



OPERATOR'S M A N U A L

OPEN FRYER

MODEL

OFE-321

OFE-322



01180404

HENNY PENNY®
Engineered to Last

REGISTER WARRANTY ONLINE AT WWW.HENNYPENNY.COM

TABLE OF CONTENTS

Section	Page
Section 1. INTRODUCTION.....	1-1
1-1. Introduction.....	1-1
1-2. Proper Care	1-2
1-3. Assistance	1-2
1-4. Safety	1-2
Section 2. INSTALLATION.....	2-1
2-1. Unpacking Instructions	2-1
2-2. Selecting the Location.....	2-2
2-3. Leveling the Fryer	2-2
2-4. Ventilation of Fryer.....	2-2
2-5. Electrical Requirements OFE-321/322	2-3
2-6. Connector Strip	2-3
Section 3. OPERATION.....	3-1
3-1. Operating Components	3-1
3-2. Operating Controls.....	3-2
3-3. Clock Set.....	3-4
3-4. Diagnostic Mode and Special Functions.....	3-6
3-5. Warnings and Error Messages	3-9
3-6. Filling and Adding Shortening.....	3-12
3-7. Basic Operations	3-13
3-8. Care of Shortening	3-15
3-9. Filtering Instructions	3-16
3-10. Filter Pump Problem Prevention.....	3-19
3-11. Filter Pump Motor Thermal Protector	3-19
3-12. Changing the Filter Envelope	3-20
3-13. Cleaning the Frypot.....	3-21
3-14. Manually Setting New or Used Shortening Function	3-25
3-15. Preventive Maintenance Schedule	3-26
3-16. Checking Temperature Probe Calibration.....	3-26
Section 4. TROUBLESHOOTING.....	4-1
4-1. Introduction.....	4-1
4-2. Troubleshooting	4-1
4-3. Diagnostic Mode Details.....	4-9
4-4. Information Mode Details	4-24
GLOSSARY	G-1

HENNY PENNY OFE-321 OPEN FRYER

SPECIFICATIONS

Pot Capacity	15 lb (6.8 kg) 65 lb shortening (29.5 kg)
Electrical	480 VAC, 3 Phase, 60 Hz, 22.0 KW, 28 Amp 415 VAC, 3 Phase, 60 Hz, 22.0 KW, 33 Amp 380 VAC, 3 Phase, 60 Hz, 22.0 KW, 35 Amp 240 VAC, 3 Phase, 60 Hz, 22.0 KW, 58 Amp 208 VAC, 3 Phase, 60 Hz, 22.0 KW, 61 Amp
Heating	Electric Three, 7333 watt, immersible elements
Shipping Weight	Approximately 280 lb (127 Kg.)

NOTICE

A data plate, located on inside the front door, gives the information of the type of fryer, serial number, warranty date, and other information pertaining to fryer.

SECTION 1. INTRODUCTION

1-1. INTRODUCTION

The Henny Penny open fryer is a basic unit of food equipment designed to cook foods better and easier. The microcomputer based design helps make this possible. This unit is used only in institutional and commercial food service operations.

The controls for the Henny Penny Models OFE-321 and OFE-322 have many features to allow the Operator to produce consistent, quality product. The controls monitor not only cooking times and temperatures, but also shortening condition, product weights, product temperatures, and many other operational variables. The controls may vary the actual shortening temperature and cook times, based on changes of the operational variables.

The controls also have very extensive self-diagnostic functions which alert the Operator to both component and procedure problems.

Some unique features of the fryer are listed below:

- **Diagnostic Function**-provides summary of fryer and Operator performance; see Diagnostic Mode and Special Functions Section
- **Alarms and Error Messages**-provide immediate feedback for Operator error or fryer malfunction; see Warnings and Error Messages Section
- **Status Mode**-allows the Operator to view basic fryer information and status; see Diagnostic Mode and Special Functions Section
- **Information Mode**-gathers and stores historic information on the fryer and Operator performance, and can be viewed by the Operator; see Diagnostic Mode and Special Functions Section
- **Manual Program Mode**-Operator can set time and temperature for nonstandard products; see Diagnostic Mode and Special Functions Section
- **Easy toggle between English and Spanish operation.** See Diagnostic Mode and Special Functions Section
- **Clean-Out Mode**-a preprogrammed function for cleaning the frypot; see Cleaning the Frypot Section

1-2. PROPER CARE

As in any unit of food service equipment, the Henny Penny Open Fryer does require care and maintenance. Requirements for the maintenance and cleaning are, contained in this manual and must become a regular part of the operation of the unit at all times.

1-3. ASSISTANCE

Should you require outside assistance, call your local independent Henny Penny distributor in your area, or call Henny Penny Corp. at 1-800-417-8405 or 1-937-456-8405.

1-4. SAFETY

The Henny Penny open fryer has many safety features incorporated. However, the only way to ensure safe operation is to fully understand the proper installation, operation, and maintenance procedures. Where information is of particular importance or is safety related, the words DANGER, WARNING, CAUTION, or NOTICE are used. Their usage is described below:



SAFETY ALERT SYMBOL is used with DANGER, WARNING or CAUTION which indicates a personal injury type hazard.

NOTICE is used to highlight especially important information.

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.



CAUTION used with the safety alert symbol indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



DANGER INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.

SECTION 2. INSTALLATION

2-1. INTRODUCTION

This section provides the installation instructions for the Henny Penny open fryer.

NOTICE

Installation of the unit should be performed only by a qualified service technician.



Do not puncture the unit with any objects such as drills or screws as component damage or electrical shock could result.

2-2. UNPACKING INSTRUCTIONS

The Henny Penny Fryer has been tested, inspected, and expertly packed to ensure arrival at its destination in the best possible condition. The unit is banded to a wooden skid and then packed inside a heavy cardboard carton with sufficient padding to withstand normal shipping treatment.

NOTICE

Any shipping damage should be noted in the presence of the delivery agent and signed prior to his or her departure.

1. Carefully cut bands from cardboard carton.
2. Lift carton from fryer.
3. Cut and remove the metal bands holding the fryer to the pallet, and remove fryer from pallet



Take care when moving the fryer to prevent personal injury. The OFE-321 weighs about 280 lbs. and the OFE-322 about 400 lbs.

4. Remove protective paper from the fryer cabinet and clean with cloth, soap and water.

2-2. SELECTING THE LOCATION

The proper location of the Fryer is very important for operation, speed, and convenience. Locate the fryer to allow clearances for servicing and proper operation. Choose a location which provides easy loading and unloading without interfering with the final assembly of food orders. Operators have found that frying from raw to finish, and holding the product in warmers provides fast continuous service. Keep in mind the best efficiency is a straight line operation, i.e., raw in one side and finished out the other side. Order assembly can be moved away with only a slight loss of efficiency.



To prevent severe burns from splashing hot shortening, position and install fryer to prevent tipping or movement. Restraining ties may be used for stabilization.

2-3. LEVELING THE FRYER

For proper operation, the fryer should be level from side to side and front to back. Using a level, place it on the flat areas around the frypot collar and level fryer accordingly.

2-4. VENTILATION OF FRYER

Locate the fryer with provision for venting into an adequate exhaust hood or ventilation system. This is essential to permit efficient removal of the steam exhaust and frying odors. Take special precautions in designing an exhaust canopy to avoid interference with the operation of the fryer. We recommend you consult a local ventilation or heating company in designing an adequate system.



Ventilation must conform to local, state, and national codes. Consult your local fire department or building authorities.

2-5. ELECTRICAL REQUIREMENTS **OFE-321/322**

Refer to the table below for supply wiring and fusing.
(Per Well)

Volts	Phase	Kw	Amps
200-208	3	22	61
220/240	3	22	58
440-480	3	22	28
380-415	3	22	20



This fryer **MUST** be adequately and safely grounded (earthed) or electrical shock could result. Refer to local electrical codes for correct grounding (earthing) procedures or in absence of local codes, with The National Electrical Code, ANSI/NFPA No. 70-(the current edition). In Canada, all electrical connections are to be made in accordance with CSA C22.1, Canadian Electrical Code Part 1, and/or local codes.

To avoid electrical shock, this appliance must be equipped with an external circuit breaker which will disconnect all ungrounded (unearthed) conductors. The main power switch on this appliance does **not** disconnect all line conductors.

A separate disconnect switch with proper capacity fuses or breakers must be installed at a convenient location between the fryer and the power source.

2-6. CONNECTOR STRIP



Figure 2-1

To connect two open fryers (ex: 2 OFE-321s) an optional oil diverter can be purchased, part number 03353. This diverter snaps into place and doesn't permanently secure the fryers. It holds the units together and prevents spillage between the two fryers. See figures 2-1 and 2-2.



Figure 2-2

SECTION 3. OPERATION

3-1. OPERATING COMPONENTS

Frypot

This reservoir holds the shortening, and is designed to hold 15 lb (6.8 kg) of product, with a cold zone for collection of crumbs

Drain Valve

A two-way ball valve that is normally closed; turn the handle to drain the shortening from the frypot into the filter drain pan

Drain Interlock Switch

A microswitch, providing protection for the frypot in the event an Operator inadvertently drains the shortening from the frypot while the POWER switch is on; the switch automatically shuts off the heat when the drain valve is opened

High Limit



Figure 3-1

A safety component that senses the temperature of the shortening and if the temperature of the shortening exceeds 420°F (212°C), this control opens and shuts off the heat to the frypot; when the temperature of the shortening drops to a safe operation limit, the control must be manually reset by pressing the red reset button

To locate the high limit reset button, open the door to the drain pan. Look up under the controls and to the right of the filter drain handle for a red reset button. See Figure 3-1.

Filter Drain Pan

The removable pan that houses the filter and catches the shortening when it is drained from the frypot; it is also used to remove and discard old shortening



When moving filter drain pan containing hot shortening, use extreme care to avoid burn from hot surfaces.

Filter Union

Connects the filter to the filter pump, and allows easy removal of the filter and drain pan

Filter Valve











With the filter pump switch in the ON position, this valve directs filtered shortening from the drain pan, back into the frypot

Contactors

Relays that route power to the heating elements; one relay is in series with the high limit, the other one is in series with the controls

3-2. OPERATING CONTROLS

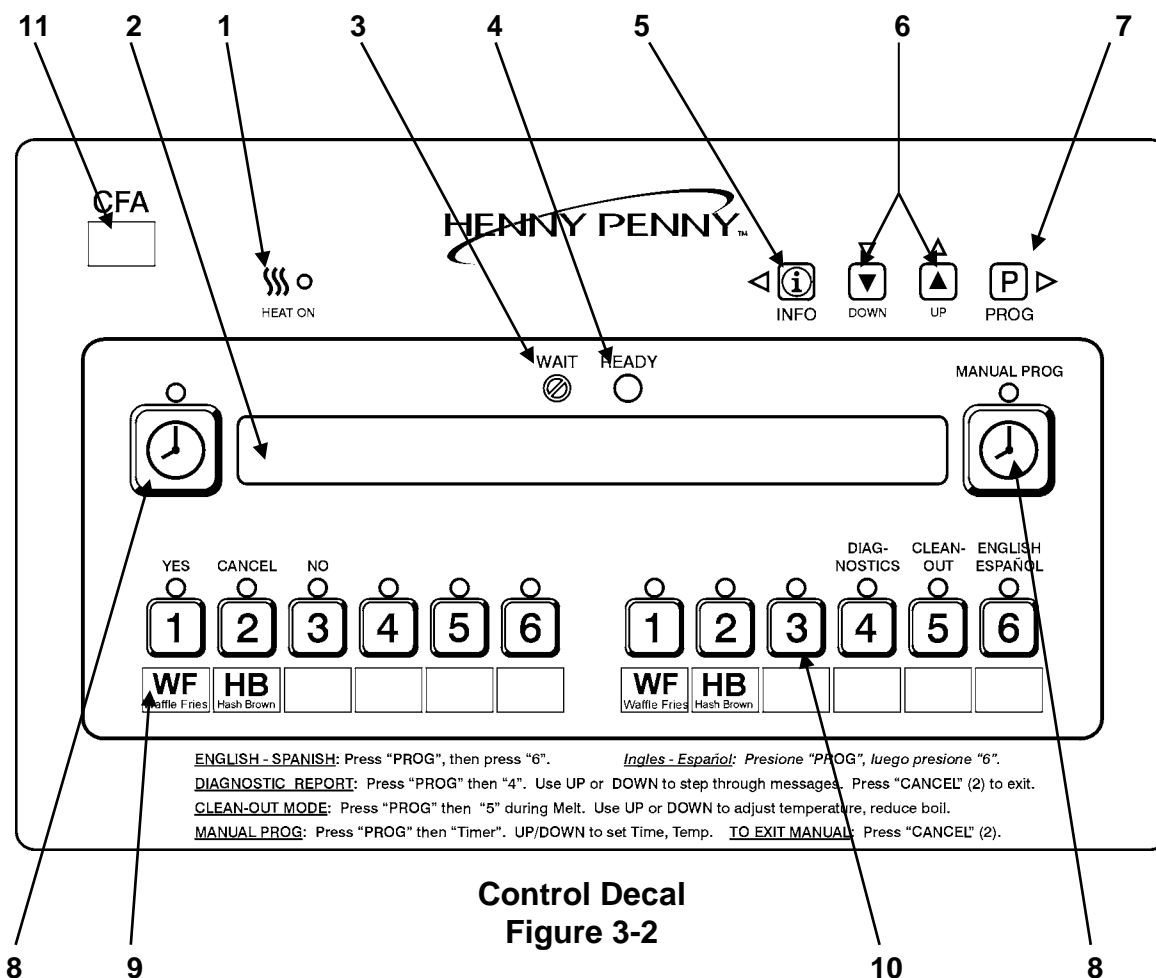
Figure 3-2 shows the location for the computer controls.

Fig. No.	Item No.	Description	
3-2	1	 HEAT ON	Lights when the control calls for heat and the shortening should start heating
3-2	2	Digital Display	Shows all the functions of the Cook Cycle, Program Mode, Diagnostic Mode and alarms
3-2	3	 WAIT	Flashes when the shortening temperature is <u>not</u> at the proper temperature for dropping product into the frypot
3-2	4	 READY	Lights when the shortening temperature is 5°F below setpoint to 15°F above setpoint, signaling product can now be cooked
3-2	5	 INFO	Press to display current fryer information and status; if pressed in the Program Mode, it shows previous settings; pressing this along with  accesses the Information Mode which has historic information on the Operator and fryer performance
3-2	6	 DOWN  UP	Used to adjust the value of the currently displayed setting in the Program Mode
3-2	7	 PROG	Press to access Program Mode; once in the Program Mode, it is used to advance to the next setting; if pressed along with  it accesses the Information Mode which has historic information on the Operator and fryer performance; it also allows access to the English-Spanish settings, diagnostics, Clean-Out Mode, and Manual Mode, if pressed before the appropriate button
3-2	8		Used to stop Cook Cycles and to stop the timer at the end of a Hold Cycle; it is also used to program a Manual Program for nonstandard products

3-2. OPERATING CONTROLS

(Continued)



















Fig. No.	Item No.	Description	Function
3-2	9	Menu Card	Shows name of food product selected; the menu card strip is located behind the decal
3-2	10	Product Select Button	Press to select food products to be cooked, as well as, answering display prompts; also, ^{CLEAN-OUT} 4 accesses the diagnostics; 5 , the Clean-Out Mode; and ^{ENGLISH ESPAÑOL} 6 toggles between English and Spanish display (Press P before entering any of the above modes.) PROG
3-2	11	Unit Identification Window	The unit's model number and the control's hardware and software version numbers appear here












3-3. CLOCK SET

NOTICE

Upon initial start-up or PC board replacement, if “**CLOCK SET**” automatically appears in the display, skip steps 1, 2 and 3.





1. Press and hold  **PROG** for 5 seconds until “**LEVEL 2**” shows in display.
2. Release  **PROG**, then press  **PROG** twice. “**CLOCK SET**” then “**ENTER CODE**” shows in display.
3. Press  **1**  **2**  **3**.
4. Display shows “**CS-1**” then “**SET**” then “**MONTH**”, with the month flashing.
5. Press  **DOWN**  **UP** to change the month.
6. Press  **PROG**. Display shows “**CS-2**” then “**SET**” then “**DATE**”, with the date flashing.
7. Press  **DOWN**  **UP** to change the date.
8. Press  **PROG**. Display shows “**CS-3**” then “**SET**” then “**YEAR**”, with the year flashing.
9. Press  **DOWN**  **UP** to change the year.
10. Press  **PROG**. Display shows “**CS-4**” then “**SET**” then “**HOUR**”, with the hour and “**AM**” or “**PM**” flashing.
11. Press  **DOWN**  **UP** to change the hour and AM/PM setting.
12. Press  **PROG**. Display shows “**CS-5**” then “**SET**” then “**MINUTE**”, with the minutes flashing.

3-3. CLOCK SET **(Continued)**

13. Press   to change the minutes.
DOWN UP
14. Press  . Display shows “CS-6” then “**CLOCK**
PROG
MODE”, along with “1.AM/PM”.
15. “1.AM/PM” is 12 hour time, “2.24-HR” is 24 hour time. Press   to change.
DOWN UP
16. Press  . Display shows “CS-7” then “**DAYLIGHT**
PROG
SAVINGS ADJ”, along with “2.US”.
17. Press   to change to the following:
 - a. “1.OFF” = No automatic adjustments for Daylight Savings Time.
 - b. “2.US” = Automatically applies United States Daylight Savings Time adjustment. DST activated on the first Sunday in April. DST de-activated on the last Sunday in October.
 - c. “3.EURO” = Automatically applies European (CE) Daylight Savings Time adjustment. DST activated on the last Sunday in March. DST de-activated on the last Sunday in October.
18. Clock Set is now complete. Press and hold  to exit.
PROG




3-4. DIAGNOSTIC MODE AND SPECIAL FUNCTIONS

Diagnostic Mode

To view summaries of the fryer and Operator performance, press  then . Press   to view the following functions:



- D1 - Adjust product color for all products (not individually)
- D2 - The age of the shortening and life remaining
- D3 - Outlet voltage monitoring
- D4 - Fryer's heating performance
- D5 - Slow or oversized product batches
- D6 - Cook Cycles started before temperature recovered
- D7 - Cook Cycles stopped more than 10 seconds before end of cycle
- D8 - Cook Cycles not ended within 20 seconds after expired time
- D9 - Number of times loading product took too long
- D10 - Programmed variables changed by Operator

NOTICE

On several of the screens you may have to press  to respond to questions asked.  or Press  at any time to exit and return to normal operation.

See Diagnostic Mode Details Section for more details of the Diagnostic Mode.











Language Selection

Pressing  then  allows the Operator to choose to display the information in English or Spanish.


3-4. DIAGNOSTIC MODE **AND SPECIAL** **FUNCTIONS** **(Continued)**

Manual Mode

This allows the Operator to quickly program a time and temperature for nonstandard products that are not on the menu card. This is to be a temporary setting and disables most of the advanced features of the controls. To enter Manual Mode:

1. Once out of the Melt Cycle, press  then  .
2. Use   to set cook time.
3. Press  and use   to set temperature.
4. Press  to start Manual Mode. Display shows **"MANUAL"** and you start a Cook Cycle by pressing  .
5. Press  to exit Manual Mode.

Status Mode

Pressing  during idle time, allows Operator to view:

- a. The temperature of the shortening
- b. The temperature setpoint and any offset
- c. The average shortening temperature during last Cook Cycle
- d. The rate of temperature rise or fall
- e. Date and Time







Pressing  during a Cook Cycle allows the Operator to view:

- a. The temperature of shortening, plus the degrees and rate the load compensation has affected the Cook Cycle (slows down or speeds up the timer)
- b. The cooking step, the time left in Cook Cycle, and setpoint temperature
- c. Average shortening temperature in Cook Cycle so far
- d. The rate of temperature rise or fall
- e. Date and Time







After 5 seconds, the control exits the Status Mode and the open fryer returns to normal operation.

3-4. DIAGNOSTIC MODE AND SPECIAL FUNCTIONS

Information Mode

This mode gathers and stores historic information on the fryer and Operator performance. Press  and  at the same time and **“*INFO MODE*”** shows on display. Press    to access the steps and press  to view the statistics within each step.

same time and **“*INFO MODE*”** shows on display. Press

   or   to access the steps and press  to view the statistics within each step.


Information Mode is intended for technical use, but the Operator can view the following information:

1. E-LOG - last 10 errors and time they occurred
2. P-LOG - time of last 10 power-ups
3. HEAT-UPS - time of day and maximum heating rate (°/second) for the last 10 heat-ups
4. LEFT COOK DATA - information on the last Cook Cycle, using the left timer button
5. RIGHT COOK DATA - information on the last Cook Cycle, using the right timer button
6. TODAY'S DATA - data since the start of day (not including the last Cook Cycle)
7. PREV-DAY-SUN - creates a log of the last 7 days, using the information in TODAY'S DATA.
8. 7-DAY TOTALS -totals the information from the last 7 days
9. OIL DATA - information on the current shortening, not including today's cooking information
10. PREV OIL DATA - information on last batch of shortening
11. INP - provides test of fryer inputs
12. OUTP - shows the state of heater
13. POT TMP - temperature of shortening
14. CPU TMP - temperature of PC board
15. ANALOG - status of controller's a-to-d converter
16. AC VOLTS - status of the line voltage to fryer
17. AMPS (Electric models only) - the present amp readings to heaters.

See Information Mode Details Section for more details.

3-5. WARNINGS AND ERROR MESSAGES

The controls monitor procedure problems and system failures with warnings and error codes. The display shows the warning or error code, and an alarm sounds.

Pressing  cancels most warnings and pressing any control button stops most error code alarms. But there are some exceptions (see below). The display shows the error until the situation is corrected.

WARNINGS

DISPLAY	CAUSE	CORRECTION
“W-1” “LOW VOLTAGE”	Incoming supply voltage too low	Have voltage at plug and receptacle checked
“W-2” “SLOW HEAT-UP”	Faulty components or connections	Have elements, connections, and contactors checked
“W-4” “SLOW COOKING”	Too much product in frypot	Do not overfill frypot
“W-5” “SLOW COOKING”	Product loaded into frypot before lights	Wait until shortening is at proper temperature
“W-6” “SLOW COOKING”	Faulty components or connections	Have elements, connections, and contactors checked
“W-7” “LOW AMPS”	Faulty components or connections	Have elements, connections, and contactors checked
“W-9” “DISCARD PRODUCT”	Product overcooked. (may appear after a “SLOW COOKING” warning)	Discard product immediately
“OIL TOO HOT”	Didn’t allow shortening to drop to current product’s setpoint temperature	Cancel button stops this warning; once the shortening drops to setpoint temperature the alarm automatically stops

**3-5. WARNINGS AND
ERROR MESSAGES
(Continued)**

ERROR CODES

DISPLAY	CAUSE	CORRECTION
“E-4” “CPU TOO HOT”	PC board too hot	Check ventilation louvers on side of fryer; if louvers are clear, have PC board checked
“E-5” “FRYER TOO HOT”	Controls sensing 405°F or above	Have heat components and temperature probe checked
“E-6” (A or B) “FRYER TEMP SENSOR FAILED”	Faulty temperature probe or connection	Have temperature probe and connection checked
“E-10” “HIGH LIMIT TRIPPED”	Shortening temperature too hot, drain valve opened while heat was on, or faulty high limit	Reset high limit (see Operating Components Section); check shortening temperature for overheating; have heat components checked if high limit continues to trip.
“E-15” “DRAIN IS OPEN”	Drain is open or faulty microswitch	Close drain; have drain microswitch checked if error code persists
“E-25” “HEAT AMPS WERE TOO HIGH”	Wrong or faulty elements or wiring problem	Have electrical supply, wiring, and elements checked NOTICE Because of the seriousness of this error code, turn the POWER switch off and back on to cancel
“E-26” “HEAT AMPS ARE LOCKED ON”	Faulty contactors or PC board	Have the contactors and PC board checked NOTICE This error code could be displayed even with the POWER switch turned off. Unplug fryer or shut off the wall circuit breaker to disconnect electrical power to fryer.

**3-5. WARNINGS AND
ERROR MESSAGES
(Continued)**

ERROR CODES

DISPLAY	CAUSE	CORRECTION
“E-41” “SYSTEM DATA LOST”	Memory scrambled; an individual product program may be scrambled: Ex: “E-41 -2- DATA LOST”; this means product #2 program is scrambled	Turn the POWER switch off and back on; if error code persists, have the PC board checked or re-initialized
“E-46” “DATA SAVE FAILED”	Faulty eprom or PC board	Turn the POWER switch OFF and back on; if error code persists, have the PC board checked or re-initialized
“E-47” “ANALOG SYSTEM OR 12 VOLT FAILED”	Failure of 12 volt DC supply on the I/O board Amp sensors plugged in backwards Faulty PC board	Turn the COOK/PUMP switch OFF and back to COOK; if the WAIT and READY DO NOT light up when the 8888's are displayed, have the I/O board replaced Have positions of amp sensors checked Have control panel replaced
“E-48” INPUT SYSTEM ERROR”	Failure of 12 volt DC supply on the I/O board Faulty PC board	Turn the COOK/PUMP switch OFF and back to COOK; if the WAIT and READY DO NOT light up when the 8888's are displayed, have the I/O board replaced Have control panel replaced
“E-70” “PWR SW OR WIRES FAILED”	Faulty POWER switch or switch wiring; faulty I/O board	Have POWER switch checked, along with its wiring; have I/O board checked
“E-92” “24 VOLT FUSE”	Blown 24 volt controller fuse, or bad 14-pin cable connection	Have the 14-pin cable connector checked or have the fryer checked for a short to ground in components such as the drain switch, or high limit and wiring

3-6. FILLING OR ADDING SHORTENING

CAUTION

The shortening level must always be above the heating elements when the fryer is heating and at the frypot level indicators on the rear of the frypot. Failure to follow these instructions could result in a fire and/or damage to the fryer.

When using solid shortening, it is recommended to melt the shortening on an outside heating source before placing it in the frypots. The heating elements or burner tubes must be completely submerged in shortening. Fire or damage to the frypot could result.

1. It is recommended that a high quality frying shortening be used in the open fryer. Some low grade shortenings have a high moisture content and will cause foaming and boiling over.

WARNING **BURN RISK**

To avoid burns when pouring hot shortening into frypot, wear gloves and take care to avoid splashing.

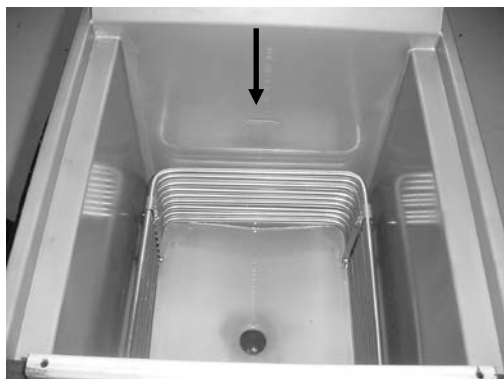




Figure 3-3

2. The open fryer requires 55 lbs. (25 kg.) of shortening per frypot. All frypots have one or two level indicator lines inscribed on the rear of the frypot wall which shows when the heated shortening is at the proper level. Figure 3-3.
3. Cold shortening should be filled to the lower indicator when the frypot has 2 indicator lines, and a ½ inch (12.7 mm) below a single indicator line.

3-7. BASIC OPERATIONS

The following procedures should be followed on the initial start-up of the fryer, and each time the fryer is brought back into operation from a cold or shut down condition. These are basic, general instructions.




1. Be sure the drain valve is in the closed position.
2. Place basket support inside of frypot.
3. Make sure the shortening is filled to the proper level in the frypot. See Filling or Adding Shortening Section.
4. Turn the POWER switch to ON. Upon initial start-up “**CLOCK SET**” shows in display. Set the clock to your time, following prompts on the display, or see Section 3-3 for help. Then display asks if the shortening is “**NEW**” or “**OLD**”. The controls automatically adjust the shortening temperature to the age of the shortening. Use   to set the number of days of old shortening.
5. Unit automatically goes into the Melt Cycle, until shortening temperature reaches 230°F (110°C). Then the controls go into the Heat Cycle and the shortening heats to a preset temperature.

NOTICE

Once melted shortening reaches the proper level in the frypot, the Melt Cycle can be bypassed by pressing and holding one of the product buttons.

CAUTION

Do not bypass the Melt Cycle unless enough shortening has melted to completely cover all of the heating elements. If the Melt Cycle is bypassed before all heating elements are covered, excessive smoking of shortening, or a fire will result.

6. Stir the shortening as it heats up from a cold start. Be sure to stir down into the bottom of the frypot.
7. Once out of the Melt Cycle,  flashes until 5° before setpoint temperature (plus any offset temperature).  then lights and the selected product shows on  display.


3-7. BASIC OPERATIONS **(Continued)**

NOTICE

The heat cycles on and off about 4 degrees before the setpoint temperature to help prevent overshooting the setpoint temperature (proportional control).

8. If the shortening was not filtered the night before at shutdown, filter the shortening now. Refer to Filtering Instructions Section.
9. Follow the steps in Chick-fil-A's training materials to load the product.

NOTICE



Before loading product, make certain  is lit, indicating that the shortening is at the correct cooking temperature for the type of product being cooked. The actual temperature may vary 20 degrees or more depending shortening age, product weights, product temperature, and other operational variables.




Do not overload, or place product with extreme moisture content into the basket. 15 lb (6.7kgs.) is the maximum amount of product. Failure to follow these instructions can result in shortening overflowing the frypot. Serious burns or damage to the unit could result.

10. Press the desired product button to start a Cook Cycle (left or right side). The display counts down the cooking time on the side the product button was pressed.

NOTICE

To check the shortening temperature press . To stop a Cook Cycle, press .

The cook times may vary, compensating for shortening age, product weights, product temperature, and other operational variables.

11. At the end of the Cook Cycle, an alarm sounds, and the display flashes "DONE". Press  to stop the alarm.

3-7. BASIC OPERATIONS **(Continued)**

12. Follow the steps in Chick-fil-A's training materials to unload the product and check for doneness.
13. Before frying next load, allow for the shortening to reheat and lights.

3-8. CARE OF THE **SHORTENING**



FOLLOW THE INSTRUCTIONS BELOW TO AVOID SHORTENING OVERFLOWING THE FRYPOT, WHICH COULD RESULT IN SERIOUS BURNS, PERSONAL INJURY, FIRE, AND/OR PROPERTY DAMAGE.

1. To protect the shortening when the fryer is not in immediate use, the fryer should be put into the Idle Mode.
2. Frying breaded products requires filtering to keep the shortening clean. Shortening should be skimmed frequently throughout the day and filtered thoroughly once a day. Refer Filtering Instructions Section.
3. Discard shortening if display shows **“CHANGE OIL SOON”** or if shortening shows signs of excessive foaming or smoking.
4. Maintain the shortening at the proper cooking level. Add fresh shortening as needed.
5. Do not overload the baskets with product, or place product with extreme moisture content into baskets. 15 lb (6.7kgs.) is the maximum amount of product per frypot.



WITH PROLONGED USE, THE FLASHPOINT OF SHORTENING IS REDUCED. DISCARD SHORTENING IF IT SHOWS SIGNS OF EXCESSIVE SMOKING OR FOAMING. SERIOUS BURNS, PERSONAL INJURY, FIRE, AND/OR PROPERTY DAMAGE COULD RESULT.

3-9. FILTERING **INSTRUCTIONS**

The shortening should be filtered once a day to extend the life of the shortening.

Follow the steps in Chick-fil-A's training materials when filtering the shortening of Henny Penny's open fryer.

1. Turn the POWER switch to OFF and remove basket.

NOTICE

For best results, filter the shortening at normal frying temperature.

2. Using a metal spatula, remove any buildup from the sides of the frypot. Do not scrape heating elements.

CAUTION

Scraping the heating elements produces scratches in the elements causing breading to stick and burn.



The filter drain pan must be as far back under fryer as it will go, and the cover in place. Be sure the hole in the cover lines up with the drain before opening the drain. Failure to follow these instructions causes splashing of shortening and could result in personal injury.

Surfaces of fryer and racks will be hot. Use care when filtering to avoid getting burned.

3. Turn the drain handle (left drain handle for OFE-321s) counterclockwise half a turn first, then slowly to the full open position (handle pointed down). This helps prevent splashing of hot shortening.
4. As the shortening drains from the frypot, use brushes (Henny Penny part no. 12105-includes both brushes) to scrape and clean the frypot and heating elements. Use L-shaped brush to clean crumbs from the elements and from sides and bottom of frypot as shortening drains. Use poker brush to push crumbs through drain opening in bottom of frypot, if necessary.
5. When all shortening has drained, scrape or brush the sides and of the frypot.

3-9. FILTERING INSTRUCTIONS (Continued)

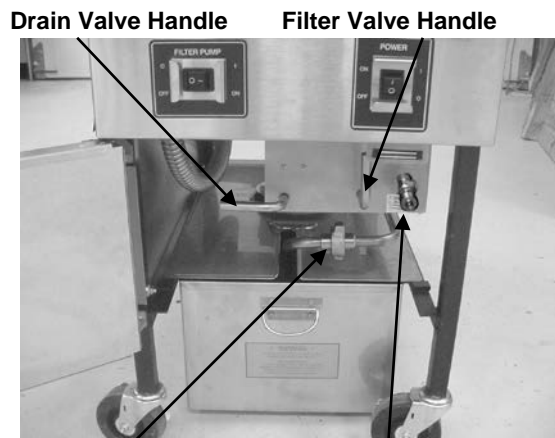


Figure 3-4



Figure 3-5



Figure 3-6

6. Rinse the frypot as follows:

a. **OFE-321**

Attach the filter rinse hose to the quick-disconnect fitting, inside the door, next to the filter valve handle. Slide the collar back on the quick-disconnect fitting on the hose, push it onto the unit's fitting and let it snap into place. Figure 3-4.

OFE-322

Using protective gloves or cloth, hold onto the faucet while sliding the collar up on the quick-disconnect fitting and remove faucet. Slide the collar up on the quick-disconnect and snap the male quick-disconnect on the hose, in place of the faucet. Figure 3-5.

b. Hold onto wooden handle, and make sure the hose nozzle is pointed down into the bottom of the frypot. Figure 3-6. Move the FILTER PUMP switch to the ON position. Hold nozzle carefully to avoid splashing.

NOTICE

On OFE-321s, make sure the right filter valve handle is closed (pointed up).

WARNING
BURN RISK

Use care to prevent burns caused by splashing of hot shortening.

- c. Rinse the frypot interior, especially areas like the frypot bottom and heating elements.
- d. After sufficient rinsing, turn the drain valve handle (left drain handle for OFE-321s) clockwise to close (handle pointed horizontally).
- e. Turn the FILTER PUMP switch to OFF.

DANGER
BURN RISK

ONLY CONNECT AND DISCONNECT THE FILTER RINSE HOSE WHEN THE MAIN POWER SWITCH IS IN THE OFF POSITION. ALSO, USE A DRY CLOTH OR GLOVE TO AVOID BURNS. FAILURE TO DO THIS COULD RESULT IN SEVERE BURNS FROM HOT SHORTENING SPRAYING FROM THE MALE FITTING

3-9. FILTERING
INSTRUCTIONS
(Continued)

- f. Detach the hose, and then raise fitting end of the hose high for a minute to allow any shortening remaining in the hose to drain into the frypot.

7. OFE-321

Turn the right filter valve handle counterclockwise to open the filter valve (handle pointed horizontally). Turn FILTER PUMP switch to ON and pump all shortening out of the filter drain pan and back into frypot.



IF THERE ARE AIR BUBBLES COMING UP IN THE SHORTENING BEFORE ALL SHORTENING IS PUMPED UP, IT'S POSSIBLE THAT THE FILTER CONNECTION AT THE UNION ON THE FILTER TUBE IS NOT TIGHTENED PROPERLY. IF SO, TURN OFF THE PUMP AND WEAR PROTECTIVE GLOVES OR CLOTH WHEN TIGHTENING THE UNION. THIS UNION WILL BE HOT. SEVERE BURNS COULD RESULT.

OFE-322

Re-attach the faucet and move faucet to empty frypot. Turn FILTER PUMP switch to ON and pump all shortening out of the filter drain pan and back into frypot.

8. OFE-321

When the pump begins creating air bubbles in the shortening, all of the shortening should be out of drain pan. First, turn the right filter valve handle clockwise to close the filter valve (handle pointed up). Then turn the FILTER PUMP switch to OFF. This keeps the filter pump and lines from filling with shortening.




When air bubbles appear in shortening, immediately close the filter valve and stop pump. This prevents aeration of the shortening and increases shortening life.

3-9. FILTERING **INSTRUCTIONS** **(Continued)**

OFE-322

When the pump is pumping air only, move the FILTER PUMP switch to OFF.

9. Check the level of the shortening in the frypot. Add fresh shortening if necessary, until it reaches the level indicator line on the rear wall of the frypot.
10. If frying is to be continued, turn the POWER switch to ON and allow shortening to heat until  lights.

3-10. FILTER PUMP PROBLEM **PREVENTION**

To help prevent filter pump problems:

1. Properly install paper envelope over the filter screens. Fold the open end of the envelope, and clamp with retaining clips so that crumbs cannot enter. See Changing the Filter Envelope Section.
2. Pump shortening, until no shortening is coming from the nozzle.

3-11. FILTER PUMP MOTOR **PROTECTOR – MANUAL** **RESET**



Figure 3-7

In the event it overheats, the filter pump motor is equipped with a manual reset button located on the rear of the motor. After waiting 5 minutes to allow the motor to cool, press the reset button. It takes some effort to reset the motor. A screwdriver can be used to help press reset button. Figure 3-7.

Servicing of the filter pump is done at the rear of the unit. If service is required, disconnect the open fryer from the electrical and/or gas power source, and pull the open fryer out from the wall to gain access to rear.



To prevent burns caused by splashing shortening, turn the unit's main power switch to the OFF position before resetting the filter pump motor's manual reset protection device.

**3-12. CHANGING THE
FILTER ENVELOPE**

Change the filter envelope daily, or whenever it becomes clogged with crumbs. Proceed as follows:

1. Move the FILTER PUMP switch to OFF.
2. Disconnect the filter union and remove the filter drain pan from beneath the frypot.



The filter union could be hot. Wear protective glove or cloth, or severe burns could result.

Use care to prevent burns caused by splashing of hot shortening.

3. Lift screen assembly from the drain pan.
4. Wipe the shortening and crumbs from the drain pan. Clean the drain pan with soap and water. Completely rinse with hot water.
5. Unscrew the suction standpipe from the screen assembly.
6. Remove the crumb screen and clean completely with hot water.
7. Remove the filter clips and discard the filter envelope.
8. Clean the top and bottom filter screen with soap and water. Rinse thoroughly with hot water.



Be sure that the filter screens, crumb catcher, filter clips, and the standpipe are thoroughly dry before assembly of filter envelope as water will dissolve the filter paper.

**3-12. CHANGING THE
FILTER ENVELOPE**
(Continued)

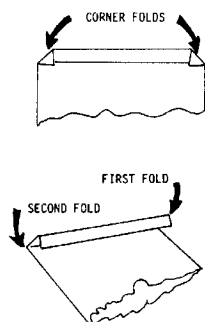


Figure 3-8

9. Assemble the top filter screen to the bottom filter screen.
10. Slide the screens into a clean filter envelope.
11. Fold the corners in and then double fold the open end. Figure 3-8.
12. Clamp the envelope in place with the two filter retaining clips.
13. Replace the crumb screen on top of the filter paper. Screw on the suction standpipe assembly.
14. Place complete filter screen assembly and crumb basket back into filter drain pan and slide pan back into place beneath the fryer.
15. Connect the filter union by hand. Do not use a wrench to tighten.
16. The fryer is now ready to operate.

**3-13. CLEANING THE
FRYPOT**

After the initial installation of the fryer, as well as before every change of shortening, the frypot should be thoroughly cleaned as follows:

1. Turn the POWER switch to OFF.



The filter drain pan must be as far back under fryer as it will go, with the cover in place. Be sure the hole in the cover lines up with the drain before opening the drain. Failure to follow these instructions causes splashing of shortening and could result in personal injury.

2. If hot shortening is present in the frypot, turn the drain handle (left drain handle for OFE-321s) counter-clockwise half a turn first, then slowly to the full open position (handle pointed down).

**3-13. CLEANING THE
FRYPOT (Continued)**

3. Turn the drain valve handle (left drain handle for OFE-321s) clockwise to close the drain valve (handle pointed horizontally) and discard the shortening. Then install filter drain pan under the fryer, leaving out the filter screens.



The filter drain pan must be as far back under fryer as it will go, and the cover in place. Be sure the hole in the cover lines up with the drain before opening the drain. Failure to follow these instructions causes splashing of shortening and could result in personal injury.

Moving the fryer or filter drain pan while containing hot shortening is not recommended. Hot shortening can splash out and severe burns could result.



**CHEMICAL
SPLASH
GOGGLES**



**CHEMICAL
RESISTANT
GLOVES**

Always wear chemical splash goggles or face shield and protective rubber gloves when cleaning the frypot as the cleaning solution is high in alkaline. Avoid splashing or other contact of the solution with your eyes or skins. Severe burns may result. Carefully read the instructions on the cleaner. If the solution comes in contact with your eyes rinse thoroughly with cool water and see a physician immediately.



4. Follow the directions in Chick-fil-A's training materials and fill the frypot to the level indicator line with cleaning solution.






Do not use steel wool, green scrub pads, or other abrasive cleaners or cleaners/ sanitizers containing chlorine, bromine, iodine or ammonia chemicals, as these will deteriorate the stainless steel material and shorten the life of the unit.

Do not use a water jet (pressure sprayer) to clean the unit, or component failure could result.

3-13. CLEANING THE FRYPOT (Continued)

5. Turn the POWER switch to ON. Press  then  . “CLEAN-OUT ?” then “1=YES 3=NO”

shows in display. Press  to start Clean-Out Mode. The fryer displays “*CLEAN-OUT MODE*” and heats up to a preprogrammed temperature, then automatically begins a 15-minute timed countdown. Use   , if necessary, to adjust the temperature and keep the cleaning solution from boiling over.

CAUTION

If the cleaning solution in the frypot starts to foam and boil over, immediately turn the POWER switch to OFF, or damage to components could result.

6. Using the fryer brush (Henny Penny part number 12105), scrub the inside of the frypot, and around the counter-top of the fryer. Never use steel wool or green scrub pad to scrub the fryer. Place basket in frypot with cleaning solution and scrub basket.
7. After cleaning, turn the POWER switch to OFF. Turn the drain handle (left drain handle for OFE-321s) counter clockwise half a turn first, then slowly to the full open position (handle pointed down). Drain the cleaning solution from the frypot and discard. Take basket to sink to be cleaned.

3-13. CLEANING THE
FRYPOT (Continued)

8. Turn the drain valve handle (left drain handle for OFE-321s) clockwise to close the drain valve (handle pointed horizontally) and refill the frypot with 2-3 gallons of cold water. Follow Chick-fil-A's training materials for rinsing and cleaning frypot, then refill with new shortening.

NOTICE

If using Henny Penny fryer cleaner, continue to the next steps.

9. Add approximately 8 ounces of distilled vinegar and re-start the Clean-Out Mode as described in step 5.
10. Using a clean brush, scrub the interior of the frypot to neutralize the alkaline left by the cleaning compound.
11. Turn the drain handle (left drain handle for OFE-321s) counterclockwise a half a turn first, then slowly to the full open position (handle pointed down). Drain the vinegar rinse water and discard.
12. Rinse down the frypot, using clean hot water, and then completely dry the drain pan and frypot interior.

NOTICE











Make sure the inside of the frypot, the drain valve opening, and all parts that come in contact with the new shortening are as dry as possible.

13. Replace the clean filter assembly in the drain pan, place pan under fryer and refill fryer with fresh shortening.

NOTICE

After completing a Clean-Out Mode, the controls assume fresh shortening is now in the frypot and adjust the temperature accordingly. If the Clean-Out Mode was aborted before starting the 15 minute cycle or if fresh shortening is not in the frypot, set the controls to "NEW" or "USED" shortening per Manually Setting New or Used Shortening Function Section

3-14. MANUALLY SETTING NEW OR USED SHORTENING FUNCTION


1. Turn the POWER switch to OFF.
2. Press and hold  while turning the POWER switch to ON, until **“IS OIL NEW OR USED?”** shows in the display.
3. Press  for new shortening, or  for used shortening.
4. If  was pressed, **“OIL IS NEW?”** shows in the display.
Press  for YES, and **“THANK YOU”** shows in the display, and controls resume normal operation.
5. If  was pressed, **“OIL IS USED?”** shows in the display.
6. Press  for YES, and **“HOW OLD IS OIL?”** shows in display.
7. Press   to set the age of the shortening.
8. Press . **“THANK YOU”** shows in the display and controls resume normal operation.



3-15. PREVENTIVE MAINTENANCE SCHEDULE

As in all food service equipment, the Henny Penny Open Fryer does require care and proper maintenance. The table below provides a summary of scheduled maintenance of the fryer.

Procedure	Frequency
Filtering shortening	Once a day
Changing shortening	When shortening is smoking or foaming excessively
Changing filter envelope	Daily
Cleaning frypot	Upon installation and change of shortening
Checking rinse hose for deterioration	Weekly

3-16. CHECKING TEMPERATURE PROBE CALIBRATION

1. Heat shortening and stir completely until shortening temperature has stabilized and  is on.
2. Place an electronic thermometer about 3 inches below the shortening's surface, in the center of the frypot. Let the temperature stabilize and remember the reading.

3. Press   to see the probe's temperature reading.
INFO

If the displayed temperature is less than 5 degrees from the electronic thermometer's temperature, see D 1, Color Adjustment in the Diagnostic Mode Details Section. If temperature differs from 5 to 15 degrees, or still can't get the correct color, have the probe calibrated. If temperature differs by more than 15 degrees, have probe replaced.

SECTION 4. TROUBLESHOOTING

4-1. INTRODUCTION

This section provides troubleshooting information in the form of an easy to read table.

If a problem occurs during the first operation of a new fryer, recheck the installation and operation sections of this manual.

4-2. TROUBLESHOOTING

To isolate a malfunction, proceed as follows:

1. Clearly define the problem (or symptom) and when it occurs.
2. Locate the problem in the Troubleshooting table.
3. Review all possible causes. Then, one-at-a-time work through the list of corrections until the problem is solved.
4. Use the Diagnostic Mode to identify the problem and make possible adjustments.

NOTICE

If a problem keeps reoccurring, have a qualified service technician check the fryer for other causes.

COOKING SECTION

PROBLEM	CAUSE	CORRECTION
Product color not correct: A. Too Dark (some batches)	<ul style="list-style-type: none"> • Temperature program too hot • Breeding product too far ahead • Done alarm ignored for more than 20 seconds • Wrong product button pressed 	<ul style="list-style-type: none"> • See Diagnostic Mode D 10; if temperature settings have been changed, have the controls reinitialized • Bread product just before frying • If the fryer hasn't been used since the problem batch, see Information Modes 4 H and 5 H; for more information on this problem, see Information Modes 6 U, 7 U, 8 R, 9 R, or 10 R • Be sure to press the correct product button; if the fryer hasn't been used since the problem batch, see Information Modes 4 B and 5 B, to see what product was selected
B. Too Dark (all batches)	<ul style="list-style-type: none"> • Temperature probe out of calibration • Shortening too old • Shortening too dark • Faulty probe; "E6" 	<ul style="list-style-type: none"> • See Diagnostic Mode D 1 to adjust color of product • Check temperature probe calibration ; see Checking Temperature Probe Calibration Section; if less than 15 degrees off, have probe calibrated; if more than 15 degrees off, replace probe • If shortening is smoking or has burnt taste, change shortening • See Diagnostic Mode D 2; change shortening if controls indicate it should be changed • Filter shortening • Change shortening • If probe can't be recalibrated, have probe replaced

COOKING SECTION (Continued)

PROBLEM	CAUSE	CORRECTION
C. Too Light (all batches)	<ul style="list-style-type: none"> • Temperature probe out of calibration • Slow fryer heat-up/recovery • Oil usage wasn't set for new shortening 	<ul style="list-style-type: none"> • See Diagnostic Mode D 1 to adjust color of product • Check temperature probe calibration; see section 3-16; if less than 15 degrees off, have probe calibrated; if more than 15 degrees off, replace probe • See Diagnostic Mode D 4, for present day's performance; or see Information Modes 5, 6, 7, 8, 9, and 10 for more information on this problem • Low voltage; see Diagnostic for present day's voltage performance; for more information see Information Modes 4, 5, 6, 7, 8, 9, 10 and 16 • See Diagnostic Mode D 2 for the age of the oil; see Basic Operations Section for setting the age of the oil
D. Too Light (some batches)	<ul style="list-style-type: none"> • Temperature programmed too low • Product placed in shortening before proper temperature • Wrong cook button pushed • Cook Cycle aborted before alarm and "DONE" flashes • Too large of a product batch 	<ul style="list-style-type: none"> • See Diagnostic Mode D 10 if temperature settings have been changed without authorization, have the controls reinitialized • If fryer hasn't been used since the problem batch, see Information Mode 4 C and 5 C; for more information see Information Modes 6 S, 7 S, 8 P, 9 P, and 10 P • If fryer hasn't been used since problem batch, see Information Modes 4 B and 5 B to see what product was selected • See Diagnostic Mode D 7 to see how many times the Cook Cycle was stopped before the end of the cycle • No more than 15 lb of product per batch; see Diagnostic Mode D 5 to see if the controls sensed any overloaded batches

COOKING SECTION (Continued)

PROBLEM	CAUSE	CORRECTION
Dryness of product	<ul style="list-style-type: none"> • Moisture loss prior to cooking • Over-cooking the product • Time of cook cycle set too long • Wrong product button pushed 	<ul style="list-style-type: none"> • Use fresh product • Cover product with plastic wrap, reducing evaporation • Done alarm ignored for more than 20 seconds if the fryer hasn't been used since the problem batch, see Information Modes 4 H and 5 H for more information on this problem, see Information Modes 6 U, 7 U, 8 R, 9 R, or 10 R • See Diagnostic Mode D 10; if time settings have been changed, have the controls reinitialized • If fryer hasn't been used since problem batch, see Information modes 4 B and 5 B, to see what product was selected
Burned taste	<ul style="list-style-type: none"> • Burned shortening flavor • Shortening needs filtering • Frypot not properly cleaned 	<ul style="list-style-type: none"> • Replace shortening • Filter shortening more often • Drain and clean frypot
Product not done	<ul style="list-style-type: none"> • Cook Cycle aborted before alarm, and "DONE" flashes • Too large of a product batch • Wrong cook button pushed • Temperature programmed too low or not programmed properly 	<ul style="list-style-type: none"> • See Diagnostic Mode D 7 to see how many time the Cook Cycle was stopped before the end of the cycle • No more than 15 lb of product per batch; see Diagnostic Mode D 5 and if the controls sensed any overload batches • If fryer hasn't been used since problem batch, see Information Modes 4 B and 5 B to see what product was selected • See Diagnostic Mode D 10; if temperature settings have been changed, have the controls reinitialized

COOKING SECTION (Continued)

PROBLEM	CAUSE	CORRECTION
Product not done (continued)	<ul style="list-style-type: none"> • Temperature probe out of calibration • Slow fryer heat-up/recovery 	<ul style="list-style-type: none"> • Check temperature probe calibration; see Checking temperature Probe Calibration Section; <ul style="list-style-type: none"> a. If less than 5° off, see Diagnostic Mode D 1 b. If between 5 and 15 degrees off, calibrate the probe; if more than 15 degrees off, replace probe • See Diagnostic Mode D 4 for present day's performance; see Information Modes 6, 7, 8, 9, and 10 for more information on this problem • Low voltage; see Diagnostic Mode D 3 for present day's voltage performance; see Information Modes 4, 5, 6, 7, 8, 9, 10 and 16 for more information on this problem

POWER SECTION

PROBLEM	CAUSE	CORRECTION
With POWER switch in ON position, fryer is completely without power	<ul style="list-style-type: none"> • Open circuit 	<ul style="list-style-type: none"> • Check to see if fryer is plugged in • Check wall circuit breaker or fuse • Have a qualified service technician check power supply and POWER switch

FILTER SYSTEM SECTION

PROBLEM	CAUSE	CORRECTION
Filter motor runs but pumps shortening slowly	<ul style="list-style-type: none"> • Pump clogged • Filter line connection loose • Solidified shortening in lines 	<ul style="list-style-type: none"> • Have pump cleaned • Tighten all filter line connections • Clear all filter lines of solidified shortening
FILTER PUMP switch on, motor does not run	<ul style="list-style-type: none"> • Defective FILTER PUMP switch 	<ul style="list-style-type: none"> • Have switch checked

FILTER SYSTEM SECTION (Continued)

PROBLEM	CAUSE	CORRECTION
FILTER PUMP switch on, motor does not run (continued)	<ul style="list-style-type: none"> • Defective motor • Motor thermal protector tripped 	<ul style="list-style-type: none"> • Have motor checked • Reset thermal protector per Filter Pump Motor Filter Protector Section
Motor hums but will not pump	<ul style="list-style-type: none"> • Clogged lines or pump removed 	<ul style="list-style-type: none"> • Have pump and lines cleaned • Have pump seal, rotor and rollers replaced

HEATING OF SHORTENING SECTION

PROBLEM	CAUSE	CORRECTION
Shortening will not heat	<ul style="list-style-type: none"> • Blown fuse or tripped circuit breaker at supply box • Faulty cord and plug • Faulty PC board • Faulty or tripped high limit; “E10” • Drain valve open; “E15” • Possible faulty probe; “E6” • Possible faulty contactor • Faulty POWER switch • Faulty drain switch; “E15” 	<ul style="list-style-type: none"> • Reset breaker or replace fuse • Check cord and plug and check power at wall receptacle • Have control panel checked • Reset high limit per Operating Components Section; if high limit doesn’t reset, have it checked • Close drain valve • Have temperature probe checked • See Diagnostic Modes D 4; if “CHECK COILS, CONTACTORS AND WIRING” shows on display; have contactors and wiring checked • See Information Mode 11 and check to see if the input code is present; if not, have fryer checked by a certified service technician
Shortening heating slowly	<ul style="list-style-type: none"> • Low or improper amps 	<ul style="list-style-type: none"> • See Information Mode 17 for present amperage; or see Information Modes 4, 5, 6, 7, 8, 9, and 10 for more information on this problem. Diagnostic Mode D 4 gives present day’s heating performance

HEATING OF SHORTENING SECTION (Continued)

PROBLEM	CAUSE	CORRECTION
Shortening heating slowly (continued)	<ul style="list-style-type: none"> • Low or improper voltage • Wire(s) loose • Weak or burnt out elements (elec. Model) Burnt or charred connectors • Faulty contactor 	<ul style="list-style-type: none"> • See Diagnostic Modes D 3 & D 4 for present day's voltage and heating performance; or see Information Modes 4, 5, 6, 7, 8, 9, 10 and 15 for more information on this problem • Have wires tightened • See Diagnostic Modes D 4; see if "CHECK COILS, CONTACTORS AND WIRING" shows on display; if so, have fryer checked by a certified service technician



4-3. DIAGNOSTIC MODE DETAILS

The Chick-fil-A fryer controllers provide Diagnostic functions that let an Operator review operating and performance data for the fryer.

The information provided by Diagnostic Mode can be used to monitor procedural errors, such as, not waiting for the READY light before starting a Cook Cycle, canceling cycles early, etc.





In addition, Diagnostic Mode allows slight adjustment to product color, reports the age and accumulated wear of the oil, and reports information about the performance of the line voltage supply.

Accessing Diagnostic Mode

To activate Diagnostic Mode, press the  **PROG**, then press . The controller displays the following message:

"*DIAGNOSTIC*"
"*REPORT*"



When this introduction message is finished, the controller displays Diagnostic step D 1 (see below).

  are used to step through the report items. Press  to step forward to the next item. Press  to step

backward through the report items.

The report information is grouped into sections, D 1 through D 10. Most sections have several related items.

To toggle between English and Spanish Display Mode, press





 **PROG** then press .

To exit Diagnostic Report Mode at any point, press  **CANCEL**.

4-3. DIAGNOSTIC MODE **DETAILS (Continued)**


D 1: Color Adjustment


This step lets the user make slight adjustments to the product color. The first step of this item asks **“IS PRODUCT COLOR OK?”**


If product color is okay and no change is desired press  or  to move on to the next item, or press  to exit Diagnostic Mode. If a change is desired, press  (i.e.


color is *not* okay). The controller shows **“ADJUST DARKNESS”**, then displays the darkness control slider:

“LT - - - - - + - - - - - DK”


A blinking asterisk (*) indicates the current position. 

and  are used to adjust the darkness setting.

To make the product darker, press  to move the blinking “*” toward the DK (darker) side.

To make the product lighter, press  to move the blinking “*” toward the LT (lighter) side.

When done adjusting, press  to exit and return to normal operating mode.

Any temperature adjustment activated by the Color Adjustment feature will be reflected in the normal setpoint display as part of the offset from the basic product cook temperature. To view the present regulating temperature, press  twice.

In the example, **“SETPT = 315°F + 6”** the product cook temperature is 315°F and has an additional offset of 6°F to compensate for the age of the oil, how long the fryer sits idle, and any color adjustments.

4-3. DIAGNOSTIC MODE
DETAILS (Continued)

D 2: Oil Wear Report

This section displays information about the age of the present batch of shortening.

The first step shows how many days of use this oil has:

“D2: THIS OIL IS”

“D2: 4 DAYS OLD”

NOTICE

The controller only counts days in which the fryer is in use.




Press DOWN to move on to the second step. This step shows the age of the shortening by percentage of its expected lifetime. The shortening's present, accumulated wear is compared to the wear setting at which the controller will prompt for the shortening to be changed.

“D2: THIS OIL IS”

“D2: 16% USED”

This information can be used as the oil nears the end of its life (i.e. 95%), to plan ahead for when a clean-out will be required.

Press  to move on to the next section.

DOWN

4-3. DIAGNOSTIC MODE **DETAILS (Continued)**

D 3: Line Voltage Performance Report

This section displays information about how good the line voltage supply has been for the present day and for the present batch of oil.

The controller continually monitors the line voltage supplied to the fryer (when the fryer is on). If the line voltage drops below [90%] of its nominal value, the controller signals a “**LOW VOLTAGE**” alarm. This alarm sounds at the end of each cook cycle for which low voltage has been detected. While not cooking, the low voltage alarm can sound as frequently as every 30 minutes.

NOTICE


“[]” around a value, such as [90%], means this value is programmable and might change with later software versions.

Voltage Report for Today


If no low voltage warnings have been detected for the present day, the controller shows, “**D3: VOLTAGE OK, D3: TODAY**”

If one or more low voltage warnings have been detected for the present day, the following sequence example could be displayed:

“**D3: YOU HAD 3**”
“**D3: LOW VOLTAGE**”
“**D3: WARNINGS**”
“**D3: TODAY**”

(Press )
DOWN

“**D3: MIN VOLTAGE**”
“**D3: TODAY = 83%**”

(Press )
DOWN

“**D3: MAX VOLTAGE**”
“**D3: TODAY = 101%**”

(Press )
DOWN


4-3. DIAGNOSTIC MODE **DETAILS (Continued)**

If one or more low voltage warnings have been detected before today, the following sequence is displayed:


“D3: BEFORE TODAY”
“D3: 27 LOW VOLT”
“D3: WARNINGS”
“D3: ON THIS OIL”

(Press )
DOWN

“D3: MIN VOLTAGE”
“D3: BEFORE TODAY”
“D3: = 85%”

(Press )
DOWN

“D3: MAX VOLTAGE”
“D3: BEFORE TODAY”
“D3: = 105%”

Press  to advance to the next section.
DOWN

D 4: Heating Capacity Report

This section reports the present status of the heating system.

The controller examines a history of heat-up data and determines whether or not the heating system is operating normally. The “heat capacity” is said to be bad only if the most recent heat-up failed to meet the expected heat-up rate and three of the last four heat-ups also failed to achieve the expected rate. That is, a single slow heat-up will not trigger a “slow heat” warning. The slow heat warning is activated only after repeated low-rate heat-ups is observed.

The controller can’t assess the integrity of the heating system if the fryer has been experiencing voltage problems. Low heat rates observed in this situation might be due to voltage problems rather than heater problems.

4-3. DIAGNOSTIC MODE
DETAILS (Continued)

If the fryer has witnessed two or more low voltage warnings today, the following report is displayed:

“D4: CAN’T TEST”
“D4: HEAT CAPACITY”
“D4: DUE TO”
“D4: VOLTAGE”
“D4: PROBLEMS”

Otherwise, if the assessed heat capacity rating is presently “good” and at most only one heat-up today that failed to achieve the expected rate, the following report is displayed:

“D4: HEATING”
“D4: CAPACITY”
“D4: IS FINE”

Otherwise, if the heat capacity is presently assessed as “bad”, or presently assessed as “good” but two or more heat-ups today have not reached the expected heat-up rate, the following report sequence is generated:

“D4: YOU HAD 75%”
“D4: SLOW HEATS”
“D4: TODAY”

(Press )

“D4: HAVE 20%”
“D4: SLOW HEATS”
“D4: THIS OIL”

(Press )

“D4: HAD 0%”
“D4: SLOW HEATS”
“D4: LAST OIL”

(Press )

If the heat capacity is assessed as bad (low heat-up rate on last heat-up, and on three of the last four heat-ups), then the heating coils are suspect and the following is displayed:

“D4: CHECK COILS,”
“D4: CONTACTORS,”
“D4: AND WIRING”

4-3. DIAGNOSTIC MODE **DETAILS (Continued)**

Otherwise, the heating coils are presumed to be good and the following messages appear:

“D4: HEATER COILS”

“D4: APPEAR OK”

(Press )

“D4: CHECK”

“D4: CONTACTORS,”

“D4: CONNECTIONS,”

“D4: AND WIRING”

D 5: Cook Times (Slow Cooks) Report

This summarizes the “slow cooking” status for each product.

Actual cook times for Cook Cycles can vary from the programmed cook time setting, due to the load compensation feature. Load compensation slows the cook timer down when the actual shortening temperature is below a reference value, and speeds up the cook timer countdown when shortening temperature is above the reference.

When the shortening temperature is lower than expected during a Cook Cycle, the overall cook time will be longer than normal. If the actual cook time stretches beyond a programmed limit, the controller counts a **“SLOW COOK”** event and sounds an alarm at the end of the Cook Cycle.

If low voltage or low amps are detected during the Cook Cycle, the warning message indicates **“LOW VOLTAGE”** or **“LOW AMPS”**, but the cycle will still count as a “slow cook”. If the voltage and amps have been fine during the cook cycle but the cycle was started before the Ready light came on, then the warning message indicates **“SLOW COOK — WAIT FOR READY LIGHT”**. Otherwise, the slow cooking problem will be attributed to a “bad batch” of product: cooking too much in one load, or cooking product that is too cold.

If none of the products has more than 5% slow Cook Cycles today, the following report is made:

“D5: COOK TIMES”

“D5: LOOK OK”

“D5: TODAY”

4-3. DIAGNOSTIC MODE
DETAILS (Continued)

Otherwise, if one or more cook products have generated a “slow cook” warning more than 5% of the time, but four or more low voltage or slow heat-up warnings (any combination) have been generated today, then the report is as follows:

“D5: SOME SLOW”
“D5: COOKS TODAY”
“D5: MAYBE DUE TO”
“D5: VOLTAGE OR”
“D5: COIL PROBLEMS”

Such a report is saying the slow cooking may be the result of low voltage (which significantly reduces heat capacity) or the result of other problems with the heating system. In this case, the slow cook problems might not have anything to do with user error.

Otherwise, the slow cooking is generally attributed to user error: cooking too much product in one load, cooking frozen product (in the pressure fryer) when it should be fresh, or cooking before the Ready light illuminates, etc.

An individual “XXXXXX IS COOKING SLOWLY TODAY” report item is generated for each product that has had more than 5% slow cook warnings today. This report item is triggered based solely on the number of slow cooks for that product, whether those slow cooks are due to voltage or heating problems, or due to cooking before ready, cooking too much, or cooking frozen product.

“D5: “FILET” (<— Product Name)
“D5: COOKING SLOW”
“D5: TODAY”

(Press )
DOWN

If any of the slow cooks for this product are suspected as being due user error, a second, “bad batch” report is generated for the product.

“D5: “NUG-STRP” (<— Product Name)
“D5: COOKING SLOW”
“D5: TODAY”

(Press )
DOWN

4-3. DIAGNOSTIC MODE **DETAILS (Continued)**

“D5: POSSIBLE”

“D5: OVERSIZED”

“D5: OR FROZEN”

“D5: BATCH OF”

“D5: “NUG-STRP”

(<— Product Name)

“D5: DETECTED”

“D5: 3 TIMES”

“D5: TODAY”

(Press )

“D5: POSSIBLE”

“D5: OVERSIZED”

“D5: BATCH OF”

“D5: “FRIES”

“D5: DETECTED”

“D5: 5 TIMES”

“D5: TODAY”

D 6: “Cooked Before Ready” Report

This section shows how many Cook Cycles were started before the READY light was on. This is strictly a user error.

If the fryer was in the ready range when the user begins to load product, but is out of the ready range by the time the cook cycle is started, the control will not give you an alarm.

If the fryer wasn't ready before loading, an alarm sounds and “WAS NOT READY” warning is generated. The number of times this has happened today is indicated by the following report item:

“D6: COOKED”

“D6: BEFORE READY”

“D6: 11 TIMES”

“D6: TODAY”

(Press )

The number of “WAS NOT READY” warnings for this batch of shortening is also reported. Note that this value does not yet include the not ready warnings generated today.

4-3. DIAGNOSTIC MODE **DETAILS (Continued)**

“D6: BEFORE TODAY,”

“D6: COOKED”

“D6: BEFORE READY”

“D6: 8 TIMES”

“D6: ON THIS OIL”

(Press )
DOWN

Finally, the controller identifies how many times the not ready warning was generated for the previous batch of shortening:

“D6: LAST OIL,”

“D6: COOKED”

“D6: BEFORE READY”

“D6: 24 TIMES”

D 7: “Stopped Too Soon” Report

This section shows how many Cook Cycles were stopped early by the user, before the cook timer had counted down to “0:00” and the “*DONE*” was displayed. This is a user error.

Cycles that are canceled after cooking for less than 30 seconds are not counted here. For example, if a cycle is accidentally started, and the Cook Cycle is canceled after just a few seconds, this cycle will not be counted as a “Stopped Too Soon” Cycle.

Also, some allowance is given for stopping a cycle a little early. The user can cancel the cycle up to 10 seconds early without penalty.

Otherwise, however, any cycle that was stopped with more than 10 seconds remaining (0:10) on the cook clock will be counted as a “STOPPED TOO SOON” Cycle.

The first item displays what percent of cycles today were stopped with more than 0:10 remaining. All products are grouped into one count.

“D7: 8% OF LOADS”

“D7: WERE STOPPED”

“D7: TOO SOON”

“D7: TODAY”

(Press )
DOWN

4-3. DIAGNOSTIC MODE **DETAILS (Continued)**

The number of Stopped Too Soon Cycles for this batch of shortening is reported next. Note that this value does not yet include the Cook Cycles from today.

“D7: BEFORE TODAY “

“D7: 3% OF LOADS”

“D7: WERE STOPPED”

“D7: TOO SOON”

“D7: ON THIS OIL”

(Press )

Finally, the controller identifies percentage of Stopped Too Soon Cycles for the previous batch of shortening:

“D7: LAST OIL”


“D7: 5% OF LOADS”


“D7: WERE STOPPED”

“D7: TOO SOON”

D 8: “Beeped *DONE* Too Long” Report

Diagnostic Report section 8 reveals how many Cook Cycles beeped “*DONE*” for more than 20 seconds before the user pressed the Timer button to stop the cycle. This is strictly a user error.

The controller cannot detect when the product is actually removed from the fryer. It only identifies how long the controller beeped “***DONE***” before the user pressed  to stop the alarm.

The first item displays the percent of today’s Cook Cycles that beeped “***DONE***” for more than 20 seconds before the user pressed  to stop it. All products are grouped into one count.

“D8: 10% OF LOADS”

“D8: BEEPED ‘DONE’”

“D8: TOO LONG”

“D8: TODAY”

(Press )

4-3. DIAGNOSTIC MODE **DETAILS (Continued)**

The number of Beeped 'DONE' Too Long Cycles for this batch of shortening is reported next. Note that this value does not yet include the cook cycles from today.


“D8: BEFORE TODAY “

“D8: 7% OF LOADS”

“D8: BEEPED 'DONE'”

“D8: TOO LONG”

“D8: ON THIS OIL”

(Press )
DOWN

Finally, the controller identifies percentage of Beeped 'DONE' Too Long Cycles for the previous batch of shortening:

“D8: LAST OIL”

“D8: 6% OF LOADS”

“D8: BEEPED 'DONE'”

“D8: TOO LONG”

D 9: Irregular Loading Report

For most Cook Cycles, the controller determines when the product was placed into the shortening. This report identifies the percentage of cycles for which this determination was not successful.

This “drop detection” detects most loads, but can fail for several reasons. Anytime the detection routine fails to find the true drop point, the controller logs an “irregular loading” count.

Examples of failed “drop detection” might be: the Operator takes too long to load the product to the time he presses the start button, or the Operator cooks a very light product load, one or two filets, for example.

In these instances, no drop point will be found and that Cook Cycle counts as an Irregular Loading Cycle. Only products that have more than 5% of loads with missed detection's are reported.

4-3. DIAGNOSTIC MODE **DETAILS (Continued)**

Loading Report for Today

If no products have a “failed to detect” rate of more than 5%, the controller shows:

“D9: LOADING”
“D9: LOOKS OK”
“D9: TODAY”

Otherwise, for each product that has more than 5% of loads in which the controller failed to detect the drop point, the following message is displayed:

“D9: IRREGULAR”
“D9: LOADING”
“D9: FOR 8% OF”
“D9: “FILET” (<— Product Name)
“D9: TODAY”

Loading Report for Present Batch of Shortening

The data for this batch of shortening does not yet include Cook Cycles from today.

If no products have a “failed to detect” rate of more than 5%, the controller shows:

“D9: LOADING”
“D9: LOOKS OK”
“D9: THIS OIL”

Otherwise, for each product that has more than 5% of loads in which the controller failed to detect the drop point, the following message is displayed:

“D9: FOR THIS OIL,”
“D9: IRREGULAR”
“D9: LOADING”
“D9: FOR 12% OF”
“D9: “NUG-STRP” (<— Product Name)

4-3. DIAGNOSTIC MODE **DETAILS (Continued)**

Loading Report for Previous Batch of Shortening

If no products have a “failed to detect” rate of more than 5%, the controller shows:

“D9: LOADING”
“D9: LOOKED OK”
“D9: PREVIOUS OIL”

Otherwise, for each product that has more than 5% of loads in which the controller failed to detect the drop point, the following message is displayed:

“D9: PREVIOUS OIL,”
“D9: IRREGULAR”
“D9: LOADING”
“D9: FOR 6% OF”
“D9: “BRK-FIL” (← Product Name)

D 10: Non-Standard Program Items Report

The last section in the Diagnostic Report identifies how many programmable settings have been altered from their original, factory default settings.

For each of the various program modes, the controller either reports that “all settings match original values” or reports “N items do not match original values”. This report makes it easy to see if any cook parameters or other settings have been changed from CFA settings.

Some programming items may have been changed from original values under the direction of CFA corporate headquarters. In some cases, a controller should have values that don’t match original values. A report that “all items match original values” could actually be an indication that something isn’t set right.

Keep in mind also that the number of such “approved” alterations might be different for different versions of software.

If all product cook settings match the original, factory default values, the controller displays the following message:

“10: ALL PROD’S”
“10: MATCH”
“10: ORIG. VALUES”

4-3. DIAGNOSTIC MODE **DETAILS (Continued)**

If any of the product settings do not match original values, the following message is displayed (with one or more of the product numbers blinking):

“10: PROD’S 123456”
“10: DO NOT MATCH”
“10: ORIG. VALUES”

In this case, the blinking numbers indicate which products do not match original settings. If the numbers 3 and 5 are the only numbers blinking, then product #3 and product #5 each have at least one setting changed from their factory preset values. Products 1, 2, 4, and 6 are confirmed to exactly match their original settings.

The second item in section 10 identifies how many items in CFA Programming Mode have been changed from their original values. These Chick-fil-A settings mainly deal with special Chick-fil-A controller features like Oil Wear, Heat-up Monitoring, New Oil Compensation, Oil Idle Compensation, Drop Detection, Clean-out Mode, and Amps and Voltage alarms.

If all items in CFA Prog. Mode match their original, factory preset values, the following report is made:

“10: ALL CFA ITEMS”
“10: MATCH”
“10: ORIG. VALUES”

If any of the items in CFA Prog. Mode do not match their original values, the following message is displayed (with the actual number of changed items):

“10: 2 CFA ITEMS”
“10: DO NOT MATCH”
“10: ORIG. VALUES”

A similar report is made for Special Program Mode. Special Program (SP) Mode settings deal with °F/°C display, speaker tone and volume, Melt and Idle Modes, and how the product buttons function (start cook or merely select product).

“10: ALL SP ITEMS”	“10: 1 SP ITEMS”
“10: MATCH”	“10: DO NOT MATCH”
“10: ORIG. VALUES”	“10: ORIG. VALUES”



4-3. DIAGNOSTIC MODE DETAILS (Continued)

The final item in section 10 identifies if any changes have been made to the heat control settings. These settings affect the fryer's heating algorithms, and include the PC factors, rate-of-rise compensations, and heat pulse cycle time, etc.


"10: ALL HC ITEMS"	"10: 3 HC ITEMS"
"10: MATCH"	"10: DO NOT MATCH"
"10: ORIG. VALUES"	"10: ORIG. VALUES"

4-4. INFORMATION MODE DETAILS


This historic information in this mode can be recorded and used for operational and technical help.

Press  and  at the same time and **"*INFO MODE*"** shows in the display, followed by **"1. E-LOG"**.


NOTICE


Press and hold  to exit Information Mode at any time, or after 2 minutes, controls automatically exit back to normal operation.


1. E-LOG (error code log)

Press  and **"1A. (date & time) *NOW*"** shows in


display. This is the present date and time.

Press  and if a error was recorded, **"1B. (date, time, and error code information)"** shows in display. This is the latest error code that the controls recorded.


Press  and the next latest error code information can be seen. Up to 10 error codes (1B to 1K) can be stored in the E-LOG section.

Press  to continue to P-LOG.


2. P-LOG (power-up log)


Press  and **"2A. (date & time) *NOW*"** shows in

display. This is the present date and time.


Press  and the latest power-up is shown, **"2B. (date, time,) PWR-UP"**.


4-4. INFORMATION MODE DETAILS (Continued)

Press  and the next latest power-up date is shown. Up to 10 power-ups (2B to 2K) can be stored in P-LOG section.


Press  to continue onto the heat-up log.


3. HEAT-UP'S

Press  and “3A. (date & time) *NOW* shows in display. This is the present date and time.

Press  and the latest heat-up is shown, along with the

heat-up rate, ex: “3B. MAY-22, 8:37A 1.25”. The heat rate is the maximum rate (degrees/second) the controller recorded during the shown time frame.


Press  and the next latest heat-up is shown. Up to 10 heat-ups (3B to 3K) can be stored in the Heat-Up Log.

Press  to continue onto the COOK DATA.

4. LEFT COOK DATA


Press  to step through the following data:

FUNCTION	DISPLAY EXAMPLE
Time of last cook cycle started	4A. STARTED 10.25A
Product (last product cooked)	4B. PRODUCT -1-
Ready? (fryer ready before start?)	4C. READY? YES
Drop detect Status	4D. DETECT ✓ T-14
Drop adjust (real time seconds)	4E. DROP ADJ T-14
Cook time adj (clock adjust)	4F. CK TM ADJ -13
Actual elapsed cook time (seconds)	4G. ACT TIME 2:23
Stopped: Time remaining, or secs past done	4H. STOP DONE+1
“Slow cook” for this cycle?	4I. SLOW? NO
Overloaded? (bad batch)	4J. OVRLD? NO
Avg temp. during Cook Cycle	4K. AVG TMP 343°F
Max voltage during Cook Cycle	4L. MAX VOLT 99%
Min voltage during Cook Cycle	4M. MIN VOLT 97%
Max amps during Cook Cycle	4N. MAX AMPS 33
Min amps during Cook Cycle	4O. MIN AMPS 33


Press  to continue onto RIGHT COOK DAT.

**4-4. INFORMATION MODE
DETAILS (Continued)**

5. RIGHT COOK DATA


Press  to step through the following data:
DOWN

FUNCTION	DISPLAY EXAMPLE
Time of last Cook Cycle started	5A. STARTED 10.25A
Product (last product cooked)	5B. PRODUCT -1-
Ready? (fryer ready before start?)	5C. READY? YES
Drop detect status	5D. DETECT X NO
Drop adjust (real time seconds)	5E. DROP ADJ T-10
Cook time adj (clock adjust)	5F. CK TM ADJ -13
Actual elapsed cook time (seconds)	5G. ACT TIME 2:23
Stopped: Time remaining, or secs past done	5H. STOP DONE+1
“Slow cook” for this cycle?	5I. SLOW? NO
Overloaded? (Bad batch)	5J. OVRLD? NO
Avg Temp during Cook Cycle	5K. AVG TMP 343°F
Max voltage during Cook Cycle	5L. MAX VOLT 99%
Min voltage during Cook Cycle	5M. MIN VOLT 97%
Max amps during Cook Cycle	5N. MAX AMPS 33
Min amps during Cook Cycle	5O. MIN AMPS 33

Press  to continue onto TODAYS DATA.
PROG

**4-4. INFORMATION MODE
DETAILS (Continued)**


6. TODAY'S DATA (automatically resets each day)

Press  to step through the following data:
DOWN

FUNCTION	DISPLAY EX.
Today's Date	6A. DATE APR-12
Time of day last heat-up was completed	6B. LAST HEAT 9:45A
Peak heat-up rate(°F/Sec)for last heat-up	6C. LAST RATE 0.82
Was last heat-up acceptable?	6D. LAST OK? YES
Heat Cap. status (based on last 4 ht-ups)	6E. HEAT CAP GOOD
Number of monitored heat-ups today	6F. HEAT-UPS 2
Number of slow heat-ups	6G. SLOW HT'S 0
Max time to heat 270°F to 310°F today	6H. MAX HT TM 1:17
Lowest "peak rate" for today's heat-ups	6I. MIN RATE 0.82
Maximum voltage today (when fryer on)	6J. MAX VOLT 99%
Minimum voltage today (when fryer on)	6K. MIN VOLT 95%
No. of "low voltage" warnings generated	6L. LO VOLT'S 0
Maximum amp draw today	6M. MAX AMPS 35
Minimum amp draw today	6N. MIN AMPS 33
Number of "low amps" warnings today	6O. LO AMP'S 0
Non-cooking time (hh:mm) while fryer was on	6P. IDLE HRS 1:23
Oil Wear accumulated so far today	6Q. OIL WEAR 3
Total number of Cook Cycles today	6R. TOT CK'S 11
Number of cycles started before Ready	6S. NOT RDY'S 2
No. cycles quit early, 0:11 or more rem.	6T. QUIT 11+ 0
No. cycles beeped *DONE *21 sec or more	6U. DONE 21+ 1
Individual product cook counts	6V. Px CK CT 2
Individual product "not detected" counts	6W. Px NO DET 0
Individual product "slow cook" counts	6X. Px SLO CT 0
Ind. product "frozen or overloaded"	6Y. Px FRZ/OV 0


NOTICE

During steps 6V through 6Y, press the product buttons (or Manual Prog) to see data on individual product items.

Press  to continue onto PREV-DAY-SUN log.
PROG

**4-4. INFORMATION MODE
DETAILS (Continued)**

7. PREV DAY - SUN

Press  to step through the following data. During each


DOWN

step, press to choose the day of the week, of the past 7 days.

FUNCTION	DISPLAY EX:
Day this data was recorded for	7A. DATE APR-8
Time of day last heat-up was completed	7B. LAST HEAT 8:15P
Peak heat-up rate (°F/Sec) - last heat-up	7C. LAST RATE 0.88
Was that day's last heat-up acceptable?	7D. LAST OK? YES
Heat cap. status (based on last 4 ht-ups)	7E. HEAT CAP GOOD
Number of monitored heat-ups that day	7F. HEAT-UPS 7
Number of slow heat-ups	7G. SLOW HT'S 0
Max heat time 270°F to 310°F that day	7H. MAX HT TM 1:11
Lowest "peak rate" - that day's heat-ups	7I. MIN RATE 0.67
Max voltage that day (when fryer on)	7J. MAX VOLT 102%
Min voltage that day (when fryer on)	7K. MIN VOLT 98%
No. of "low voltage" warnings generated	7L. LO VOLT'S 0
Maximum amp draw that day	7M. MAX AMPS 35
Minimum amp draw that day	7N. MIN AMPS 34
No. of "low amps" warnings that day	7O. LO AMP'S 0
Non-cooking time (hh:mm) while fryer was on	7P. IDLE HRS 7:09
Oil wear accumulated that day	7Q. OIL WEAR 39
Total number of Cook Cycles that day	7R. TOT CK'S 18
Number of cycles started before ready	7S. NOT RDY'S 2
No. cycles quit early, (0:11 or more remaining)	7T. QUIT 11+ 1
No. cycles beeped *DONE* 21 sec or more	7U. DONE 21+ 3
Individual product cook counts	7V. Px CK CT 12
Individual product "not detected" counts	7W. Px NO DET 1
Individual product "slow cook" counts	7X. Px SLO CT 0
Individual product "frozen or overloaded"	7Y. Px FRZ/OV 1

NOTICE


During steps 7V through 7Y, press the product buttons (or Manual Prog) to see data on individual product items.

Press  to continue onto 7-DAY TOTALS log.

PROG

**4-4. INFORMATION MODE
DETAILS (Continued)**


8. 7-DAY TOTALS

Press  to step through the following data:
DOWN

FUNCTION	DISPLAY EX:
Oldest day in the “previous days” history	8A. SINCE APR-5
Number of days with data included in totals	8B. DAYS CNT 6
Number of monitored heat-ups	8C. HEAT-UPS 30
Number of slow heat-ups	8D. SLOW HT'S 1
Max time to heat 270°F to 310°F	8E. MAX HT TM 3:25
Lowest “peak rate” of all heat-ups	8F. MIN RATE 0.47
Maximum voltage	8G. MAX VOLT 102%
Minimum voltage	8H. MIN VOLT 91%
No. of “low voltage” warnings generated	8I. LO VOLT'S 0
Maximum amp draw	8J. MAX AMPS 35
Minimum amp draw	8K. MIN AMPS 32
Number of “low amps” warnings	8L. LO AMP'S 0
Non-cooking time (hrs) while fryer was on	8M. IDLE HRS 43
Total oil wear accumulated	8N. TOT WEAR 278
Total number of Cook Cycles	8O. TOT CK'S 125
Number of cycles started before ready	8P. NOT RDY'S 7
No. cycles quit early, (0:11 or more remaining)	8Q. QUIT 11+ 1
No. cycles beeped *DONE* 21 sec or more	8R. DONE 21+ 3
Individual product cook counts	8S. Px CK CT 77
Individual product “not detected” counts	8T. Px NO DET 3
Individual product “slow cook” counts	8U. Px SLO CT 0
Individual product “frozen or overloaded”	8V. Px FRZ/OV 1


NOTICE

During steps 8S through 8V, press the product buttons (or Manual Prog) to see data on individual product items.

Press  to continue onto OIL DATA log.
PROG

**4-4. INFORMATION MODE
DETAILS (Continued)**

9. OIL DATA (current batch; resets by Clean-Out Mode)


Press  to step through the following data:

DOWN

FUNCTION	DISPLAY EX:
The day current batch of oil was started	9A. SINCE APR-1
No. of days with data included in totals	9B. DAYS CNT 10
Number of monitored heat-ups	9C. HEAT-UPS 75
Number of slow heat-ups	9D. SLOW HT'S 2
Max time to heat 270°F to 310°F	9E. MAX HT TM 3:25
Lowest "peak rate" of all heat-ups	9F. MIN RATE 0.43
Maximum voltage	9G. MAX VOLT 102%
Minimum voltage	9H. MIN VOLT 91%
No. of "low voltage" warnings generated	9I. LO VOLT'S 0
Maximum amp draw	9J. MAX AMPS 35
Minimum amp draw	9K. MIN AMPS 32
No. of "low amps" warnings	9L. LO AMP'S 0
Non-cooking time (hrs) while fryer was on	9M. IDLE HRS 43
Total oil wear accumulated	9N. TOT WEAR 278
Total number of Cook Cycles	9O. TOT CK'S 125
Number of cycles started before ready	9P. NOT RDY'S 7
No. cycles quit early, (0:11 or more remaining)	9Q. QUIT 11+ 1
No. cycles beeped *DONE* 21 sec or more	9R. DONE 21+ 3
Individual product cook counts	9S. Px CK CT 77
Individual product "not detected" counts	9T. Px NO DET 3
Individual product "slow cook" counts	9U. Px SLO CT 0
Individual product "frozen or overloaded"	9V. Px FRZ/OV 1

NOTICE


During steps 9S through 9V, press the product buttons (or Manual Prog) to see data on individual product items.

Press  to continue onto PREV OIL DATA log.

PROG

**4-4. INFORMATION MODE
DETAILS (Continued)**

10. PREV OIL DATA (moved here from Oil Data log;
assumes new shortening)

Press  to step through the following data:
DOWN

FUNCTION	DISPLAY EX:
The day previous batch of oil was started	10A. BEGAN MAR-9
No. of days with data included in totals	10B. DAYS CNT 18
Number of monitored heat-ups	10C. HEAT-UPS 98
Number of slow heat-ups	10D. SLOW HT'S 0
Max time to heat 270°F to 310°F	10E. MAX HT TM 1:31
Lowest "peak rate" of all heat-ups	10F. MIN RATE 0.57
Maximum voltage	10G. MAX VOLT 101%
Minimum voltage	10H. MIN VOLT 96%
Number of "low voltage" warnings generated	10I. LO VOLT'S 0
Maximum amp draw	10J. MAX AMPS 35
Minimum amp draw	10K. MIN AMPS 33
Number of "low amps" warnings	10L. LO AMP'S 0
Non-cooking time (hours) while fryer was on	10M. IDLE HRS 62
Total oil wear accumulated	10N. TOT WEAR 1523
Total number of Cook Cycles	10O. TOT CK'S 653
Number of cycles started before Ready	10P. NOT RDY'S 25
Num. cycles quit early, with 0:11 or more rem	10Q. QUIT 11+ 3
Num. cycles beeped *DONE* 21 sec or more	10R. DONE 21+ 13
Individual product cook counts	10S. Px CK CT 466
Individual product "not detected" counts	10T. Px NO DET 31
Individual product "slow cook" counts	10U. Px SLO CT 0
Individual product "frozen or overloaded"	10V. Px FRZ/OV 5

NOTICE

During steps 10S through 10V, press the product buttons (or Manual Prog) to see data on individual product items.

Press  to continue onto INP A_VHDSF_M check.
PROG

4-4. INFORMATION MODE **DETAILS (Continued)**

11. INP A_VHDSF_M

This mode displays the status of components and inputs. If the input signal is detected, an identifying letter is displayed (see below). If the signal is not detected, “_” is displayed.

With the POWER switch turned to ON, and all inputs detected, “H_P_A_VHDSF_M” shows in the display. See below for “definition” of codes.

A = POWER Switch turned to ON

V = Volts - 24 VAC detected


H = High Limit - If “H” is present, the high limit is good; if “H” is missing, the high limit is tripped (overheated) or faulty

D = DRAIN SWITCH - If “D” is present, the drain handle is closed; if “D” is missing, the drain is open or faulty

S = POWER switch “on” interlock circuit: if “S” is present, the POWER switch is in the ON position; if the “S” is missing, the POWER switch is either off, failed, or wired incorrectly


F = FAN

M = MV - Detects 24 V jumper to MV terminal

Press  to view the specific status of each input. An underscore (“_”) indicates the input is not presently detected. A Checkmark (“√”) indicates the signal is detecting a normal input. A blinking (“X”) indicates the signal is presently detected, but is detected as a half-wave (partially failed) input.

NOTICE

The V, H, D, S, F, and M signals below are wired in series. The first signal missing out of this sequence will generally cause all signals to the right of it to be missing as well.

Press  to continue onto OUTP H* check.


4-4. INFORMATION MODE **DETAILS (Continued)**

12. OUTP H*

This mode displays the status of components and outputs. If the output signal is detected, an identifying letter is displayed (see below), followed by an “*”. If the output is off, “_” is displayed.

H = Heat output

If heat is on, “H*” shows in display. If heat is off, “H_” shows in display. If controls senses a problem with the heat output, “H*” shows in display, with the “*” flashing.


Press  to view the “amps” status of output.


“H√” in the display means the amps are good. A flashing “X” behind the H means a problem exists.

Press  to view the No Connect/Ground (“NC/GD”)

status of the output. This monitors a possible problem with the relays on the output PC board.


“H√” in the display means everything on the output PC board is good. A flashing “X” behind the H means a problem exists.

Press  to view the outputs and inputs (see step 10) together.

Press  to continue onto the POT TMP reading.


13. POT TMP

This step shows the present shortening temperature. The display shows “13. POT TMP (temp.)”.

Press  to continue onto the CPU TMP reading.

14. CPU TMP


This step shows the present PC board temperature.


Press  to continue onto the ANALOG reading.

4-4. INFORMATION MODE DETAILS (Continued)

15. ANALOG <1> 2344


This step displays the present status of any channel of the controller's a to d converter. This feature may be useful to a technician troubleshooting the fryer or controller.


The displayed value can be toggled between volts and bits by pressing . If the displayed value has a decimal point, it is voltage (0 to 5 VDC). If no decimal point is shown, the value is a-to-d bits (0 - 4095).

Press  to continue onto AC VOLTS reading.

16. AC VOLTS 98%

This item displays the present status of the line voltage supply to the fryer. The displayed value is averaged over a 10-second period, so brief dips or fluctuations in the voltage might not show up in this display.

The voltage is normally displayed as a “percent of nominal” value, where 100% would indicate that voltage is right on the nominal value (i.e. 208 volts for a 208v fryer). The display can be toggled to an actual voltage value by pressing .

Press  to continue onto AMPS reading.


17. AMPS 33 33 33

For electric fryers, this display shows the present readings from the fryer's amps sensors, which monitor the electrical current supplied to the heaters.

On open fryers, these values indicate the current through each individual heater coil. On 208 or 240 volt units, this value should be close to the value on the data plate. On 480 volt fryers, this value should be the value on the data plate multiplied by 1.76.

The “amps” values should normally cycle on and off with the HEAT ON light, and all three values should be about the same.

NOTICE

Press and hold  to exit Information Mode at any time, or after 2 minutes, controls automatically exit back to normal operation.

G L O S S A R Y

HENNY PENNY OPEN FRYERS

air valve	a valve on the eight head fryer that allows air into the filter lines when the pump is on in the mixing mode on eight head fryers
airflow switch (gas fryers only)	a switch on the eight head fryer that senses the amount of airflow coming from the blower; if the airflow falls below a certain level, the switch cuts power to the gas control valve that shuts down the burners
blower (gas fryers only)	located on the rear of a gas fryer, the blower pulls flue gases out of the flue and provides the proper amount of air to the burner tubes for efficient combustion
breadding	a flour and seasoning mixture used to coat the product prior to frying
burner assembly (gas fryers only)	an assembly on gas fryers that houses the pilot light which ignites the gas that heats the fryer
burner tubes (gas fryers only)	the tubes through which heated air is forced to heat the shortening
carrier	a wire frame inside the eight head frypot that holds five racks of product during the cook cycle
casters	the wheels on bottom of the fryer that allow the unit to roll; casters should be locked when unit is in use and not being moved; casters may be adjusted to help level the fryer
cleaning solution	an agent used to clean the frypot; see recommended cleaning procedures
cold zone	an area in the bottom of the frypot where shortening is cooler than the area above; the zone allows the crumbs to settle without burning
cook cycle	a programmed cycle that cooks a particular product at a preselected temperature and for a preselected time
cooking load	the amount of product cooked during a cook cycle
counterweight	the weights shipped with the fryer that, when installed in the counterweight assembly, enable the eight head fryer lid to lift easily
counterweight assembly	an assembly of weights and cables that enable the eight head fryer lid to lift easily
cover	a protective lid for the frypot when fryer is not in use
cracklings	the crumbs of breadding that come off the product during a cook cycle
crumb catcher	the part of the filter assembly on four head fryers that filters crumbs out of the shortening before the shortening is pumped back into the frypot

data plate	a label or plate located on the right side panel of the fryer that indicates the fryer type, serial number, warranty date, and other information
drain handle	the handle used to open and close the drain valve
drain interlock switch	a microswitch that automatically shuts off the fryer heat in the event the drain valve is inadvertently opened while the fryer power switch is in the ON position
drain valve	a valve that allows the shortening to drain from the frypot into the filter drain pan; the fryer power switch should be in the OFF position before the drain valve is opened; the drain valve should remain closed at all other times
dumping table	a table onto which the cooked product is dumped after removal from the fryer frypot
fill lines	the four lines marked on the interior real wall of the frypot that show the proper shortening level <i>(also referred to as level indicator lines)</i>
filter clips	the clips are the part of the filter screen assembly that holds the filter envelope closed
filter drain pan	a pan that slides under the fryer into which shortening is drained
filter envelope	a fiber envelope into which the filter screen is placed; the end of the envelope is folded and held closed with filter clips; a part of the filter screen assembly
filter heater switch	control panel switch that activates the strip heater <i>(Model OE-100 only)</i>
filter pan dolly	an optional transport cart for the filter drain pan
filter pump motor	the motor that powers the filtering system
filter screen assembly	an assembly that filters the shortening as it is pumped from the frypot; the assembly is made up of two filter screens, a filter envelope, two filter clips, and a crumb catcher <i>(Note: eight head fryers have two filter screens with no crumb catcher)</i>
filter union	the threaded connection between the fryer and the filter system that can be connected or released without tools
filter valve	the valve that must be opened to pump shortening back into the frypot during the filter cycle <i>(Models OE-100, 320, and 340)</i>
flame sensors <i>(gas fryers only)</i>	the sensors that shut off the gas supply to gas fryers if the pilot lights go out or do not light
fryer brush	a brush included with the fryer used to scrub the inside of the frypot
frypot	the interior portion of the fryer that holds the shortening and the product while cooking
frypot collar	the top flat surface area around the fryer lid

gas control valve (gas fryers only)	an automatic dual controller that controls gas to both pilot lights and gas pressure to burners on fryers; if either pilot light goes out, the controller shuts off the gas to the other pilot light
gas valve knob (gas fryers only)	the knob that opens and closes the gas control valve
gas pressure regulator (gas fryers only)	a device located on the gas control valve that regulates the gas pressure; the pressure specifications are preset at the factory
heat indicator	the light that illuminates when the shortening is being heated; the light goes off when the preset shortening temperature has been achieved
heating elements	the coils located inside the frypot on electric fryers that heat the shortening
high limit	a temperature control that opens and shuts off the heat to the frypot if it senses shortening temperature in excess of 420°F (212°C)
ignition modules	two modules that send electrical energy to the spark igniters that ignite the pilot lights on gas fryers
L-shaped brush	a brush included with the fryer that is used to clean around the burner tubes and heating elements
landing table	another name for a dumping table (<i>see dumping table</i>)
level indicator lines	the lines marked on the interior real wall of the frypot that show the proper shortening level (<i>also referred to as fill lines</i>)
lid assembly	an assembly comprised of lid, lid handle, and lid latch which raises and lowers product into shortening on eight head fryers
lid handle	a handle that is attached to the lid and is used to lower the lid into contact with the frypot; the handle is then pulled forward and pushed down to lock the lid in place (<i>see lid latch</i>)
lid latch	a mechanical catch on the front of the fryer lid that engages a bracket located on the front of the frypot; the latch holds the lid down
manual reset lever	resets high limit (<i>OE-100 only</i>)
manual shutoff valve (gas fryers only)	a valve located between the fryer and the wall that shuts off the flow of gas from the supply line; this is not the main shutoff valve for the store
melt cycle	a heat mode that cycles on and off to slowly melt the shortening when the power switch is on and the shortening temperature is below a certain temperature; the melt cycle prevents scorching of the shortening
pilot orifice (gas fryers only)	a controlled opening for the pilot light located on the burner assembly
pilot light (gas fryers only)	a small flame that remains burning even when the fryer is not in use; the flame ignites the gas when the fryer is turned on
power/pump switch	a three-way switch located on the front control panel of the fryer that serves as an off/on switch and a filter switch

product	a food item cooked in the fryer
rack	the wire grid that slides into the carrier to hold product during the cook cycle
setpoint	a preset cooking temperature; the setpoint is a programmable feature
shortening mixing system	an automatic system on eight head fryers that periodically uses the filter pump to mix the shortening in the frypot to prevent an accumulation of moisture to minimize the boiling action in the frypot
shortening shuttle	optional equipment used for shortening disposal
sift breading	the process of removing clumps from breading
spark igniters (gas fryers only)	the igniters that create a spark to ignite the pilot lights on gas fryers (see <i>ignition modules</i>)
standpipe	the pipe through which oil is pumped back into the frypot after the filtering process is complete
standpipe assembly	the pipe and fittings that are part of the shortening filtering process
straight brush	a brush that is included with the fryer that is used to clear the drain in the bottom of the frypot
strip heater	keeps the filter lines free of solidified shortening when the filter heater switch is turned on (<i>Model OE-100 only</i>)
temperature probe	a round probe that is located in the inside of the frypot that measures the temperature of the oil in the frypot; the probe communicates with the control panel
thermal protector	overheat protection switch for the filter motor that must be manually reset if tripped



Henny Penny Corporation
P.O.Box 60
Eaton, OH 45320

1-937-456-8400
1-937-456-8402 Fax

Toll free in USA
1-800-417-8417
1-800-417-8434 Fax

www.hennypenny.com

* FM05 - 006 - E * Henny Penny Corp., Eaton, Ohio 45320, Revised 3-01-17