

Giles Enterprises Inc.

Time/Temperature Control

Supplemental Operations Manual

**Giles Enterprises Inc.
2750 Gunter Park Drive West
Montgomery, Alabama 36109**

1-800-288-1555

CONGRATULATIONS

The Chester Fried Models MGF 40, 40VH, 50, 50VH and 40G fryers are equipped with a high quality cooking computer which is covered by a three year warranty. This new "user friendly" easily programmed cooking computer incorporates extensive design detail by its manufacturer WATLOW, and extensive cooking application by the "Chester Fried[®]" engineering team. The new cooking computer along with the Chester Fried fryer is truly a "world class" product.

To help you understand the many programming features of the cooking computer we strongly suggest you read the following:

MELT CYCLE

This melt cycle is shipped to you OFF and must be turned ON for those fryers users who occasionally or regularly use SOLID SHORTENING. (Shortening which is slushy at room temperature is not considered solid.)

For SOLID SHORTENING users the melt cycle typically increases a 335°F initial daily preheat time to 45 minutes. The ON melt cycle with SOLID SHORTENING prevents solid shortening scorching and greatly reduces the chance of a solid shortening oil fire on initial preheat.

It is the responsibility of you the end user to tell your equipment supplier/installer of any solid shortening use so they can program your "melt" cycle "ON".

In the event your equipment supplier can not be reached to set up your controller for melt cycle operation, you can call our factory service department toll free at 1-800-288-1555 and we will tell you how to set the controller to melt cycle mode.

COOL DOWN CYCLE

After any of your 8 menu time cycles end (00:00) and your fryer is not required for use for an hour or more, you can reduce energy cost by pressing the "COOL" key. This key will allow the hot oil to cool down to 275°F for stand-by use. When your fryer is required for use after being in the "cool" cycle merely press the COOL key again and the fryer will go back to the last lighted menu key's programmed temperature. When the orange heat light goes off in approximately 3-4 minutes the oil will be ready for use.

COMPUTER FUNCTION KEYS

The following is a description of the basic function and operation of your cooking computer's key pad:

BASKET KEY

When the basket key is pressed once the up and down arrow keys blink. If the basket is up, it can only be lowered using the down arrow key. If the basket is down it can only be raised with the up arrow key. Once the basket key is pressed you have 20 seconds to select your basket arrow direction or you must push it again after the basket key light goes off. Once the basket key is pressed; and the proper arrow key is pressed within 20 seconds, the basket travels either up or down. Any menu cycle can be started while the basket is in motion. The basket cannot be stopped during it's up or down travel. Allow 20 seconds for the basket travel time to change basket direction of travel if required.

TEMPERATURE BULB KEY

To check the temperature setting of any lighted menu key, simply press the temp bulb key and for 3 seconds the temperature will display and then return to 00:00 or the time remaining in that menu countdown.

BOIL CYCLE KEY

(For use with boil out procedure portion of this manual only)!

The boil cycle feature is used for cleaning the fryer by using fryer heated cold water & Chester Clean (part # 71425). When the Boil key is pressed and held for 5 seconds, and no menu is active (00:00), the red boil light will come on and the display will alternately flash boil and 00:00. This activates a fixed temperature setting of 200°F. The water and Chester Clean will not boil at 200°F but it will clean the fry pot and keep the Boil-out solution from possibly boiling over on to the floor. 1) When this cycle is considered complete (fryer clean) turn off the fryer power rocker switch. 2) Drain and wash out the fry pot. 3) Refill with room temperature oil to 1 inch below the oil level line before turning fryer on! When the fryer is turned on, the computer will heat the oil to the menu 1 key temperature. To heat it to a different menu key temperature, merely press your desired menu key twice.

FILTER CYCLE AND ALARM

The Chester Fried chicken program recommends that every 4th full load of chicken you filter your oil. Filtering cleans the breaching settlement out of the fry pot and removes contaminants from the oil. The filtering process can greatly extend the oil life. At the end of every fourth load "FILT" will flash up on the display and a repeating 2 sec on/2 sec off sound alarm will be heard. The filter alarm indicates it is time to filter the oil.

If for some reason you cannot take the time to filter, you must silence the alarm to continue cooking. The sound alarm can be silenced by pressing the filter key.

STIR CYCLE AND ALARM

Your fryer is equipped with a stir message and a repeating one second on / one second off sound alarm telling you it's time to stir your product. This time is a Chester Fried preset time of 62% of each of the 8 menu times to prevent the chicken from sticking to itself. When the stir alarm sounds, stir the chicken and then silence the alarm by pressing the lighted menu key once.

END OF MENU AND ALARM

At the end of each of 8 menu key times (00:00), the fry basket will come up and a 10 second continuous sound alarm will be heard. To silence the alarm before 10 seconds are up, merely press the lighted menu key once.

MENU KEYS 1 THRU 8

The eight menu keys can each be easily programmed with their own time and temperature cycle to meet your needs. Once programmed, cooking is as easy as lowering your basket, loading your product into the hot oil and then pressing your proper menu key 1-8. When it's time to stir, your alarm sounds continuously for 1 second on /1 second off. After stirring, you can silence the alarm by pressing the lighted menu key once.

At the end of any menu 1-8, the 10 second long continuous alarm can also be silenced prior to the 10 second ending by pressing the lighted menu key. When counting down time without the alarm sounding, pressing the lighted menu key will reset that menu key to 00:00. You cannot raise the basket when canceling out a menu in progress by pressing the lighted menu key! The basket can only be raised by pressing the basket key and then the up arrow!

PROGRAMMING

The first step is to determine the time and temperature for each product. The MGF 40&50 recommended times and temperatures for fried chicken are 335°F for 13:00 minutes. Channel 1 is the only menu key programmed for 335°F and 13:00 minutes when you receive your fryer. All other menu keys will require programming or reprogramming. Menu keys 2 thru 8 will be pre set to 200°F for 00:00 time and cannot be accessed to cook on until programmed (details on following page) with a product time and temperature.

Your cooking computer has many various capabilities to meet many special end user needs. Our service department at 1-800-288-1555 stands ready to answer special questions. We can give you multiple cooking temperatures and times (up to 3) per menu item for special products. We can adjust the end of menu alarm both loudness and sound pattern. We can also easily give you time compensation, as well as several other special performance items that only a world class computer can perform!



HOW TO PROGRAM MENU TEMPERATURES & TIMES ON MENU KEYS

1



THRU

8



1.) PRESS POWER ROCKER SWITCH TO ON. (GREEN INDICATOR LIGHT COMES ON)

2.) PRESS  &  KEYS SIMULTANEOUSLY FOR (6) SECONDS UNTIL SP 1 FLASHES ALTERNATELY WITH THE PRESET MENU TEMPERATURE.




3.) PRESS DESIRED MENU KEY TO BE PROGRAMMED. (RED LIGHT COMES ON OVER KEY)


4.) PRESS  OR  KEYS TO DESIRED MENU TEMPERATURE.

5.) PRESS LIGHTED MENU KEY AGAIN & t 1 FLASHES ALTERNATELY WITH SET TIME.

6.) PRESS  OR  KEYS TO DESIRED MENU TIME IN MIN:SEC

7.) PRESS NEXT MENU KEY FOR PROGRAMMING IF DESIRED & REPEAT STEPS 4 THRU 7.

8.) WHEN MENU KEYS ARE PROGRAMMED PRESS  & LOC APPEARS. IF YOU WANT ALL ENTERED MENU TEMPERATURES & TIMES SECURED PRESS  & 1 WILL BE DISPLAYED. IF YOU DON'T WANT PROGRAM SECURITY PRESS  & 0 WILL BE DISPLAYED.

9.) PRESS  ONCE MORE & YOU WILL EXIT PROGRAM MODE & 00:00 APPEARS.

10.) AFTER ORANGE HEAT LIGHT GOES OFF, PRESSING ANY PROGRAMMED MENU KEY WILL START THAT MENU TEMPERATURE/TIME CYCLE. ALWAYS PRESS THE MENU KEY AFTER LAST PIECE PER LOAD IS DROPPED IN THE BASKET.

NOTE: DURING THE ABOVE PROCESS, IF NO KEYS ARE PRESSED FOR 60 SECONDS THE COMPUTER WILL JUMP OUT OF THE PROGRAM MODE & YOU WILL HAVE TO START OVER IF YOUR PROGRAMMING IS NOT COMPLETE. ANY OF YOUR PROGRAMMED TEMPERATURES & TIMES WILL BE RETAINED UNLESS REPROGRAMMING OCCURS.

**THE NEXT
4 PAGES
ARE**

**FOR
DISTRIBUTORS
AND
SERVICE
COMPANIES
ONLY!**

BOIL OUT TEMPERATURE SETTINGS AT ALTITUDES RANGING FROM SEA LEVEL TO 11,000 FEET (3553M)

CUSTOMER'S ALTITUDE ABOVE SEA LEVEL		SERVICE MODE BOIL KEY SETTING	
FEET	(METERS)	° F	(° C)
0	(0)	205°	(96°)
1,000	(305)	205°	(96°)
2,000	(610)	205°	(96°)
3,000	(914)	202°	(94°)
4,000	(1219)	198°	(92°)
5,000	(1524)	196°	(91°)
6,000	(1829)	195°	(90°)
7,000	(2134)	193°	(89°)
8,000	(2438)	191°	(88°)
9,000	(2743)	189°	(87°)
10,000	(3048)	187°	(86°)
11,000	(3553)	185°	(85°)

EFFECTIVE
MARCH 1, 1993

THE SET UP MODE

(CUSTOMIZING END USERS SPECIAL NEEDS)

1.) PRESS POWER ROCKER SWITCH TO ON. (GREEN INDICATOR LIGHT COMES ON)

2.) PRESS



PRESS	ALTERNATING FACTORY DISPLAY	MEANING	VARIABLE SETTINGS
	<u>C_F</u> THEN <u>F</u>	TEMP SCALE (SET AT FACTORY BY COUNTRY)	C OR F
	<u>gb</u> THEN <u>450</u>	GUARD BAND (FACTORY SET 450° F) (FACTORY SET 250° C)	0-450° F 0-250° C
	<u>tcnP</u> THEN <u>OFF</u>	WATCURVE (TIME COMPENSATION) (FACTORY SET OFF)	ON OR OFF
	<u>tS</u> THEN <u>nnSc</u>	TIME UNITS (MIN-SEC)	NONE
	<u>1nP1</u> THEN <u>J</u>	THERMOCOUPLE TYPE (FACTORY SET J)	J = TYPE J H = TYPE K E = TYPE E
	<u>rL1</u> THEN <u>200</u>	LOW FRY TEMP (FACTORY SET 200° F) (93° C)	NONE
	<u>rH1</u> THEN <u>350</u>	HIGH FRY RANGE (FACTORY SET 350° F) (191° C)	200-375° F (93-191° C)
	<u>HyS1</u> THEN <u>3</u> OR <u>6</u>	TEMPERATURE HYSTERISIS (FACTORY SET 3° ELECTRIC FRYERS) (FACTORY SET 6° FOR GAS FRYERS)	1-6° F 1-3° C
	<u>CAL1</u> THEN <u>0</u>	CALIBRATION OFFSET (FACTORY SET 0°)	± 35° F ± 19° C
	<u>LJDI</u> THEN <u>OFF</u> <small>STARTED 3/97</small>	FACTORY SET IS OFF	ON (HAS TO BE FILTERED EVERY 4 ROUNDS)

PUSH ONE
MORE TIME

00:00

RETURNED TO OPERATION MODE

NOTE: ONCE YOU ENTER THE SET UP MODE & C_F APPEARS, YOU MUST PUSH THE



KEY 9 TIMES OR UNTIL 00:00 APPEARS IN DISPLAY TO GET INTO OPERATION MODE
OR WAIT 1 MINUTE WITH NO KEY ACTION

EFFECTIVE
MARCH 1, 1993















THE SERVICE MODE

(CUSTOMIZING END USERS SPECIAL NEEDS)

1.) PRESS POWER ROCKER SWITCH TO ON. (GREEN INDICATOR LIGHT COMES ON)

2.) PRESS       THE DISPLAY

SHOWS Aut 1 THEN 0. (LEAVE AT 0)

PRESS	ALTERNATING FACTORY DISPLAY	MEANING	VARIABLE SETTINGS
	<u>Pb 1</u> THEN <u>0</u>	PROPORTIONAL BAND (FACTORY SET AT 0)	(LEAVE AT 0)
	<u>StP</u> THEN <u>1</u>	COOKING PROGRAM STEPS (FACTORY SET AT 1)	1, 2, 3
	<u>Loop</u> THEN <u>OFF</u>	SHORTED SENSOR PROTECTION (FACTORY SET OFF)	ON OR OFF (LEAVE OFF)
	<u>nnS</u> THEN <u>OFF</u>	SOLID SHORTENING MELT CYCLE (FACTORY SET OFF SEE MANUAL)	 (ON)  (OFF)
AFTER 1/1/97	NNSP THEN OFF	1% TO 5% CYCEL TIME ON & OFF	FACTORY SET IS (1)
	<u>CLE</u> THEN <u>275</u>	FRYER COOL DOWN TEMPERATURE (FACTORY SET AT 275° F) (135° C)	200 TO 375° F 93 TO 191° C
	<u>bStP</u> THEN <u>BOIL TEMP.</u>	BOIL SET POINT TEMPERATURE	185 TO 208° F (SEE ALTITUDE CHART) (STANDARD FRYER PRESET AT 205° F)
	<u>OIL</u> THEN <u>4</u>	MENU CYCLES TO OIL FILTERING & ALARM (FACTORY SET AT 4)	0 TO 20
	<u>PEr</u> THEN <u>62</u>	STIR CYCLE PERCENT OF COOK TIME & ALARM (FACTORY SET AT 62% OF EACH MENU TIME)	0 TO 90
	<u>AUdF</u> THEN <u>-2</u>	FILTER CYCLE ALARM (-2 SETTING IS 2 SEC. ON 2 SEC. OFF)	RANGE (-10 TO 60) -10 TO -1 = # SEC ON/OFF REPEATS 0 = OFF 1-59 = # SECS ON (1 TIME) 60 = CONTINUOUS ON
	<u>AUdS</u> THEN <u>-1</u>	STIR CYCLE ALARM (-1 SETTING IS 1 SEC. ON 1 SEC. OFF)	RANGE (-10 TO 60) -10 TO -1 = # SEC ON/OFF REPEATS 0 = OFF 1-59 = # SECS ON (1 TIME) 60 = CONTINUOUS ON
	<u>AUdn</u> THEN <u>10</u>	END OF MENU ALARM (1 BEEP 10 SECS. LONG)	RANGE (-10 TO 60) -10 TO -1 = # SEC ON/OFF REPEATS 0 = OFF 1-59 = # SECS ON (1 TIME) 60 = CONTINUOUS ON
	<u>00:00</u>	RETURNED TO OPERATION MODE	NONE

NOTE: ONCE YOU ENTER THE SERVICE MODE & Aut 1 APPEARS, YOU MUST PUSH THE



KEY 12 TIMES OR UNTIL 00:00 APPEARS IN DISPLAY TO GET INTO OPERATION MODE OR WAIT 1 MINUTE WITH NO KEY ACTION.

Error Code Messages

The error code is visible in the display and alternates with the current display at a 3 second rate. The list below outlines the standard error codes associated with the Series 733/734. They are designed to isolate specific problem areas and aid in troubleshooting your control. If the problem persists, consult the factory.

Problem	Probable Cause	Solution
Er01 - ROM (Read Only Memory) checksum error	Internal ROM is defective.	<ul style="list-style-type: none"> • Cycle power
Er02 - RAM (Random Access Memory) checksum error	Internal RAM is defective.	<ul style="list-style-type: none"> • Cycle power
Er03 - Ambient sensor error	Ambient temperature is below 32°F/0°C Factory calibration parameters have been altered.	<ul style="list-style-type: none"> • Check ambient temperature at the control. • Restore factory calibration parameters. See Calibration section.
Er04 - Configuration error	Defective microprocessor	<ul style="list-style-type: none"> • Cycle power
Er05 - Eeprom error	Power loss while storing data.	<ul style="list-style-type: none"> • Cycle power
Er06 - Zone 1 A/D (Analog to Digital Converter) Underflow error	<ul style="list-style-type: none"> • Incorrect sensor type • Measuring temperature outside the sensor range 	<ul style="list-style-type: none"> • Check the InP1 parameter. Verify it matches your sensor.
Er07 - Zone 1 A/D overflow error	Open sensor	<ul style="list-style-type: none"> • Check the InP1 parameter. Verify it matches your sensor.
Er08 - Zone 2 A/D (Analog to Digital Converter) Underflow error	<ul style="list-style-type: none"> • Incorrect sensor type • Measuring temperature outside the sensor range 	<ul style="list-style-type: none"> • Check the InP2 parameter. Verify it matches your sensor.
Er09 - Zone 2 A/D overflow error	Open sensor	<ul style="list-style-type: none"> • Check the InP2 parameter. Verify it matches your sensor.



WARNING:

Electrical noise or a noise event, excess environmental moisture or temperature, or vibration may cause Series 733/734 errors to occur. If the cause of an error is not otherwise apparent, check for these.

Table 2 -
Error Code
Troubleshooting



NOTE:


For Er06 through Er09, always check the sensor and connections for a reversed or open sensor before trying the solution listed.


Put jumper on 5 & 6
If it clears need to
change the controller

Error Codes









Table 2 -
Continued

Problem	Probable Cause	Solution
Er10 - Stack overflow error	Microprocessor error	<ul style="list-style-type: none"> • Cycle power
Er11 - Zone 1 open sensor error	Open sensor	<ul style="list-style-type: none"> • Check the InP1 parameter. Verify it matches your sensor.
Er12 - Zone 1 shorted sensor	<ul style="list-style-type: none"> • Incorrect sensor type • Measuring temperature outside the sensor range 	<ul style="list-style-type: none"> • Check the InP1 parameter. Verify it matches your sensor.
Er13 - Zone 2 Open sensor	<ul style="list-style-type: none"> • Incorrect sensor type • Measuring temperature outside the sensor range 	<ul style="list-style-type: none"> • Check the InP2 parameter. Verify it matches your sensor.
Er14 - Zone 2 shorted sensor	Open sensor	<ul style="list-style-type: none"> • Check the InP2 parameter. Verify it matches your sensor.
Er15 - Zone 1 loop error	<ul style="list-style-type: none"> • Faulty heater or gas valve • Shorted sensor • Faulty output switching device • Blown fuse to heater • Incorrect Pb1 value for thermal system 	<ul style="list-style-type: none"> • Check heater or gas valve • Check sensor • Check output switching device • Check fuse to heater • Auto-tune the control
Er16 - Zone 2 loop error	See Er15 Probable Cause above. <ul style="list-style-type: none"> • Incorrect Pb2 value for thermal system 	See Er15 Solution above. <ul style="list-style-type: none"> • Auto-tune the control

 **NOTE:**
For Er10 through Er14, first check the sensor and connections for a reversed or open sensor before trying the solution listed.

 **NOTE:**
Er06 through Er09, and Er11 through Er14 are self clearing errors if the condition that caused the alarm has been taken care of.

Error Code Actions

- **Error codes will result in these conditions:**
 - The alarm outputs are in their alarm state (de-energized).
 - The display alternately flashes the process value and error code.
 - All keys are inactive except for the Temperature key . This key snoozes the error code and display for 30 seconds.
 - The above conditions occur regardless of the LOC value, or the presence of the Setup, Service or Calibration Menus.
- **To clear a corrected error...**
 - Cycle power to the control. *OR*
 - Enter the Program mode by pressing the   keys simultaneously for 3 seconds.
 - Press the Menu 12 key  once.
 - Press the Time key . The EC (Error Clear) prompt is displayed.
 - Press the Temperature key , and the error is cleared. Press the Time key  twice, and you're back to the Operation mode 



**Before attempting to calibrate,
make sure you have the proper
equipment called for in each procedure.**

**The Series 733/734 is calibrated and tested
before leaving the factory.**

Calibration Parameters

Calibrate: Determines which parameters, if any are to be calibrated. Choose one of the options below:

CALy

- ALL All parameters are calibrated. The next parameter is InLO.
- OUt Only the process outputs are calibrated. The display skips to the Ot1L parameter.
- no No parameters are calibrated. The display skips to the LgOt parameter.
- rEst Restores factory calibration parameters. See Page 26 for more information.

Input Low: The low calibration point for each zone. Input 0.00mV uncompensated for thermocouple and process units. Input 100Ω for RTD units.

InLO

Input High: The high calibration point for each zone. Input 50mV for single and dual t/c versions, or input 317.33 for RTD units, or input 10V for dual input t/c and process units on Zone 2.

InHI

mA Input High: Represents the high current calibration point for Zone 2, input 20mA. Applies only to thermocouple and process input. Only applies to Zone 2 inputs.

nAHI

Thermocouple Compensator: Used to calibrate the thermocouple reference compensator for units with thermocouple input. Input 0.00mV compensated through Type J reference compensator (32°F/0°C).

tC

4-20mA Output Low (Zone 1): Represents the process output low current calibration point for Zone 1. Applies to 0-5VDC and 4-20mA outputs only.

Ot1L

4-20mA Output High (Zone 1): Represents the process output high current calibration point for Zone 1. Applies to 0-5VDC and 4-20mA outputs only.

Ot1H

4-20mA Output Low (Zone 2): Represents the process output low current calibration point for Zone 2. Applies to 0-5VDC and 4-20mA outputs only. This parameter only appears if you have a dual zone control.

Ot2L

4-20mA Output High (Zone 2): Represents the process output high current calibration point for Zone 2. Applies to 0-5VDC and 4-20mA outputs only. This parameter only appears if you have a dual zone unit.

Ot2H

Calibration

rSt

Restore : Restores factory calibration parameters. See below for more information.

LgOt

Logic Output Test: Used to test all the control and logic outputs.

0 = All outputs OFF	1 = Output #1 ON Heater
2 = Output #2 ON Basket up	3 = Alarm ON Basket Down
4 = Event #1 ON	5 = Event #2 ON
6 = Event #3 ON	7 = Event #4 ON
8 = Audible output ON	

LI

Logic Inputs: This parameter reads all the board option jumpers and the event inputs. Factory use only.

HEy











Keyboard: Used to read all the keys in hexadecimal.

dISp

Display Test: Performs a display test. A sequence of characters will move across the seven-segment displays and LED's. This parameter will continue until you advance.

DO NOT USE Restoring Factory Calibration DO NOT USE

The rSt parameter restores the factory calibration values to the Series 733/734. If you calibrate your control incorrectly, you have the option to default to the original values. Once you leave the CAL menu, the values are entered.

1. Enter the Calibration mode by using the key sequence      .
2. **CALY** appears. Press the Up key  until the **rEST** parameter appears.
3. Press the Time key , the **rSt** parameter is displayed.
4. Press the Up key  once and **YES** will appear. Press the Time key .
5. The Series 733/734 will beep and advance to the **LgOt** parameter.

This procedure is only to be used to restore calibration. It is not meant to default any other values.