



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

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

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RE SERIES E⁴ ELECTRIC FRYERS

Installation & Operation Manual

05/2016
✱ 8196149 ✱

NOTICE

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

NOTICE

This appliance is intended for professional use only and is to be operated by qualified personnel only. A Frymaster Dean Factory Authorized Servicer (FAS) 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. See **NATIONAL CODE REQUIREMENTS** in Chapter 2 of this manual for specifics.

NOTICE TO U.S. CUSTOMERS

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 U.S. Food and Drug Administration.

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 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

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.

 DANGER

The front ledge of this appliance is not a step! Do not stand on the appliance. Serious injury can result from slips or contact with the hot cooking oil/shortening.

 DANGER

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

 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

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.

 DANGER

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

 DANGER

Prior to movement, testing, maintenance and any repair on your Frymaster fryer, disconnect all electrical power from the fryer.

 WARNING

This appliance is not intended for use by children under the age of 16 or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision concerning use of the appliance by a person responsible for their safety. Do not allow children to play with this appliance.

 WARNING

If the electrical power supply cord is damaged, it must be replaced by a Frymaster Factory Authorized Servicer or a similarly qualified person in order to avoid a hazard.



RE Series E⁴ Electric Fryers Installation and Operation Manual

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RE SERIES E⁴ ELECTRIC FRYERS

CHAPTER 1: INTRODUCTION

1.1 General

Read the instructions in this manual thoroughly before attempting to operate this equipment. This manual covers all configurations of FPRE14, FPRE17, and FPRE22 models. The fryers in this model family have most parts in common, and when discussed as a group, will be referred to as “RE Series Electric” fryers.

Although similar in appearance to the Pro Series Electric family of Common Electric fryers, the RE Series Electric fryers feature a significantly different rotating element with an enhanced design. Other features, including the deep cold-zones, open frypots and filtration system remain essentially unchanged. Control options include multi-product cooking computers (standard) or optional digital and analog controllers. Fryers in this series come in full- or split-pot arrangements, and can be purchased as single units or grouped in batteries of up to six fryers.

1.2 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 one below.

 **DANGER**

Hot cooking oil causes severe burns. Never attempt to move a fryer containing hot oil or to transfer hot oil from one container to another.

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

 **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.

 **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.

Fryers in this series are equipped with the following automatic safety features:

1. Two high-temperature detection features shut off power to the elements should the temperature controls fail.
2. A safety switch built into the drain valve prevents the elements from heating with the drain valve even partially open.

1.3 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 their own expense.

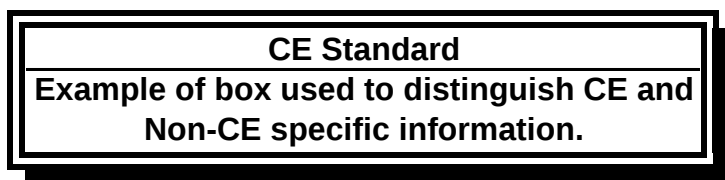
The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

1.4 European Community (CE) Specific Information

The European Community (CE) has established certain specific standards regarding equipment of this type. Whenever a difference exists between CE and non-CE standards, the information or instructions concerned are identified by means of shadowed boxes similar to the one below.



1.5 Installation, Operating, and Service Personnel

Operating information for Frymaster equipment has been prepared for use by qualified and/or authorized personnel only, as defined in Section 1.6. **All installation and service on Frymaster equipment must be performed by qualified, certified, licensed, and/or authorized installation or service personnel, as defined in Section 1.6.**

1.6 Definitions

QUALIFIED AND/OR AUTHORIZED OPERATING PERSONNEL

Qualified/authorized operating 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.

QUALIFIED INSTALLATION PERSONNEL

Qualified installation personnel are individuals, firms, corporations, and/or companies which, either in person or through a representative, are engaged in and are responsible for the installation of electrical appliances. Qualified personnel must be experienced in such work, be familiar with all electrical precautions involved, and have complied with all requirements of applicable national and local codes.

QUALIFIED SERVICE PERSONNEL

Qualified service personnel are those who are familiar with Frymaster equipment and who have been authorized by Frymaster, L.L.C. to perform service on the equipment. All authorized service personnel are required to be equipped with a complete set of service and parts manuals, and to stock a minimum amount of parts for Frymaster equipment. A list of Frymaster Factory Authorized Servicers (FAS's) is located on the Frymaster website at www.frymaster.com. ***Failure to use qualified service personnel will void the Frymaster warranty on your equipment.***

1.7 Shipping Damage Claim Procedure

What to do if your equipment arrives damaged:

Please note that this equipment was carefully inspected and packed by skilled personnel before leaving the factory. Frymaster does not assume responsibility for damage or loss incurred in transit. The freight company assumes full responsibility for safe delivery upon acceptance of the equipment.

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 the freight company or carrier immediately and file a concealed damage claim. This should be done within 15 days of date of delivery. Be sure to retain container for inspection.

1.8 Service Information

For non-routine maintenance or repairs, or for service information, contact your local Frymaster Authorized Servicer (FAS). Service information may also be obtained by calling the Frymaster Technical Services Department (1-800-24FRYER) or by e-mail at service@frymaster.com. The following information will be needed in order to assist you efficiently:

Model Number _____

Serial Number _____

Voltage _____

Nature of the Problem _____

RETAIN AND STORE THIS MANUAL IN A SAFE PLACE FOR FUTURE USE.

RE SERIES E⁴ ELECTRIC FRYERS

CHAPTER 2: INSTALLATION INSTRUCTIONS

2.1 General

Proper installation is essential for the safe, efficient, trouble-free operation of this appliance.

Qualified, licensed, and/or authorized installation or service personnel, as defined in Section 1.6 of this manual, should perform all installation and service on Frymaster equipment.

Failure to use qualified, licensed, and/or authorized installation or service personnel (as defined in Section 1.6 of this manual) to install 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 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.

Service may be obtained by contacting your local Factory Authorized Servicer.

NOTICE

All fryers shipped without factory supplied cords and plug assemblies must be hardwired using flexible conduit to the terminal block located on the rear of the fryer. These fryers should be wired to NEC specifications. Hardwired units must include installation of restraint devices.

DANGER

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

NOTICE

If this equipment is wired directly into the electrical power supply, a means for disconnection from the supply having a contact separation of at least 3-mm in all poles must be incorporated in the fixed wiring.

NOTICE

This equipment must be positioned so that the plug is accessible unless other means for disconnection from the power supply (e.g., a circuit breaker) is provided.

NOTICE

If this appliance is permanently connected to fixed wiring, it must be connected by means of copper wires having a temperature rating of not less than 167°F (75°C).

NOTICE

If the electrical power supply cord is damaged, it must be replaced by a Frymaster Dean Factory Authorized Servicer technician or a similarly qualified person in order to avoid a hazard.

** DANGER**

This appliance must be connected to a power supply having the same voltage and phase as specified on the rating plate located on the inside of the appliance door.

** DANGER**

All wiring connections for this appliance must be made in accordance with the wiring diagram(s) furnished with the appliance. Refer to the wiring diagram(s) affixed to the inside of the appliance door when installing or servicing this equipment.

** DANGER**

Frymaster appliances equipped with legs are for stationary installations. Appliances fitted with legs must be lifted during movement to avoid damage to the appliance and bodily injury. For movable installations, optional equipment casters must be used. Questions? Call 1-800-551-8633.

** DANGER**

Do not attach an apron drainboard to a single fryer. The fryer may become unstable, tip over and cause injury. The appliance area must be kept free and clear of combustible material at all times.

In the event of a power failure, the fryer(s) will automatically shut down. If this occurs, turn the power switch OFF. Do not attempt to start the fryer(s) until power is restored.

This appliance must be kept free and clear of combustible material, except that it may be installed on combustible floors.

A clearance of 6 inches (15cm) must be provided at both sides and back adjacent to combustible construction. A minimum of 24 inches (61cm) should be provided at the front of the equipment for servicing and proper operation.

** WARNING**

Do not block the area around the base or under the fryers.

2.1.2 Electrical Grounding Requirements

All electrically operated appliances must be grounded in accordance with all applicable national and local codes, and, where applicable, CE codes. All units (cord connected or permanently connected) should be connected to a grounded power supply system. A wiring diagram is located on the inside of the fryer door. Refer to the rating plate on the inside of the fryer door for proper voltages.

2.1.3 Australian Requirements

To be installed in accordance with AS 5601 / AG 601, local authority, gas, electricity, and any other relevant statutory regulations.

2.2 Power Requirements

Three (3) Phase Requirements				
MODEL	VOLTAGE	WIRE SERVICE	MINIMUM WIRE SIZE AWG (mm)	AMPS (per leg)
FPRE14	208	3	6 (4.11)	39
FPRE14	240	3	6 (4.11)	34
FPRE14	480	3	8 (2.59)	17
FPRE14	220/380	4	6 (4.11)	21
FPRE14	240/415	4	6 (4.11)	20
FPRE14	230/400	4	6 (4.11)	21
FPRE17	208	3	6 (4.11)	48
FPRE17	240	3	6 (4.11)	41
FPRE17	480	3	6 (4.11)	21
FPRE17	220/380	4	6 (4.11)	26
FPRE17	240/415	4	6 (4.11)	24
FPRE17	230/400	4	6 (4.11)	25
FPRE22	208	3	4 (5.19)	61
FPRE22	240	3	4 (5.19)	53
FPRE22	480	3	6 (4.11)	27
FPRE22	220/380	4	6 (4.11)	34
FPRE22	240/415	4	6 (4.11)	31
FPRE22	230/400	4	6 (4.11)	32

Single Phase Requirements				
MODEL	VOLTAGE	WIRE SERVICE	MINIMUM WIRE SIZE AWG (mm)	AMPS (per leg)
FPRE14	208	2	3 (5.83)	68
FPRE14	240	2	4 (5.19)	59
FPRE14	480	2	8 (3.26)	30

NOTICE

If this appliance is permanently connected to fixed wiring, it must be connected by means of copper wires having a temperature rating of not less than 167°F (75°C).

DANGER

This appliance must be connected to a power supply having the same voltage and phase as specified on the rating plate located on the inside of the appliance door.

DANGER

All wiring connections for this appliance must be made in accordance with the wiring diagram(s) furnished with the appliance. Refer to the wiring diagram(s) affixed to the inside of the appliance door when installing or servicing this equipment.

2.3 After Fryers Are Positioned At the Frying Station

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.

1. 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.

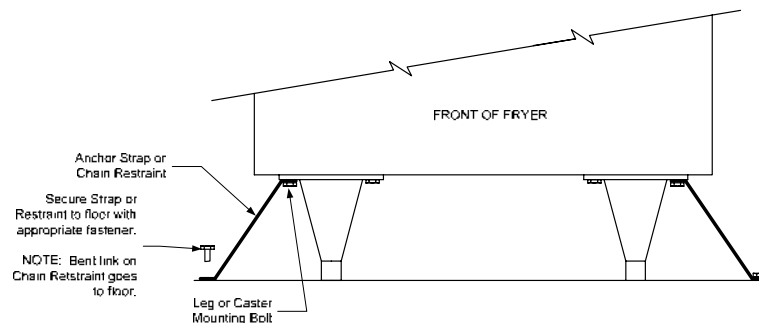
To level fryers equipped with legs, the bottom of the legs can be screwed out up to one inch for leveling. Legs should also be adjusted so that the fryer(s) are at the proper height in the frying station.

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 the electrical conduit. A restraint kit is provided with the fryer. If the restraint kit is missing contact your local Frymaster Factory Authorized Servicer (FAS) 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

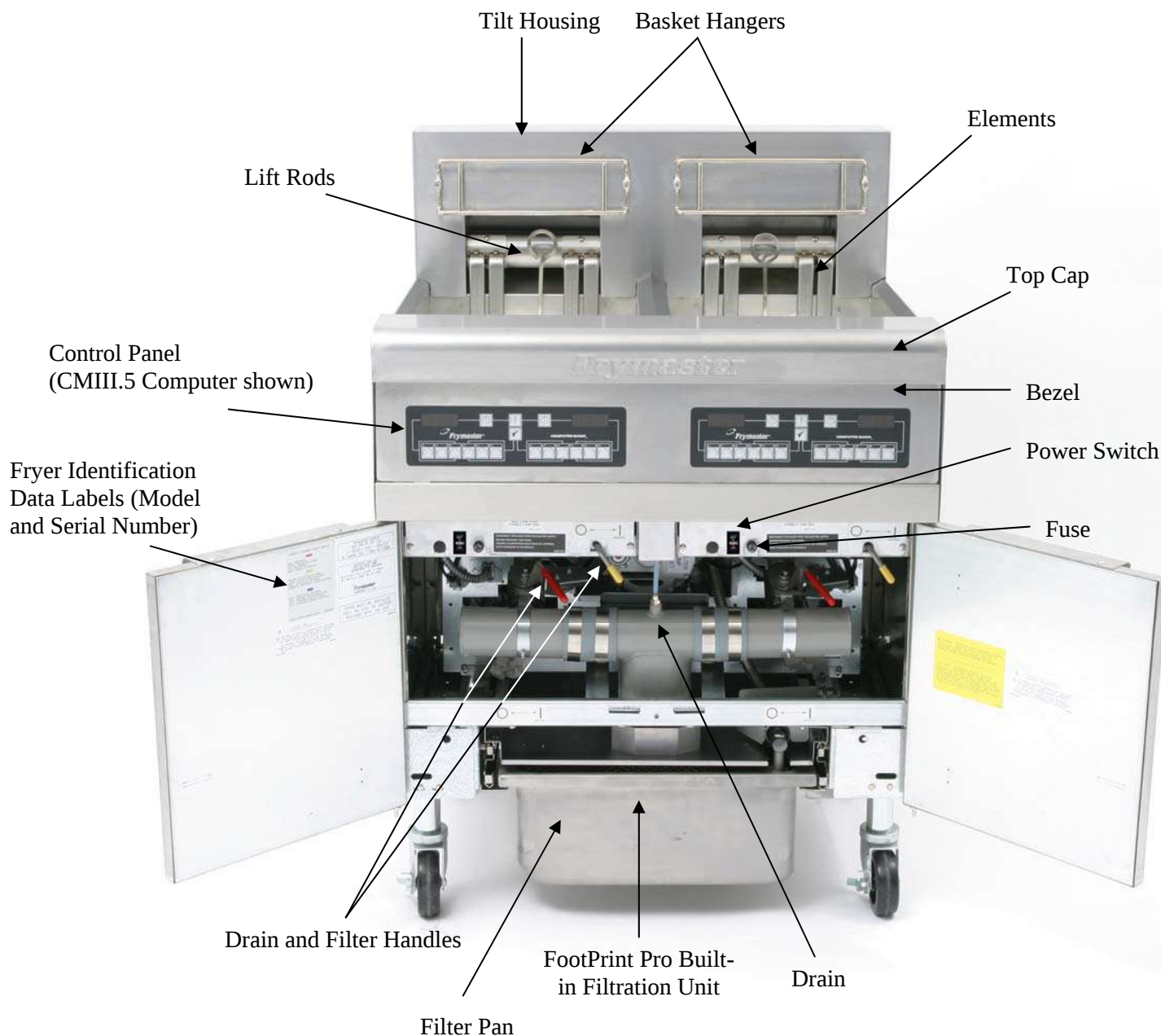
Hot oil can cause severe burns. Avoid contact. Under all circumstances, oil must be removed from the fryer before attempting to move it to avoid oil spills, falls and severe burns. This fryer may tip and cause personal injury if not secured in a stationary position.

2. Close fryer drain-valve(s) and fill frypot with water to the bottom oil level line.
3. Boil out frypot(s) in accordance with the instructions in Section 5.1.3 of this manual.
4. Drain, clean, and fill frypot(s) with cooking oil. (See *Equipment Setup and Shutdown Procedures* in Chapter 3.)

RE SERIES E⁴ ELECTRIC FRYERS

CHAPTER 3: OPERATING INSTRUCTIONS

FINDING YOUR WAY AROUND THE FPRE SERIES E⁴ ELECTRIC FRYER



TYPICAL CONFIGURATION (FPRE217 SHOWN)

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

3.1 Equipment Setup and Shutdown Procedures

Setup

 DANGER

Never operate the appliance with an empty frypot. The frypot must be filled to the fill line with water, oil or shortening before energizing the elements. Failure to do so will result in irreparable damage to the elements and may cause a fire.

 DANGER

Remove all drops of water from the frypot before filling with oil. Failure to do so will cause spattering of hot liquid when the oil is heated to cooking temperature.

1. Fill the frypot with oil to the bottom OIL LEVEL line located on the rear of the frypot. This will allow for oil expansion as heat is applied. Do not fill cold oil any higher than the bottom line; overflow may occur as heat expands the oil.

NOTE: If solid shortening is used, first raise the elements, then pack the shortening into the bottom of the frypot. Lower the elements, and then pack the shortening around and over the elements. It may be necessary to add shortening to bring the level up to the proper mark after the packed shortening has melted.

 DANGER

Never set a complete block of solid shortening on top of the heating elements.

When using solid shortening, always pre-melt the shortening before adding it to the frypot. If the shortening is not pre-melted, it must be packed down into the bottom of the frypot and between the elements, and the fryer must be started in the melt-cycle mode.

Never cancel the melt-cycle mode when using solid shortening. Doing so will result in damage to the elements and increase the potential for a flash fire.

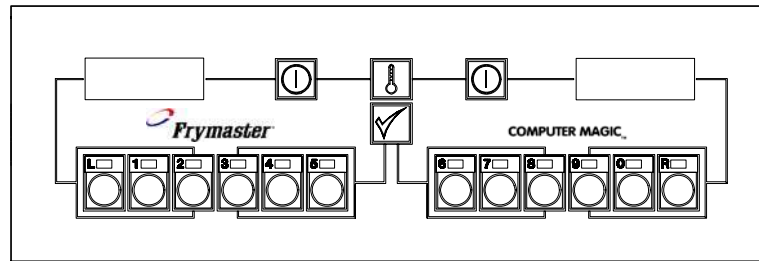
2. Ensure that the power cord(s) is/are plugged into the appropriate receptacle(s). Verify that the face of the plug is flush with the outlet plate, with no portion of the prongs visible.
3. Ensure that the power is switched on. Some models are equipped with a master switch located behind the fryer door cabinet on the front panel of the component box, next to the fuse. See page 3-1. **STANDBY** or **OFF** is displayed on the computer.
4. Ensure that the computer / controller is switched **ON**.
5. Ensure that the oil level is at the *top* OIL LEVEL line when the oil *is at its cooking temperature*. It may be necessary to add oil or shortening to bring the level up to the proper mark, *after it has reached cooking temperature*.

Shutdown

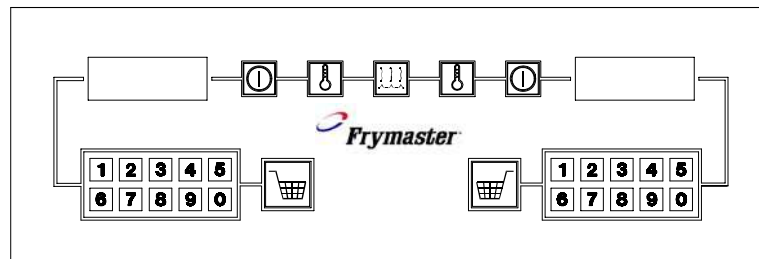
1. Turn the fryer off.
2. Filter the cooking oil and clean the fryers (See Chapters 4 and 5).
3. Place the frypot covers on the frypots.

3.2 Controllers

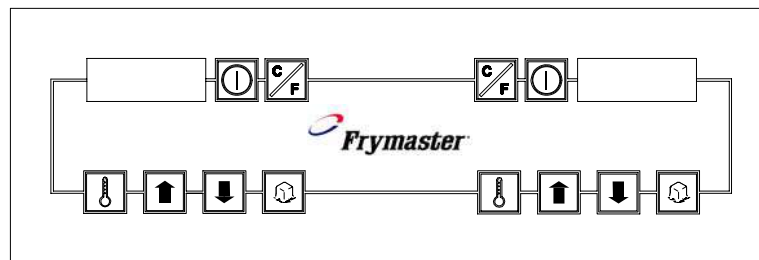
This fryer may be equipped with any of the following controllers:



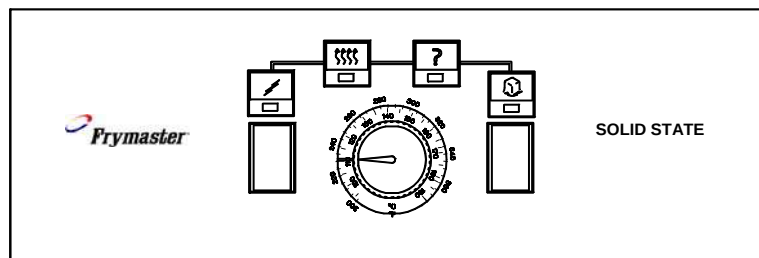
Computer Magic III.5 (CM III.5)



Basket Lift Timer



Digital Controller



Solid State (Analog) Controller

CAUTION
If this is the first time the fryer is being used after installation, refer to the frypot Boil-Out Procedure on Page 5-2.

Refer to the separate *Frymaster Fryer Controllers User's Manual* furnished with your fryer for the specific controller operating instructions.

Refer to Chapter 4 of this manual for operating instructions for the built-in filtration system.

RE SERIES E⁴ ELECTRIC FRYERS

CHAPTER 4: FILTRATION INSTRUCTIONS

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.

4.1 Draining and Manual Filtering

DANGER

Draining and filtering of oil 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 oil.

DANGER

Allow oil to cool to 100°F (38°C) before draining into an appropriate container for disposal.

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.

DANGER

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

If your fryer is not equipped with a built-in filtration system, the oil must be drained into another suitable METAL container. (For safe, convenient draining and disposal of used oil or shortening, Frymaster recommends using the Frymaster Shortening Disposal Unit (SDU). The SDU is available through your local distributor.)

1. Turn the fryer power switch to the **OFF** position. Screw the drainpipe (provided with your fryer) into the drain valve. Make sure the drainpipe is firmly screwed into the drain valve and that the opening is pointing down.
2. Position a metal container with a sealable cover under the drainpipe. The metal container must be able to withstand the heat of the oil and hold hot liquids. If you intend to reuse the oil or shortening, Frymaster recommends that a Frymaster filter cone holder and filter cone be used when a filter machine is not available. If you are using a Frymaster filter cone holder, be sure that the cone holder rests securely on the metal container.

3. Open the drain valve slowly to avoid splattering. If the drain valve becomes clogged with food particles, use the Fryer's Friend (poker-like tool) to clear the blockage.

 DANGER

NEVER attempt to clear a clogged drain valve from the front of the valve! Hot oil will rush out creating the potential for severe burns.

DO NOT hammer on the drain valve with the cleanout rod or other objects. Damage to the ball inside will result in leaks and will void the Frymaster warranty.

4. After draining the oil, clean all food particles and residual oil from the frypot. BE CAREFUL, this material may still cause severe burns if it comes in contact with bare skin.
5. Close the drain valve securely and fill the frypot with clean, filtered or fresh oil or solid shortening to the bottom OIL-LEVEL line.

 DANGER

When using solid shortening, pack the shortening down into the bottom of the frypot. DO NOT operate the fryer with a solid block of shortening sitting in the upper portion of the frypot. This will cause damage to the frypot and may cause a flash fire.

4.2 Preparing the Built-In Filtration System for Use

The FootPrint Pro filtration system allows the oil in one frypot to be safely and efficiently filtered while the other frypots in a battery remain in operation. The FootPrint Pro filtration system is available in three different configurations:

- Filter Paper – includes crumb tray, large hold-down ring, and metal filter screen.
- Filter Pad – includes crumb tray, small hold-down ring, and metal filter screen.
- Magnasol Filter – includes crumb tray and Magnasol filter assembly.

Section 4.2.1 covers preparation of the Filter Paper and Filter Pad configurations for use. Refer to Section 4.2.2 for instructions on preparing the Magnasol Filter configuration for use. Operation of all three configurations is the same and is covered in section 4.3. Disassembly and reassembly of the Magnasol filter is covered in section 4.4.

4.2.1 Preparation for Use with Filter Paper or Filter Pad

1. Pull the filter pan out from the cabinet and remove the crumb tray, hold-down ring, filter paper and filter screen. (See Figure 1) Clean all components with a solution of detergent and hot water, then dry thoroughly.

The filter pan is equipped with rollers in rails, much like a kitchen drawer. The pan may be removed for cleaning or to gain access to interior components by lifting the front of the pan to disengage the front rollers, then pulling it forward until the rear rollers clear the rails. The pan cover must not be removed except for cleaning, interior access, or to allow a shortening disposal unit (SDU) to be positioned under the drain. If using an SDU built before January 2004 see instructions on page 4-8.

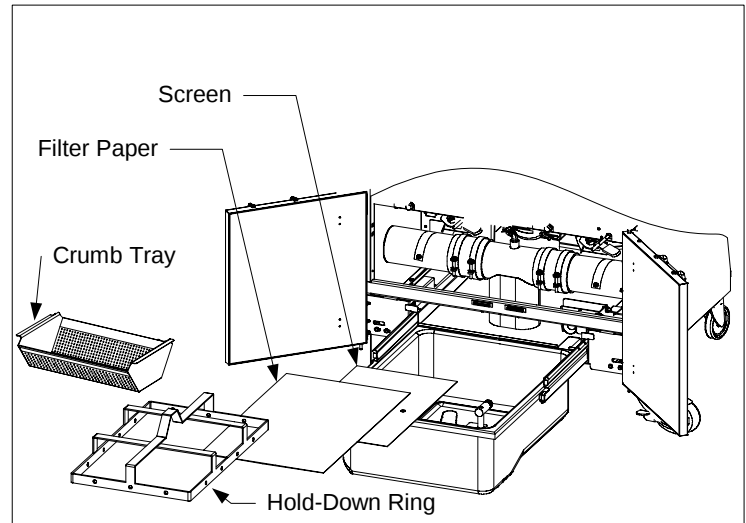


Figure 1

2. Inspect the filter pan connection fitting to ensure that both O-rings are in good condition. (See Figure 2)
3. Then in reverse order, place the metal filter screen in the center of the bottom of the pan, then lay a sheet of filter paper on top of the screen, overlapping on all sides. (See Figure 1) If using a filter pad, ensure the rough side of the pad is up and lay the pad over the screen, making sure that the pad is in between the embossed ridges of the filter pan.
4. Position the hold-down ring over the filter paper and lower the ring into the pan, allowing the paper to rest on the sides of the filter pan. (See Figure 3)

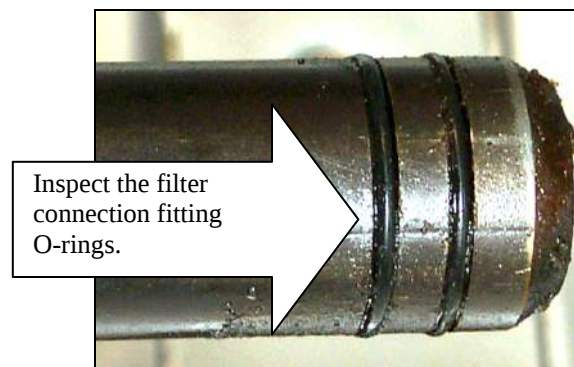


Figure 2



Figure 3

5. When the hold-down ring is in position, if using filter paper, sprinkle one packet of filter powder evenly over the paper. (See Figure 4)

If using a filter pad, position the hold down ring on top of the pad. **DO NOT** use filter powder with the pad.

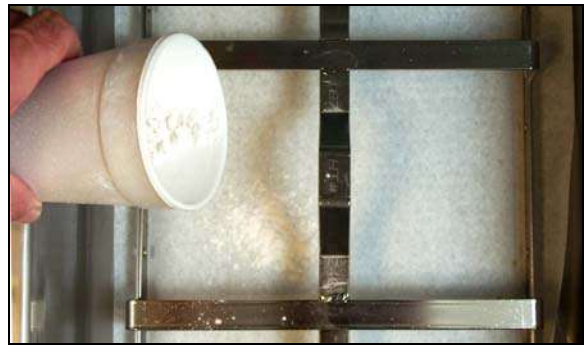


Figure 4

6. Replace the crumb tray in the filter pan, then push the filter pan back into the fryer, positioning it under the drain.

4.2.2 Preparation for Use with the Magnasol Filter Assembly

1. Pull the filter pan out from the cabinet and remove the crumb tray and Magnasol filter assembly. (See Figure 5)

The filter pan is equipped with rollers in rails, much like a kitchen drawer. The pan may be removed for cleaning or to gain access to interior components by lifting the front of the pan to disengage the front rollers, then pulling it forward until the rear rollers clear the rails. The pan cover must not be removed except for cleaning, interior access, or to allow a shortening disposal unit (SDU) to be positioned under the drain.

NOTE: Refer to Section 4.4 for instructions on how to disassemble and reassemble the Magnasol filter screen assembly.



Figure 5

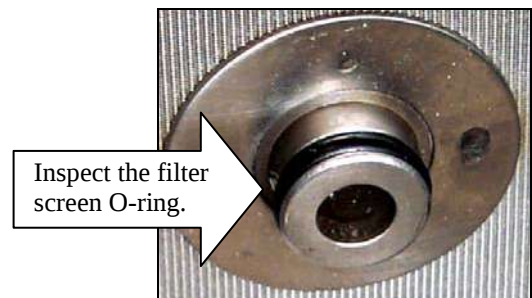


Figure 6

2. Inspect the fitting on the bottom of the Magnasol filter assembly to ensure that the O-ring is present and in good condition. (See Figure 6)
3. Inspect the filter pan connection fitting to ensure that both O-rings are present and in good condition. (See Figure 7)

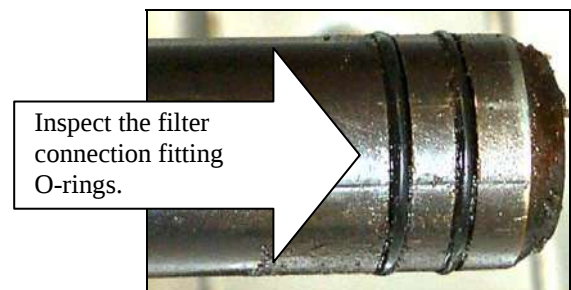


Figure 7

4. Replace the Magnasol filter assembly in the filter pan, ensuring that the fitting on the bottom of the assembly is securely seated in the port in the bottom of the pan. Sprinkle one packet of the Magnasol XL filter powder evenly over the screen.
5. Replace the crumb tray, then push the filter pan back into the fryer, positioning it all the way to the back of the cabinet.

4.3 Operation of the Filter

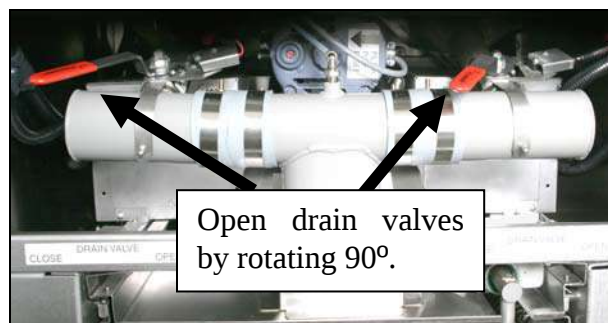
DANGER

Draining and filtering of oil 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 drain handles are in their proper position before operating any switches or valves. Wear all appropriate safety equipment when draining and filtering oil.

DANGER

NEVER attempt to drain oil from the fryer with the elements on! Doing so may cause irreparable damage to the elements and may cause a flash fire. Doing so will also void the Frymaster warranty.

1. Ensure that the filter is prepared. See Sec. 4.2.
2. Make sure the oil is at operating temperature.
3. Turn the fryer power OFF. Drain the frypot into the filter pan by rotating the valves 90°. If necessary, use the *Fryer's Friend* clean-out rod to clear the drain from **inside** the frypot.



DANGER

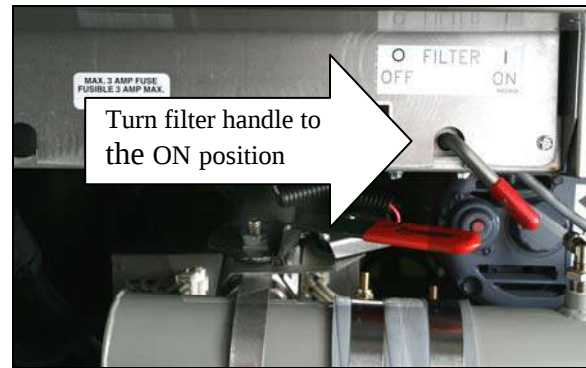
Do not drain more than one frypot at a time into the built-in filtration unit to avoid overflow and spillage of hot oil.

DANGER

NEVER attempt to clear a clogged drain valve from the front of the valve! Hot oil will rush out creating the potential for severe burns.

DO NOT hammer on the drain valve with the cleanout rod or other objects. Damage to the ball inside will result in leaks and will void the Frymaster warranty.

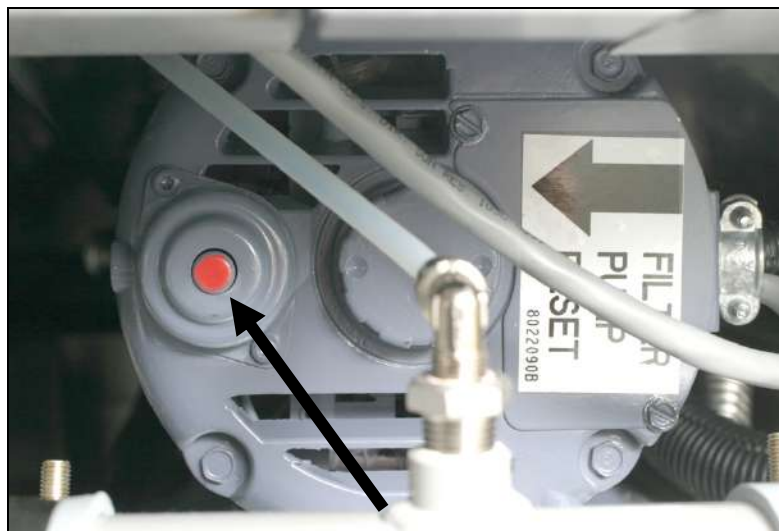
4. After the oil has drained from the frypot, turn the filter handle to the ON position to start the pump and begin the filtering process. There may be a slight delay before the pump activates.



5. The filter pump draws the oil through the filter medium and circulates it back up to and through the frypot during a 5-minute process called polishing. Polishing cleans the oil by trapping solid particles in the filter medium.
6. After the oil is filtered (about 5 minutes), close the drain valve and allow the fryer to refill. Let the filter pump run 10 to 12 seconds after the oil begins to bubble. Turn the filter off.

⚠ WARNING

The filter pump is equipped with a manual reset switch in case the filter motor overheats or an electrical fault occurs. If this switch trips, turn off power to the filter system and allow the pump motor to cool 20 minutes before attempting to reset the switch (see photo below).



Filter Pump Reset Switch

7. Ensure the elements are lowered into the frypot if raised and reinstall the basket support rack if it was removed.

8. Ensure the drain valve is fully closed. (If the drain valve is not fully closed, the fryer will not operate.) Turn the fryer ON and allow the oil to reach setpoint.

⚠ 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

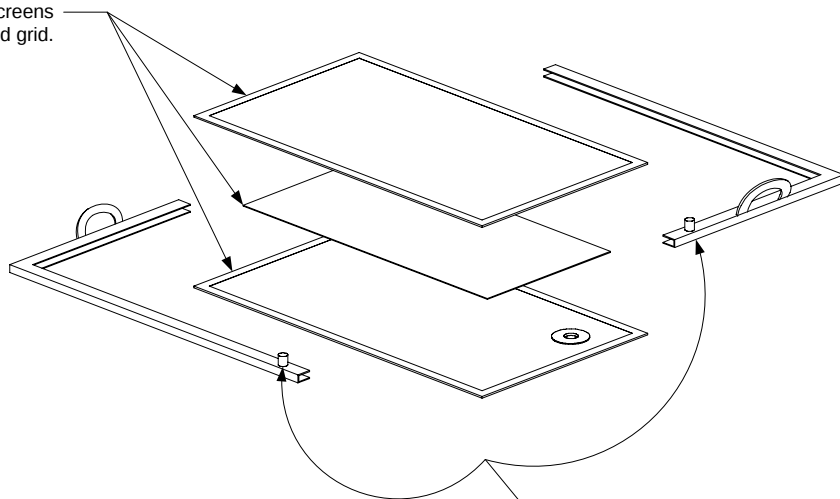
Do not bang fry baskets or other utensils on the fryer's joiner strip. The strip is present to seal the joint between the fry vessels. Banging fry baskets on the strip to dislodge shortening will distort the strip, adversely affecting its fit. It is designed for a tight fit and should only be removed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

4.4 Disassembly and Reassembly of the Magnasol Filter

Disassembly

1. Grasp the frame with your thumbs on the handles at the corner of the assembly and pull outward in opposite directions to separate the frame at the corner. Continue to open the frame (it will pivot at the opposite corner) until the outer screens and grid can be removed from the frame.

Step 2 - Separate
the outer screens
and grid.



Step 1 - Grasp frame with
thumbs on these handles and
pull frame apart at corner.

2. Separate the outer screens and grid.

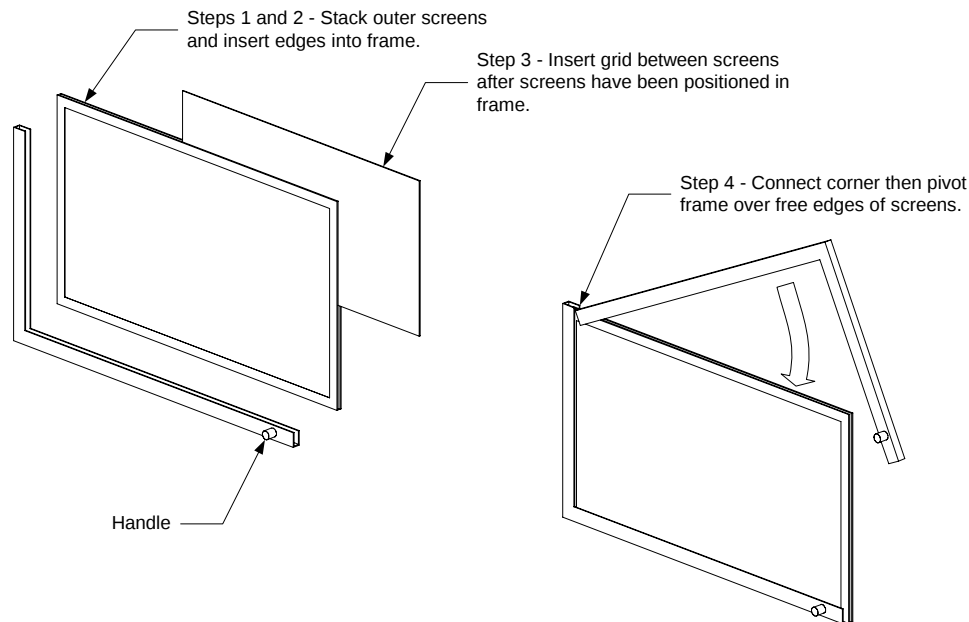
Cleaning

1. Clean the two frame pieces, outer screens, and grid using a good quality degreaser and hot water from a spray nozzle. The groove in the seal frame pieces can be cleaned with the edge of a Scotch-Brite™ or similar cleaning pad.
2. At each scheduled boil-out, disassemble the leaf filter assembly and place in the frypot being boiled out. Follow the boil-out procedure in Section 5.1.2 of this manual.

3. Allow all filter assembly components to air dry or thoroughly dry with clean towels before reassembling.

Reassembly

1. Place the two outer screens together and align their edges (see illustration on following page).
2. Insert the screens into one of the frame halves (it doesn't matter which one). Ensure that the fitting in the bottom screen is on the opposite side of the frame from the handle.
3. Slip the grid between the screens, ensuring that the grid is centered between the edges of the screens.
4. Connect the other half of the frame at the corner opposite the handles and pivot the frame onto the free edges of the screen.



4.5 Draining and Disposing of Waste Oil

When your oil has reached the end of its usable life, drain the oil into an appropriate METAL container for transport to the disposal container. Frymaster recommends the use of the Frymaster Shortening Disposal Unit (SDU). **NOTE:** If using an SDU built before January 2004 the filter pan cover must be removed to allow the unit to be positioned beneath the drain. To remove the lid, lift up on the front edge and pull it straight out of the cabinet. Refer to the documentation furnished with your disposal unit for specific operating instructions. If a shortening disposal unit is not available, allow the oil to cool to 100°F (38°C), then drain the oil into a metal stockpot or similar metal container. When draining is finished, close the fryer drain valve securely.

⚠ DANGER

Allow oil to cool to 100°F (38°C) before draining into an appropriate METAL container for disposal.

When draining oil into a disposal unit, do not fill above the maximum fill line located on the container.

RE SERIES E⁴ ELECTRIC FRYERS

CHAPTER 5: PREVENTATIVE MAINTENANCE

5.1 Cleaning the Fryer

 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.

 DANGER

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

 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.

5.1.1 Clean Inside and Outside of the Fryer Cabinet – Daily

Clean inside the fryer cabinet with a dry, clean cloth. Wipe all accessible metal surfaces and components to remove accumulated oil and dust.

Clean outside the fryer cabinet with a clean, damp cloth soaked with detergent. Wipe with a clean, damp cloth.

5.1.2 Clean the Built-in Filtration System – Daily

 WARNING

Never drain water into the filter pan. Water will damage the filter pump.

There are no periodic preventive maintenance checks and services required for your FootPrint Pro Filtration System other than daily cleaning of the filter pan and associated components with a solution of hot water and detergent.

5.1.3 Clean the Frypot and Heating Elements- Weekly

DANGER

Never operate the appliance with an empty frypot. The frypot must be filled to the fill line with water, oil or shortening before energizing the elements. Failure to do so will result in irreparable damage to the elements and may cause a fire.

5.1.4 Boiling Out the Frypot

Before the fryer is first used, it should be boiled out to ensure that residue from the manufacturing process has been eliminated. Also, after the fryer has been in use for a period of time, a hard film of caramelized oil will form on the inside of the frypot. This film should be periodically removed by following the boil out procedure that follows.

1. Before switching the fryer(s) ON, close the frypot drain valve(s), then fill the empty frypot with a mixture of cold water and detergent. Follow instructions on detergent container when mixing.
2. Press the fryer ON/OFF switch to the ON position. On fryers equipped with solid state (analog) controllers, set the melt switch to OFF.
3. For fryers equipped with Computer Magic III.5 computers, program the computer for boil-out as described in the separate Frymaster Fryer Controllers User's Manual.

For fryers with digital controllers, set the temperature to 195°F (91°C) as described in the separate Frymaster Fryer Controllers User's Manual.

For fryers with solid state (analog) controllers, set the temperature control knob to the lowest setting.

4. Simmer the solution for 45 minutes to one hour. Do not allow the water level to drop below the bottom oil-level line in the frypot during the boil-out operation. **NOTE:** For units with thermostat controllers, you must turn the fryer on and off periodically during this process to prevent the frypot from boiling over.

DANGER

Never leave the fryer unattended during the boil-out process. If the boil-out solution boils over, turn the fryer off immediately and let the solution cool for a few minutes before resuming the process.

5. Turn the fryer ON/OFF switch(s) to the OFF position.
6. Add two gallons (7.6 liters) of water. Drain out the solution and clean the frypot(s) thoroughly.

WARNING

Do not drain boil-out solution into a shortening disposal unit (SDU), a built-in filtration unit, or a portable filter unit. These units are not intended for this purpose, and will be damaged by the solution.

7. Refill the frypot(s) with clean water. Rinse the frypot(s) twice, drain and dry with a clean towel. Thoroughly remove all water from the frypot and elements before refilling the frypot with oil.

 DANGER

Remove all drops of water from the frypot before filling with oil. Failure to do so will cause spattering of hot liquid when the oil is heated to cooking temperature.

5.1.5 Clean Detachable Parts and Accessories – Weekly

Wipe all detachable parts and accessories with a clean, dry cloth. Use a clean cloth saturated with detergent to remove accumulated carbonized oil on detachable parts and accessories. Rinse the parts and accessories thoroughly with clean water and wipe dry before reinstalling.

5.2 Check Calibration of Solid State (Analog) Controller Knob – Monthly

NOTE: Required only on fryers equipped with a Solid State (Analog) Controller.

1. After the oil reaches operating temperature, let the heating elements cycle at least four times.
2. Insert a thermometer or pyrometer probe near the temperature-sensing probe approximately three inches (7.5 mm) deep into the oil. When the heating elements cycle on for the fourth time, the thermometer should be within $\pm 5^{\circ}\text{F}$ ($\pm 2^{\circ}\text{C}$) of the temperature control knob setting.
3. If the knob requires adjustment, refer to Chapter 4 of the separate *Frymaster Fryer Controllers User's Manual* furnished with your fryer.

5.3 Annual/Periodic System Inspection

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

Frymaster recommends that this appliance be inspected at least annually by a Factory Authorized Servicer as follows:

Fryer

- Inspect the cabinet inside and out, front and rear for excessive oil.
- Verify that the heating element wires are in good condition and that leads have no visible fraying or insulation damage and that they are free of oil.
- Verify that heating elements are in good condition with no carbon/caramelized oil build-up. Inspect the elements for signs of extensive dry-firing.
- Verify that the tilt mechanism is working properly when lifting and lowering elements, and that the element wires are not binding and/or chafing.
- Verify the heating-element amp-draw is within the allowed range as indicated 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 guards are present and properly installed.
- Verify that component box and contactor box components (i.e. computer/controller, relays, interface boards, transformers, contactors, etc.) are in good condition and free from oil and other debris.
- Verify that component box and contactor box wiring connections are tight and that wiring is in good condition.
- Verify that all safety features (i.e. contactor shields, drain safety switches, reset switches, etc.) are present and functioning properly.
- Verify that the frypot is in good condition and free of leaks and that the frypot insulation is in serviceable condition.
- Verify that all wiring harnesses and connections are tight and in good condition.

Built-In Filtration System

- 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 quick-disconnect fittings) are present and in good condition. Replace O-rings and seals if worn or damaged.
- Check filtration system integrity as follows:
 - Verify that filter pan cover is present and properly installed.
 - 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 oil 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.
 - 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 oil to return to the frypot, indicated by bubbles in the oil. Return the oil return handle to the OFF position. The frypot should have refilled in no more than 2 minutes and 30 seconds.

RE SERIES E⁴ ELECTRIC FRYERS

CHAPTER 6: OPERATOR TROUBLESHOOTING

6.1 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 the chapter covers the most common problems reported, you may encounter problems that are not covered. In such instances, the Frymaster Technical Services 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 failure of a small component may often be indicative of potential failure or incorrect functioning of a more important component or system.

Before calling a service agent or the Frymaster 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.

 DANGER

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

 DANGER

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

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

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

6.2 Troubleshooting

6.2.1 Controller and Heating Problems

Problem	Probable Causes	Corrective Action
Controller won't activate.	A. Power cord is not plugged in or circuit breaker is tripped.	A. Plug power cord in and verify that circuit breaker is not tripped.
	B. Controller or power supply component or interface board has failed.	B. If any of the components in the power supply system (including the transformer and interface board) fail, power will not be supplied to the controller and it will not function. Determining which component has failed is beyond the scope of operator troubleshooting. Call FAS.
Fryer does not heat.	A. Drain valve is open.	A. A drain safety switch prevents the heating element from being energized if the drain valve is not fully closed. Verify that the drain valve is fully closed.
	B. One or more other components have failed.	B. If the circuitry in the fryer control system cannot determine the frypot temperature, the system will not allow the element to be energized or will de-energize the element if it is already energized. If the contactor, element, or associated wiring fails, the element will not energize. Determining which specific component is malfunctioning is beyond the scope of operator troubleshooting. Call FAS.

Problem	Probable Causes	Corrective Action
Fryer repeatedly cycles on and off when first started.	Fryer is in melt-cycle mode.	This is normal for fryers equipped with <i>CM III.5 computers, Basket Lift Timers, and Digital Controllers</i>. The default operational mode for these controllers is for the elements to cycle on and off until the temperature in the frypot reaches 180°F (82°C). In CM III.5 computers, ℄Y℄L will appear in the display when in the melt-cycle mode. The purpose of the melt-cycle is to allow controlled melting of solid shortening to prevent scorching and flash fires or damage to the element. If you are not using solid shortening, the melt-cycle can be cancelled or bypassed. Refer to the separate <i>Frymaster Fryer Controllers User's Manual</i> for the procedure for canceling the melt-cycle for the particular controller installed on your fryer. In fryers equipped with <i>Solid State (Analog)</i> controllers, the melt-cycle is controlled manually by means of the rocker switch to the right of the temperature control knob. <i>If not using solid shortening</i>, press the rocker switch to the OFF position to turn off the melt-cycle.
Fryer does not heat after filtering.	Drain valve is open.	This fryer is equipped with a drain safety switch that prevents the heating element from being energized if the drain valve is not fully closed. Verify that the drain valve is fully closed.
Fryer heats until high limit trips with heat indicator ON.	Temperature probe or controller has failed.	Turn fryer off and call FAS.

Problem	Probable Causes	Probable Causes
Fryer heats until high limit trips without heat indicator ON.	Contactors or controller has failed.	Call FAS.
Fryer stops heating with heat indicator ON.	The high limit thermostat or contactor has failed.	Determining which component has failed is beyond the scope of operator troubleshooting. Call FAS.

6.2.2 Error Messages and Display Problems

Problem	Probable Causes	Corrective Action
Basket lift timer display shows <i>HELP</i>.	Open drain valve or problem with latching circuits	Verify that the drain valve is fully closed. The fryer will not function if the drain valve is not fully closed. If the drain valve is fully closed, the problem is within the latching circuitry and is beyond the scope of operator trouble shooting. Call FAS.
Basket lift timer display shows <i>HOT</i>.	Frypot temperature is more than 410°F (210°C) or, in CE countries, 395°F (202°C).	This is an indication of a malfunction in the temperature control circuitry, including a failure of the high limit thermostat. Shut the fryer down immediately and call FAS.
Basket lift timer display shows <i>Prob.</i>	Problem with the temperature measuring circuitry including the probe.	This indicates a problem within the temperature measuring circuitry that is beyond the scope of operator troubleshooting. Shut the fryer down and call FAS.
CM III.5 display is in wrong temperature scale (Fahrenheit or Celsius).	Incorrect display option programmed.	CM III.5 computers may be programmed to display in either Fahrenheit or Celsius. Refer to the separate <i>Frymaster Fryer Controllers User's Manual</i> for instructions on changing the display.
CM III.5 display shows <i>HELP</i>.	Open drain valve or problem with latching circuitry.	Verify that the drain valve is fully closed. The fryer will not function if the drain valve is not fully closed. If the drain valve is fully closed, the problem is within the latching circuitry and is beyond the scope of operator trouble shooting. Call FAS.

Problem	Probable Causes	Corrective Action
CM III.5 display shows <i>H I</i>.	Fryer is more than 21°F (12°C) above setpoint.	This display is normal if the fryer setpoint has been changed to a lower temperature. The display should revert to the normal four dashes when the frypot temperature cools to the setpoint. If the setpoint has not been changed, this indicates a problem with the temperature control circuitry. Turn the fryer off and call FAS.
CM III.5 display shows <i>HOT</i>.	Frypot temperature is more than 410°F (210°C) or, in CE countries, 395°F (202°C).	This is an indication of a malfunction in the temperature control circuitry, including a failure of the high limit thermostat. Shut the fryer down immediately and call FAS.
CM III.5 display shows <i>Lo</i>.	Frypot temperature is more than 21°F (12°C) below setpoint.	This display is normal when the fryer is first turned on and may appear for a short while if a large batch of frozen product is added to the frypot. If the display never goes out, the fryer is not heating. Look for a decimal in the LED display between digits 1 and 2. If the decimal is present, the computer is calling for heat and is functioning properly. See <i>Fryer Does Not Heat</i> in Control and Heating Problems (Section 6.2.1). If the decimal is not present, the computer is not calling for heat and may be malfunctioning.
CM III.5 display shows <i>Prob</i>.	Problem with the temperature measuring circuitry including the probe.	This indicates a problem within the temperature measuring circuitry that is beyond the scope of operator troubleshooting. Shut the fryer down and call FAS.
CM III.5 frypot temperature is displayed constantly.	Computer is programmed for constant temperature display.	The CM III.5 computer may be programmed for constant temperature display or countdown timer display. Refer to the separate <i>Frymaster Fryer Controllers User's Manual</i> for instructions on toggling between these display options.

Problem	Probable Causes	Corrective Action
Digital controller display is in wrong temperature scale (Fahrenheit or Celsius).	Incorrect display option selected.	Digital controllers are manually set to display in one temperature scale or the other. Refer to the separate <i>Frymaster Fryer Controllers User's Manual</i> for instructions on changing the display.
Digital controller display shows <i>HELP</i>.	Open drain valve or problem with latching circuits	Verify that the drain valve is fully closed. If the drain valve is fully closed, the problem is within the latching circuitry and is beyond the scope of operator trouble shooting. Call FAS.
Digital controller display shows <i>HOT</i>.	Frypot temperature is more than 410°F (210°C) or, in CE countries, 395°F (202°C).	This is an indication of a malfunction in the temperature control circuitry, including a failure of the high limit thermostat. Shut the fryer down immediately and call FAS.
Digital controller display shows <i>Prob.</i>	Problem with the temperature measuring circuitry including the probe.	This indicates a problem within the temperature measuring circuitry that is beyond the scope of operator troubleshooting. Shut the fryer down and call FAS.
Solid state controller trouble light ON.	Oil temperature above acceptable range or a problem with the temperature measuring circuitry.	This is an indication of a malfunction in the temperature measuring or control circuitry, including a failure of the high limit thermostat. Determining the specific problem is beyond the scope of operator troubleshooting. Shut the fryer down immediately and call FAS.
Solid state controller trouble light ON and heating mode light ON.	Open drain valve or problem with latching circuits	Verify that the drain valve is fully closed. The fryer will not function if the drain valve is not fully closed. If the drain valve is fully closed, the problem is within the latching circuitry and is beyond the scope of operator troubleshooting. Call FAS.
Solid state controller trouble light ON and heating mode light OFF.	The temperature probe has failed.	Call FAS.

6.2.3 Basket Lift Problems

Problem	Probable Causes	Corrective Action
Basket lift movement is noisy, jerky, or erratic.	Lack of lubrication on basket lift rods.	Apply a light coating of Lubriplate™ or similar lightweight white grease to the rod and bushings.

6.2.4 Filtration Problems

Problem	Probable Causes	Corrective Action
Filter pump won't start.	A. Power cord is not plugged in or circuit breaker is tripped.	A. Verify that the power cord is fully plugged in. If so, verify that circuit breaker is not tripped.
	B. Pump motor has overheated causing the thermal overload switch to trip.	B. If the motor is too hot to touch for more than a few seconds, the thermal overload switch has probably tripped. Allow the motor to cool at least 45 minutes then press the Pump Reset Switch.
	C. Blockage in filter pump. Test: Close the drain valve and pull the filter pan out from the fryer. Activate the pump. If the pump motor hums for a short time then stops, the probable cause is blockage of the pump itself.	C. Pump blockages are usually caused by sediment buildup in the pump due to improperly sized or installed filter paper and failure to use the crumb screen. Call FAS.
Filter pump runs but oil does not return to frypot and there is no bubbling oil.	Blockage in filter pan suction tube. Test: Close the drain valve and pull the filter pan out from the fryer. Activate the pump. If bubbling oil occurs, there is a blockage in the filter pan suction tube.	The blockage may be caused by sediment buildup or, if solid shortening is used, solidified shortening in the tube. Use a thin, flexible wire to remove the blockage. If the blockage cannot be removed, call FAS.

Problem	Probable Causes	Corrective Action
Filter pump runs, but oil return is very slow and bubbling oil occurs.	A. Improperly installed filter pan components.	A. If using filter paper or pad configuration, verify that filter screen is in bottom of pan with paper or pad on top of screen. Verify that O-rings are present and in good condition on filter pan connection fitting. If using Magnasol filter assembly, verify that O-ring is present and in good condition on filter screen fitting.
	B. Attempting to filter with oil that is not hot enough.	B. In order to properly filter, the oil or shortening should be at or near 350°F (177°C). At temperatures lower than this, the oil becomes too thick to pass through the filter medium easily, resulting in much slower oil return and eventual overheating of the filter pump motor. Make sure oil is at or near frying temperature before draining oil into filter pan.

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