remove all plastic skin from sides, front, and doors of the fryer(s). Failure to do this prior to initial fryer operation will make it very difficult to remove later.

2.2 General

Upon arrival, inspect the fryer carefully for visible or concealed damage. (See Receiving and Unpacking Equipment in Section 2.1.)

The Frymaster KSCF18G Cool Zone Series Fryers are energy-efficient, gas-fired units, design-certified by the International Approval Services (AGA/CGA), Gaz de France, NSF International and manufactured to their basic performance and application specifications.

All units are shipped completely assembled with accessories packed inside the frypots. All units are adjusted, tested and inspected at the factory before shipment. Sizes, weights and input rates of all models are listed in this manual.

2.3 Principles of Operation

The incoming gas flows through orifices and is mixed with air in the burners to create the correct ratio for proper combustion. The mixture is ignited at the front end of each heat tube by the pilot light. Internal diffusers slow the flame as it goes through the burner tube. This slower and more turbulent flame gives much better heat transfer to the walls of the tubes, thereby heating the oil more efficiently.

2.4 Rating Plate

This is attached to the inside of the front door panel. Information provided includes the model and serial number of the fryer, BTU/hr (kW/hr) input of the burners, outlet gas pressure in inches W.C. (mbars) and whether the unit has natural (G20/25) or propane (G31) gas orifices.

2.5 Pre-Installation

⚠ DANGER

This appliance is equipped with a three-prong (grounding) plug for your protection against electrical shock, and must be plugged directly into a properly grounded three-prong receptacle. Do not cut, remove, or otherwise bypass the grounding prong on this plug.

A. **General**: Only licensed personnel should install any gas-fired equipment.

1. A manual gas shut-off valve must be installed in the gas supply line ahead of the fryers for safety and ease of future service.

2. The Frymaster KSCF18G gas fryers require 120 volts (AC) 60-cycle electrical service for non-CE installation (U.S./Canada/Mexico) and 230 volts (AC) 50-cycle electrical service for CE/International installations. Fryers are equipped with a 16-3 SJT grounded flexible power cord for a direct connection to the power supply. Amperage draw for each unit depends on the accessories supplied with the unit. See detailed instructions packaged with the fryer line-up.

⚠ 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 Service Hotline at 1-800-551-8633.

2.5 Pre-Installation (cont.)

⚠ DANGER
This appliance must be installed with sufficient ventilation to prevent the occurrence of unacceptable concentrations of substances harmful to the health of personnel in the room in which it is installed.

B. **Clearances**: The fryer area must be kept free and clear of all combustibles. This unit is design-certified for the following installations:

1. Commercial installation only (not for household use).

2. Non-combustible floor installation equipped with factory-supplied 6-inch (15-cm) adjustable legs or 5-inch (13-cm) casters;

3. Combustible construction with a minimum clearance of 6-inches (15-cm) side and 6-inches (15-cm) rear, and equipped with factory-supplied 6-inch (15-cm) adjustable legs or 5-inch (13-cm) casters.

C. **Installation Standards**

1. U.S. installations must meet:	2. Canadian installations must meet:
American National Standard Institute ANSI Z83.11 American Gas Association 8501 E. Pleasant Valley Road Cleveland, OH 44131	CAN 1-B149 Installation Codes Canadian Gas Association 55 Scarsdale Road Don Mills, ONT, M3B 2R3
National Electrical Code ANSI/NFPA #70 American National Standard Institute 1430 Broadway New York, NY 10018	Canadian Electric Code c22.1, part 1 Canadian Standards Association 178 Rexdale Blvd. Rexdale, ONT, M9W 1R3
NFPA Standards #96 and #211 National Fire Protection Association 470 Atlantic Avenue Boston, MA 02110	

3. CE/EXPORT STANDARDS: Fryer installation must conform with local codes, or in the absence of local codes, to the appropriate national or European Community (CE) standards.

2.6 Air Supply and Ventilation

⚠ DANGER
Do not connect this appliance to the gas supply before reviewing each step in this section.

A. Keep the area around the fryer clear to prevent obstruction of combustion and ventilation airflow as well as for service and maintenance and adhere to the following:

1. Do not connect this fryer to an exhaust duct.

2. Correct installation and adjustment will ensure adequate airflow to the fryer system.

3. A commercial, heavy-duty fryer's combustion wastes must be vented to the outside of the building. A deep-fat fryer must be installed under a powered exhaust hood, or an exhaust fan must be provided in the wall above the unit, as exhaust gas temperatures are approximately 800-1000°F (427-538°C). Check air movement during installation. Strong exhaust fans in the exhaust hood or in the overall air conditioning system can produce slight air drafts in the room, which can cause erratic burner flames and/or improper fryer operation.

4. Do not place the fryer's flue outlet directly into the plenum of the hood, as it will affect the gas combustion of the fryer.

5. Never use the interior of the fryer cabinet for storage or store items on shelving over or behind the fryer. Exhaust temperatures can exceed 800°F (427ºC) and may damage or melt items stored in or near the fryer.

6. Adequate distance must be maintained from the flue outlet of the fryer(s) to the lower edge of the filter bank. Per NFPA Standards No. 96, a minimum of 18-inches (45-cm) should be maintained between the flue(s) and the lower edge of the exhaust hood filter.

7. Filters and drip troughs should be part of any industrial hood, but consult local codes before constructing and installing any hood. The duct system, the exhaust hood and the filter bank must be cleaned on a regular basis and kept free of grease.

B. After the fryer has been positioned under the exhaust hood, ensure the following has been accomplished:

1. Adequate means must be provided to limit the movement of fryers without depending upon gas connections. If a flexible gas hose is used, a restraining cable must be connected at all times when the fryer is in use. The restraining cable and installation instructions are packed with the flexible hose in the accessories box that was shipped with your unit.

2.6 Air Supply and Ventilation (cont.)

2. Single unit fryers must be stabilized by installing restraining chains on appliances equipped with casters or anchor straps on appliances equipped with legs. Follow instructions shipped with the casters/legs to properly install the chains or straps.

⚠ DANGER
Do not attach an apron drain board to a single unit. The appliance may become unstable, tip over, and cause injury. The appliance area must be free and clear of combustible material at all times.

2.7 Equipment Installed at High Altitudes

A. The fryer input rating [BTU/hr (kW/hr)] is for elevations up to 2,000 feet (610-m). For elevations above 2,000 feet (610-m), the rating should be reduced four percent for each additional 1,000 feet (305-m) above sea level.

B. The correct orifices are installed at the factory if operating altitude is known at time of the customer's order.

2.8 Conversion of Units

Pressure:
1 mbar = 10.2 mm water column (mm W.C.) = 0.4 Inch WC
20 mbar = 204 mm W.C. = 8 Inch W.C.
1-Inch W.C. = 25.4 mm W.C. = 2.5 mbar

Heat Input:
1 kW = 3410 BTU/hr
100 BTU/hr = 0.0293 kW

Temperature:
0º Celsius = 32º Fahrenheit
Temperature in degrees Celsius = (Temperature in degrees Fahrenheit (F) – 32) X 0.555
100° Celsius = (212º Fahrenheit – 32) X 0.555

3.1 Installing the Fryer

Qualified, licensed, and/or authorized installation or service personnel only (as defined in Section 1.7) should perform the following:

- **Installation and service on Frymaster equipment.**
- **Conversion of this appliance from one gas type to another.**

Failure to use qualified, licensed, and/or authorized installation or service personnel to install, convert to another gas type or otherwise service this equipment will void the Frymaster warranty and may result in damage to the equipment or injury to personnel.

Where conflicts exist between instructions and information in this manual and local code or national codes, or regulations, installation and operation shall comply with the codes or regulations in force in the country in which the equipment is installed.

A. Initial Installation: If installed with legs, do not push against any unit edges to adjust its position. Use a pallet or lift jack to lift it slightly and place it where it is to be installed.

B. Relocating the Fryer: If relocating a fryer installed with legs, remove all weight from each leg before moving.

Note: If a leg becomes damaged during movement, contact your service agent for immediate repair/replacement.

⚠ DANGER
Building codes prohibit a fryer with its open tank of hot oil/shortening being installed beside an open flame of any type, including those of broilers and ranges.

3.2 Leg and Caster Installation

⚠ DANGER
Frymaster fryers equipped with legs are for permanent installations. Fryers fitted with legs must be lifted during movement to avoid damage and possible bodily injury. For a moveable or portable installation, optional equipment casters must be used. Questions? Call 1-800-551-8633

A. **General**

1. Install legs and rear rigid casters near where the fryer is to be used, as neither are secure for long transit. Unit cannot be curb mounted and must be equipped with the legs and rear rigid casters provided.

3.2 Leg and Caster Installation (cont.)

2. When positioning the fryer, gently lower the fryer into position to prevent undue strain to the legs and internal mounting hardware. Use a pallet or lift jack to lift and position the fryer if possible. Tilting the fryer may damage the legs.

3. The rigid casters must be installed on the fryer rear channel assembly only.

4. Proceed to Step 3.3, Leveling the Fryer, after legs and rear rigid casters are installed to ensure the fryer is level before using.

B. **Leg and Rigid Caster Installation**

1. Remove unit from pallet.

2. Carefully raise unit with forklift, pallet jack, or other steady means.

3. Place one lock washer on each hex head screw.

4. Insert hex head screws with lock washers [1/4-20 threads by ¾" (19-mm) long] through bolt holes of leg mounting plates and mount to the front channel. Mount rigid casters to the rear channel following the same procedure. Locknuts have been attached to the topside of the base mounting plates at the factory to capture hex head screws as they are screwed in.

5. Tighten the bolts to 50 inch-lbs. (5.65 joules) minimum torque.

⚠ WARNING
For caster retrofit, the unit must be at room temperature and drained of shortening before installing the casters.

3.3 Leveling the Fryer

A. Place a carpenter's spirit level across the top of the fryer and level the unit front-to-back. If the fryer is off level side to side, a platform or other surface adjustment is needed; there is no side to side level adjustments on a fryer equipped with caster/leg combinations (If a fryer is equipped with legs only, side to side level adjustments can be made. If a fryer is equipped with casters only, no level adjustments to the fryer can be made.). If the fryer is not level, the unit may not function efficiently, the oil may not drain properly for filtering and in a multi-fryer battery, it may not match adjacent units.

Legs (Only)

1. Adjust leg height with an adjustable or 1-1/16-inch (27-mm) open-end wrench by turning the hex bullet on the bottom of the leg.

3.3 Leveling the Fryer (cont.)

2. The hex bullet is for minor leg height adjustment only. Do not adjust more than 1-inch (25-mm).

3. When leveling the unit, the leg body should be held firmly to keep the leg from bending or rotating while turning the hex bullet foot to the required height.

Rigid Casters (Only)

1. Install the rigid casters on the fryer rear channel only. Legs must be installed on the front channel.

2. There are no level-adjustments for the rigid casters.

B. If the floor is uneven or has a decided slope, place the fryer on a smooth platform.

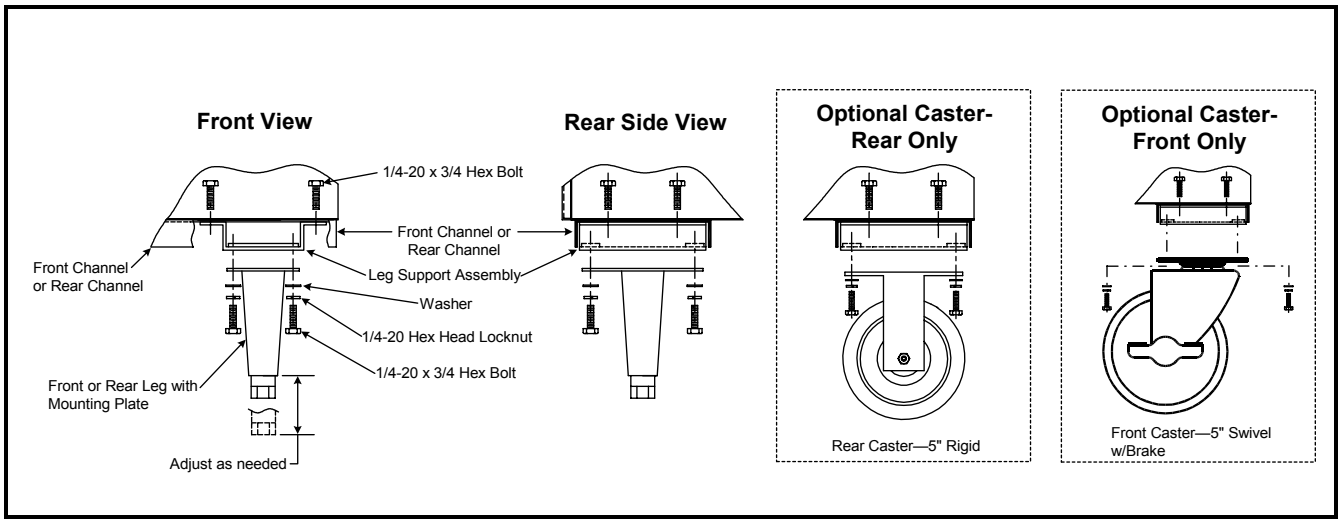
C. If the fryer is moved, re-level the fryer following the instructions given in Steps 3.3.A-C.

D. **Installing Optional Swivel Casters**:

1. Install non-locking casters only at the rear of the unit.

2. Locking casters must be installed at the front of the unit. Locking casters allow the fryer to be "locked" in position for safe operations.

3. Follow the same instructions for leg installations as given above in steps 3.2, B1-5.



Leg and Caster (Optional) Mounting Installation

3.3 Leveling the Fryer (cont.)

ANSI Z83.11a-(Latest Edition) requires a fryer be restrained to prevent tipping when installed in order to avoid the splashing of hot liquid. The means of restraint may be the manner of installation, such as connection to battery of appliances or installing the fryer in an alcove, or by separate means, such as adequate ties (chains, straps, etc.). A bracket has been provided on the fryer back panel for this purpose.

NOTE: The installation must be inspected after it is complete to ensure it meets the intent of these instructions. The on-site supervisor and/or operator(s) should be informed that the appliance is installed with restraints. If restraints are removed to move fryer (cleaning beneath and behind, relocation, etc.), ensure that they are re-installed when fryer is returned to its permanently installed position.

3.4 Gas Connections

KSCF18G Cool Zone Series gas fryers have obtained CE markings for countries and gas categories shown below:

Countries	Supply Pressures and Gas (mbar)		Appliance Categories	Countries	Supply Pressures and Gas (mbar)		Appliance Categories
BE Belgium	G20 G31	20/25 37	I2E (R) B I3P	GR Greece	G20 G31	20 37 and 50	II2H3P
DE Germany	G20 G31	20 50	I2E I3P	IR Ireland	G20 G31	20 37	II2H3P
DK Denmark	G20	20	I2H	IT Italy	G20	20	I2H
ES Spain	G20 G31	20 37 and 50	II2H3P	LU Luxembourg	G20/G25 G31	20/25 50	II2E3P
FR France	G20/G25 G31	20/25 37 and 50	II2ESI3P	NL The Netherlands	G25 G31	25 50	II2L3P
GB Great Britain	G20 G31	20 37	II2H3P	PT Portugal	G20 G31	20 37	II2H3P

The gas supply (service) line must be the same size or greater than the fryer inlet line. KSCF18G gas fryers are equipped with a 3/4" (22-mm) male inlet. The gas supply line must be sized to accommodate all gas-fired equipment connected to that gas supply. Consult local gas companies/suppliers or your local contractor for minimum supply line requirements.

3.4 Gas Connections (cont.)

Supply Line Specifications

The gas supply lines must be sized as indicated in the chart below, based on the total number of fryers connected to the main gas supply.

Recommended Gas Supply Line Sizes			
Gas Types	**Number of Fryers**		
	1	2 to 3	4 or more (*)
Natural Gas	3/4" (22 mm)	1" (28 mm)	1 1/4" (35 mm)
Propane Gas	1/2" (15 mm)	3/4" (22 mm)	1" (28 mm)
(*) When exceeding 18 feet (6 meters) for a configuration of more than four fryers, it is necessary to provide a 1 1/4" (35 mm) rigid gas connection.			

⚠ DANGER

All connections must be sealed with a joint compound suitable for the gas being used and all connections must be tested with a solution of soapy water before lighting any pilots.

Never use matches, candles, or any other ignition source to check for leaks. If gas odors are detected, shut off the gas supply to the appliance at the main shut-off valve and immediately contact the local gas company or an authorized service agency for service.

⚠ DANGER

"Dry-firing" your unit will cause damage to the frypot and can cause a fire. Always ensure that melted shortening, cooking oil or water is in the frypot before firing the unit.

⚠ DANGER

Before connecting new pipe to this appliance, the pipe must be blown out thoroughly to remove all foreign material. Foreign material in the burner and gas controls will cause improper and dangerous operation.

3.4 Gas Connections (cont.)

Rigid Connections

Check any installer-supplied intake pipe(s) visually and clean metal particles or other foreign matter from the threads before installing into a service line. If the intake pipes are not clear of all foreign matter, the orifices will clog when gas pressure is applied. When using thread compound on gas piping, use very small amounts and only on male threads. Use a pipe thread compound that is not affected by the chemical action of LP gases. DO NOT apply thread compound to the first two pipe threads—doing so will cause clogging of the burner orifices and control valve.

Manual shut-off valve

This gas service supplier-installed valve must be installed in the gas service line ahead of the fryers in the gas stream and in a position where it can be reached quickly in the event of an emergency.

Regulating Gas Pressure

The fryer and shut-off valve must be disconnected from the gas supply during any pressure testing of the system.

External gas regulators are not normally required on this fryer. A safety control valve protects the fryer against pressure fluctuations. If the incoming pressure is in excess of ½" PSI (3.45 kPa/35 mbar), **a step-down regulator will be required**.

⚠ DANGER
When pressure-testing incoming gas supply lines, disconnect the fryer from the gas line if the test pressure is 3,45 kPa (½" PSI, 14" W.C.) or greater to avoid damage to the fryer's gas piping and gas valve(s).

The fryer and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of the gas supply system, especially if the test pressures are in excess of ½" PSI (3.45 kPa/35 mbar).

A. Manifold Pressure: Your local service technician should check the manifold pressure with a manometer**.**

1. Check the rating plate for manifold gas pressures. Natural gas units normally require 4" WC, and propane units normally require 11" WC gas pressure.
2. Confirm that the arrow forged into the bottom of the regulator body, which indicates gas flow direction, is pointed downstream towards the fryers. The air vent cap is also part of the regulator and should not be removed.

3.4 Gas Connections (cont.)

3. If a vent line from the gas pressure regulator is used, it should be installed in accordance with local codes or in the absence of local codes, with the National Fuel Gas Code, ANSI Z223.1-(Latest Edition).

⚠ WARNING
Use a diluted soap solution to find potentially dangerous gas leaks when making new connections.

B. Regulators: Gas regulators can be adjusted in the field, but no adjustments should be made unless the regulator is out of adjustment, or serious pressure fluctuations are observed.

C. Only qualified service personnel should make adjustments to the regulators.

D. Orifices: The fryer can be ordered to operate on any available gas. The correct combination gas valve, appropriate burner orifices, and pilot burners are installed at the factory. While the valve can be adjusted in the field, only qualified service personnel should make any adjustments with the proper test equipment.

⚠ DANGER
If gas odors are detected, the gas supply must be shut off at the main shut-off valve. The local gas company or FASC should be contacted immediately to rectify the problem.

E. Flexible Couplings, Connectors and Casters:

1. If the fryer is to be installed with flexible couplings and/or quick-disconnect fittings, the installer must use a heavy-duty AGA design-certified commercial flexible connector of at least 3/4" NPT (with suitable strain-relief attachments), in compliance with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69-(Latest Edition) and Addenda Z21.69a-(Latest Edition). Quick disconnect devices must comply with the Standard for Quick-Disconnect Devices for Use with Gas Fuel, ANSI Z21.41-(Latest Edition).

2. For an appliance equipped with casters, the installation shall be made with a connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69, or Connectors for Moveable Gas Appliances, CAN/CGA-6.16. A quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use with Gas Fuel, ANSI Z21.41, or Quick-Disconnect Devices for Use with Gas Fuel, CANI-6.9 must be used. Under no circumstances are the connector and the quick-disconnect device, or its associated piping be used to limit fryer movement. A restraining bracket is provided on the appliance structural back to prevent the unit from moving from its installed position.

3.4 Gas Connections (cont.)

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

3. The fryer must be restrained by means independent of the flexible coupling or connector in order to limit the movement of the fryer. Clips are located on the back panel of the fryer for the attachment of restraints.

4. If disconnection of the restraint is necessary, this restraint must be reconnected after the fryer has been returned to its originally installed position.

F. After hook-up, bleed the gas line of air to ensure that the pilot light will ignite quickly and evenly.

⚠ WARNING
Qualified personnel MUST perform any adaptation, modification, or gas conversion, if required. Failure to use qualified personnel will void the Frymaster warranty.

3.5 Adjustments/Adaptation To Different Gases

A. Proper operation of appliances requires operator to scrupulously inspect the following adjustments in terms of:

1. Gas inputs and pressures.

2. Voltage and polarities of electrical power supplies.

B. Frymaster gas fryers are manufactured to use the type of gas and pressure specified on the rating plate. When changing gas, **adaptation must be performed by qualified personnel.** Failure to use qualified personnel will void the Frymaster warranty.

3.6 Gas Inputs

A. Nominal "Qn" Heat Input for the KSCF18G Cool Zone Gas fryer is 25 kW.

B. Inputs for different gases are as follows:

G20	Natural Gas (Type H)	20 mbar/ 8" WC
G25	Natural Gas (Type L)	25 mbar/ 10" WC
G31	Propane	37 mbar/ 15" WC

C. Adjustments for different gases are as follows:

ORIFICE SIZE (# / MM)	GAS TYPE	GAS PRESSURE AT REGULATOR		BURNER MARKING	PILOT MARKING
		MBAR	INCH W.C.		
#42 / 2,40 #42 / 2,40 #53 / 1,51	G20 G25 G31	10,0 15,0 27,0	4,0 6,0 10,8	Blue Blue Red	26N 26N 16LP

NOTE: Outlet gas pressure must be adjusted strictly within the above requirements 5 to 10 minutes after the appliance is operating.

* For controls and adjustments, please refer to "gas valve" illustrations on page 3-11. (Pilot Flame Adjustment: Turn the pilot adjustment screw clockwise/counter-clockwise until the desired flame-volume is achieved).

3.7 Gas Conversion: Procedures

⚠ DANGER

This appliance was configured at the factory for a specific type of gas. Converting from one gas type to another requires the installation of specific gas-conversion components.

Switching to a different type of gas without installing the proper conversion components may result in fire or explosion. NEVER ATTACH THIS APPLIANCE TO A GAS SUPPLY FOR WHICH IT IS NOT CONFIGURED!

Conversion of this appliance from one type of gas to another should only be performed by qualified, licensed, and authorized installation or service personnel, as defined in Section 1.5 of this manual.

See page 3-11 for gas valve illustrations when performing the following conversions.

When converting from G20 to G25 gas, the following procedures apply:

- Equipment replacement is not required.
- Adjust orifice gas pressure by turning the gas valve "adjustment screw".
- After adjustment, seal the screw.

When converting from G20 (or G25) gas to G31 propane (or vice-versa), the following procedures apply:

- Gas valve, burner orifices and pilot(s) **MUST** be replaced.

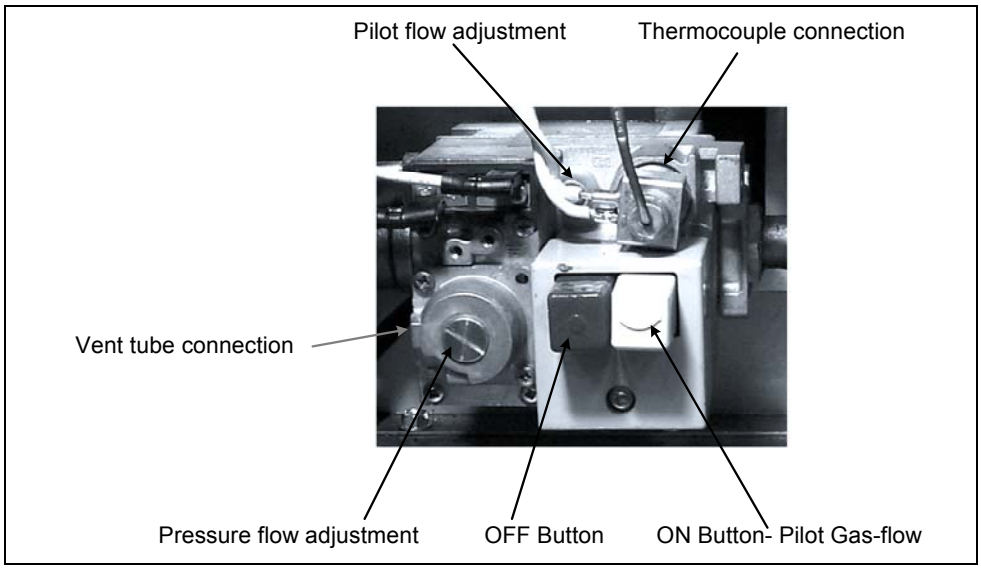
When converting from G20 (20 mbar) to G25 (25 mbar), or vice-versa, or G31 (37 mbar) to G31 (50 mbar), the following procedures apply:

- Check pilot adjustment and adjust as necessary.
- Other adjustments are not necessary.

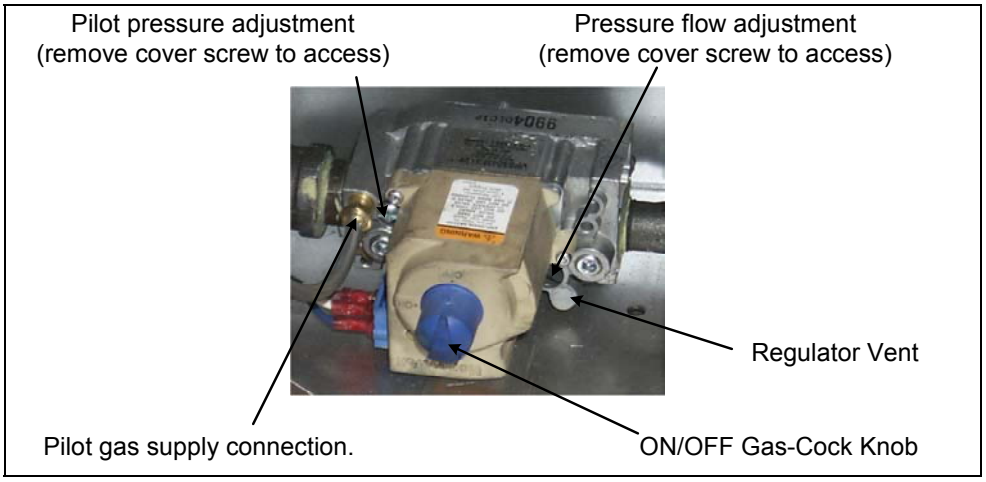
Conversion from one gas family to another (i.e. changing from natural gas to propane) requires special components and parts. Contact a Factory Authorized Service Agent for requirements and part numbers.

Conversions can only be executed by qualified, factory-authorized personnel.

3.7 Gas Conversion: Procedures (cont.)



CE Gas Valve



Non-CE Gas Valve

3.9 Electrical Connections

⚠ DANGER
This fryer is equipped with a three-prong (grounding) plug for protection against electrical shock and must be plugged directly into a properly grounded, three-prong receptacle. DO NOT CUT, REMOVE, OR OTHERWISE BYPASS THE GROUNDING PRONG ON THIS PLUG!

⚠ DANGER
This appliance requires electrical power for operation. Place the gas control valve in the OFF position in case of a prolonged power outage. Do not attempt to operate this appliance during a power outage.

Refer to the rating plate and wiring diagram located inside the front door. The diagram can also be found in Section 8.4. The fryer is equipped with a 120VAC/60Hz system for USA/Canada/Mexico operations or a CE-approved 230VAC/50Hz single-phase system for CE/International installations. All electrically operated appliances must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code (ANSI/NFPA 70), the Canadian Electrical Code (CSA C22.2), or the appropriate CE community standards. Do not cut or remove the ground prong from the power cord plug. Do not attempt to use this appliance in a power outage.

3.10 Operating Switches

A. **Fryer with KFC-1 Computer (if equipped)**

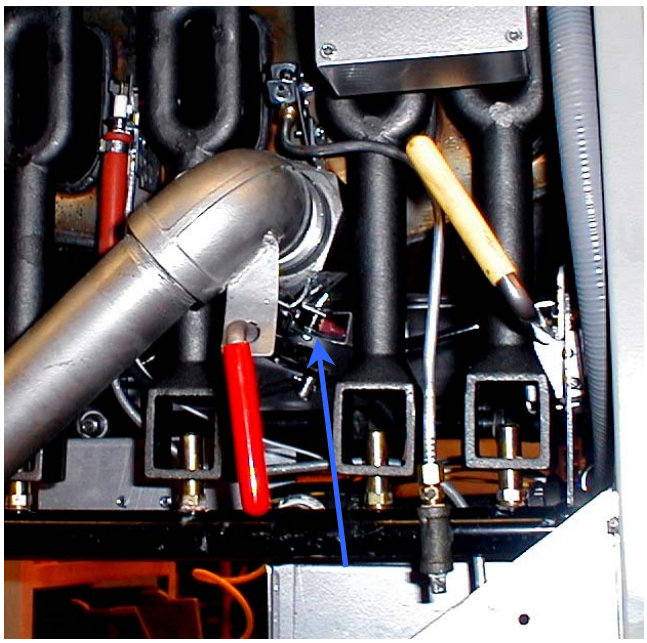
This fryer/filter system is equipped with a drain valve safety switch and a frypot float-switch on each of the two-batteried fryers. Drain-valve safety switches de-energize the control circuit during the filter process, thus providing an additional safety feature. Always leave the computer ON when filtering.

The KFC-1 computer monitors cooking operations. The computer logs the number of cook sequences and locks out the cook cycle after a preset number is reached. The drain-valve must be opened, the oil must be filtered, and the drain-valve closed before the KFC-1 computer will allow a cook cycle. After filtering, always allow the frypot to refill with oil/shortening and heat to setpoint before engaging a cook cycle.

See the KFC-1 SMS Cooking Computer User Manual that came with the computer for detailed information.

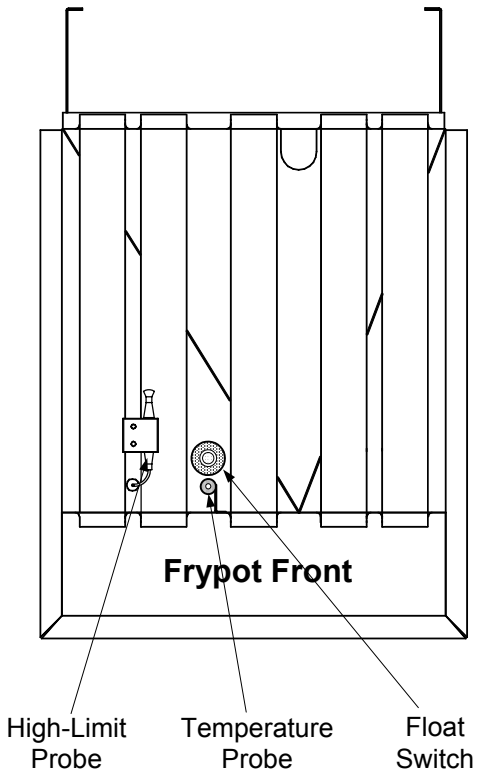
B. Other Fryer/Filter Switches

1. Drain-valve Microswitch: The computer will display "DRAIN OPEN" when the drain valve is opened. The computer will lockout and prevent any cooking operation until "EXIT/COOL FILTER" is pressed.



A microswitch is located on the red handle at the drain valve.

2. Float-Switch: Located in the frypot. Designed as a safety switch, it deactivates the gas valve, preventing burner ignition until the oil level extends above the heating tubes.

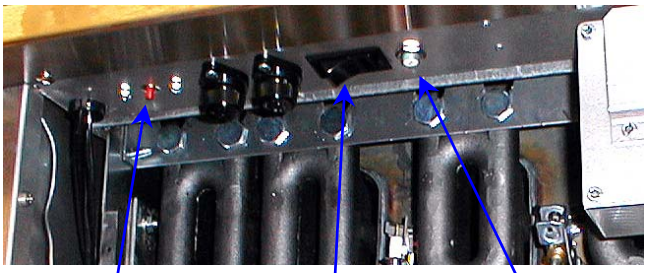


3.10 Operating Switches (cont.)

3. High-limit Reset: Located in the fryer cabinet under the control panel. This switch is used to reset the high-limit if the cooking medium has reached high temperature safety limits. The high-limit sensor bulb is mounted inside the frypot between the two left-most burner tubes.

4. Filter Pump Reset: Located in the right fryer cabinet. This switch resets the filter pump motor.

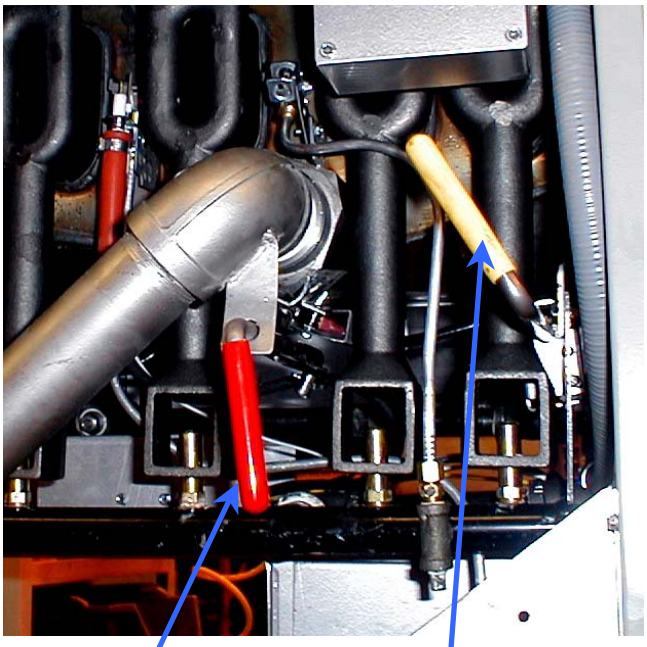
5. Manual Filter Override Switch: Also located in the right fryer control panel of the fryer battery. This rocker switch (older units have toggle switches) allows the operator to manually operate the filtration system if a problem develops with the auto functions.



C. **Filter Oil-Drain and Return Handles**

1. Red: Drain Valve Handle. Pull the red handle (located in the fryer cabinet) to open drain valve when filtering. After all oil has drained from the frypot, and/or polishing is complete, push red handle to close drain valve.

2. Yellow: Oil Return Valve. Pull the "Yellow" handle to open the oil return valve and energize the pump motor. Push the "Yellow" handle to close oil return valve and deactivate motor after frypot is refilled and filtering is complete. Activate the "Yellow" handle only when filtering.



3.11 Initial Cleaning Before Startup

New units are wiped clean with solvents at the factory to remove any visible signs of dirt, oil, grease, etc., remaining from the manufacturing process, then coated lightly with oil. Wash thoroughly with hot, soapy water to remove any film residue and dust or debris before food preparation, then rinse out and wipe dry. Wash also any accessories shipped with the unit. Close the drain-valve completely and remove the crumb screen. Ensure the screws securing the temperature probe to the bracket between heating tubes are tight.

⚠ WARNING
All droplets of water must be removed from the frypot before filling with shortening. Failure to do so will cause splattering of hot shortening and could cause injury to the operator.

3.12 Final Preparation

1. The KSCF18G frypot shortening capacity is approximately 40.5Kg (90 pounds).

2. Ensure fryer power switches are "OFF".

3. Ensure the float switch is in "up" position if using solid shortening.

4. Liquid shortening (cooking oil): Fill the fryer to the bottom OIL LEVEL line scribed into the back of the frypot. Replace the basket support screen.

⚠ WARNING
Never operate fryer without enough oil/shortening or water in the frypot to cover the heating tubes.

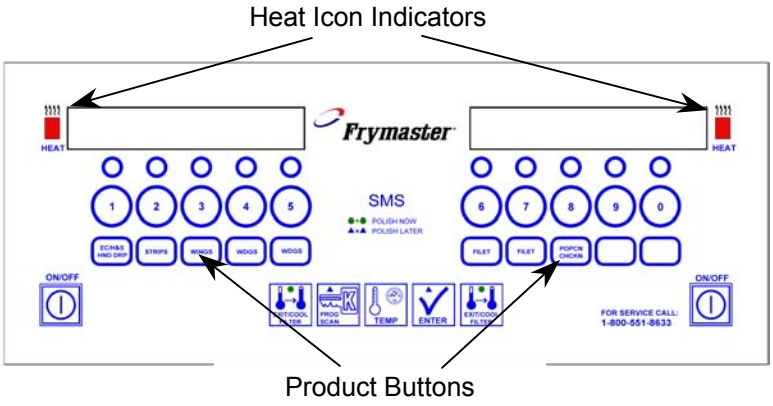
⚠ WARNING
NEVER set a complete block of solid shortening on top of heating tubes. To do so will damage the frypot and increase the potential for flash-point shortening temperatures and subsequent fire.

5. Solid shortening: Either pre-melt solid shortening on another appliance first or cut into small pieces and pack tightly into the cool zone (bottom) of the frypot. Take care not to disturb the temperature probe or high-limit when packing shortening into frypot. If solid shortening is packed into the frypot, ensure the float switch is in the "up" position.

3.12 Final Preparation (cont.)

Note: If the float switch is blocked in "down position" with solid shortening, the fryer will not operate. Always ensure that the float switch is in the "up" position when packing solid shortening into frypot.

6. KFC-1 Cooking Computer: Turn computer "ON" (this turns the fryer on also-electronic ignition equipped fryers only). The computer will cycle the burners on and off (melt cycle). This is indicated by heat icons located on either side of the KFC-1 product buttons, which will cycle on and off. The computer will display "LOw" until the shortening reaches 255°F (124°C).



At 255° F (124°C), the fryer goes into continuous heat mode. The computer will display actual shortening/oil temperature until setpoint is reached. At setpoint temperature, the computer will display "drop".

7. After shortening reaches the setpoint temperature, let the burners cycle at least four times, then insert a good thermometer or pyrometer near the temperature sensing probe approximately 7.5-mm (3-inches) deep into the shortening. When the burners just cycle on after the fourth time, the thermometer should read within ±5°F (±2°C) of the computer temperature setting.

8. When the frypot is filled and the shortening melted, replace the basket-support screen over the heating tubes.

⚠ 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 frypots. 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.

For pilot lighting instructions, see Chapter 4. For filtration instructions, see Chapter 5.

KSCF18G COOL ZONE SERIES GAS FRYERS
CHAPTER 4: DAILY OPERATION

4.1 Opening

1. At opening time, always check that the power switch and the computer are "OFF".

4.2 General Use

1. For consistent quality product, convenience and long-term savings, use a high-quality liquid shortening.

2. If using solid shortening, never melt a block of shortening by setting it whole in the fryer vessel.

3. Although 350°F (177°C) is the recommended temperature for most cooking operations, set the fryer at the lowest possible temperature which produces a high quality end product while ensuring maximum life for your oil/shortening.

4.3 Start-Up Procedures

1. If fryer is empty, pour enough liquid shortening into the frypot to fill to the bottom OIL LEVEL line scribed on the rear wall. If solid shortening is to be used, melt the shortening following procedures in Section 3.7, Final Preparation.

2. Pilot lighting procedures- CE models with standing pilot/piezo ignitor:

   a. Ensure that the following steps are done in sequence before lighting or re-lighting the pilot:

   b. Turn off the manual shut-off valve on the incoming service line.

   c. Turn the operating thermostat to "OFF".

   d. Depress the Pilot Off button (red) on the combination safety gas valve to turn off.

   e. Wait at least 5 minutes for any accumulated gas to disperse.

   f. Open the manual shut-off valve on the incoming service line.

   g. Press and hold the white pilot light button, then repeatedly press the piezo ignitor button until the pilot lights. Release the white button after approximately 45 seconds to 1 minute.)

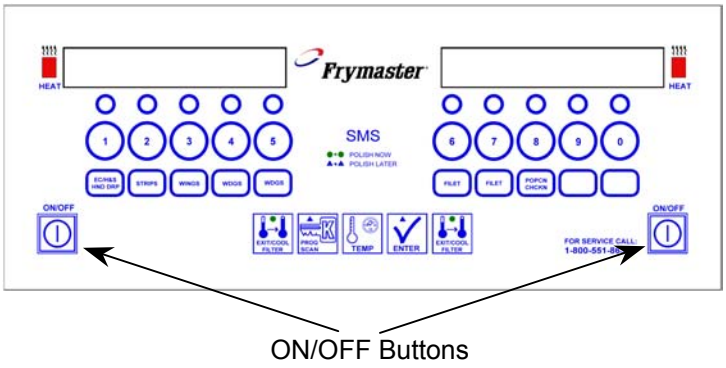
   h. If the pilot does not stay lit, depress the white pilot light button and re-light the pilot (repeat step 2-h), holding the button in longer before releasing. Trapped air may necessitate re-lighting the pilot several times until a constant gas flow is attained.

4.3 Start-Up Procedures (cont.)

i. When the pilot stays lit, release the white pilot light button.

j. Turn the thermostat to any "ON" setting and ensure the main burner ignites from the pilot.

3. KFC-1 Cooking Computer: Turn the computer "ON" and select cooking program as described in the KFC-1 SMS Cooking Computer User Guide.



4.4 Filtering

⚠ DANGER
When filtering, never leave the filter unattended. Oil moving through the lines could JOLT a flexible return hose out of the filter pan, spraying hot shortening and causing severe burns.

⚠ 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.

⚠ WARNING
Filter one frypot at a time. The filter pan is designed to safely hold the oil from one fryer only.

1. The KFC-1 Computer must remain ON during filter operations for proper filter procedure.

2. Filter the shortening at least once daily or more frequently if cooking is heavy. This assures the longest life possible for the shortening, a better taste to the food being prepared and minimizes flavors being transferred from batch to batch.

4.4 Filtering (cont.)

3. If using solid shortening, clear return lines before turning off the filter motor by allowing the pump to run for approximately 10-15 seconds once air bubbles appear in the frypot from the oil return line. Failure to do so increases the likelihood that solid shortening will solidify and clog the lines.

See Chapter 5 for detailed filtration procedures.

4.5 Closing

1. When closing at night, filter shortening in all fryers and drain the filter lines. Cover the open tanks of oil. Turn the computer "OFF". On CE units with standing pilots, press the red button on the combination safety gas valve to turn off.

4.6 Shutdown

1. When shutting down for periods longer than overnight, drain shortening and clean the frypot thoroughly. After cleaning, either discard the shortening or filter it and return it to the frypot. Cover the frypot with the appropriate frypot cover. Turn both the power switch and computer "OFF". On CE units with standing pilots, press the red button on the gas valve to turn off.

5.1 General

⚠ WARNING
The on-site supervisor is responsible for ensuring that operators are made aware of the inherent hazards of operating a hot oil filtering system, particularly the aspects of oil filtration, draining and cleaning procedures.

To conduct filter operations with the KFC-1 Cooking Computer installed on the fryer, ALWAYS leave the computer ON when filtering. The computer must sense the drain valves opening and closing in order to allow fryer operation.

For consistent product quality, convenience and long-term savings, use a high-quality liquid shortening or vegetable oil.

If using solid shortening, always ensure the return lines are clear before turning off the filter pump. Hang any flexible lines up to drain, as solid shortening will solidify as it cools and clog the lines.

5.2 Filter Preparation

Assemble tools to be used for filtering. These are supplied with the filter starter kit (at right):

- L-shaped Teflon Brush - used to clean frypot sides, heating tubes, and to dislodge sediment during filtration or shortening/oil change.
- Clean-Out Rod - used to dislodge heavy debris in the drain tube (when needed).
- Filter Powder.
- Filter Paper.

Filter Starter Kit.

The following tools are not required, but are recommended to make the filtering task easier.

- Measuring Cup - used to measure filter powder.
- Stainless Steel Crumb Scoop – for removing large debris from shortening/oil prior to filtering.

Note: Always wear oil-resistant, insulated gloves and/or protective gear when working with hot oil.

5.2 Filter Preparation (cont.)

1. Put on protective gear/gloves. Pull the filter pan out from filter cabinet. Remove covers.

Pull the filter pan from the fryer and remove covers.

2. Place drip pan under male filter pan connection.

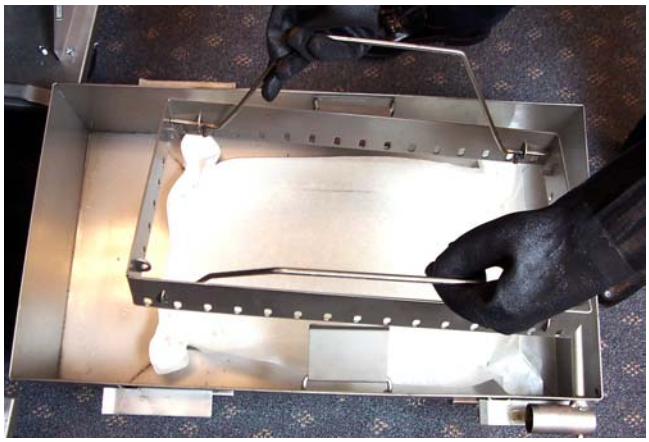
Proper drip pan placement.

3. Remove the crumb screen.

Remove crumb screen. If crumbs are present in the crumb screen, empty the screen into a fireproof container. Thoroughly wash the screen in hot, soapy water, rinse, then dry.

5.2 Filter Preparation (cont.)

4. Unlatch and remove the hold-down ring.



Removing hold-down ring.

5. Remove and discard old filter paper sheet from the filter pan.

Remove and discard old filter paper.

6. Remove the filter screen from the bottom of the pan.

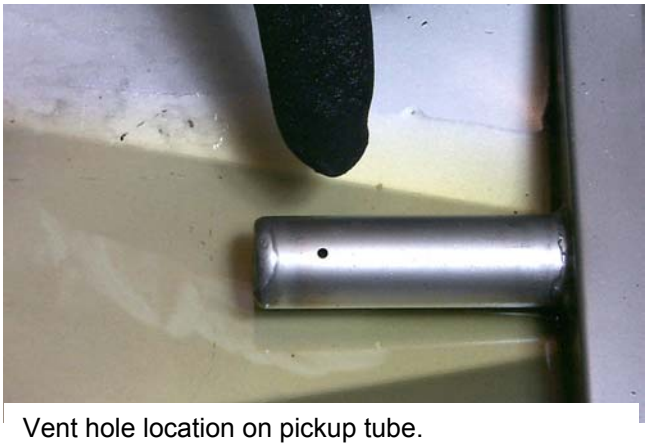
Remove filter screen from filter pan.

5.2 Filter Preparation (cont.)

7. Thoroughly clean pan and all pan components as described for the crumb screen (step 3).

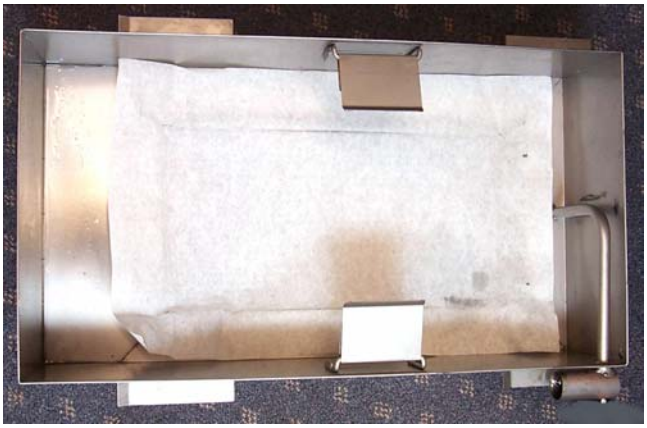
Clean filter pan and all pan components. Ensure all parts are thoroughly dried before reassembly.

8. Inspect pickup tube and ensure vent hole is open and free of shortening/debris.



Vent hole location on pickup tube.

9. Replace filter screen, then place one sheet of filter paper in the bottom of the filter pan. **The filter screen must be installed prior to filter paper placement, or the filter won't operate correctly.**



Proper filter paper placement.

5.2 Filter Preparation (cont.)

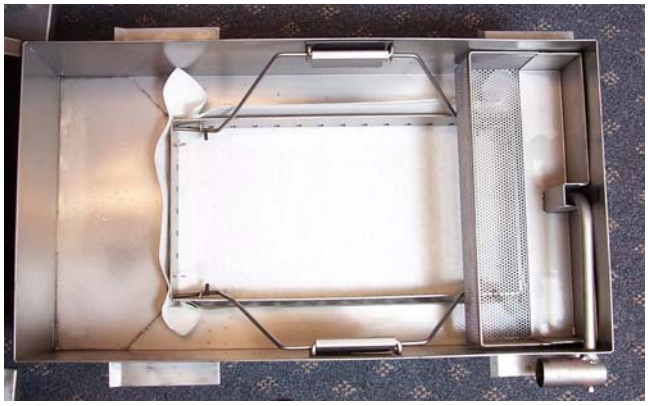
10. Reinstall and latch the hold down ring into position. Ensure filter paper is properly aligned under hold-down ring.

Locking latches on hold-down ring.

11. Sprinkle 1-cup (8 ounces/227 grams) evenly over the paper.

Use a measuring cup or scoop to evenly distribute filter powder over the filter sheet.

12. Replace the crumb screen. Ensure crumb screen is kept clean throughout the workday.



Properly assembled filter pan, ready for use.

5.2 Filter Preparation (cont.)

13. Return pan covers to the filter pan.

Pan covers properly placed.

14. Return filter pan to fryer cabinet, ensuring that the two drainpipe extensions are directly over opening in filter pan cover.

Pushing filter pan back into cabinet. Filter is ready for operation.

5.3 Filter Operations

⚠ DANGER
Draining and filtering of cooking oil or shortening must be accomplished with care to avoid the possibility of a serious burn caused by careless handling. The oil to be filtered is at or near 350°F (177°C). Ensure all hoses are connected properly and drain handles are in their proper position before operating any switches or valves. Wear all appropriate safety equipment when draining and filtering cooking oil or shortening.

⚠ DANGER
Allow oil/shortening to cool to 100°F (38°C) before draining into a metal container, stockpot or disposal unit.

⚠ DANGER
Do not drain more than one frypot at a time into the built-in filtration unit to avoid overflow and spillage of hot oil/shortening.

⚠ DANGER
When draining oil/shortening into a disposal unit or portable filter unit, do not fill above the maximum fill line located on the container.

1. Remove large debris floating in the oil/shortening.

Remove large debris from frypot prior to filtering.

5.3 Filter Operations (cont.)

2. Remove the support grid from the frypot using the clean-out rod. Stir the oil with the L-shaped Teflon brush to suspend debris prior to draining.

Removing support grid from frypot prior to draining.

3. Open the fryer drain valve by pulling the red handle (under the frypot to be filtered) out until it is completely open. Continue stirring the oil.

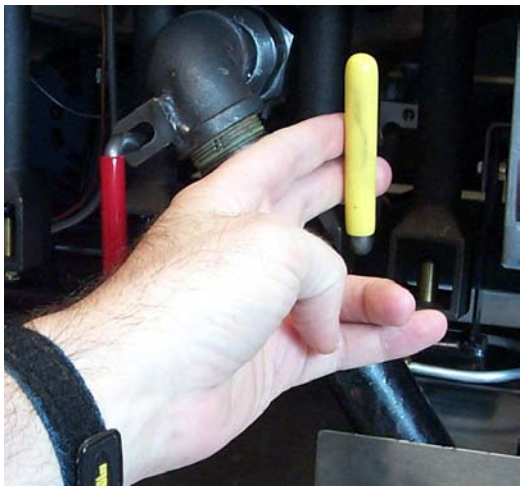
Pull the red handle out to open drain valve. Oil will start to drain into filter pan.

5.3 Filter Operations (cont.)

4. Use the L-shaped brush to scrub the frypot, and to assist in sediment removal. Brush down the frypot sides and between the tubes to remove debris. Use the clean-out rod to clear the drain if necessary.

Use the L-shaped brush to loosen debris as oil drains from the frypot.

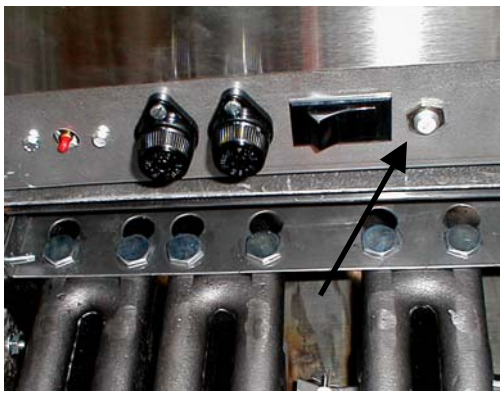
5. Open the oil return valve by pulling the yellow handle. With the red drain valve handle still in the open position, continue to scrub the frypot sides and bottom. When the yellow handle is pulled, the filter pump starts.



Pulling the yellow handle opens the oil return valve and activates the filter pump.

⚠ WARNING
If the filter pump safety switch repeatedly trips, do not continue to reset. A potential safety hazard exists. Contact an authorized service technician for troubleshooting.

Note: A 7-amp or 5-amp circuit breaker located under the control panel of the right-hand fryer protects the filter circuit. A thermal overload breaker is built in to the filter motor in case of overheating/overload. If the circuit breaker or the thermal overload trips, the filter pump will stop. Reset the appropriate breaker(s) and continue the filtration process.



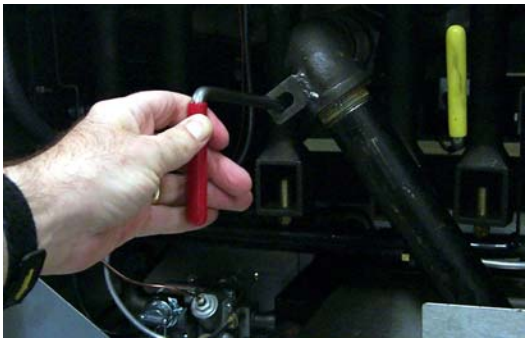
A resettable circuit breaker protects the filter circuit.

5.3 Filter Operations (cont.)

6. Obstructions in the oil return lines often cause the circuit breaker to trip. Ensure the correct oil return valve is open. The yellow oil return valve handle corresponding to the frypot being filtered should be in the open position (pulled out).

If the circuit breaker, trips ensure yellow handle is pulled all the way out.

7. Close the red drain valve by pushing the handle inward until it stops. Ensure the handle is completely closed so that the microswitch is engaged (the fryer will not operate unless the computer senses a closed microswitch circuit). The frypot will begin to fill with filtered oil/shortening.



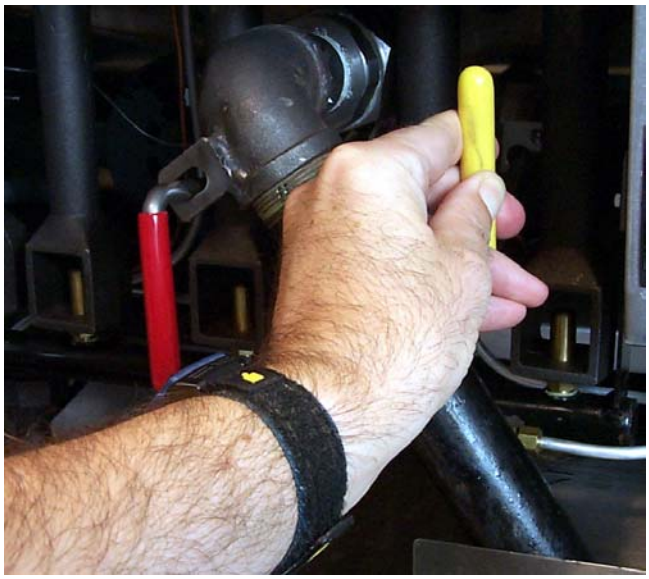
After filtering is complete, close the red drain handle to start refilling the frypot.

8. Allow the filter to pump bubbles into the fryer for approximately 10-15 seconds to ensure the evacuation of all oil/shortening from the filter pan and oil return lines.

Bubbling oil indicates that air is flowing through the return lines and all oil/shortening has been evacuated from the lines.

5.3 Filter Operations (cont.)

9. Turn off the filter by pushing the yellow handle inward until it stops. This closes the oil return line to the filtered frypot and shuts down the filter pump motor.



Push yellow handle in until it stops. This closes the oil return valve and de-activates the filter pump.

⚠ 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.

10. Repeat steps 1 and 2 in section 5.2. Remove crumb screen and empty debris into a fireproof container. If possible, wash all filter pan components in hot, soapy water, rinse and dry thoroughly (section 5.2, step 7). If not, the filter pan should be thoroughly cleaned at the close of each day, as previously described.

Empty contents of the crumb screen into a fireproof container immediately after filtering is complete.

Filtration system troubleshooting information can be found in Chapter 7, page 7-8.

6.1 General

Well-maintained equipment operates more efficiently and lasts longer. Keep the fryer clean during the working day and thoroughly clean at the end of each day.

⚠ DANGER
Never attempt to clean the fryer during the cooking process or when the frypot is filled with hot oil/shortening. If water comes in contact with oil/shortening heated to cooking temperature, it will cause spattering of the oil/shortening, which can result in severe burns to nearby personnel.

6.2 Daily

Wash all removable parts. Clean all exterior surfaces of the body. Do not use cleansers, steel wool, or any other abrasive material on stainless steel. Filter the oil/shortening and replace if necessary. Filter oil/shortening more often under heavy use conditions (i.e. heavily breaded products).

⚠ WARNING
Use a commercial-grade cleaner formulated to effectively clean and sanitize food-contact surfaces. Read the directions for use and precautionary statements before use. Particular attention must be paid to the concentration of cleaner and the length of time the cleaner remains on the food-contact surfaces.

⚠ WARNING
Water MUST NOT be allowed to drain into the filter pan or filter system. Irreversible damage will result if water is allowed into the system, and all applicable warranties will be voided.

6.3 Weekly

Completely drain the frypot into either the filter or a steel container. Do not use a plastic bucket or glass container.

Clean the frypot with a good grade of cleaner or hot water and a strong detergent.

Close the drain valve and refill with either the cleaning solution or water and detergent.

Scrub frypot walls and heating tubes. Then drain frypot and rinse in clear water.

Once cleaning is completed, drain, rinse, and dry thoroughly.

Refill with shortening as directed in Section 3.12 of this manual.

6.4 Periodic/Annual

This appliance should be inspected and adjusted periodically by qualified service personnel as part of a regular kitchen maintenance program.

Frymaster/Dean recommends that this appliance be inspected at least annually by a Factory Authorized Service Technician as follows:

- Inspect the cabinet inside and out, front and rear for excessive oil build-up and/or oil migration.
- Verify that the flue opening is not obstructed by debris or accumulations of solidified oil or shortening.
- Verify that burners and associated components (i.e. gas valves, pilot assemblies, ignitors, etc.) are in good condition and functioning properly. Inspect all gas connections for leaks and verify that all connections are properly tightened.
- Verify that the burner manifold pressure is in accordance with that specified on the appliance's rating plate.
- Verify that the temperature and high-limit probes are properly connected, tightened and functioning properly, and that mounting hardware and probe guard are present and properly installed.
- Verify that component box components (i.e. computer/controller, transformers, relays, interface boards, etc.) are in good condition and free from oil migration build-up and other debris. Inspect the component box wiring and verify that connections are tight and that wiring is in good condition.
- Verify that all safety features (i.e. drain safety switches, reset switches, etc.) are present and functioning properly.
- Verify that the frypot/cookpot is in good condition and free of leaks and that the frypot/cookpot insulation is in serviceable condition. Verify that the frypot tube diffusers are present and in good condition (i.e. no visible deterioration or damage).
- Verify that wiring harnesses and connections are tight and in good condition.

Built-in Filtration:

- Inspect all oil-return and drain lines for leaks and verify that all connections are tight.
- Inspect the filter pan for leaks and cleanliness. If there is a large accumulation of crumbs in the crumb basket, advise the owner/operator that the crumb basket should be emptied into a fireproof container and cleaned daily.
- Verify that all O-rings and seals (including those on the Power Shower and on quick-disconnect fittings) are present and in good condition. Replace o-rings and seals if worn or damaged.

6.4 Periodic/ Annual (cont.)

- Check filtration system integrity as follows:

– With the filter pan empty, place each oil return handle, one at a time, in the ON position. Verify that the pump activates and that bubbles appear in the cooking oil/shortening (or that gurgling is heard from the Power Shower port) of the associated frypot.

– Close all oil return valves (i.e., place all oil return handles in the OFF position). Verify proper functioning of each oil return valve by activating the filter pump using the lever on one of the oil return handle microswitches. No air bubbles should be visible in any frypot (or no gurgling should be heard from the Power Shower ports).

– Verify that the filter pan is properly prepared for filtering, then drain a frypot of oil heated to 350°F (177°C) into the filter pan and close the frypot drain valve. Place the oil return handle in the ON position. Allow all cooking oil/shortening to return to the frypot (indicated by bubbles in the cooking oil/shortening or, on units with Power Showers, cessation of oil flow from the Power Shower). Return the oil return handle to the OFF position. The frypot should refill in no more than 2 minutes and 30 seconds.

To ensure good fryer health and a safe environment, the fryer should be checked and adjusted periodically by qualified service personnel as part of a regular kitchen maintenance program.

6.5 Stainless Steel

All stainless steel fryer outer parts should be wiped regularly with hot, soapy water during the day and with a liquid cleaner designed for this material at the end of each day.

Do not use steel wool, abrasive cloths, cleansers or powders!

Do not use a metal knife, spatula or any other metal tool to scrape stainless steel! Scratches are almost impossible to remove.

If it is necessary to scrape the stainless steel to remove any encrusted materials, soak the area first to loosen the material, then use a wood or nylon scraper only.

7.1 Introduction

This section provides an easy reference guide to some of the common problems that may occur during the operation of this equipment. The troubleshooting guides that follow are intended to help correct, or at least accurately diagnose, problems with this equipment. Although this chapter covers the most common problems reported, you may encounter problems, which are not addressed. In such instances, the Frymaster/Dean Technical Service staff will make every effort to help you identify and resolve the problem.

When troubleshooting a problem, always use a process of elimination starting with the simplest solution and working through to the most complex. Never overlook the obvious – anyone can forget to plug in a cord or fail to close a valve completely. Most importantly, always try to establish a clear idea of why a problem has occurred. Part of any corrective action involves taking steps to ensure that it doesn't happen again. If a controller malfunctions because of a poor connection, check all other connections, too. If a fuse continues to blow, find out why. Always keep in mind that the failure of a small component may often be indicative of potential failure or incorrect functioning of a more important component or system.

<u>Before</u> calling a service agent or the Frymaster/Dean HOTLINE (1-800-551-8633):

- **Verify that electrical cords are plugged in and that circuit breakers are on.**
- **Verify that frypot drain valves are fully closed.**
- **Verify that gas line is properly connected.**

⚠ DANGER
Never attempt to move a fryer containing hot cooking oil/shortening or to transfer hot cooking oil/shortening from one container to another.

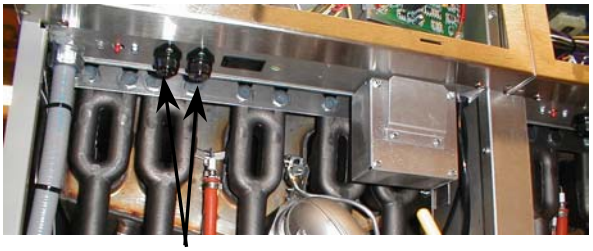
⚠ DANGER
Use extreme care when testing electrical circuits. Live circuits will be exposed.

⚠ WARNING
Inspection, testing, and repair of electrical components should be performed only by qualified service personnel. The equipment should be unplugged when servicing, except when electrical tests are required.

⚠ DANGER
NEVER use open flame to melt solidified shortening-blockage in the filtration system. Open flame increases the chance for extreme fire hazard and operator injury.

7.2 Fryer Troubleshooting

<table>
<tr><td>7.2.1</td><td>Computer fails to turn "ON" when ON/OFF button is pressed.</td><td>1. Check wall circuit breakers. Reset if necessary.

2. Check fryer connection to external power source.</td></tr>
<tr><td colspan="2"> 
Fuses are located inside the cabinet, under the component box.</td><td>3. Disconnect fryer from power supply.

4. Check fuses and replace if necessary (see photo at left).

5. Power surge/outage may have temporarily locked out computer.</td></tr>
</table>

⚠ DANGER

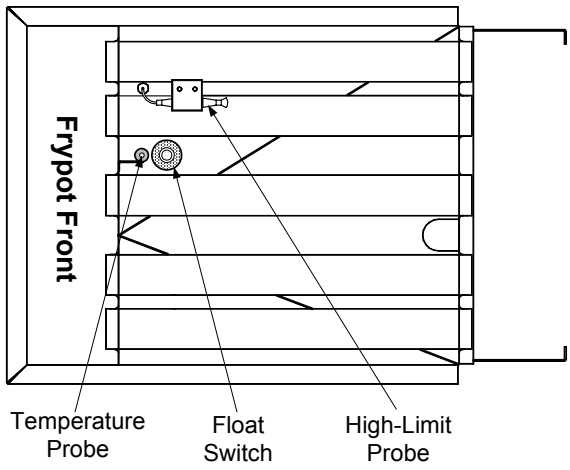
Disconnect power before unplugging and plugging 15-pin computer connector. A shock hazard exists if the connector is not unplugged prior to troubleshooting or repair.

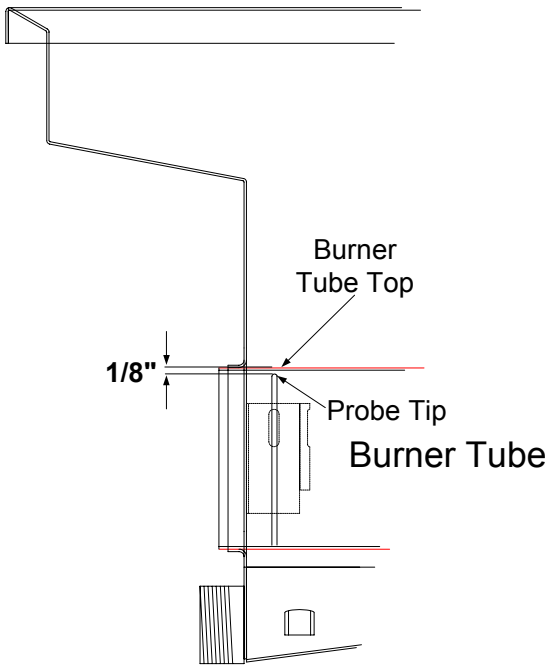
8.2 Fryer Troubleshooting (cont.)

7.2.1 (cont.)	**Computer fails to turn "ON" when ON/OFF button is pressed.**	1. Access the back of the computer by removing front control panel. 2. Disconnect, then reconnect the 15-pin connector mounted on the computer back. 3. Reconnect power to fryer. Press computer ON/OFF button "ON". 4. If computer fails to come "ON", contact an authorized service agent for service.
7.2.2	**Computer is "ON", but the gas valves fail to energize.**	1. Ensure float-switch is not stuck in "down" position. Contact an authorized service technician for service if float-switch is defective. 2. If computer displays HELP, reset high-limit thermostat (located in the fryer cabinet under the control panel). Contact an authorized service technician for service if high-limit will not reset.
7.2.3	**Actual frypot temperature differs from computer setpoint temperature.**	1. Turn fryer "ON". 2. Select a product number and allow the fryer to heat for approximately 30 minutes to stabilize shortening temperature at desired setpoint. 3. Place a thermometer within 1-inch (25-mm) of the temperature probe (see illustration, page 7-4). 4. Press the computer temperature button to check frypot temperature. Press the computer temperature button twice to view setpoint temperature for the product number chosen.

7.2 Fryer Troubleshooting (cont.)

7.2.3 (cont.)	**Actual frypot temperature differs from computer setpoint temperature.**





5. The thermometer temperature should be within ±10°F (±5°C) of the computer display temperature. If the results are:

   Yes- System is maintaining temperature properly.

   No- Ensure the probe tip is 1/8" from the top of the burner tubes (see illustration). If the probe adjustment is correct, the computer probe circuit may be faulty. If probe adjustment is incorrect, it will require adjustment.

6. Contact your authorized service agent if any of the following occurs during this test:

   a. Computer probe circuit is suspected as faulty.

   b. Temperature probe requires adjustment.

   c. Computer fails to call for heat during the calibration test.

7.2 Fryer Troubleshooting (cont.)

7.2.4	DRAIN OPEN **message remains after closing drain valve.**	1. Computer was turned "OFF" while draining frypot. 2. Close drain valve. Turn computer "OFF" and then "ON". Computer display will read "ON". 3. Open drain valve. Computer display will read DRAIN OPEN. After 30 seconds the computer display will read FILL. 4. Close drain valve. 5. Fill frypot with shortening. Press EXIT/COOL FILTER when ready to cook. 6. If the computer message DRAIN OPEN remains after steps 1-4, contact an authorized service agent. Possible malfunctions are: a. Drain microswitch may be faulty. b. Drain circuit may be suspect. c. Computer may be suspect.

7.2 Fryer Troubleshooting (cont.)

7.2.5	**Main burner malfunctions.**	A. Main burner will not ignite; no gas present at main burner. 1. Check that float switch is not stuck in the "down" position. 2. Check and reset the high-limit switch. 3. The combination gas valve and/or electronic ignition system may be defective; contact an authorized service technician for service. B. Main burner flames are small and appear lazy; shortening does not come up to temperature quickly. 1. Contact an authorized service technician for service.

7.2 Fryer Troubleshooting (cont.)

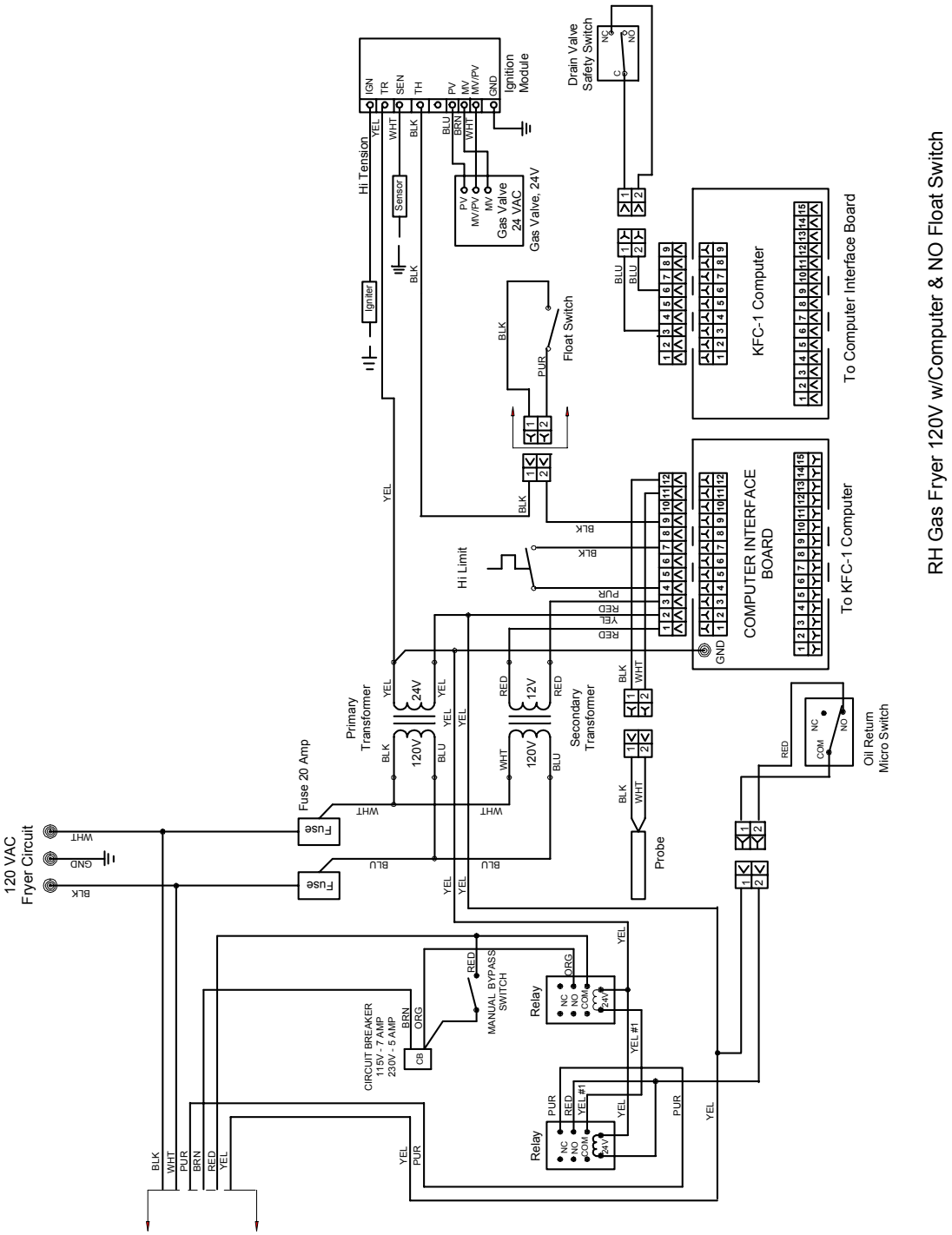
7.2.5 (cont.)	**Main burner malfunctions.**	C. Fryer will not reach setpoint temperature and/or runs erratically. 1. Incorrect location or adjustment of sensor probe or defective temperature sensor. Contact an authorized service technician for service. D. Fryer shortening temperature cannot be controlled; fryer runs at high-limit temperature. Possible causes are: 1. Defective operating thermostat or temperature probe. Contact an authorized service technician for service.

7.3 Filtration System Troubleshooting

Pump won't start	• Return valve not fully opened. • Tripped circuit breaker. • Incorrect or no line voltage. • Failed return microswitch.
Pump stops during filtering process. Motor is hot.	• Allow motor to cool for at least 45 minutes and then press thermal overload switch on motor.
Pump stops and motor is cool.	• Move filter handle to OFF. Allow oil to cool then empty pan. Verify filter paper and screen are clean and properly installed. Refill pan and restart process.
Pump starts and abruptly stops	• Reset thermal overload. • Verify wiring harness is properly connected; a damaged harness should be replaced by a FASC. • Pump is blocked. Call FASC for service. • Filter pan suction tube is blocked. Use a thin, flexible wire to unclog. • Motor or 24 VAC transformer failed; call for service.
Pumping is erratic	• Verify O-ring on pan outlet is present and in good condition. • Verify paper and screen have been properly installed.
Oil not being returned to frypot	• Solidified oil or sediment is likely clogging the return line. Clear line.
After filtering, fryer does not operate properly.	• Verify drain valve is fully closed.

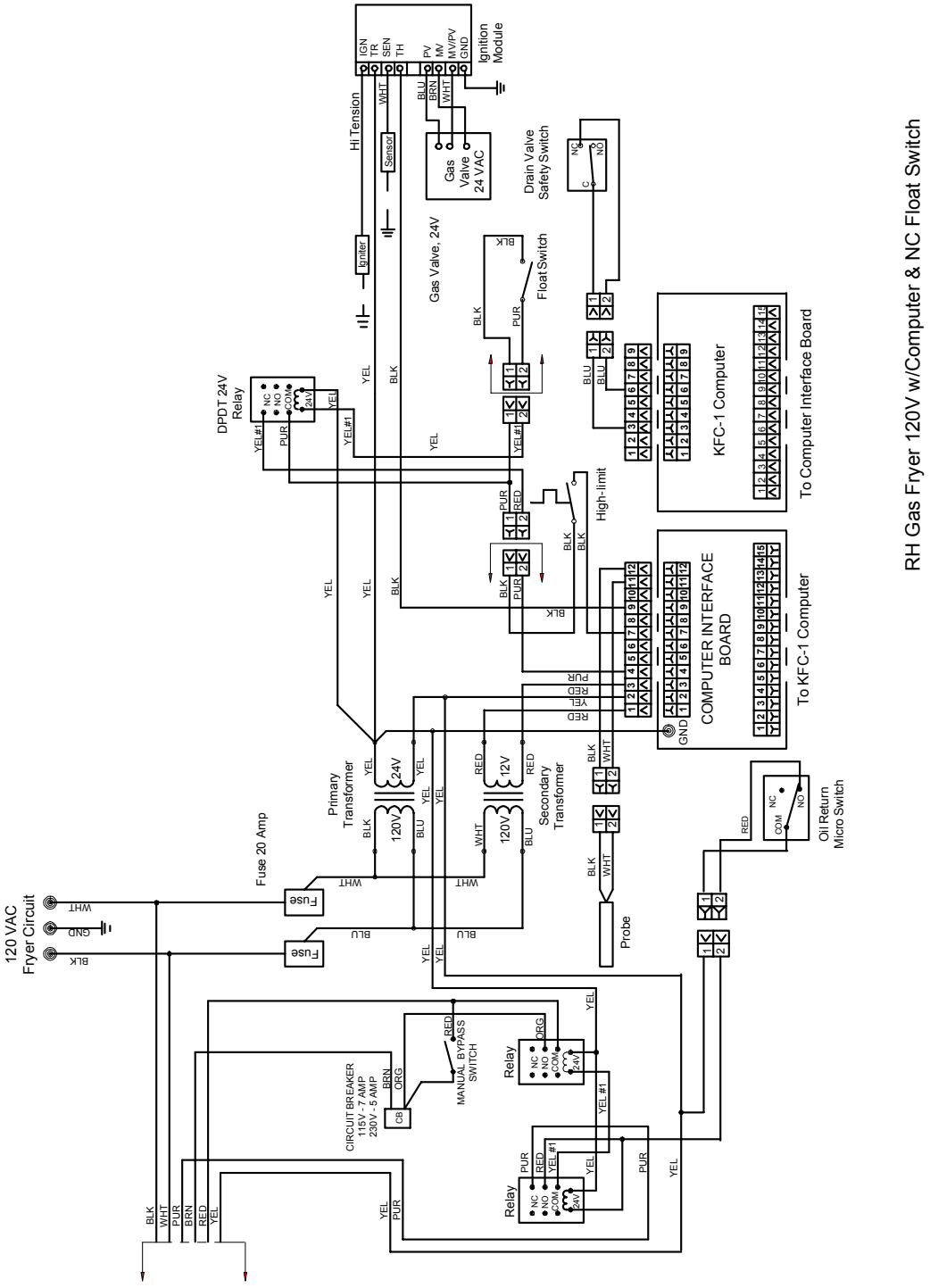
7.4 Wiring Diagrams

KSCF18G (Right-hand Fryer with UFF Filter Circuit)
(Current Production - USA, Mexico and Canada)



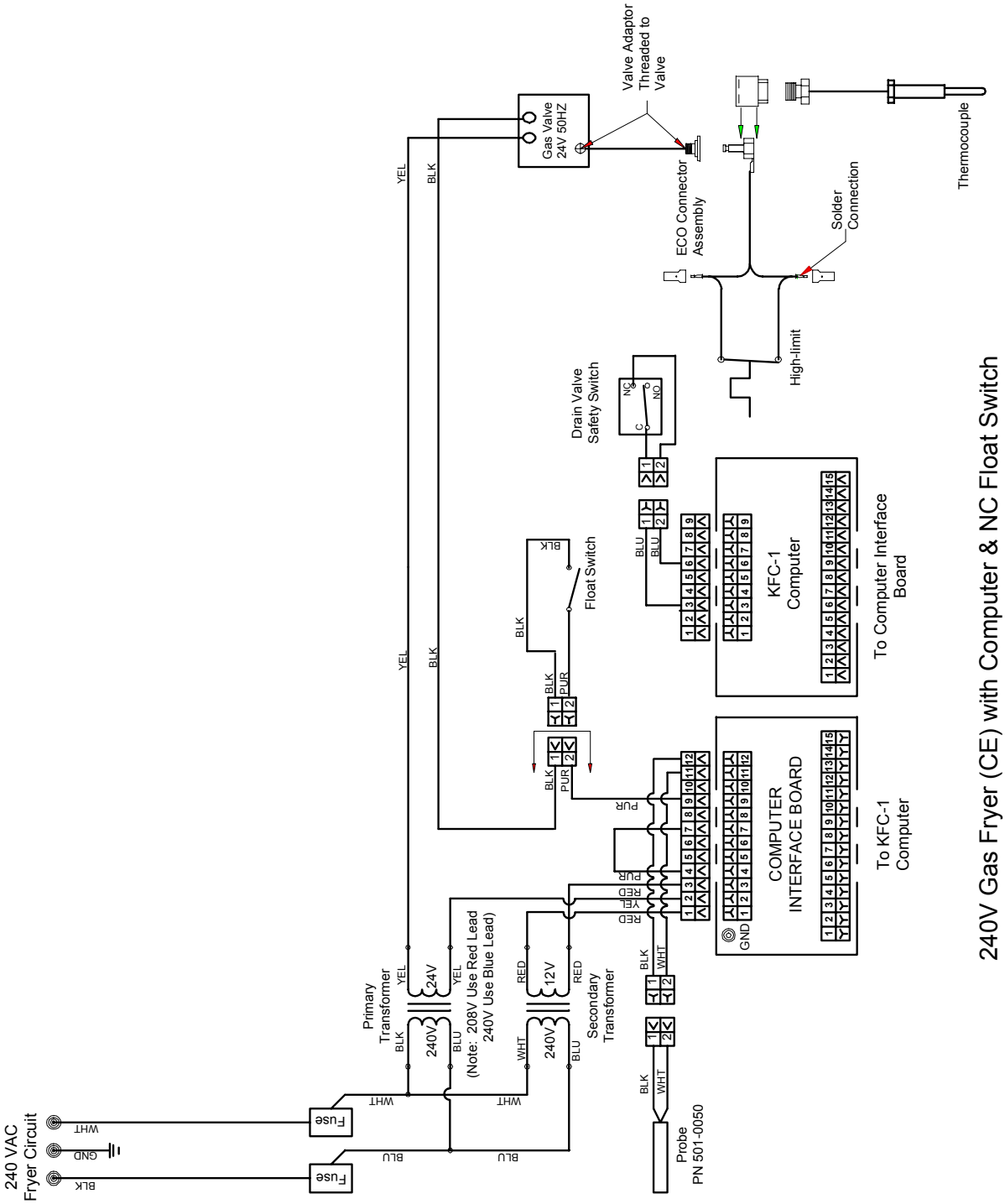
7.4 Wiring Diagrams (cont.)

KSCF18G (Right-hand Fryer with SCF Filter Circuit)
(Serial Numbers 9912XXX and earlier- Retrofitted fryers use Current Production Wiring Diagram- Page 7-9)



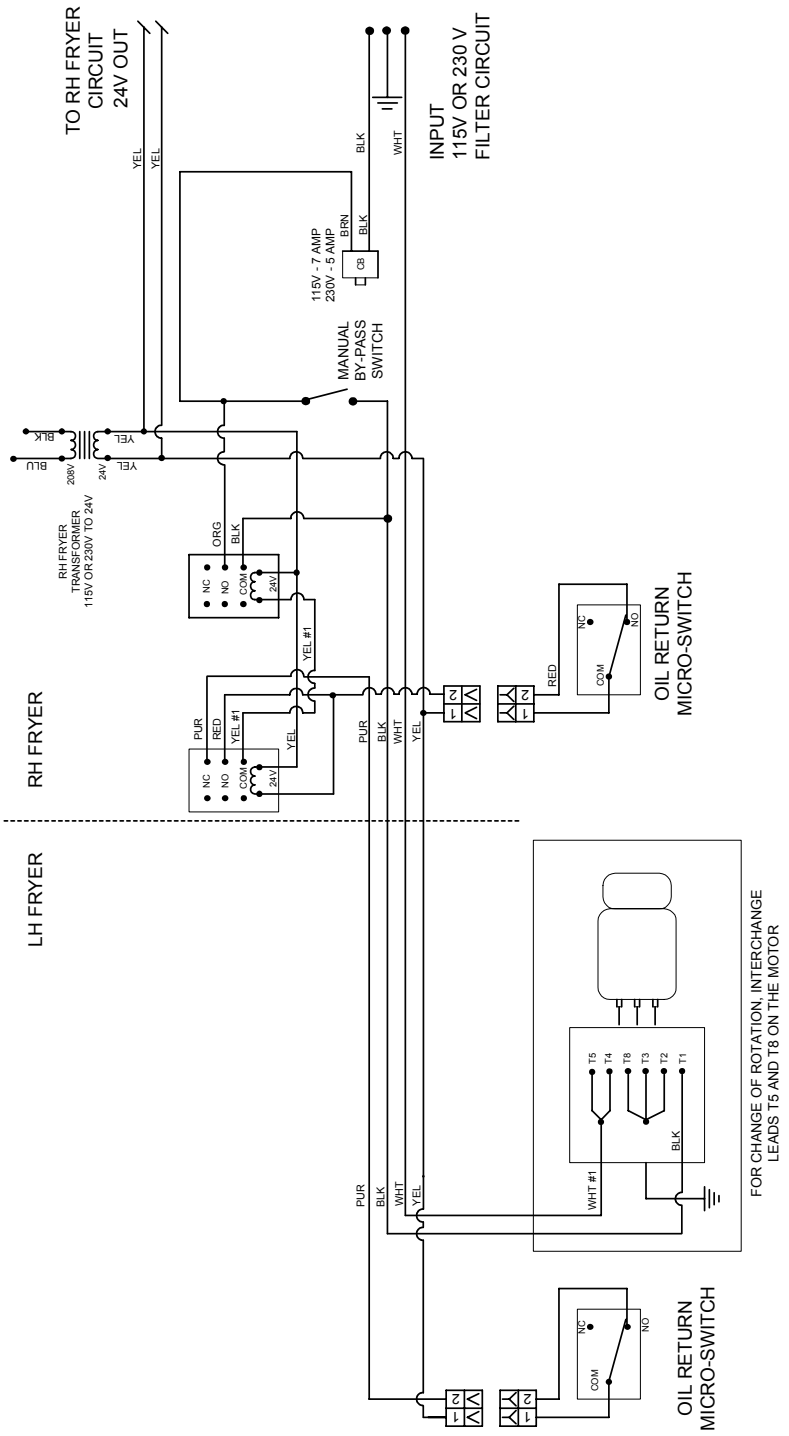
7.4 Wiring Diagrams (cont.)

KSCF18G (CE - 240Volts)



7.4 Wiring Diagrams (cont.)

KSCF18G Filtration System

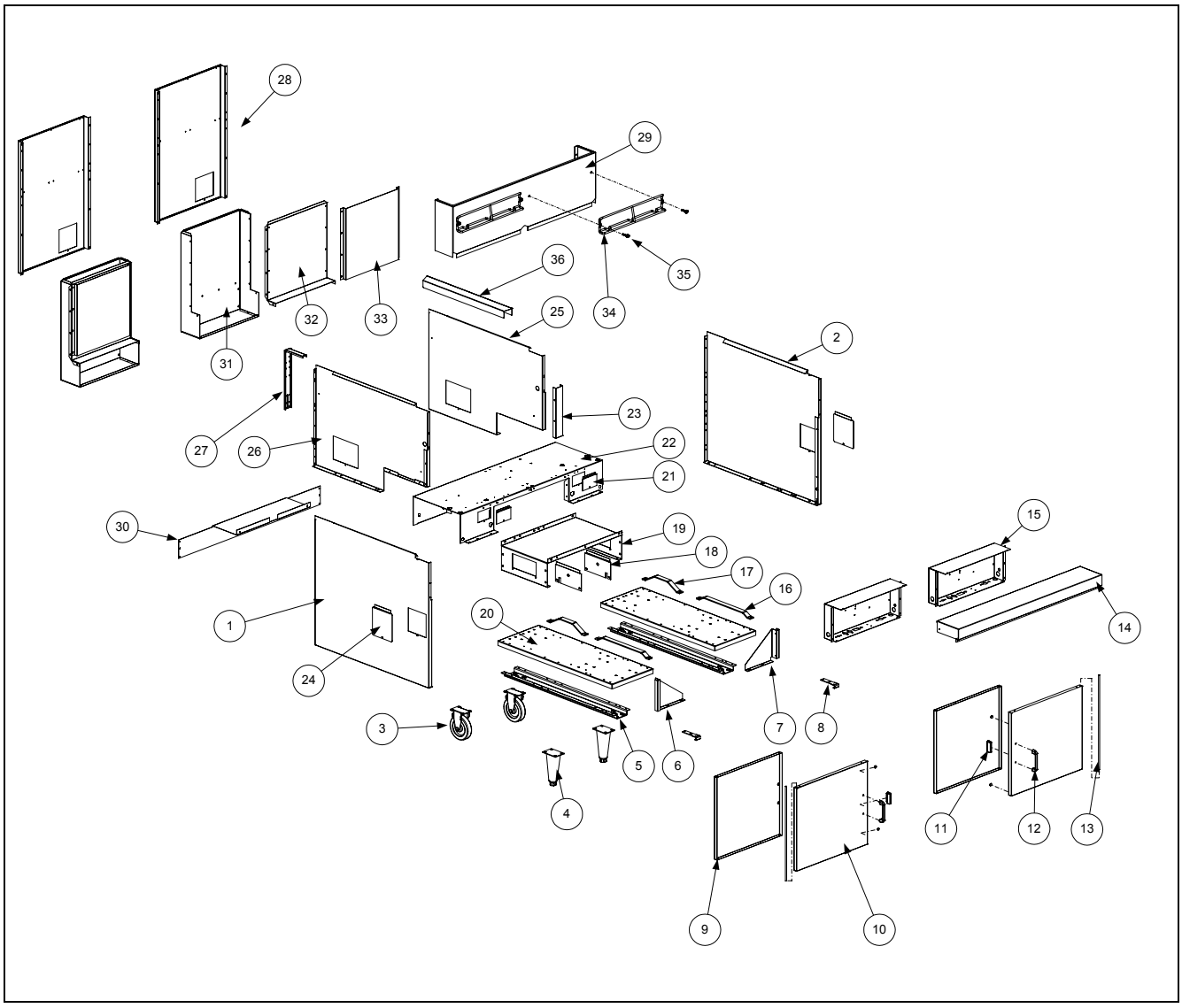


KSCF18G COOL ZONE SERIES GAS FRYERS
CHAPTER 8: PARTS LIST

8.1 KSCF18G Parts List

For parts and/or components not listed, contact the Frymaster Service Hotline at 1-800-551-8633 or 1-318-865-1711 for additional service and parts information.

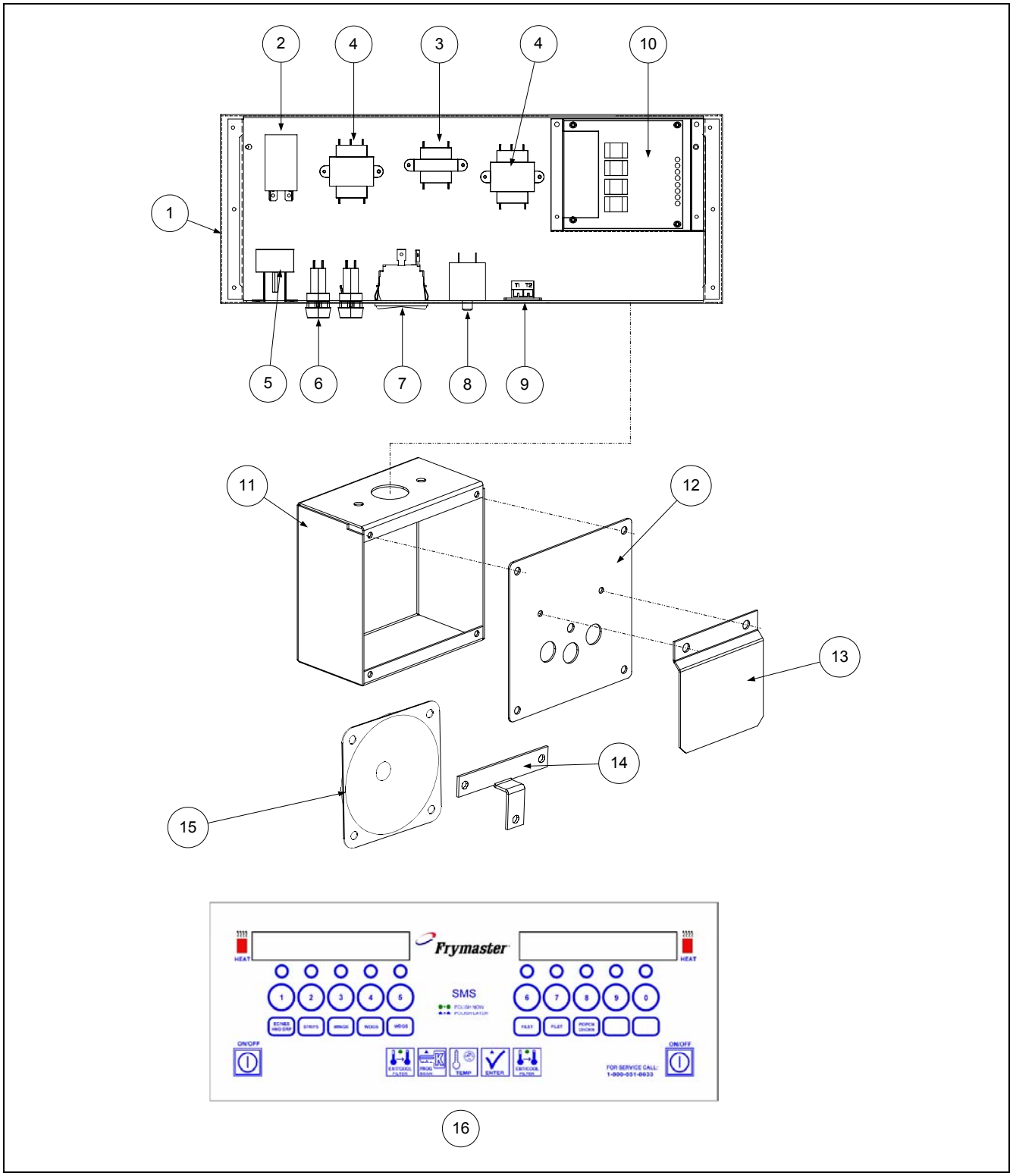
8.1.1 Cabinetry and Related Components



8.1.1 Cabinetry and Related Components (cont.)

ITEM	PART #	COMPONENT
1	201-1299	Side Panel, Painted, LH
2	202-1299	Side Panel, Painted, RH
3	810-0378	Caster, Stationary- 5" Rigid
4	806-5043	Leg
5	823-3180	Support, Channel- Leg/Caster
6	201-1182	Gussets, L/H
7	202-1182	Gussets, R/H
8	200-1675	Lower Hinge Bracket (Door)
9	200-1185	Door Panel, Inner
10	210-1271SP	Door Panel, Outer
*	106-0855	Door Assembly
11	810-1105	Magnetic Door Catch
12	810-2105	Handle, Door- Chrome
*	809-0918	Screw, 10-24 x ½" Slotted Head (Use With 810-2105)
*	809-0191	Washer, ¼ Spring-Lock (Use With 810-2105)
13	200-1301	Door Pin
14	824-0937	Top Cap
15	200-2044	Component Box
16	210-1807	Slide, UFF Filter Pan- Front (Long)
17	210-2128	Slide, UFF Filter Pan- Rear (Short)
18	200-1331	Shield, Heat
19	200-1297	Base, Lower Frame
20	200-1198	Channel, Base
21	200-2134	Plate, Mounting (UFF)
22	200-1611	Base, Upper
23	200-2308	Post, Door
24	210-1365	Cover, Access Duct
25	202-1245	Panel, Inner- Right Side
26	201-1245	Panel, Inner- Left Side
27	210-1959	Gusset, Upper- Vessel Support
28	200-1652	Back, Cabinet
29	823-3366	Cap, Flue
30	200-1425	Cross-brace
31	200-1773	Back, Flue
32	200-1339	Front Flue
33	200-1325	Shield, Heat- Flue
*	809-0167	Screw, 10A x 5/8 (Flue Assembly)
34	810-2092	Hanger, Basket
35	809-0171	Thumbscrew, ¼ x 1-3/8" Nickel-Plated
36	210-1288	Joiner Strip
* Not Illustrated		

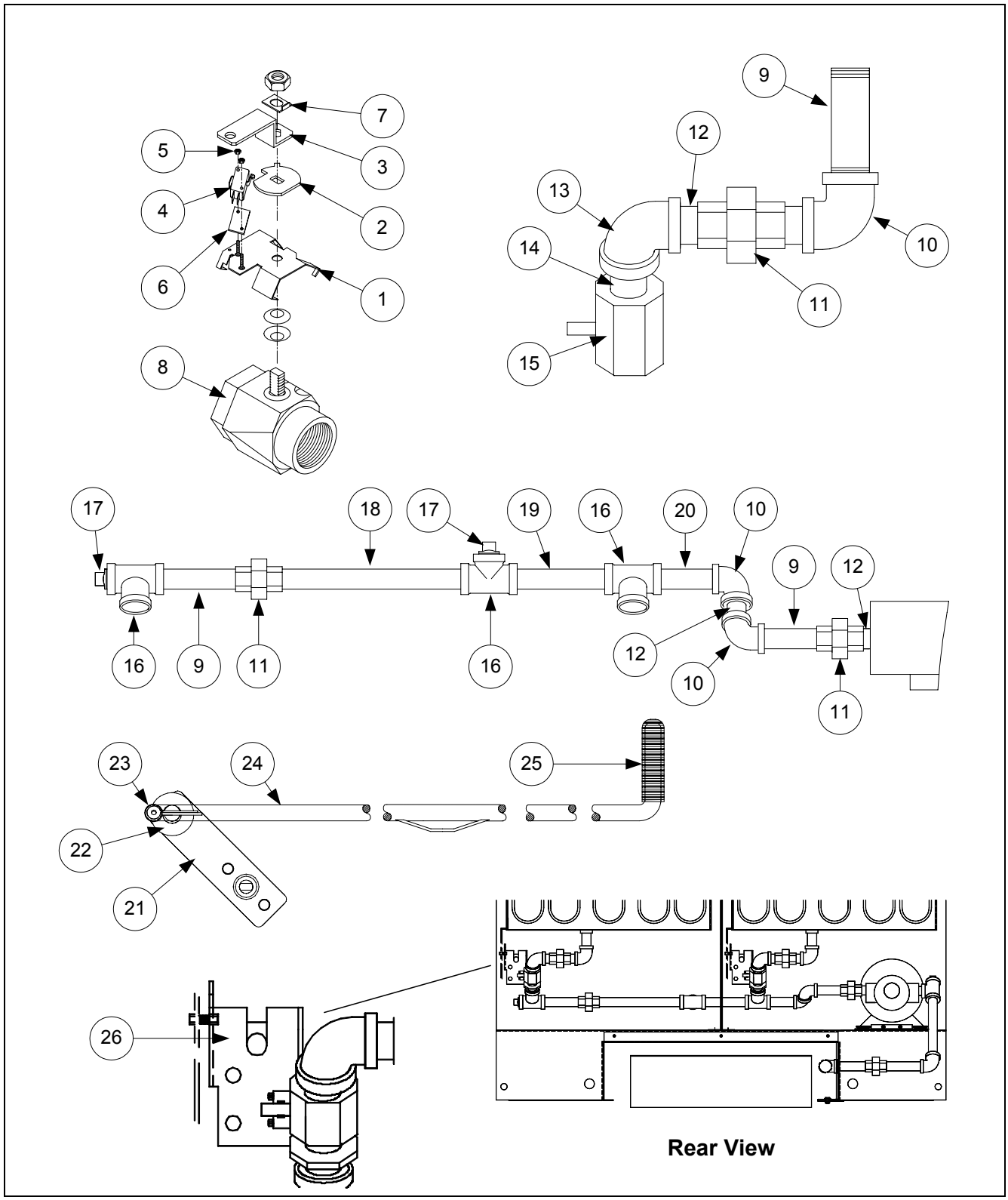
8.1.2 Component Box, Computers and Related Components



8.1.2 Component Box, Computers and Related Components (cont.)

ITEM	PART #	COMPONENT
1	200-2044	Component Box
2	807-3611	Relay, DPDT, 24VAC
*	807-3612	Relay Socket
*	807-3613	Relay Spring
*	200-1598	Relay Bracket, w/2 cutouts
*	200-1337	Relay Bracket w/1 cutout
3	807-0855	Transformer, 120V to 12V
4	807-0800	Transformer, 120V to 24V (Fryer and Filter Circuit)
*	807-0680	Transformer, 240V to 24V
*	807-1999	Transformer, Dual-Voltage- **CE** Only
5	►►►	**See Page 8-10 For High-Limit Thermostats**
6	807-0922	Fuse Holder, Buss
*	807-2278	Fuse, 20 Amp- KTK-R20
*	807-0921	Fuse, 3 Amp- KTK-R3
7	807-3580	Switch, Filter By-Pass
*	807-3620	Switch, Toggle- Filter By-Pass (Older Units)
8	807-3577	Circuit Breaker, Filter, 7 Amp (120V Units)
*	807-3538	Circuit Breaker, Filter, 5 Amp (208/230V Units)
9	810-1164	Block, Terminal
10	806-6336	Interface Board, Computer
*	106-1552	Plate, Mounting- Interface Board
11	200-1618	Box, Sound Device Housing
*	807-3546	Bushing, Heyco
12	200-1596	Cover, Sound Device Mounting
13	200-1597	Shield, Sound Device Cover
14	900-2147	Bracket, Speaker
15	807-3520	Speaker, Sound Device
*	809-0102	Screw, 10-32 x ½"
*	809-0050	Nut, 10-32
16	806-9727	KFC-1 Computer (Domestic)
*	106-0124	Computer, KFC-1 (Foreign)
*	210-1256	Panel, Control- Computer
*	809-0824	Screw, Control Panel
*	819-5733	KFC-1 SMS User's Guide
* Not Illustrated		

8.1.3 Drain Valve, Oil Return and Related Components



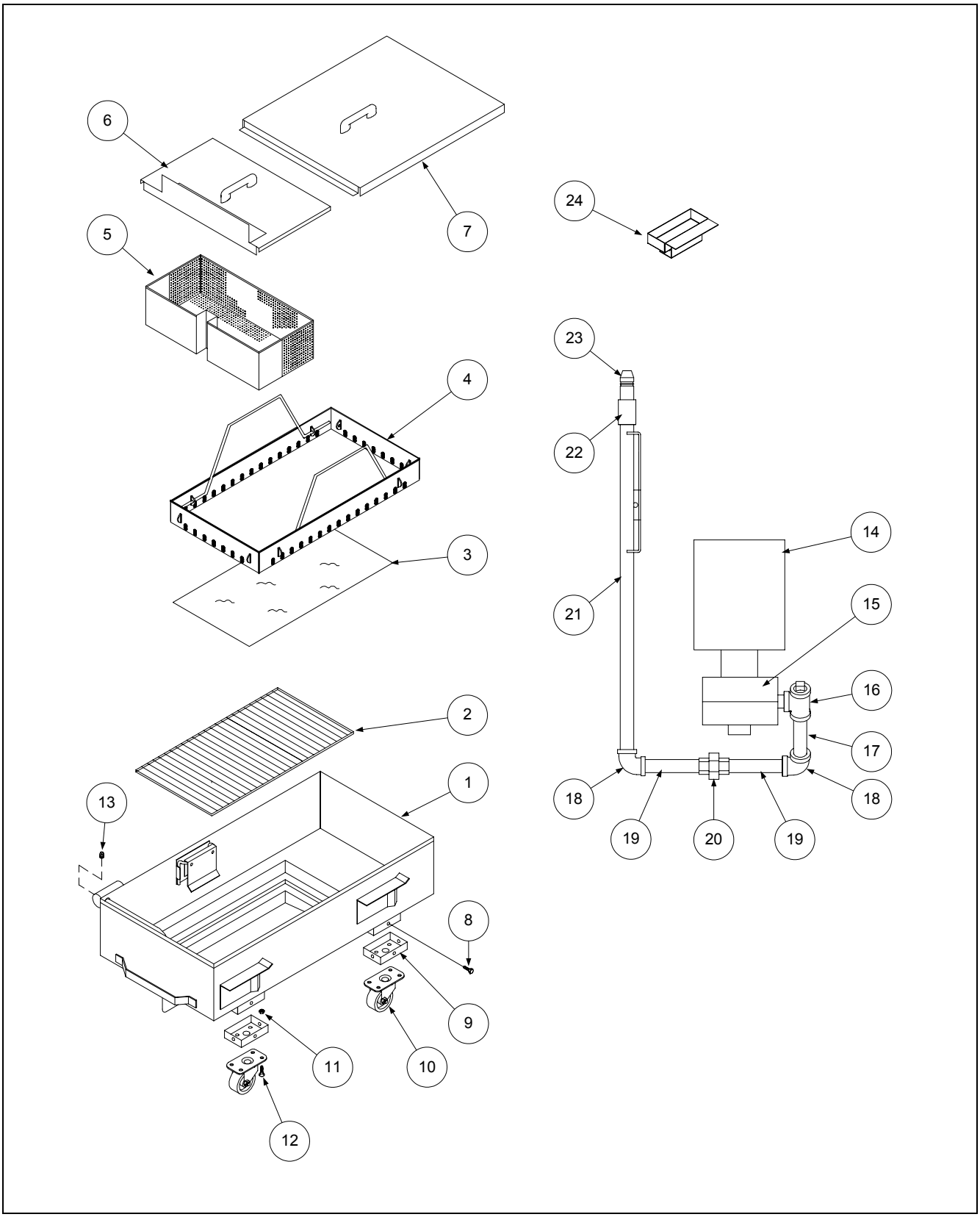
8.1.3 Drain Valve, Oil Return and Related Components (cont.)

ITEM	PART #	COMPONENT
		Drain Valve/Microswitch Components
1	106-1401	Bracket, Microswitch
2	210-2029	Bracket, Activator- Microswitch
3	200-1940	Handle, Drain Valve
*	823-3429	Handle, Push/Pull
*	816-0547	Cap, Vinyl-Red
4	807-2104	Microswitch
5	809-0842	Nut, Nylock- #4-40
6	816-0220	Insulation, Microswitch
7	200-1257	Retainer, Nut
8	810-2127	Drain Valve, 1-1/2" Full Port (With Washers & Nut)
*	813-0645	Nipple, SS- 1-½ x 2-½"
*	823-3221	Elbow/Bracket Assembly, 1-½"- Left Side
*	823-3222	Elbow/Bracket Assembly, 1-½"- Right Side
*	823-3357	Nipple, Drain- Left Side
*	823-3358	Nipple, Drain- Right Side
*	210-1273	Clamp, Drain Pipe
*	809-0123	Screw, 10-32 x ¾" Slotted Head
*	826-1376	Nut, Keps- 10-32 (Qty: 10)
*	210-2311	Clamp, Drain Pipe-Center
		Oil Return Valve/Fittings Components
9	813-0247	Nipple, ½ NPT x 3-½" BM
10	813-0062	Elbow, ½"- 90° NPT BM
11	813-0173	Union, ½ NPT x 3-½" BM
12	813-0022	Nipple, ½" x Close BM
13	813-0634	Elbow, ½ x 3/8"- 90° NPT BM
14	813-0625	Nipple, 3/8" NPT x Close BM
15	810-2125	Valve, Ball- 3/8"
16	813-0003	Tee- ½" NPT BM
17	813-0156	Plug, ½" Square Head NPT BM
18	813-0673	Nipple, ½ NPT x 8-½" BM
19	813-0677	Nipple, ½ NPT x 4-½" BM
20	813-0265	Nipple, ½ NPT x 2-½" BM
21	823-3344	Handle, Oil Return Valve
*	809-0823	Nut, Oil Valve Handle (Nylock)
*	200-1143	Retainer, Oil Valve Nut (Requires 2)
22	809-0885	Washer, 3/8 x 1/16"
23	809-0843	Pin, Cotter- Plated
24	823-3343	Handle, Push-Pull, Oil Return
25	816-0548	Cap, Vinyl- Yellow
* Not Illustrated		

8.1.3 Drain Valve, Oil Return and Related Components (cont.)

ITEM	PART #	COMPONENT
26		Microswitch Bracket Assembly, Oil Return
*	201-1233	Bracket, Oil Return Microswitch- Left
*	202-1233	Bracket, Oil Return Microswitch- Right
*	810-2144	Spacer, Aluminum, 4-40- ¼ x 3/8
*	807-2104	Microswitch, Oil Return
*	809-0846	Screw, 4-40 x 1" Slotted Head
*	809-0842	Nut, Nylock- 4-40
*	200-1341	Bracket, Microswitch Rod
*	809-0360	Screw, #8 x 3/8 Hex Washer Slotted Head
*	809-0803	Bolt, ¼-20 x ¾" Hex Head Grade 5
*	809-0823	Nut, Nylock, ¼-20
*	809-0070	Nut, ¼-20 Hex SS
* Not Illustrated		

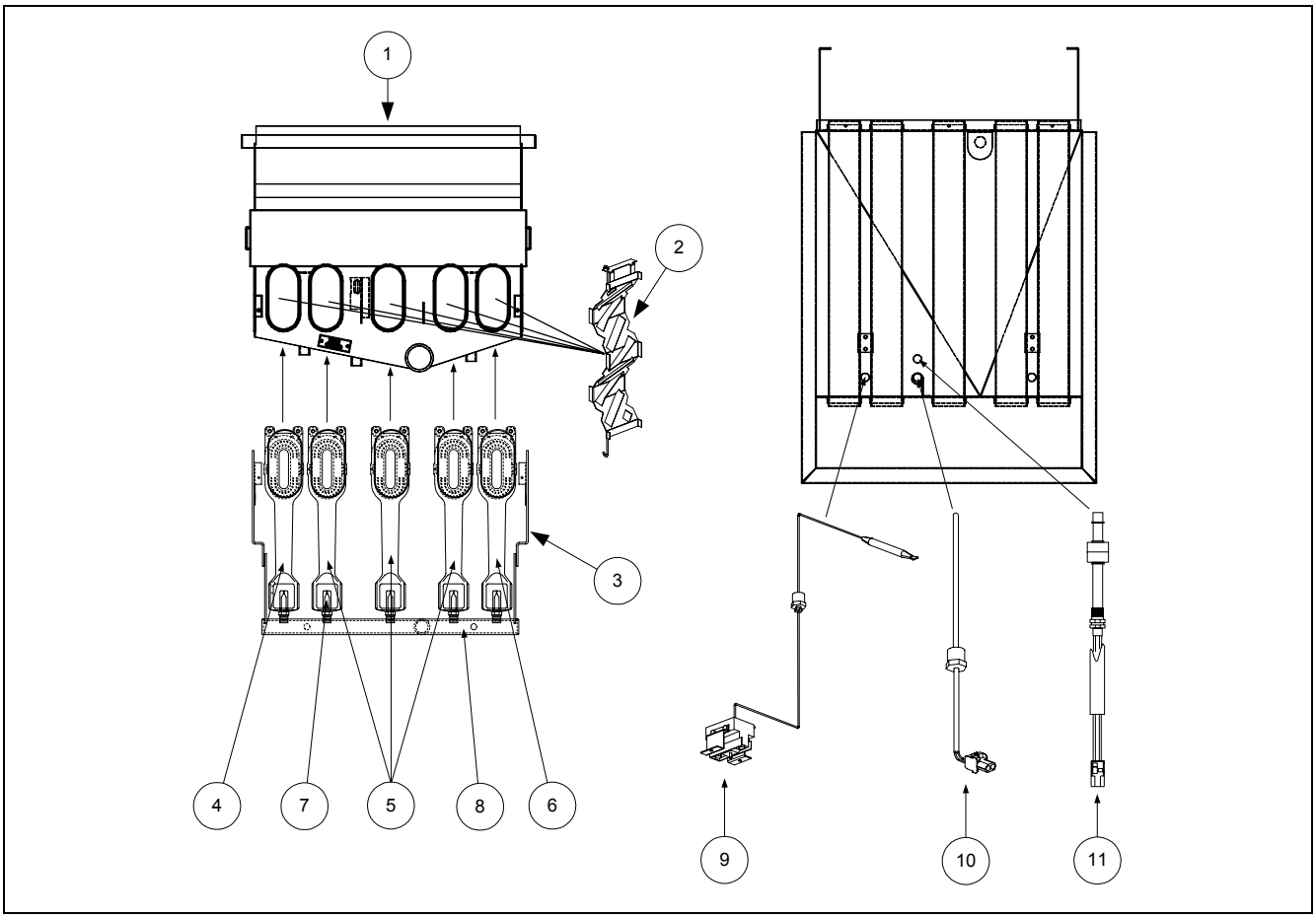
8.1.4 Filter Pan, Pump Motor and Related Components



8.1.4 Filter Pan, Pump Motor and Related Components (cont.)

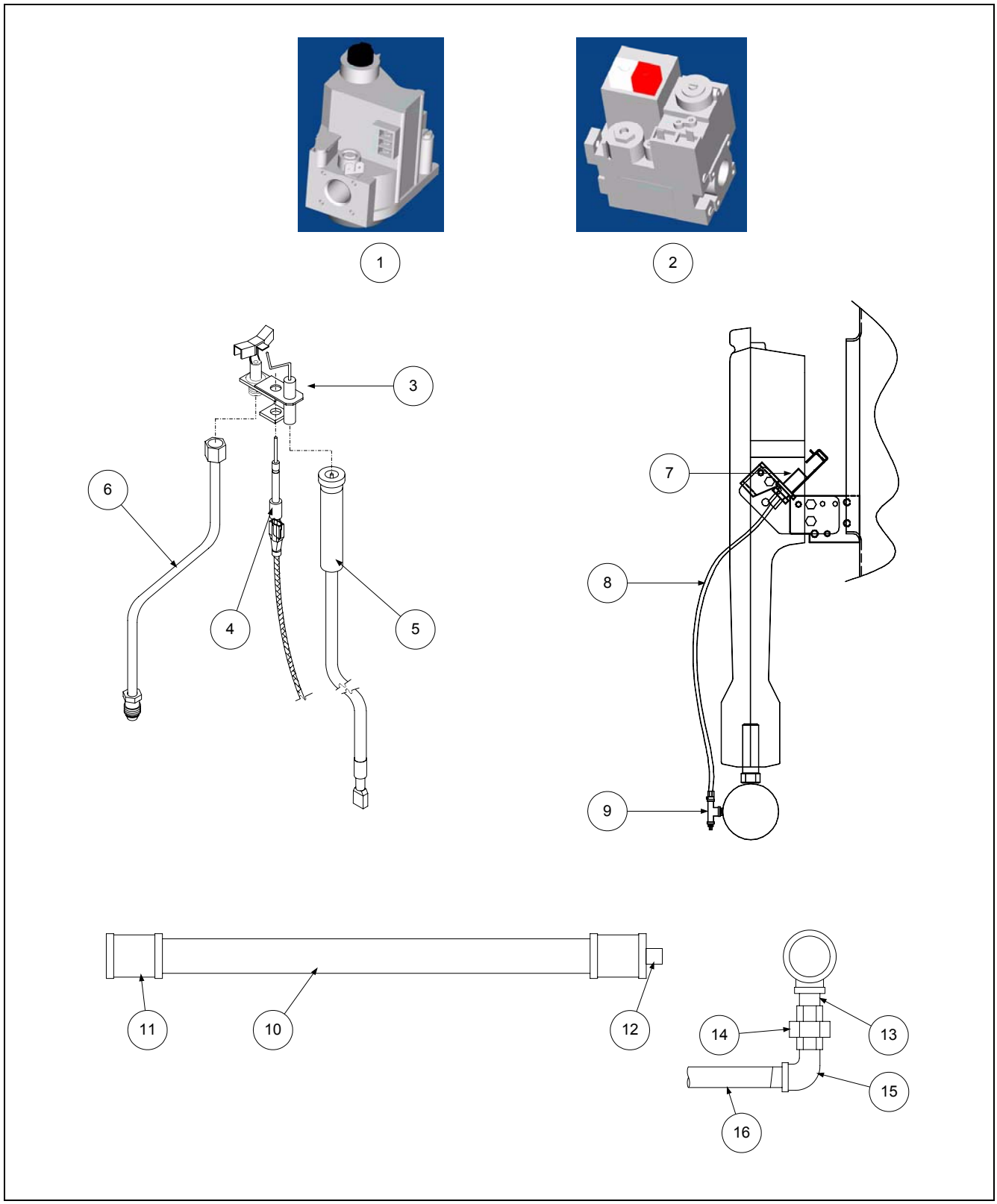
ITEM	PART #	COMPONENT
1	823-3240	Pan, Filter
2	810-2119	Grid, Filter
3	803-0170	Paper, Filter
4	823-3201	Ring, Hold-Down (No Handles)
*	823-3202	Handle, Hold-Down Ring
5	823-3204	Crumb Basket
6	823-3241	Lid, Filter Pan- Front
7	210-1295	Lid, Filter Pan- Back
*	810-2105	Handle, Pan Lid, Front and Back- Chrome
*	809-0918	Screw, 10-24 x ½" Slotted Head (Use With 810-2105)
*	809-0191	Washer, ¼ Spring-Lock (Use With 810-2105)
8	809-0866	Screw, SS- ¼-10 x ½" Phillips Head
9	210-1293	Insert, Mounting Plate- Caster
10	810-2141	Caster, 2"
11	809-0823	Nut, Nylock- ¼-20
12	809-0822	Bolt, ¼-20 x ½" Hex Head
13	813-0679	Plug, SS- 1/8 Square Head
14	810-2100	Motor, Filter Pump
15	810-2098	Pump, Filter- 8GPM
16		**Fitting, Oil Suction Start**
*	813-0022	Nipple, ½" NPT x Close BM
*	813-0003	Tee, ½" NPT BM
*	813-0156	Plug, Hex Head ½" NPT BM
17	813-0674	Nipple, ½ NPT x 7-¼" BM
18	813-0062	Elbow, ½" x 90° NPT BM
19	813-0247	Nipple, ½ NPT x 3-½" BM
20	813-0173	Union, ½" NPT BM
21	823-3282	Nipple/Plate Assembly
22	813-0608	Coupling, Full
23	810-0697	Disconnect, Male
*	826-1392	O-Ring, Disconnect (Qty: 5)
24	106-0820SP	Drip Cup Assembly
*	803-0278	Teflon Brush
*	803-0002	Filter Powder
* Not Illustrated		

8.1.5 Frypot and Related Components



ITEM	PART #	COMPONENT
1	823-3285SP	Frypot, Stainless Steel, w/1-½" Drain
*	803-0149	Grid, Frypot
2	823-3181	Diffuser Assembly
3	200-1615	Support, Manifold
4	810-2151	Burner, Left-hand
5	810-2149	Burner, Center
6	810-2150	Burner, Right-hand
*	200-3081	Shutter, Air- **CE** Only
7	810-2048	Orifice, 2.53 mm (#39) (Non-CE)
*	810-2060	Orifice, 2.40 mm (#42) (**CE-Blue**)
*	810-2059	Orifice, 1.51 mm (#53) (Non-CE & **CE-Red**)
8	810-2072	Manifold, Gas
9	807-3680	High-Limit with Manual Reset- 450°F (232°C)
*	807-3560	High-Limit with Manual Reset- 410°F (210°C)
*	210-1433	High-Limit Mounting Bracket
*	810-2046	High-Limit Spring
10	106-0986SP	Temperature Probe
11	106-0960SP	Float Switch
* Not Illustrated		

8.1.6 Gas Valves, Pilot Assemblies and Related Components



8.1.6 Gas Valves, Pilot Assemblies and Related Components (cont.)

ITEM	PART #	COMPONENT
1	807-3628	Gas Valve, LP, 24V, Non-CE
*	807-3552	Gas Valve, Natural Gas, 24V, Non-CE
2	806-6710SP	Gas Valve, Natural, 24V, **CE**
*	806-6711SP	Gas Valve, LP, 24V, **CE**
*	813-0066	Elbow, ¾"- 90° NPT BM
*	813-0664	Nipple, ¾ x 1-½" NPT BM
*	813-0174	Union, ¾" NPT BM
*	810-1153	ECO Connector Assembly (**CE**)
3	810-2157	Pilot Burner, Natural, Electronic Ignition
*	810-2159	Pilot Burner, LP, Electronic Ignition
*		**Piezo Ignitor Components**
*	200-2042	Bracket, Pilot Thermocouple (**CE**)
*	810-1001	Trigger, Piezo Ignitor (**CE**)
*	200-1868	Piezo Bracket (**CE**)
*	807-3540	Electrode, Piezo (**CE**)
*	810-1152	Thermocouple (**CE**)
*	807-3550	Thermocouple- Non-CE
*	810-2033	Thermopile- Non-CE
4	807-1310	Sensor, Ignitor
5	807-1315	Cable, Ignitor
*	807-3563	Module, Ignition (Spark)
*	200-1322	Cover, Ignition Module
*	106-1109SP	Harness, Ignition Module
*	106-1110SP	Harness, Ignition Module
6	810-2437	Gas Line, Pilot Supply- ¼ x 20"
*	810-1172	Gas Line, Pilot Supply- ¼ x 23" (**CE** Only)
*		Trailing Pilot Assembly
7	810-2155	Pilot Burner, RS- LP
*	810-2032	Pilot Burner, RS- Natural
8	810-0703	Gas Line, 1-Piece- ¼ x 17-½"
9	810-2138	Valve, Pilot Adjustment- 1/8" NPT x ¼ CC
*	809-0845	Screw, 10-32 x 3/8"
*	809-0766	Nut, 10-32 SS Hex Head
		Rear Gas Manifold Components
10	813-0680	Pipe, Gas Manifold- 1¼ x 21-5/8"
11	813-0637	Tee, 1-¼ x 1-¼ x ½" NPT BM
12	813-0658	Plug, 1-¼" Square Head NPT BM
13	813-0622	Nipple, ½ NPT x 1-½" BM
14	813-0173	Union, ½" NPT BM
15	813-0165	Elbow, Street- ½"- 90° NPT BM
16	813-0607	Nipple, ½ x 23-½" NPT BM
*	810-2043	Clamp, ½"
* Not Illustrated		

Frymaster, L.L.C., 8700 Line Avenue, PO Box 51000, Shreveport, Louisiana 71135-1000
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