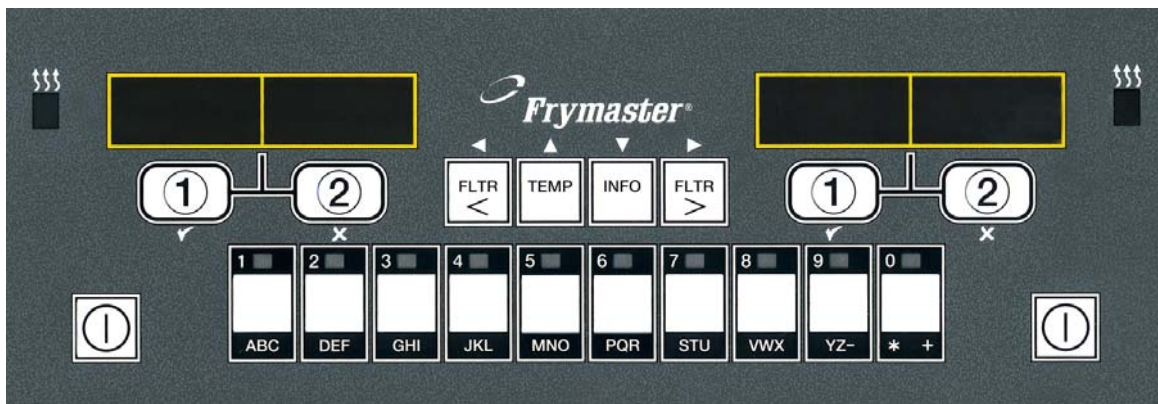


FRYMASTER MANUAL LOV™ M3000 CONTROLLER OPERATION MANUAL



This equipment chapter is to be installed in the Fryer Section of the *Equipment Manual*.



MANUFACTURED
BY



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JULY 2012
* 8196964 *

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 FACTORY 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 SERVICE CENTER.

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.

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 CONTROLLERS

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.

NOTICE

The instructions in this manual for using a bulk oil system for filling and discarding oil are for an RTI system. These instructions may not be applicable to other bulk oil systems.

MANUAL LOV™ M3000 CONTROLLER

CHAPTER 1: INSTALLATION INSTRUCTIONS

1.1 Installation

Before attempting to operate your unit, read the instructions in this manual thoroughly before installation. Installation of the Manual LOV™ (Low Oil Volume) M3000 controller requires some extra steps prior to use. This controller uses network cables for communication between controllers. The controllers also require locator connectors which identify the position of the controllers in the bank of fryers. Finally the network must be terminated on the far left controller and the far right controller of the network.

1.2 Controller Information for the M3000 Controllers

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.

1.3 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. 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. **Inspect For and Record All Visible Loss or Damage**, and ensure that this information 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** upon discovery and file a concealed damage claim.

This must be submitted within 15 days of date of delivery. Be sure to retain container for inspection.

***Frymaster* DOES NOT ASSUME RESPONSIBILITY FOR DAMAGE OR LOSS
INCURRED IN TRANSIT.**

1.4 Service Information

For non-routine maintenance or repairs, or for service information, contact your local Frymaster Authorized Servicer (FAS). In order to assist you quickly, the Frymaster Authorized Servicer (FAS) or Service Department representative requires certain information about your equipment. Most of this information is printed on a data plate affixed to the inside of the fryer door. Part numbers are found in the Service and Parts Manual. Parts orders may be placed directly with your local FAS or distributor. A list of Frymaster Factory Authorized Servicers (FAS's) is located on the Frymaster website at www.frymaster.com. If you do not have access to this list, contact the Frymaster Service Department at 1-800-551-8633 or 1-318-865-1711 or by email at service@frymaster.com.

The following information will be needed in order to assist you efficiently:

Model Number _____

Serial Number _____

Voltage _____

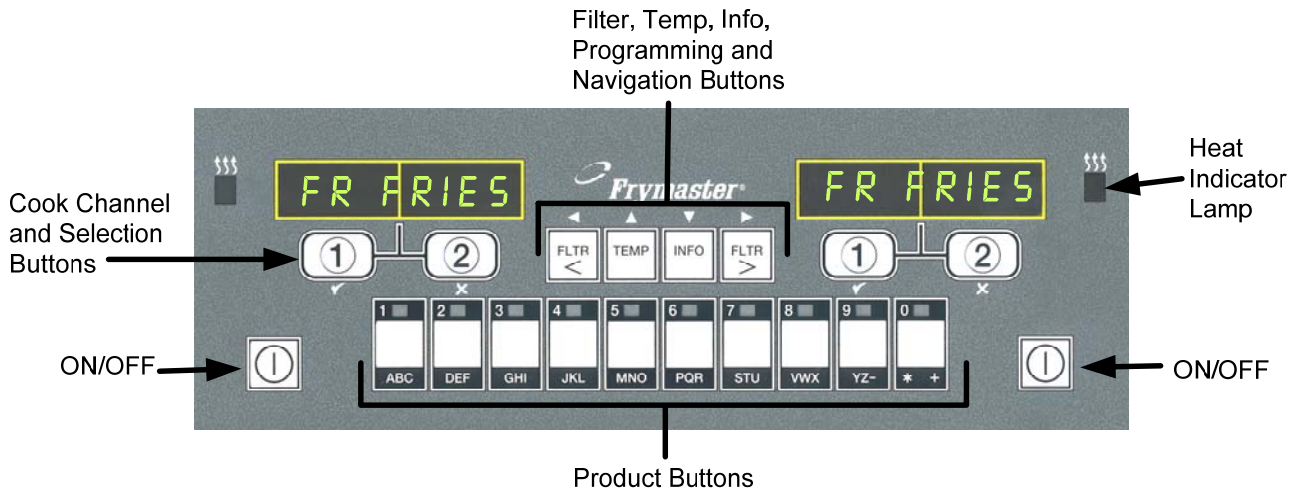
Gas Type _____

Nature of the Problem _____

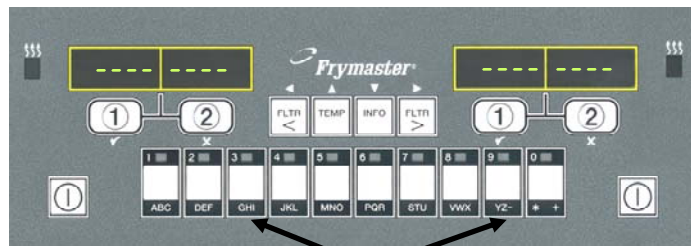
RETAIN AND STORE THIS MANUAL IN A SAFE PLACE FOR FUTURE USE.

CHAPTER 2: MANUAL LOV™ M3000 CONTROLLER OPERATION INSTRUCTIONS

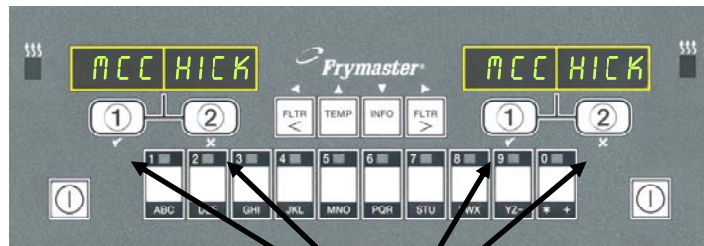
2.1 M3000 General Information



Welcome to the Manual LOV™ M3000, a controller that retains the one-button ease of the M2000 and 100B and the utility of 40-product menu capability. The controller is easy to use. One button push starts a cook cycle for an item cooked in a dedicated vat. The same flexible controller on a multi-product vat requires only two button pushes to launch a cook cycle. Just choose a menu item on a product button and press, and then press a cook channel button under the display showing the desired item. The controller can move seamlessly from McNuggets to Crispy Chicken to any added menu item.



Pressing product buttons 3 or 9 displays McChick.

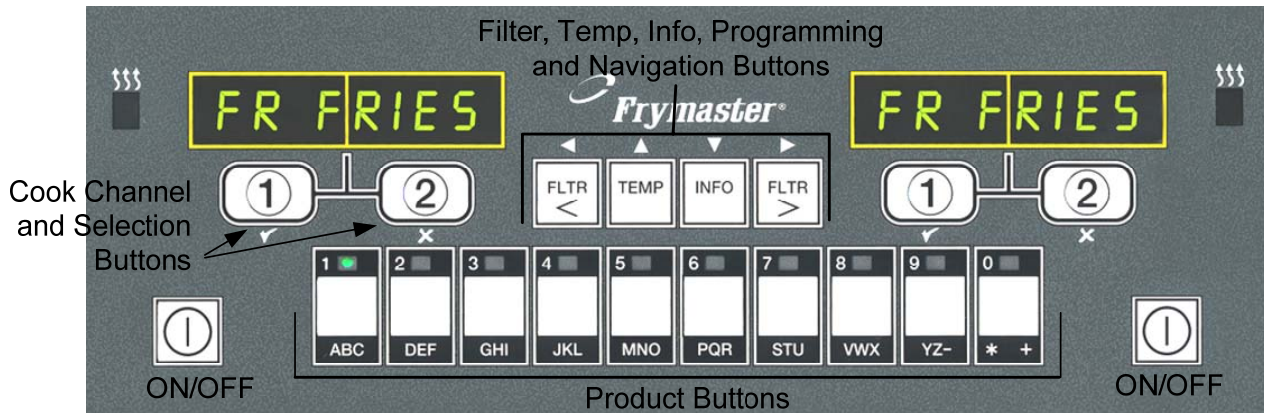


Pressing either cook cycle button under the McChick displays launches a cook cycle.

In a typical store setting, the M3000s on the three-vat fry station display FR FRIES (shown above) and will launch a cook cycle with one push of a cook channel button. On the chicken/filet station, the LED display shows dashed lines. To launch a cook cycle, press a product button and then press the cook channel button that corresponds with the location of the dropped basket. By pressing the product button for McChicken, McChick will appear in the display. Just press the cook channel button corresponding to the location of the appropriate dropped basket. The M3000 will operate with electric and gas fryers, both full- and split-vat.

2.2 Basic Operation

Basic Operation



Turn Fryer ON

Press either key for full pot; press key on desired side on a split pot.



Turn Fryer OFF

Press either key for full pot; press key on desired side on a split pot.



Check Frypot Temperature

Press TEMP key once. Displays show frypot temperatures.



Check Frypot Setpoint

Press TEMP key twice. Displays show frypot setpoint temperatures.



Cancel Duty or Remove Alarm

Press key under active display.



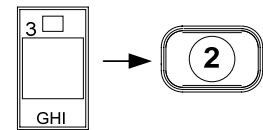
Start One-Button Cook Cycle (Dedicated Mode)

Press either key under display showing desired item.



Start Two-Button Cook Cycle (Multi-Product Mode)

Press product key bearing icon for desired product. Press cook channel button to begin cook cycle.



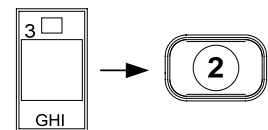
Change From Dedicated to Multi-Product Mode

Press and hold a Cook Channel button under displayed menu item for approximately three seconds until beep is heard. Display changes to dashed lines.



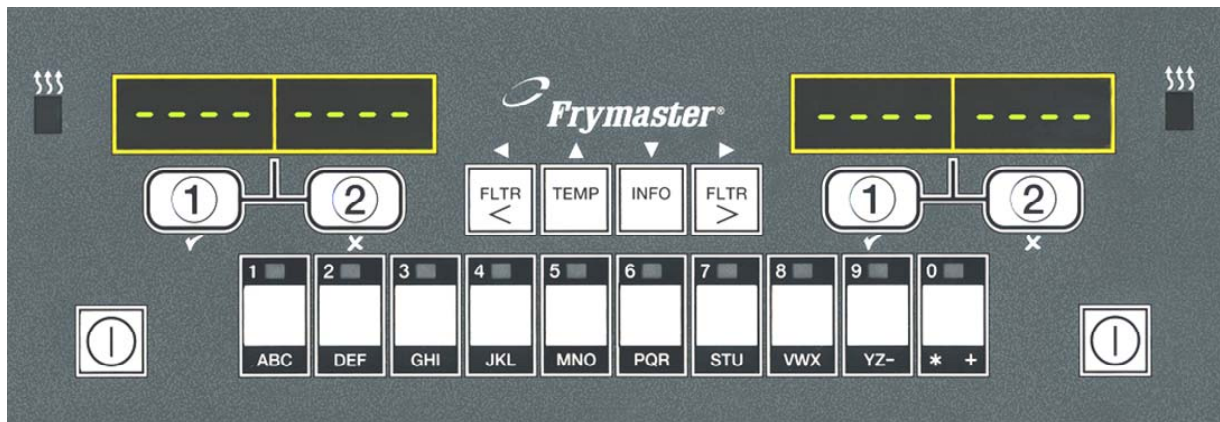
Change From Multi-Product Mode to Dedicated Mode



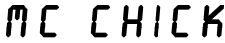

Press product key bearing icon for desired product. Press cook channel button under display showing desired item until beep is heard (approx three seconds).





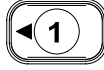
2.3 Cooking with Multi-Product Display

Cooking With Multi-Product Display









- 1 Dashed lines appear in both displays. 
- 2 Press a product button. 
- 3 Vat with appropriate setpoint displays: skip to step 5. 
- 4 Vat with inappropriate setpoint displays: 

If this occurs, change setpoint by pressing the button assigned to the product. 

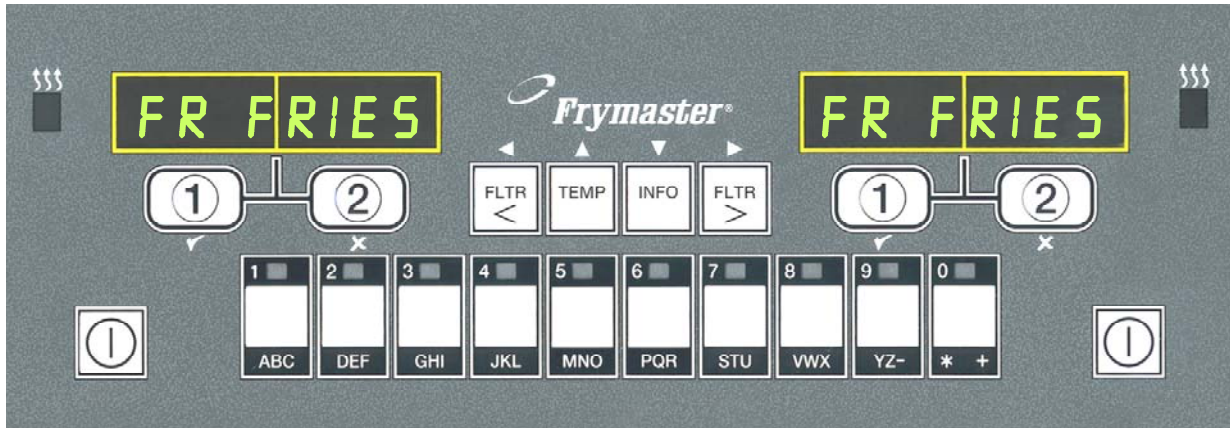
When the chevrons appear, immediately press and hold cook channel button until a beep is heard (approx three seconds) and release. 
- 5 Press a cook channel button to begin cook cycle. 

NOTE: If error *REMOVE DISCARD PRODUCT* appears, press the cook channel button under the message to cancel alarm and remove error message.

- 6 Display alternates between product ID and remaining cook time. 
- 7 If a duty is required for this menu item, duty is displayed when it is time to perform a duty, such as shake. 
- 8 Press cook channel button under duty display to cancel alarm. 
- 9 Pull is displayed when the cook time is complete; an alarm sounds. 
- 10 Press cook channel button under pull display to cancel alarm. 
- 11 Dashed lines reappear under active display at the end of the cook cycle. 

2.4 Cooking with Dedicated Display

Cooking With Dedicated Display



1 A menu item, such as FR FRIES shows in display

FR FRIES

2 Press a cook channel button to begin the cook cycle.



3 Display alternates between abbreviated product name and remaining cook time.

FRY ↔ 2:34

4 Duty is displayed when it is time to shake the fry basket.

DUTY

5 Press cook channel button to cancel alarm.



6 Pull is displayed when the cook cycle is complete.

PULL

7 Press cook channel button to cancel alarm.



8 Q 7 is displayed and alternates with FRY. As the quality time counts down.

Q 7 ↔ FRY

Q 1 ↔ FRY

9 Pressing the cook channel button now will launch a cook cycle and end the quality countdown.



10 QUAL is displayed when the quality time has elapsed.

QUAL

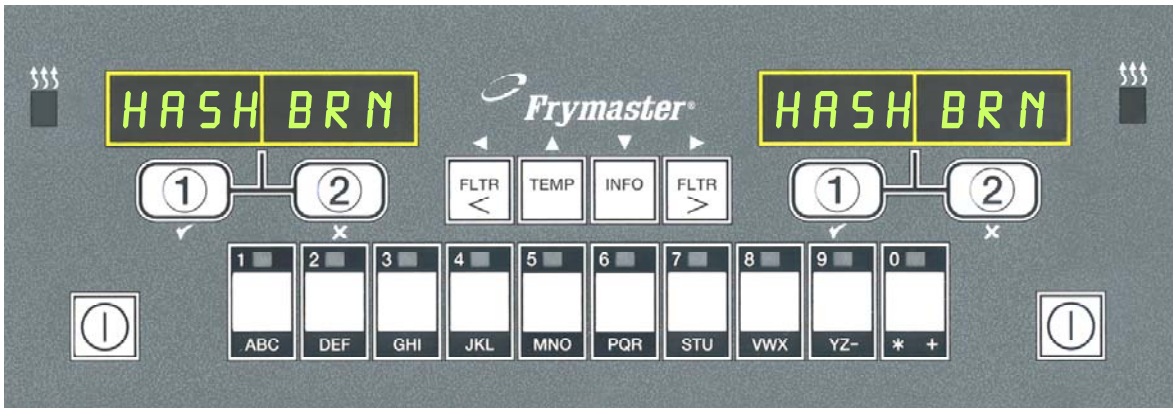
11 Pressing the cook channel button restores the display to FR FRIES and the unit is ready for cooking.



FR FRIES

2.5 Changing from Breakfast Setup to Lunch

Changing from Breakfast Setup to Lunch



- 1 Press and quickly release product button for french fries.



- 2 Computer will change from HASH BRN to <<<< >>>>; an alarm will sound.

H A S H B R N
↓ ↓ ↓ ↓
<<<< >>>>

- 3 Press and hold the cook channel button under the display until a beep is heard (approximately three seconds) and release.

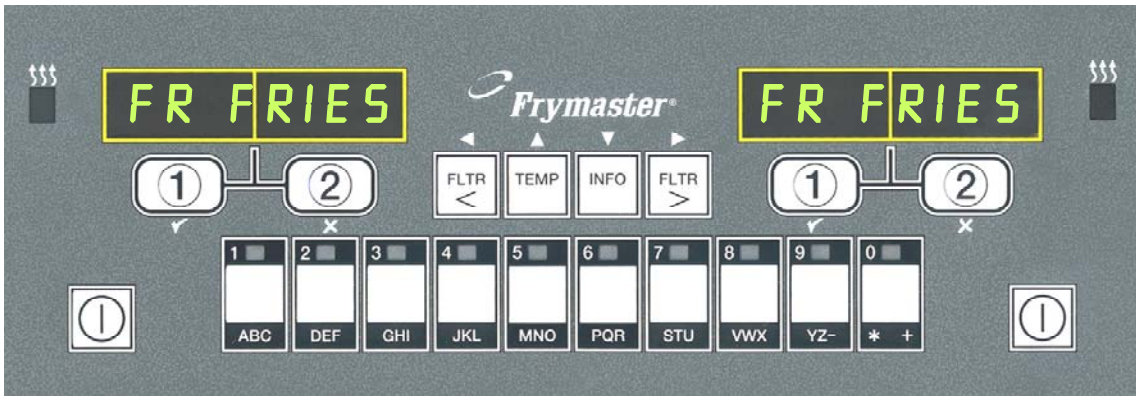


- 4 Display changes to FR FR FRIES.

Perform these steps on both sides to change both displays to FR FRIES

2.6 Changing from Lunch Setup to Breakfast

Changing from Lunch Setup to Breakfast

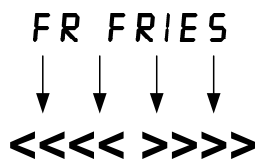


1 Computer displays **FR FRIES**

2 Press and quickly release product button for hash browns.



3 Computer display will change from FR FRIES to <<<< >>>>; an alarm sounds.



4 Press and hold the cook channel button under the display until a beep is heard (approximately three seconds) and release.



5 Display changes to LOW TEMP until setpoint is reached. **LOW TEMP**

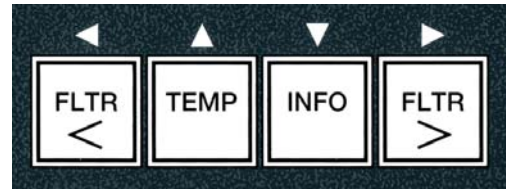
6 Display changes to Hash Brn. **HASH BRN**

Perform these steps on both sides to change both displays to HASH BRN

2.7 M3000 Button Description and Functions

2.7.1 Navigation Buttons

The menu on the M3000 uses ◀ ▶ and ▲ ▼ buttons to navigate the various menus and submenus.



When programming, the left screen shows a menu or submenu item. The right screen is for data entry. Data is entered with alpha-numeric characters, scrolling through lists or by toggling between choices.



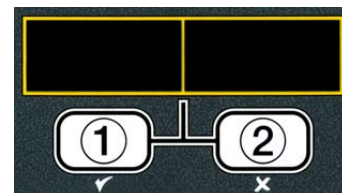
During programming if a button is not pushed within one minute, the controller returns to operation mode.

2.7.2 Filter, Temperature and Info Buttons

The < **FLTR** and **FLTR** > buttons (see Figure 1) are used to filter the left and right vats of a split vat or a full vat fryer on demand. The **FLTR** buttons, if pressed once displays the number of cook cycles remaining until a filtration prompt. When the **FLTR** button is pressed twice, the date and time of the last filter is displayed. The **TEMP** button, if pressed once while the fryer is on, displays current vat temperature on both sides. If the **TEMP** button is pressed twice while the fryer is on, it shows the setpoint temperatures of the vats. If the fryer is off, the display shows the current versions of software. The **INFO** button (see Figure 1), if pressed once when the fryer is on, shows the recovery time for each vat from the last test. Recovery is the time required for the fryer to raise the temperature of the oil 50°F (28°C) between 250°F (121°C) and 300°F (149°C). Maximum recovery time should not exceed 1:40 for electric or 2:25 for gas. If the **INFO** button is pressed and held for three seconds it shows information such as usage, filter statistics and last cook cycles (see page 2-31 for more details on the **INFO** button).

2.7.3 Cook Channel and Selection Buttons

The ✓ ✕ buttons are dual-function buttons shared with the number **1** and **2** buttons. They are located directly below the LED displays. Use these buttons to select or cancel functions. The ✕ button is used to back out of and exit submenus.



2.8 Manual LOV™ M3000 Menu Summary Tree

Reflected below are the major programming sections in the M3000 and the order in which submenu headings will be found under the sections in the controller operation chapter.

Adding New Product Menu Items (Product Selection) See section 2.10.2
Storing Product Menu Items in Product Buttons See section 2.10.3
Draining, Refilling, and Disposing of Oil See section 2.10.4

Filter Menu	2.11
[Press and hold ◀ FLTR or FLTR ▶]	
Quick Filter	
Maint Filter	
Dispose	
Drain to Pan	
Fill Vat from Drain Pan	

Programming	
Level 1 Program	2.12
[Press and hold TEMP and INFO buttons, 2 beeps, displays Level 1, enter 1234]	
Product Selection	2.10.2
Name	
Cook Time	
Temp	
Cook ID	
Duty Time 1	
Duty Time 2	
Qual Tmr	
AIF Disable	
Assign Btn	
AIF Clock (Suppress Filter Prompt)	2.12.1
Disabled	
Enabled	
Deep Clean Mode	2.12.2
High-Limit Test	2.12.3
Fryer Setup	2.9

Level 2 Program (Manager Level)	2.13
[Press and hold TEMP and INFO buttons, 3 beeps, displays Level 2, enter 1234]	
Prod Comp Sensitivity for product	2.13.1
E-Log Log of last 10 error codes	2.13.2
Password Setup Change passwords	2.13.3
Setup [enter 1234]	
Usage [enter 4321]	
Level 1 [enter 1234]	
Level 2 [enter 1234]	
Alert Tone Volume and Tone	2.13.4
Volume 1-9	
Tone 1-3	
Top Off After Sets number of cooks before top off prompt	2.13.5
Filter After Sets number of cooks before filter prompt	2.13.6
Filter Time Sets amount of time between filter cycles	2.13.7

Info Mode	2.14
[Press and hold INFO for 3 seconds, displays Info Mode]	
Full/Split Vat Configuration	
Filter Stats	2.14.1
Review Usage	2.14.2
Last Load	2.14.3

2.9 Fryer Setup Mode Programming

Ensure the fryer is OFF and follow the steps below to navigate the options. The setup mode sets the time, date, date format, language, fryer type, vat type, oil system type and the temperature scale. These settings should only be changed by a technician.

Left Display	Right Display	Action
OFF	OFF	Press the TEMP and INFO buttons simultaneously for THREE seconds until LEVEL 1 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 1	PROGRAM	None required.
PRODUCT SELECTION	Blank	Press the ▲ button once to scroll to FRYER SETUP .
FRYER SETUP	Blank	Press the ✓ (1) button.
ENTER CODE	Blank	Enter 1234.
LANGUAGE	ENGLISH	Use the ◀ and ▶ buttons to scroll through the language menu. With the desired language selection displayed, press the ▼ button.
TEMP FORMAT	F	Press the ◀ and ▶ buttons to toggle between F and C temperature scales. NOTE: F is used for Fahrenheit, C is used for Celsius. With the desired format displayed, press the ▼ button.
TIME FORMAT	12 HR	Press the ◀ and ▶ buttons to toggle between 12HR and 24HR . With the desired format displayed, press the ▼ button.
ENTER TIME	HH:MM	Enter time in hours and minutes using the number buttons 0-9. Example: 7:30 AM is entered 0730 if using the 12 hour format. 2:30 is entered 1430 if using 24 hour format. To change AM and PM use the ▲▼ buttons. With the correct time displayed, press the ▼ button.
DATE FORMAT	US	Press the ◀ and ▶ buttons to toggle between US and INTERNTL . With the desired format displayed, press the ▼ button.
ENTER DATE	MM-DD-YY or DD-MM-YY	Enter the date using the number buttons 0-9. Example: US Format – Dec. 5, 2010 is entered as 120510. International Format – 5 Dec. 2010 is entered as 051210 With the correct date displayed, press the ▼ button.
FRYER TYPE	ELEC	Press the ◀ and ▶ buttons to toggle between ELEC and GAS . With the fryer type displayed, press the ▼ button.
VAT TYPE	SPLIT	Press the ◀ and ▶ buttons to toggle between SPLIT and FULL . With the vat type displayed, press the ▼ button.

Fryer Setup Mode Programming cont.

Left Display	Right Display	Action
OIL SYSTEM	NONE	Press the ▼ button.
DISPOSE SYSTEM	NONE	Press the ▼ button.
LANGUAGE	ENGLISH	Press the ▲ ▼ buttons to scroll and edit any additional fields. Press the ✖ (2) button to exit.
SETUP	COMPLETE	None required.
OFF	OFF	None required.

2.10 M3000 Common Tasks

Covered in this section are common tasks used in stores:

1. Escaping out of a menu or sub-menu.
2. Adding new product items.
3. Storing menu items in product buttons.
4. Draining, disposing and refilling the vats.

2.10.1 Escape Menu Items

To escape or back out of **MENUS** and **SUB-MENUS**, press the ✖ (2) button.



2.10.2 Adding New Product Items to the Menu (PRODUCT SELECTION)

This function is used to add additional products to the controller menu. To add a new product to the menu turn the fryer off and follow the steps below:

Left Display	Right Display	Action
OFF	OFF	Press the TEMP and INFO buttons simultaneously until LEVEL 1 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 1	PROGRAM	None required.
PRODUCT SELECTION	Blank	Press the ✓ (1) button.
SELECT PRODUCT	FR FRIES	Press the ▲ ▼ buttons to advance through menu items until the menu item to be modified or a numbered spot is displayed (ex. PROD 13). With the desired product displayed, press the ✓ (1) button.
MODIFY? YES NO	Blank	Press the ✓ (1) button.

Adding New Product Items to the Menu (PRODUCT SELECTION) cont.

Left Display	Right Display	Action
NAME	PROD 13	<p>Use the number keys to enter the first letter of the new product. Each key has three letters. Press until derived character is displayed.</p> <p>The full product name is limited to eight characters including spaces (ex. FR FRIES).</p> <p>Press the ▶ button to advance the cursor to the next display space. Use the #0 key to insert a space. The ◀ button can be used to move the cursor back.</p> <p>For example, to enter “WINGS”, press the #8 key two times until W appears in the display. Then use the ▶ button to advance the cursor to the next display space. Press the #3 key until I appears. Continue on until WINGS is spelled out on the display.</p> <p>With the desired name displayed, press the ▼ (INFO) button.</p>
COOK TIME	:00	<p>Use the number keys to enter the product cook time in minutes and seconds (ex. 3:10 as 310).</p> <p>With the desired cook time displayed, press the ▼ (INFO) button.</p>
TEMP	32F	<p>Use the number keys to enter the cook temperature for the product (ex. 335° as 335). With the cook temperature entered, press the ▼ (INFO) button.</p>
COOK ID	P 13	<p>Use the instructions above for entering a product name to enter a four-letter name for the menu item. This is the shortened name that alternates with the cook time during a cook cycle.</p> <p>With the cook ID entered, press the ▼ (INFO) button.</p>
DUTY TIME 1	:00	<p>Use the number keys to enter the time in minutes and seconds for the first duty (shake time) to be preformed (ex. shake the product after 30 seconds is entered as 30).</p> <p>With the shake time entered, press the ▼ (INFO) button to scroll to duty time 2. If a product calls for a second duty to be preformed, it can be entered here. Use the instructions above to enter duty time two, otherwise press the ▼ (INFO) button</p>
QUAL TMR	:00	<p>Use the number keys to enter the quality timer time in minutes and seconds for the product hold time (ex. 7:00 minutes as 700). This is used to set the hold time before the food is to be discarded.</p> <p>With the QUAL TMR (hold time) entered, press the ▼ (INFO) button.</p>
RIF DISABLE	NO	<p>Use the ◀ and ▶ buttons to toggle between YES and NO. This feature, if set to yes, disables the filter prompts for the programmed product. This is used to prevent co-mingling of product-specific oils.</p> <p>With the filter option displayed, press the ▼ (INFO) button.</p>

Adding New Product Items to the Menu (PRODUCT SELECTION) cont.

Left Display	Right Display	Action
ASSIGN BTN	Product name	With the chosen product displayed on the right and ASSIGN BTN on the left, press a button between 1-0 to assign the product. The LED in the chosen product button will illuminate. To unassign a product from a button, press the button assigned to that product. The LED no longer illuminates. With the assigned button illuminated, press the ▼ (INFO) button.
NAME	Product name	If additional programming, to add other products, is desired press the * (2) button once and then the ▼ button and return to MODIFY? YES NO step above. If no further programming is desired, press the * (2) button three (3) times.
OFF	OFF	None required.

2.10.3 Storing Menu Items in Product Buttons

This function is used to store individual menu items to product buttons for one or two button cooking. To store menu items to a specific button follow the steps below:

Left Display	Right Display	Action
OFF	OFF	Press the TEMP and INFO buttons simultaneously until LEVEL 1 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 1	PROGRAM	None required.
PRODUCT SELECTION	Blank	Press the ✓ (1) button.
SELECT PRODUCT	FR FRIES	Press the ▲ ▼ buttons to advance through menu items until the menu item to be modified or a numbered spot is displayed (ex. PROD 13). With the desired product displayed, press the ✓ (1) button.
MODIFY? YES NO	Blank	Press the ✓ (1) button.
NAME	PROD 13	Press the ▲ button to scroll to the ASSIGN BTN option used to assign a menu item to a specific product button.
ASSIGN BTN	Product name	With the chosen product displayed on the right and ASSIGN BTN on the left, press a button between 1-0 to assign the product. The LED in the chosen product button will illuminate. To unassign a product from a button, press the button assigned to that product. The LED no longer illuminates. With the assigned button illuminated, press the ▼ (INFO) button.
NAME	Product name	If additional programming, to add other products, is desired press the * (2) button once and then the ▼ button and return to MODIFY? YES NO step above. If no further programming is desired, press the * (2) button three (3) times.
OFF	OFF	None required.

2.10.4 Draining and Refilling Vats, and Disposing of Oil

When cooking oil is exhausted, drain the oil into an appropriate container for transport to the disposal container. Frymaster recommends a McDonald's Shortening Disposal Unit (MSDU). **Do not drain deep clean (boil-out) solution into an MSDU.** **NOTE:** If using an MSDU built before January 2004 the filter pan cover must be removed to allow the unit to be positioned beneath the drain. To remove the cover, lift up on the front edge slightly and slip the oil guard up 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** container.

2.10.4.1 Oil Disposal

This option is used to dispose of old oil into either an MSDU or a **METAL** pot. To dispose of oil turn the fryer off and follow the steps below:

Remove the filter pan and position the MSDU or **METAL** container under the fryer to drain the oil.

Left Display	Right Display	Action
OFF	OFF	Press and hold the FLTR button of the corresponding vat until FILTER MENU/MAINT FILTER is displayed.
Blank	FILTER MENU MAINT FILTER	Press the ▼ (INFO) button to scroll to DISPOSE .
Blank	DISPOSE	Press the ✓ (1) button.
Blank	DISPOSE? alternating with YES NO	Press the ✓ (1 YES) button to continue.
<p>⚠ WARNING NEVER drain deep clean (boil-out) solution into an MSDU. Deep Clean (boil-out) solution can cause damage to an MSDU.</p>		
<p>⚠ DANGER When draining oil into a disposal unit, do not fill above the maximum fill line located on the container.</p>		
<p>⚠ DANGER Allow oil to cool to 100°F (38°C) before draining into an appropriate METAL container for disposal.</p>		
Blank	DISPOSAL UNIT IN PLACE alternating with CONFIRM	Remove the filter pan and insert the disposal unit or a METAL container. Press the ✓ (1) button.
Blank	OPEN DRAIN VALVE	Open the drain valve.
Blank	DISPOSING	None required.
Blank	VAT EMPTY? CONFIRM	Press the ✓ (1) button once the vat is empty.

Oil Disposal cont.

Left Display	Right Display	Action
Blank	<i>CLOSE DRAIN VALVE</i>	Close the drain valve.
<i>OFF</i>	<i>OFF</i>	None required.

2.11 Filter Menu

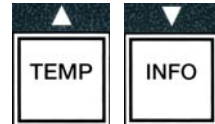
The filter menu selections are used for filtering, draining, filling and disposing.

2.11.1 Accessing the Filter Menu

1. With the controller on, press and hold the filter button for the selected vat for three seconds.



The controller displays *FILTER MENU* for three seconds, changing to *QUICK FILTER*.




2. Press the ▲ and ▼ buttons to scroll between:
 - a. *QUICK FILTER* See pg. 2-15
 - b. *MAINT FILTER* (Manual or Maintenance Daily Filter) See pg. 2-16
 - c. *DISPOSE* See pg. 2-13
 - d. *DRAIN TO PAN* See pg. 2-18
 - e. *FILL VAT FROM DRAIN PAN* See pg. 2-18

2.11.2 Quick Filter

Prepare the filter for use using the instructions that accompanied the fryer.

Quick Filtration is a feature that, after a number of cook cycles, will automatically prompt to filter a frypot. Alternatively pressing and holding the filter button with the fryer on and at setpoint will also prompt a demand filtration.

 **WARNING**
The filter pad or paper **MUST** be replaced daily.

 **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 that may cause severe burns, slipping and falling.

Left Display	Right Display	Action
Blank	FILTER NOW? alternating with YES NO	After a preset number of cook cycles or time the controller displays FILTER NOW? alternating with YES NO . Press the ✓ (1) (YES) button.
Blank	SKIM VAT alternating with CONFIRM	Skim the vat and press the ✓ (1) button to start filtration
Blank	OPEN DRAIN VALVE	Open the drain valve.
Blank	DRAINING	None required.
Blank	OPEN RETURN VALVE alternating with CONFIRM	Open the return valve and press the ✓ (1) button.
Blank	WASHING	None required.
Blank	CLOSE DRAIN VALVE	Close the drain valve.
Blank	FILLING	None required.
Blank	CLOSE RETURN VALVE WHEN VAT FULL alternating with CONFIRM	Close the return valve when the vat is full and bubbles appear in the oil and press the ✓ (1) button.
OFF	OFF	

2.11.3 Filter Busy

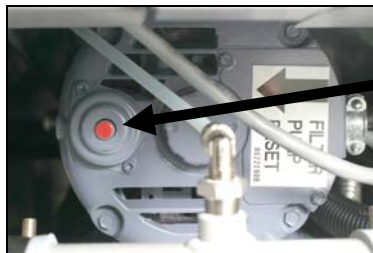
If **FILTER BUSY** is displayed, another controller has not completed a process, or is waiting on another vat to be filtered. Wait 15 minutes to see if problem is corrected. If not, call your local FAS.

⚠ 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).

⚠ WARNING

Use caution and wear appropriate safety equipment when resetting the filter pump reset switch. Resetting the switch must be accomplished with care to avoid the possibility of a serious burn from careless maneuvering around the drain tube and frypot.



Filter Pump Reset Switch

2.11.4 Maintenance (Manual) Filtration

NOTICE

The filter pad or paper must be replaced daily.

⚠ 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 that may cause severe burns, slipping and falling.

Ensure the filter pad or paper is replaced daily to keep the system operating correctly. The fryer **MUST** be at setpoint temperature. Turn the fryer off and follow the steps below:

Left Display	Right Display	Action
OFF	OFF	Press and hold the FLTR button of the corresponding vat until FILTER MENU/MAINT FILTER is displayed.
Blank	FILTER MENU/ changing to MAINT FILTER	Press the ✓ (1) button.
Blank	MAINT FILTER? alternating with YES NO	Press the ✓ (1 YES) button.
Blank	OPEN DRAIN VALVE	Open the drain valve.
Blank	DRAINING	None required.
Blank	SCRUB VAT COMPLETE? alternating with CONFIRM	Scrub the vat with the no scratch pad and press the ✓ (1) button when complete.

Maintenance (Manual) Filtration cont.

Left Display	Right Display	Action
Blank	WASH VAT? alternating with CONFIRM	Press the ✓ (1) button.
Blank	OPEN RETURN VALVE alternating with CONFIRM	Open the return valve and press the ✓ (1) button.
	WASHING	None required.
Blank	CLOSE DRAIN VALVE	Close the drain valve.
Blank	RINSING	None required.
Blank	CLOSE RETURN VALVE WHEN VAT FULL alternating with CONFIRM	Close the return valve and press the ✓ (1) button.
Blank	OPEN DRAIN VALVE	Open the drain valve.
Blank	RINSE AGAIN? alternating with YES NO	If the pot is clear of debris, press the * (2 NO) button to continue. If another rinse is desired, press the ✓ (1 YES) button and return to CLOSE DRAIN VALVE step above.
Blank	POLISH? alternating with CONFIRM	Press the ✓ (1) button to continue.
Blank	OPEN RETURN VALVE alternating with CONFIRM	Open the return valve and press the ✓ (1) button.
	POLISHING alternating with 5 minute countdown timer.	The polish begins and a alternates with a five minute countdown timer.
Blank	FILL VAT? alternating with CONFIRM	Press the ✓ (1) button to continue.
Blank	CLOSE DRAIN VALVE	Close the drain valve.
Blank	FILLING	None required.
Blank	CLOSE RETURN VALVE WHEN VAT FULL alternating with CONFIRM	Close the drain valve and press the ✓ (1) button.
OFF	OFF	

The **DRAIN TO PAN** and **FILL VAT FROM DRAIN PAN** functions are used primarily for diagnostic purposes. They are used to drain oil to the filter pan or returned to the frypot.

2.11.5 Drain to Pan

The drain to pan function drains the oil from the frypot to the filter pan. Turn the fryer off and follow the steps below:

Left Display	Right Display	Action
OFF	OFF	Press and hold the FLTR button of the corresponding vat until FILTER MENU/MAINT FILTER is displayed.
Blank	FILTER MENU/ changing to MAINT FILTER	Press the ▼ (INFO) button to scroll to DRAIN TO PAN
Blank	DRAIN TO PAN	Press the ✓ (1) button.
Blank	DRAIN TO PAN? alternating with YES NO	Press the ✓ (1 YES) button.
Blank	OPEN DRAIN VALVE	Open the drain valve.
Blank	DRAINING	None required.
Blank	VAT EMPTY? alternating with CONFIRM	Press the ✓ (1) button.
Blank	CLOSE DRAIN VALVE	Close the drain valve.
OFF	OFF	

2.11.6 Fill Vat from Drain Pan

Fill vat from drain pan function is used to refill the frypot from the filter pan.

Ensure the fryer is off and follow the steps below:

Left Display	Right Display	Action
OFF	OFF	Press and hold the FLTR button of the corresponding vat until FILTER MENU/MAINT FILTER is displayed.
Blank	FILTER MENU/ changing to MAINT FILTER	Press the ▼ (INFO) button to scroll to FILL VAT FROM DRAIN PAN.
Blank	FILL VAT FROM DRAIN PAN	Press the ✓ (1) button.
Blank	FILL VAT FROM DRAIN PAN? alternating with YES NO	Press the ✓ (1 YES) button.
Blank	OPEN RETURN VALVE alternating with CONFIRM	Open the return valve and press the ✓ (1) button.
Blank	FILLING	None required.
Blank	CLOSE RETURN VALVE WHEN VAT FULL alternating with CONFIRM	Close the return valve when the vat is full and bubbles appear in the oil and press the ✓ (1) button.
OFF	OFF	

2.12 Programming Level One

Level one programming is used to enter new products, control when AIF (filter prompt clock) is disabled and perform deep clean (boil-out) and high-limit test. Ensure the fryer is off and follow the steps below:

Left Display	Right Display	Action
OFF	OFF	Press the TEMP and INFO buttons simultaneously for THREE seconds until LEVEL 1 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 1	PROGRAM	None required.
PRODUCT SELECTION	Blank	<p>Press the ▲▼ buttons to scroll between:</p> <ul style="list-style-type: none"> a. PRODUCT SELECTION See pg. 2-10 b. AIF CLOCK (Suppress Filter Prompt) See pg. 2-20 c. DEEP CLEAN MODE See pg. 2-21 d. HI LIMIT TEST See pg. 2-23 e. FRYER SETUP See pg. 2-9 <p>With the selection displayed, press the ✓ (1) button to select chosen menu item.</p>

2.12.1 AIF CLOCK

The AIF Clock (suppress filter prompt) mode allows programming of times to lock out the filter prompt. This is useful for busy times of the day, like the noon rush. Ensure the fryer is off and follow the steps below:

Left Display	Right Display	Action
OFF	OFF	Press the TEMP and INFO buttons simultaneously for THREE seconds until LEVEL 1 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 1	PROGRAM	None required.
PRODUCT SELECTION	Blank	Press the ▼ (INFO) button to scroll to AIF CLOCK (Filter Prompt). Press the ✓ (1) button.
AIF CLOCK	DISABLED	Use the ◀ and ▶ buttons to toggle between DISABLED or ENABLED . Default setting is DISABLED . Set this function to ENABLED if there are times in which the AIF (filter prompt) feature is disabled (ex. noon rush). If ENABLED is chosen proceed to the next step. If DISABLED is chosen press the * (2 NO) button to quit and return to OFF.
Blank	ENABLED	If enabled is chosen press the ▼ (INFO) button to scroll between M-F 1 thru SUN 4 . These are the different time periods which filter prompts will be suspended.
M-F 1	12:00AM	Enter the starting time, using the number keys, which no filter prompts are desired. (ex. On Monday – Friday no filtering is desired during a lunch rush from 11:30 AM until 1:30 PM.) Press the ▲ and ▼ buttons to toggle from AM to PM. Once the starting time is entered, press the ▼ (INFO) button.
M-F 1	0 DUR	This is the amount of time the filter prompt is to remain suspended. Use the number keys to enter a time between 0 and 999 minutes (ex. 1½ hours is entered as 90 minutes). Enter 90 for this example. The controller displays 090 DUR . Four different time periods to suspend filtration are available for each day or set of days. (M-F 1-4, Sat 1-4 and Sun 1-4) Press the ▼ (INFO) button to accept time and move to the next time period. When finished, press the * (2) button two times to return to OFF .
OFF	OFF	None required.

2.12.2 DEEP CLEAN MODE (BOIL-OUT)

The deep clean mode is used to remove carbonized oil from the frypot.

NOTE: Refer to the MRC Deep Clean (boil out) instructions to clean the fryer.



⚠ DANGER


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

⚠ DANGER

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

Left Display	Right Display	Action
OFF	OFF	Ensure an MSDU or suitable metal container is in place under the drain. Open the drain valve to the corresponding vat and drain the oil. Once the oil is completely drained close the drain valve. Press the TEMP and INFO buttons simultaneously for THREE seconds until LEVEL 1 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 1	PROGRAM	None required.
PRODUCT SELECTION	Blank	Press the ▼ (INFO) button to scroll to DEEP CLEAN (Boil-Out). Press the ✓ (1) button.
DEEP CLEAN? alternating with YES NO	Blank	Press the ✓ (1 YES) button.
DEEP CLEAN alternating with L and R		On split vat units press either L to start a deep clean on the left vat or R to start a deep clean on the right vat.
Blank	IS OIL REMOVED? alternating with YES NO	Press the ✓ (1 YES) button if the oil is removed and skip to SOLUTION ADDED? at the top of the next page. If not press the * (2) button and continue.
Blank	DISPOSAL UNIT IN PLACE alternating with CONFIRM	Remove the filter pan and insert a disposal unit or METAL pan. Once in place press the ✓ (1) button.
Blank	OPEN DRAIN VALVE	Open the drain valve.
Blank	DISPOSING alternating with countdown timer.	None required.
Blank	VAT EMPTY? alternating with CONFIRM	Press the ✓ (1) button.
Blank	CLOSE DRAIN VALVE	Close the drain valve.

Left Display	Right Display	Action
Blank	SOLUTION ADDED? alternating with CONFIRM	Fill frypot to be cleaned with water and cleaning solution mix. Referring to maintenance requirement card and Kay Chemical provided instructions “Fryer Deep Clean Procedure” for McDonald’s deep clean (boil-out) procedure and press the ✓ (1) button.
Blank	DEEP CLEAN alternating with 60:00 minute timer	None required. The vat heats to 195° F (91° C) for one hour. To cancel DEEP CLEAN, press and hold the ✖ (2) button for three seconds and proceed to IS SOLUTION REMOVED? below.
Blank	CLEAN DONE alternating with CONFIRM	Press the ✓ (1) button.
 DANGER Allow deep-clean (boil-out) solution to cool to 100°F (38°C) before disposal, otherwise hot liquid can cause injury.		
 WARNING Do not drain boil-out solution into a McDonald’s shortening disposal unit (MSDU), 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.		
Blank	IS SOLUTION REMOVED? alternating with YES	Open drain valve to remove the small amount of solution left in the drain. When finished press the ✓ (1 YES) button.
Blank	SCRUB VAT COMPLETE? alternating with CONFIRM	Once the vat is scrubbed and rinsed press the ✓ (1) button.
Blank	OPEN DRAIN VALVE	Open the drain valve.
Blank	DRAINING	None required.
Blank	RINSE COMPLETE? alternating with CONFIRM	Rinse the vat several times and press the ✓ (1) button when complete.
Blank	CLOSE DRAIN VALVE	Close the drain valve.
Blank	REMOVE PAN alternating with CONFIRM	Remove the filter pan.

Left Display	Right Display	Action
Blank	VAT AND PAN DRY? alternating with CONFIRM	Dry the vat and filter pan thoroughly and press the ✓ (1) button when complete.
 DANGER Ensure that the frypot and filter pan are completely dry and free of water before filling with oil. Failure to do so will cause splattering of hot liquid when the oil is heated to cooking temperature.		
Blank	INSERT PAN alternating with CONFIRM	Insert the filter pan and press the ✓ (1) button
Blank	MANUAL FILL VAT alternating with CONFIRM	Carefully pour oil into the pot until it reaches the low fill line in the fryer.
OFF	OFF	None required.

2.12.3 HIGH-LIMIT TEST MODE

The high-limit test mode is used to test the high limit circuit. The high-limit test will destroy the oil. It should only be performed with old oil. Shut the fryer off and call for service immediately if the temperature reaches 460°F (238°C) without the second high-limit tripping and the controller displays **HIGH LIMIT FAILURE** alternating with **DISCONNECT POWER** with an alert tone during testing.

The test is cancelled at any time by turning the fryer off. When the fryer is turned back on, it returns to the operating mode and displays the product.

Left Display	Right Display	Action
OFF	OFF	Press the TEMP and INFO buttons simultaneously for THREE seconds until LEVEL 1 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 1	PROGRAM	None required.
PRODUCT SELECTION	Blank	Press the ▼ (INFO) button to scroll to HIGH LIMIT TEST . Press the ✓ (1) button.
HI-LIMIT? alternating with YES NO	Blank	Press the ✓ (1 YES) button or on a split vat on the sides that corresponds to the vat.
PRESS AND HOLD CHECK	Blank	Press and hold the ✓ (1 YES) button to initiate the high-limit test.
335F (CURRENT VAT TEMP)	335F (CURRENT VAT TEMP)	None required. The vat begins to heat. The controller displays the actual vat temperature during the test. When the temperature reaches 410°F ± 10° F (210°C ± 12°C)*, the controller displays HOT HI-1 alternating with the actual temperature (ex. 410F) and continues heating.

Left Display	Right Display	Action
Blank	HOT HI-1 alternating with the actual temperature	When the temperature reaches 410°F ± 10° F (210°C ± 12°C)*, the controller displays HOT HI-1 alternating with the actual temperature (ex. 410F) and continues heating. NOTE: In controllers used in the European Union (those with the CE mark), the temperature is 395°F (202°C).
Blank	HELP HI-2 alternating with the actual temperature	The fryer continues heating until the second (physical) high limit opens. Generally this happens once the temperature reaches 423°F to 447°F (217°C to 231°C) for non-CE high limits and 405°F to 426°F (207°C to 219°C) for CE high limits. Release the ✓ (1 YES) button. If the high-limit fails, the controller displays HIGH LIMIT FAILURE alternating with DISCONNECT POWER . If this happens, disconnect power to the fryer and call for service immediately.
VAT TEMPERATURE	VAT TEMPERATURE	Press the soft power button on the controller to cancel the alarm. The vat stops heating and the controller displays the current temperature setting alternating with the actual temperature (ex. 430F) until the temperature cools below 400°F (204°C). Once the temperature cools below 400°F (204°C) press the ✕ (2) button twice to exit to OFF.
OFF	OFF	Follow the procedures on page 2-13 to dispose of the oil.

2.13 Programming Level Two

Level two programming is used to adjust compensation (sensitivity), view the error log, change passwords, adjust alarms and adjust filter prompts. Ensure the fryer is off and follow the steps below:

Left Display	Right Display	Action
OFF	OFF	Press the TEMP and INFO buttons simultaneously for TEN seconds until LEVEL 2 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 2	PROGRAM	None required.
PROD COMP	Blank	Press the ▲ ▼ buttons to scroll between: a. PROD COMP See pg. 2-25 b. E-LOG See pg. 2-25 c. PASSWORD SETUP See pg. 2-27 d. ALERT TONE See pg. 2-27 e. TOPOFF AFTER See pg. 2-28 f. FILTER AFTER See pg. 2-28 g. FILTER TIME See pg. 2-29 With the selection displayed, press the ✓ (1) button to select chosen menu item.

2.13.1 PRODUCT COMP MODE

The product comp mode allows the product compensation (sensitivity) to be changed. Some menu items may need an adjustment, depending on their cooking characteristics. **Use caution when changing the product compensation, as it could have an adverse affect on the products cooking cycles.** The default setting for product compensation is set to (4) four.

Left Display	Right Display	Action
OFF	OFF	Press the TEMP and INFO buttons simultaneously for TEN seconds until LEVEL 2 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 2	PROGRAM	None required.
PROD COMP	Blank	Press the ✓ (1) button.
PRODUCT SELECTION	Blank	None required.
SELECT PRODUCT	FR FRIES	Use the ▲ and ▼ to scroll through the product list. With a product selected, press the ✓ (1) button to select a product.
MODIFY? alternating with YES NO	Product name	Press the ✓ (1 YES) button.
LOAD COMP	4	This is the sensitivity setting recommended for this product. NOTE: It is highly recommended to NOT adjust this setting, as it could have an adverse effect on the product. If changing this setting, enter a number between 0-9. Press the * (2) button two times to accept selection and exit to OFF.
OFF	OFF	None required.

2.13.2 E-LOG MODE

The E-LOG mode is used to view the ten most recent error codes encountered on the fryer. These codes are displayed from 1-10 with the most recent displayed first. The time, date and error code are displayed.

Left Display	Right Display	Action
OFF	OFF	Press the TEMP and INFO buttons simultaneously for TEN seconds until LEVEL 2 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 2	PROGRAM	None required.
PROD COMP	Blank	Press the ▼ (INFO) button to scroll to E-LOG . Press the ✓ (1) button.

Left Display	Right Display	Action
E-LOG	Blank	Press the ✓ (1) button.
NOV	Current date alternating with the time	Press the ▼ (INFO) and ▼ (TEMP) buttons to scroll through the ten most recent error codes starting with “A” through “J”. If no errors exist, the controller displays NO ERRORS . Errors are displayed by position A through J, the side of the error, if a split vat error code and time alternating with the date. An error code displaying and “L” indicates left side of a split vat and “R” indicates right side of a split vat where the error occurred (example –A R E06 06:34AM 06/04/10). Error codes are listed below. Press the ✖ (2) button two times to exit.
OFF	OFF	None required.

E-LOG Error Codes

Code	ERROR MESSAGE	EXPLANATION
E03	ERROR TEMP PROBE FAILURE	Temp probe reading out of range.
E04	HI 2 BAD	High limit reading is out of range.
E05	HOT HI 1	High limit temperature is past more than 410°F (210°C), or in CE countries, 395°F (202°C).
E06	HEATING FAILURE	A component has failed in the high limit circuit such as controller, interface board, contactor or open-high limit.
E20	INVALID CODE LOCATION	SD card removed during update.
E21	FILTER PAD PROCEDURE ERROR (Change Filter Pad)	25 hour timer has expired or dirty filter logic has activated.
E22	OIL IN PAN ERROR	The controller detects oil may be in the filter pan.
E25	RECOVERY FAULT	Recovery time exceeded maximum time limit.
E27	LOW TEMP ALARM	Oil temperature has dropped lower than 15°F (8°C) in idle mode or 45°F (25°C) in cook mode.

2.13.3 PASSWORD SETUP MODE

The password mode allows a restaurant manager to change passwords for various modes and levels.

Left Display	Right Display	Action
OFF	OFF	Press the TEMP and INFO buttons simultaneously for TEN seconds until LEVEL 2 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 2	PROGRAM	None required.
PROD COMP	Blank	Press the ▼ (INFO) button to scroll to PASSWORD SETUP .
PASSWORD SETUP	Blank	Press the ✓ (1) button.
FRYER SETUP	Current date and time	Press the ▲ and ▼ buttons to scroll between: a. FRYER SETUP – Established password to enter FRYER SETUP mode. (Default is 1234) b. USAGE – Established password to enter USAGE mode to reset usage statistics. (Default is 4321) c. LEVEL 1 – Establishes password to enter LEVEL 1 mode. (Default is 1234) d. LEVEL 2 – Establishes password to enter LEVEL 2 mode. (Default is 1234) Press the * ✓ (1) button once selection is displayed.
MODIFY? alternating with YES NO	Blank	Press the ✓ (1 YES) button.
FRYER SETUP	NEW PASSWORD flashes for three seconds then 1234 or the current password is displayed on the right	Using the 0-9 keys enter a new password or reenter the existing password and press the ✓ (1) button.
CONFIRM	1234 or the new password	Press the ✓ (1 YES) button.
PASSWORD SETUP	Blank	Repeat process to change other passwords or press the * (2) button to exit.
OFF	OFF	None required.

2.13.4 ALERT TONE MODE

The alert tone volume is adjustable to nine levels and the tone is adjustable to three frequencies. Use different frequencies to distinguish protein or French fry stations.

Left Display	Right Display	Action
OFF	OFF	Press the TEMP and INFO buttons simultaneously for TEN seconds until LEVEL 2 is displayed.
ENTER CODE	Blank	Enter 1234.
LEVEL 2	PROGRAM	None required.

Left Display	Right Display	Action
<i>PROD COMP</i>	Blank	Press the ▼ (INFO) button to scroll to <i>ALERT TONE</i> .
<i>ALERT TONE</i>	Blank	Press the ✓ (1) button.
<i>VOLUME 1-9</i>	9	Use the number keys to set volume level. Select from nine levels of volume with 1 being the softest and 9 the loudest. Press the ▼ (INFO) button.
<i>TONE 1-3</i>	1	Use the number keys, to set the tone frequency from 1 to 3. Press the ▼ (INFO) button.
<i>VOLUME 1-9</i>	9	Press the * (2) button two times to exit.
<i>OFF</i>	<i>OFF</i>	None required.

2.13.5 TOP OFF AFTER

The prompt for topoff is initiated after a number of cycles have elapsed. The default is 40 and can be adjusted. After the number of cycles have elapsed, the controller displays “CHECK OIL LEVEL” and “CONFIRM”. Check oil level and add oil if necessary. Ensure oil is at the top oil level line and press the ✓ (**1**) button.

Left Display	Right Display	Action
<i>OFF</i>	<i>OFF</i>	Press the TEMP and INFO buttons simultaneously for TEN seconds until <i>LEVEL 2</i> is displayed.
<i>ENTER CODE</i>	Blank	Enter 1234.
<i>LEVEL 2</i>	<i>PROGRAM</i>	None required.
<i>PROD COMP</i>	Blank	Press the ▼ (INFO) button to scroll to <i>TOPOFF AFTER</i> . Press the ✓ (1) button.
<i>TOPOFF AFTER</i>	<i>DISABLED</i>	Use the ◀ and ▶ buttons to toggle between <i>DISABLED</i> or <i>ENABLED</i> . Default setting is <i>DISABLED</i> . Set this function to <i>ENABLED</i> to prompt for top off. Press the ▼ (INFO) button
<i>TOPOFF AFTER</i>	40	Use the number keys from 0 to 9 to enter the number of cook cycles before prompting to top off. (ex. after every 40 cycles enter as 40). The default is 40. Press the * (2) button two times to exit.
<i>OFF</i>	<i>OFF</i>	None required.

2.13.6 FILTER AFTER

The *FILTER AFTER* option is used to set the number of cooking cycles which occur before the filtration prompt is displayed.

Left Display	Right Display	Action
<i>OFF</i>	<i>OFF</i>	Press the TEMP and INFO buttons simultaneously for TEN seconds until <i>LEVEL 2</i> is displayed.
<i>ENTER CODE</i>	Blank	Enter 1234.
<i>LEVEL 2</i>	<i>PROGRAM</i>	None required.

Left Display	Right Display	Action
<i>PROD COMP</i>	Blank	Press the ▼ (INFO) button to scroll to <i>FILTER AFTER</i> . Press the ✓ (1) button.
<i>FILTER AFTER</i>	<i>DISABLED</i>	Use the ◀ and ▶ buttons to toggle between <i>DISABLED</i> or <i>ENABLED</i> . Default setting is <i>DISABLED</i> . Set this function to <i>ENABLED</i> if filter prompts are desired. Press the ▼ (INFO) button.
<i>FILTER AFTER</i>	<i>6 DV</i> or <i>12 FV</i>	Use the number keys from 0 to 9 to enter the number of cook cycles before prompting to filter (ex. after every 6 cycles enter as 6). The default is 6 for DV or 12 for FV. Press the * (2) button two times to exit.
<i>OFF</i>	<i>OFF</i>	None required.

2.13.7 FILTER TIME

The *FILTER TIME* option is used to set default times for a filtration prompt. Two programmable quick filter time prompts can be programmed. If this option is enabled, the controller will prompt to filter at 10:00AM and 2:00PM each day.

Left Display	Right Display	Action
<i>OFF</i>	<i>OFF</i>	Press the TEMP and INFO buttons simultaneously for TEN seconds until <i>LEVEL 2</i> is displayed.
<i>ENTER CODE</i>	Blank	Enter 1234.
<i>LEVEL 2</i>	<i>PROGRAM</i>	None required.
<i>PROD COMP</i>	Blank	Press the ▼ (INFO) button to scroll to <i>FILTER TIME</i> .
<i>FILTER TIME</i>	Blank	Press the ✓ (1) button.
<i>1 QUICK FILTER</i>	<i>DISABLED</i>	Use the ◀ and ▶ buttons to toggle between <i>DISABLED</i> or <i>ENABLED</i> . Default setting is <i>DISABLED</i> . Set this function to <i>ENABLED</i> if a time filter prompt is desired. Press the ▼ (INFO) button.
<i>1 QUICK FILTER</i>	<i>10:00AM</i>	Use the number keys from 0 to 9 to change the time of the first timed quick filter prompt. The default is 10:00AM. Press the ▼ (INFO) button or press the * (2) button two times to exit.
<i>2 QUICK FILTER</i>	<i>DISABLED</i>	Use the ◀ and ▶ buttons to toggle between <i>DISABLED</i> or <i>ENABLED</i> . Default setting is <i>DISABLED</i> . Set this function to <i>ENABLED</i> if a second time filter prompt is desired. Press the ▼ (INFO) button.
<i>2 QUICK FILTER</i>	<i>2:00PM</i>	Use the number keys from 0 to 9 to change the time of the second timed quick filter prompt. The default is 2:00PM. Press the * (2) button two times to exit.
<i>OFF</i>	<i>OFF</i>	None required.

2.14 INFO Mode

The **INFO** button is used to display information and navigate menus. Pressed once, it shows each vat's recovery time. Press for three seconds and it displays usage, filter statistics and last cook cycles.

Left Display	Right Display	Action
OFF	OFF	Press and hold the INFO button for THREE seconds until INFO MODE is displayed.
INFO MODE	Blank	None required.
FILTER STATS	Blank	Press the ▲ and ▼ buttons to scroll between: FULL VAT CONFIGURATION a. FILTER STATS See pg. 2-30 b. REVIEW USAGE See pg. 2-31 c. LAST LOAD (split vat L or R) See pg. 2-31
OFF	OFF	None required.

2.14.1 FILTER STATS MODE

The filter stats mode displays vat filtration counts and skipped filters by day and the average number of cook cycles per filter.

Left Display	Right Display	Action
OFF	OFF	Press and hold the INFO button for THREE seconds until INFO MODE is displayed.
INFO MODE	Blank	None required.
FILTER STATS	Blank	Press the ✓ (1) button.
Current Day (ex. TUE)	Current date (ex. 06/04/10)	Use the ◀ and ▶ buttons to scroll from the current day and going back one week. When the day is selected press the ▼ (INFO) button. NOTE: Split vats have an L or R in front of the left display indicating statistics for either the left or right side of the vat.
FILTERED	(ex. 4 FRI)	Press the ▼ (INFO) button. Number of times vat filtered and day.
FLT BPSD	(ex. 0 FRI)	Press the ▼ (INFO) button. Number of times filter was bypassed and day.
FLT AVG	(ex. 12 FRI)	Press the ▼ (INFO) button. Average number of cook cycles per filter and day.
FILTERED	(ex. 4 FRI)	Use the ◀ and ▶ buttons to scroll to another day or press the ✕ (2) button two times to exit.
OFF	OFF	None required.

2.14.2 REVIEW USAGE MODE

The review usage displays total cook cycles per vat, number of cook cycles per vat, number of cook cycles exited prior to completion, the number of hours the vat(s) have been on and the date of last usage reset.

Left Display	Right Display	Action
OFF	OFF	Press and hold the INFO button for THREE seconds until INFO MODE is displayed.
INFO MODE	Blank	None required.
FILTER STATS	Blank	Press the ▼ (INFO) button to scroll to REVIEW USAGE .
REVIEW USAGE	Blank	Press the ✓ (1) button.
USAGE SINCE	Blank	None required.
DATE	TIME	Press the ▼ (INFO) button. Usage since date and time of last reset.
TOTAL COOKS	26	Press the ▼ (INFO) button. Number of cook cycles for all products since last reset.
QUIT COOK	3	Press the ▼ (INFO) button. Number of cook cycles exited within first 30 seconds since last reset.
ON HRS	54:56	Press the ▼ (INFO) button. Number of hours the vat has been on since last reset. Split vats will have an L or R before on hrs to indicate left or right vat.
RESET USAGE alternating with YES NO	Blank	Press the ✓ (1 YES) button to reset usage, otherwise press * (2 NO) button. Resets usage counters
ENTER CODE	Blank	Enter 4321.
RESET USAGE	COMPLETE	None required.
REVIEW USAGE	Blank	Press the * (2) button to exit.
OFF	OFF	None required.

2.14.3 LAST LOAD MODE

The last load mode displays data for the last cook cycle.

Left Display	Right Display	Action
OFF	OFF	Press and hold the INFO button for THREE seconds until INFO MODE is displayed.
INFO MODE	Blank	None required.
FILTER STATS	Blank	Press the ▼ (INFO) button to scroll to LAST LOAD for full vats or LOAD L or LOAD R for split vat configurations.
LAST LOAD	Blank	Press the ✓ (1) button.
NOTE – Below numbers are examples. They do not reflect actual conditions.		
PRODUCT	Product (ex. FRY)	Press the ▼ (INFO) button. Last product cooked.
STARTED	02:34PM	Press the ▼ (INFO) button. Time last cook cycle started.

Left Display	Right Display	Action
<i>ACTUAL TIME</i>	<i>3:15</i>	Press the ▼ (INFO) button. Actual cooking time including stretch time.
<i>PROG TIME</i>	<i>3:10</i>	Press the ▼ (INFO) button. Programmed cook time.
<i>MAX TEMP</i>	<i>337°</i>	Press the ▼ (INFO) button. Maximum oil temperature recorded during the cook cycle.
<i>MIN TEMP</i>	<i>310°</i>	Press the ▼ (INFO) button. Minimum oil temperature recorded during the cook cycle.
<i>AVG TEMP</i>	<i>335°</i>	Press the ▼ (INFO) button. Average oil temperature recorded during the cook cycle.
<i>HEAT ON</i>	<i>70</i>	Press the ▼ (INFO) button. Percentage of the cook time the heat source was on.
<i>READY</i>	<i>YES</i>	Press the ✖ (2) button two times to exit. Displays if the fryer was back to proper temperature before the cook cycle was started.
<i>OFF</i>	<i>OFF</i>	None required.

MANUAL LOV™ M3000 CONTROLLER

CHAPTER 3: OPERATOR TROUBLESHOOTING

3.1 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 (1-800-24-FRYER):

- **Verify that electrical cords are plugged in and that circuit breakers are on.**
- **Verify that frypot drain valves are fully closed.**
- **Have your fryer's model and serial numbers ready to give to the technician assisting you.**

 **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.

3.2 Troubleshooting

3.2.1 Controller and Heating Problems

Problem	Probable Causes	Corrective Action
No Display on Controller.	A. Controller not turned on.	A. Press the ON/OFF switch to turn the controller on.
	B. No power to the fryer.	B. Verify controller power cord is plugged in and that circuit breaker is not tripped.
	C. Controller has failed.	C. Call your FAS for assistance.
	D. Damaged controller wiring harness.	D. Call your FAS for assistance.
	E. Power supply component or interface board has failed.	E. Call your FAS for assistance.
M3000 displays CHANGE FILTER PADP	25 hour filter pad change prompt has occurred or change filter pad was ignored on a prior prompt.	Change the filter pad. Do NOT ignore CHANGE FILTER PAD prompts.
Fryer does not heat.	A. Main power cord not plugged in.	A. Verify that both the main power cord and 120V is fully seated in its receptacle, locked into place and that circuit breaker is not tripped
	B. Controller has failed.	B. Call your FAS for assistance.
	C. One or more other components have failed.	C. Call your FAS for assistance.
Fryer heats until high-limit trips with heat indicator ON.	Temperature probe or controller has failed.	Call your FAS for assistance.
Fryer heats until high-limit trips without heat indicator ON.	Contact or controller has failed	Call your FAS for assistance.

3.2.2 Error Messages and Display Problems

Problem	Probable Causes	Corrective Action
M3000 display is in wrong temperature scale (Fahrenheit or Celsius).	Incorrect display option programmed.	Toggle between F° to C° by pressing and holding ◀ and ▶ simultaneously until TECH MODE appears. Enter 1658 . The controller displays OFF . Turn the controller on to check temperature. If the desired scale is not displayed, repeat.
M3000 display shows HOT-HI-1.	Frypot temperature is more than 410°F (210°C) or, in CE countries, 395°F (202°C).	Shut the fryer down immediately and call your FAS for assistance.
M3000 display shows HELP HI-2 or HIGH LIMIT FAILURE.	Failed high limit	Shut the fryer down immediately and call your FAS for assistance.

Problem	Probable Causes	Corrective Action
M3000 display shows TEMP PROBE FAILURE.	Problem with the temperature measuring circuitry including the probe or damaged controller wiring harness or connector.	Shut the fryer down and call your FAS for assistance.
M3000 display shows HEATING FAILURE.	Failed controller, failed interface board, open high-limit thermostat.	Call your FAS for assistance.
Heating indicator is on, but fryer is not heating.	Three phase power cord unplugged or circuit breaker is tripped.	Verify that both the main power cord and 120V is fully seated in its receptacle, locked into place and that circuit breaker is not tripped. If the problem continues call your FAS for assistance.
M3000 display shows RECOVERY FAULT and alarm sounds.	Recovery time exceeded maximum time limit.	Clear error and silence the alarm by pressing the ✓ button. Maximum recovery time for electric is 1:40 and 2:25 for gas. If this error continues call your FAS for assistance.
M3000 display shows REMOVE DISCARD.	A product cook is started that has a different setpoint than the current vat temperature.	Remove and discard product. Press the cook button under the display with the error to remove the error. Reset the setpoint of the vat before trying to cook product.
Controller locks up.	Controller error.	Call your FAS for assistance.
M3000 displays SERVICE REQUIRED followed by an error message.	An error has occurred which requires a service technician.	Press ✖ (2 NO) to continue cooking and call your FAS for assistance. In some cases, cooking may not be available.
DRAIN OPEN alternating with CONFIRM	Drain valve is open.	Press either button under CONFIRM and follow prompts.
IS VAT FULL? alternating with CONFIRM	A drain has been opened.	Press either button under CONFIRM and follow prompts.
IS PAN EMPTY? alternating with CONFIRM	A drain has been opened.	Press either button under CONFIRM and follow prompts.

3.2.3 Filtration Problems

Problem	Probable Causes	Corrective Action
Fryer filters after each cook cycle.	Filter after setting incorrect.	Change or overwrite the filter after setting by re-entering the filter after value in level two. See section 2.13.6 on page 2-28.
<i>MAINT FILTER</i> (Manual Filter) won't start.	Temperature too low.	Ensure fryer is at setpoint before starting <i>MAINT FILTER</i> .
Filter pump won't start or pump stops during filtering.	A. Power cord is not plugged in or circuit breaker is tripped.	A. Verify that the power cord is fully plugged in and the 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. (See page 2-16)
	C. Blockage in filter pump.	C. Call your FAS for assistance.
Filtration won't start.	A. AIF disable is set to yes. B. Filter relay has failed. C. Oil temperature too low.	A. Set AIF disable in Level 1 to no. B. Call your FAS for assistance. C. Ensure oil temperature is at 300°F (149°C) or above.
M3000 display shows <i>FILTER BUSY</i>.	Another function or filter pad change is still in process.	Wait until the previous function ends to start another function. Change filter pad if prompted.

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