



Phase 8.3 and 8.4 Rev 2.2 Microprocessor User's Manual

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Retain This Manual In A Safe Place For Future Reference

Please read this manual carefully to thoroughly familiarize yourself with the Phase 8 microprocessor controller (computer) system features, operational instructions, and programming characteristics. This manual contains important information on how to employ all the features of your new dryer in the safest and most economical way.

This product embodies advanced concepts in engineering, design, and safety. If this product is properly maintained, it will provide many years of safe, efficient, and trouble free operation.

We have tried to make this manual as complete as possible and hope you will find it useful. The manufacturer reserves the right to make changes from time to time, without notice or obligation, in prices, specifications, colors, and material, and to change or discontinue models.

“IMPORTANT NOTE TO PURCHASER”

Information must be obtained from your local gas supplier on the instructions to be followed if the user smells gas. These instructions must be posted in a prominent location near the dryer.

WARNING

Proposition 65

Use of this product could expose you to substances from fuel combustion that contain chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

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NOTES _____



Important

Read all instructions before operating!

General User Information Coin/Debit Models “Coin Dry Mode” _____

Cold Start (Initial/First Use)

Appliance is programmed at the factory as follows:

Dryer
10 minute dry time/quarter (coin 1)
\$.25 dry price

Warm Start (After Power Failure)

A few seconds after power is restored, if a cycle was in progress at the time of the power failure, the display will prompt “Select Cycle to Restart”. This is to indicate the need for a setting to be pressed to restart dryer.

Pricing

After the door is opened following the completion of a cycle, the display indicates the cycle price (unless set for free operation). As coins or debit inputs arrive, the display will change to lead the user through the initiation of a cycle.

There are 2 types of pricing:

Accumulative Time

In this Vending Mode each coin inserted has a specific value in time, which is determined by the “Time for Amount to Start”.

Accumulative Coin

In this Vending Mode additional time can only be achieved when the “Time for Top Off” has been inserted.



Note

A maximum of 99 minutes may be purchased; no additional credit is given when 99 minutes is in the display.

“Free Dry Mode”

When the Dry Mode is set to FREE, only one cycle time is initially vended. Pressing and holding the HIGH or LOW key for 3-seconds will allow the time to be adjusted. Pressing HIGH will increase the time in 1 minute units and pressing LOW will decrease the time in 1 minute units. Once the desired time is chosen, pressing MED will save the new time.

Hot Keys

Display Reason S.A.F.E. is Disabled

While machine is idle displaying “S.A.F.E. DISABLED ... READY INSERT 25¢ TO START” or “S.A.F.E. DISABLED ... SELECT A CYCLE”, press the PAUSE and LO keys simultaneously.

Clear Credit

While machine is idle displaying “SELECT A CYCLE” press and hold PAUSE, while holding PAUSE press HI, HI, HI, LO, LO, MED within 3-seconds and the control will display “CLEAR CREDIT?” While still holding PAUSE press any key to clear credit. Releasing PAUSE then pressing any key will not clear credit.

Display Fault Message

While machine is displaying “OUT OF ORDER” press the LO key.

Display Credit Remaining

While machine is displaying “OUT OF ORDER” press the HI key.

Clear “Out of Order”

While machine is displaying “OUT OF ORDER” press and hold the PAUSE key for 3-seconds.

General User Information Non-Coin Models “OPL Dry Mode” _____

Cold Start (Initial/First Use)

This appliance has 20 preset cycles, which are ready for use. To start the unit, use the UP and DOWN ARROW keys to scroll through the preset cycles, until the desired cycle is highlighted, then press the START/ENTER key. You can find a detailed description of the preset cycles in the chart on page 8. While a cycle is running you can press the STOP button once to pause the cycle or twice to clear it completely.

Hot Keys

Display Reason S.A.F.E. is Disabled

While machine is idle displaying “SELECT A CYCLE” or “S.A.F.E. DISABLED ... SELECT A CYCLE”, press the STOP and START keys simultaneously.

Clear Current Drying Cycle

While machine is idle displaying “CYCLE PAUSED RESTART CYCLE OR PRESS PAUSE TO CLEAR”, press the STOP key and the cycle will be terminated.

Clear Fault Message

While machine is displaying any fault message press and hold the STOP key for 3-seconds.

Introduction to Programming _____

The keypad along with the digital display are used to setup the dryer controls.

Entering and Exiting Service Mode

Entering

Coin/Debit Models

Use security key to activate programming mode.

Non-Coin (OPL) Models

To enter the Program Mode you must hold the STOP key and the UP ARROW key down.

Exiting

The PERM PRESS/ENTER key must be depressed to save any changes that have been made.

Coin/Debit Models

Return security key back to its normal position.

Non-Coin (OPL) Models

Exit Service Mode by pressing the STOP key.



Important

If the computer in a non-coin (OPL) unit is set to coin or free, it will be necessary to connect two orange wires found loose in the wire bundle directly behind the computer board. Once this is done, the computer will be automatically entered into the Service Mode.

How to use the Keypad to Program the Controls

Coin/Debit Controllers

The HIGH key is used to increase numbers and scan through menu locations.

The MEDIUM key will enter program locations and save changes made.

The LOW key is used to decrease numbers and scan through menu locations.

To back out of a program location hit the PAUSE key.

Non-Coin (OPL) Controllers

The UP ARROW is used to increase numbers and scan through menu locations.

The DOWN ARROW is used to decrease numbers and scan through menu locations.

The START/ENTER key will enter program locations and save changes made.

To back out of a menu location hit the STOP/PAUSE key.



Caution

The service access panel must not be opened unless power is first disconnected from the dryer.

Before proceeding it is worth noting that, despite all the options available, an owner can simply choose to uncrate a new commercial machine, hook it up, plug it in and have a unit which operates.



Note

On stacked dryers programming selections apply to both pockets.

NOTES _____

Quick Reference Programming Menu for Coin/Debit/Free Models

Machine Info

Coin Vault
Hours
Serial #
Software Rev

Program Setup

Dry Mode

Coin Dry Mode
Free Dry Mode

Control Settings

Language Multi Language (Language 1, Language 2)
Temp Scale (°F, °C)
Buzzer Settings (End of Cycle, Beep Count)
Top Back Light (0-200)
Bottom Back Light (0-200)
Ready Prompt (To start insert #, Ready, Custom)

Machine Settings

Lint Cleaning Frequency (0-3 Hours)
Axial Max Temp (100° - 180° F / 38° - 82° C)
Burner Setup (One / Two) Not Available on Stack

Hi Key

Time for Amount to Start (1-99 Minutes)
Time for Top Off (1-99 Minutes)
Dry Temp (100° - 160° F / 38° - 71° C)
Cool Time (0-9 Minutes)
Reversing Mode (OFF / ON)

Med Key

Time for Amount to Start (1-99 Minutes)
Time for Top Off (1-99 Minutes)
Dry Temp (100° - 160° F / 38° - 71° C)
Cool Time (0-9 Minutes)
Reversing Mode (OFF / ON)

Low Key

Time for Amount to Start (1-99 Minutes)
Time for Top Off (1-99 Minutes)
Dry Temp (100° - 160° F / 38° - 71° C)
Cool Time (0-9 Minutes)
Reversing Mode (OFF / ON)

Vending Options

Currency Symbol (USD, Pound, Euro, Yen, Token,
No Symbol, No Symbol or Decimal)
Vending Mode (Accumulative Time, Accumulative Coin)
Vending Safeguard (Bad Coin Reset, Bad Coin Lockout)
Clear Escrow (0-99 Minutes)
Clear Coin Vault (No / Yes)
Left Coin Value (1-2500)
Right Coin Value (1-2500)
Amount to Start (1-2500)
Amount for Top Off (1-2500)
Debit Card Setup (Off, Gen 1, Gen 2)

Diagnostic Mode

Fault Recording
Diagnostic Cycle
Help Mode

Machine Setup

Note: this location is password protected (password is "MED" key four times).

Model

Gas non-reversing, electric non-reversing, steam non-reversing,
gas reversing, electric reversing, steam reversing

Dryer Type

Coin/Free
OPL

Factory Settings

Note: this location is password protected
(contact factory if information is necessary)

KEY FUNCTIONS

LOW

Scroll down/decrease value

HIGH

Scroll up/increase value

MEDIUM

Accept selection

PAUSE / STOP

Back out of a location

Quick Reference Programming Menu for Non-Coin (OPL) Models

Machine Info

Hours
Serial #
Software Rev

Program Setup

Control Settings

Language Multi Language (Language 1, Language 2)
Temp Scale (°F, °C)
Buzzer Settings (End of Cycle, Beep Count)
Top Back Light (0-200)
Bottom Back Light (0-200)

Machine Settings

Lint Cleaning Frequency (0-3 Hours)
Axial Max Temp (100° - 180° F / 38° - 82° C)
Burner Setup (One / Two) Not Available on Stack
Auto Adjust (1-255)
Search Period (1-255)

Vending Options

Debit Card Setup (Off, Gen 1, Gen 2)

KEY FUNCTIONS

DOWN ARROW
Scroll down/decrease value

UP ARROW
Scroll up/increase value

ENTER
Accept selection

PAUSE / STOP
Back out of a location

Diagnostic Mode

Fault Recording
Diagnostic Cycle
Help Menu

Machine Setup

Note: this location is password protected (password is "ENTER" key four times).

Model

Gas non-reversing, electric non-reversing, steam non-reversing,
gas reversing, electric reversing, steam reversing

Dryer Type

Coin/Free
OPL

Factory Settings

Note: this location is password protected
(contact factory if information is necessary)

Coin Programming Example Changing “Time for Amount to Start”

Below is a flowchart explaining how to change the time allotted for the start price on coin machines for all temperatures. This is meant to be an example as there are many options and ways to program this controller. All programming parameters and options are explained in the following section “programming selections”.

1. Use the service key to transition the key switch.



Note

Be sure the computer has no credit or time existing before performing this action.

2. Press the low key once to highlight “Program Setup” and then press the medium key to select.
3. Press the low key three times to highlight “HI key settings” and then press the medium key to select.
4. Press the medium button to select “time for amount to start”.
5. Use the low or high buttons to raise or lower the amount of minutes shown in the screen to the desired amount and then press the medium key to save your change.
6. Press the low key once to high light “time for top off” the press the medium key to select.
7. Use the low or high buttons to raise or lower the amount of minutes shown in the screen to the desired amount and then press the medium key to save your change.
8. Press the pause button once to go back one screen.
9. Press the low button once to highlight “medium key settings” and press the medium key to select.
10. Repeat items 4 through 8.
11. Press the low button once to highlight “low key settings” and press the medium to select.
12. Repeat items 4 through 7.
13. Transition the key switch back to the normal position and remove key.

Programming Non-Coin (OPL) Cycles

Choosing Cycle to Program

At the “SELECT CYCLE” message, use the UP and DOWN ARROW keys to select the cycle that you would like to change.

Once the desired cycle is highlighted, press and hold the STOP and then ENTER. This will allow the user to view and edit each particular cycle’s settings. Using the UP and DOWN ARROW keys will allow the user to scan through the settings. Pressing the ENTER key while the setting is highlighted, will allow the user to adjust that particular setting.



Note

A cycle can only be programmed if the controller is in the “SELECT CYCLE” state, no fault condition exists, and all doors are closed.

Programming Cycle Name

This option will allow the user to rename the cycle that was chosen under the “CYCLE SETTINGS” message. Up to 16 characters are available for each cycle name.

When “CYCLE NAME” is chosen by pressing the ENTER key, the display will transition to an edit “CYCLE NAME” menu. The name will change to 16 underlined character spaces. Pressing STOP will exit out of the “CYCLE NAME” menu and none of the changes will be saved.

Example:

```
A _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
↑
```

Use the UP and DOWN ARROW keys to scroll through the available characters. The available characters are A-Z, space, 0-9, and → . Once the ENTER key is pressed, the next character can now be changed.

Example:

```
I A _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
↑
```

Once the last character is entered, choose the → and press ENTER. This will save the new cycle name.



Note

There is no need to enter spaces in any of the remaining character spaces. Once the → is selected, all remaining characters will become spaces.

Programming Cycle Settings

To change a particular cycle’s settings, use the UP and DOWN ARROW keys to scroll through the selection and the ENTER key to save your selection.

CYCLE TYPE

AUTO
MANUAL

CYCLE TIME

(Only applies if MANUAL cycle is selected)
0 to 99 M (minutes)

DRY LEVEL

(Only applies if AUTO cycle is selected)
FIN (FINISHING)
DRY
XDRY

DRY TEMP

100° to 160° F (degrees Fahrenheit)
38° to 71° C (degrees Celsius)

COOL DOWN TIME

(Only applies if MANUAL cycle is selected)
0 to 99 M (minutes)

COOL DOWN TEMP

(Only applies if MANUAL cycle is selected)
70° to 100° F (degrees Fahrenheit)
21° to 38° C (degrees Celsius)

REVERSING MODE

OFF / ON

REV SPIN TIME

120 to 240 S (seconds)

REV STOP TIME

5 to 10 S (seconds)

Non-Coin (OPL) Factory Preset Programs/Parameters

The following are the default cycle descriptions:

Cycle	Name	Cycle Type Auto / Manual	Dryness			Cool Down (Manual Only)		Reversing		
			Time Manual Only	Level Auto Only	Temp 100° F - 160° F 38° C - 71° C	Time 0-99 min.	Temp 70° F - 100° F 21° C - 38° C	Mode Off / On	Spin 120-240 sec.	Stop 5-10 sec.
1	DENIM	AUTO	50	DRY	160° F / 71° C	4	100° F / 38° C	ON	240	5
2	HEAVY	AUTO	50	DRY	155° F / 68° C	4	100° F / 38° C	OFF	240	5
3	TOWELS	AUTO	40	XDRY	155° F / 68° C	2	100° F / 38° C	ON	240	5
4	HAND TOWELS	AUTO	40	DRY	155° F / 68° C	2	100° F / 38° C	OFF	240	5
5	WHITES	AUTO	40	XDRY	155° F / 68° C	2	100° F / 38° C	OFF	240	5
6	COLORS	AUTO	40	DRY	145° F / 63° C	2	100° F / 38° C	OFF	240	5
7	SHEETS	AUTO	40	DRY	141° F / 61° C	2	100° F / 38° C	ON	120	5
8	COTTONS	AUTO	40	FIN	140° F / 60° C	2	100° F / 38° C	OFF	240	5
9	DELICATES	AUTO	40	FIN	130° F / 54° C	2	70° F / 21° C	OFF	240	5
10	EXTRA DELICATE	AUTO	40	FIN	100° F / 38° C	2	70° F / 21° C	OFF	240	5
11	WRINKLE REMOVAL	MANUAL	5	DRY	160° F / 71° C	0	70° F / 21° C	OFF	240	5
12	TOUCH UP	MANUAL	15	DRY	155° F / 68° C	2	100° F / 38° C	OFF	240	5
13	CASUAL	MANUAL	40	DRY	150° F / 66° C	2	100° F / 38° C	OFF	240	5
14	DUVET	MANUAL	50	DRY	125° F / 52° C	4	70° F / 21° C	ON	120	5
15	HAND WASH	MANUAL	20	DRY	125° F / 52° C	4	70° F / 21° C	ON	240	5
16	SILK	MANUAL	20	DRY	120° F / 49° C	10	70° F / 21° C	ON	240	5
17	WOOLENS	MANUAL	30	DRY	100° F / 38° C	10	70° F / 21° C	ON	240	5
18	AIR	MANUAL	0	DRY	100° F / 38° C	20	70° F / 21° C	ON	240	5
19	NEW CYCLE 1	MANUAL	30	DRY	150° F / 66° C	4	100° F / 38° C	OFF	240	5
20	NEW CYCLE 2	MANUAL	30	DRY	150° F / 66° C	4	100° F / 38° C	OFF	240	5

NOTES

Programming Selections

MAIN MENU

When PROGRAM Mode is first entered, the control will enter the PROGRAM Mode main menu. This main menu will serve as the gateway to all of the PROGRAM Mode features. The features include MACHINE INFO, PROGRAM SETUP, DIAGNOSTIC MODE, MACHINE SETUP, and FACTORY SETTINGS.



Note

If a fault occurs while in normal operation, and the faults were not cleared, then these faults will be displayed in the upper display when the SERVICE SWITCH has been transitioned. Pressing the MED/ENTER key will enable the user to enter into Service Mode.

SERVICE MODE	
1:	MACHINE INFO
2:	PROGRAM SETUP
3:	DIAGNOSTIC MODE
4:	MACHINE SETUP
5:	FACTORY SETTINGS

The LOW/DOWN ARROW key will enable the user to scroll through all the menu items.

Each menu in Service Mode will contain a list of selectable items. The use of the HI/UP ARROW key and the LOW/DOWN ARROW key on the keypad will enable the currently selected item to change. The currently selected menu item will appear with a box around it.

If the menu contains a list of items that will lead to a sub-menu, then the items will be listed in ascending numbered order starting at one. Once the item is selected and entered, the controls will go to the sub-menu.

If the menu item does not lead to a sub-menu, the items will only be listed and not numbered. When the item is selected and entered, the selected item will become highlighted.

Some of these items without a sub-menu do contain selectable parameters. These parameters will be viewed to the right of the item. Once the item is highlighted, the parameter can be changed.

1: MACHINE INFORMATION

Machine information will display the coin vault* upper/lower hours**, SERIAL NUMBER, and the SOFTWARE REV. All of the items on the MACHINE INFORMATION SCREEN will be read only.

* Coin models only.

** Stack units will appear as upper and lower.

Actual listing will be as follows:

COIN VAULT:	XX.XX	Amount of coin accumulated since last cleared. (Coin models only)
UPPER/LOWER HOURS:	XXXXXX	Total amount of hours run.
SERIAL NUMBER:	XXXXXX	The 6 digit serial number entered by the factory.
SOFTWARE REV:	XXX	The software revision loaded on the control board.

2: PROGRAM SETUP

While the control is displaying "SERVICE MODE" and PROGRAM SETUP is highlighted, press the MED/ENTER key to enter this menu.



Note

All default settings are illustrated in **underlined bold italics**.

1: CONTROL SETTINGS

1: LANGUAGE

1: MULTI LANGUAGE
ON/OFF

2: LANGUAGE 1 – allows the user to change the language shown on the display.

ENGLISH
FRENCH
SPANISH
ITALIAN
DUTCH
JAPANESE

3: LANGUAGE 2 – allows the user to change the second language on the display if multi language is set to "ON".

ENGLISH
FRENCH
SPANISH
ITALIAN
DUTCH
JAPANESE

2: TEMP SCALE – will display temperatures as degrees Fahrenheit or Celsius.

°F / °C

3: BUZZER SETTINGS

1. END OF CYCLE – controls audible beep
OFF / ON

2. BEEP COUNT – adjusts number of beeps (duration) (adjustable between 1-10 beeps)
5

4: TOP BACKLIGHT – adjusts brightness of top display.

0 (adjustable from 0 to 200
0 = brightest and 200 = dimmest)

5: BOTTOM BACKLIGHT – adjusts brightness of bottom display. (Not available on single [8.3] computers.)

0 (adjustable from 0 to 200
0 = brightest and 200 = dimmest)

6: READY PROMPT (used on coin/debit only)

1. Ready Prompt
To start insert
Ready
Custom (up to 21 characters)

2. Custom
(This will enable you to enter a custom display)

2: MACHINE SETTINGS

1: *LINT CLEAN FREQ.* – adjusts time between prompts to clean lint.
3 (adjustable between 0 - 3 hours, 0 being off)

2: *AXIAL MAX TEMP* – adjusts axial probes set maximum temperature
180 (adjustable between 100° - 180° F / 38° - 82° C)

3: *BURNER SETUP*
One burner / **Two burner**
(option not available for stack units)

NOTE: 20 and 30 lb capacity must be set as one and 50 and 75 lb capacity must be set as two.

4: *AUTO ADJUST* – for auto cycle adjustment (used on non-coin [OPL] only)
7 (adjustable from 1 - 255)

NOTE: 20 lb capacity should be set as 4. 30 and 50 lb capacity should be set as 7. 75 lb capacity should be set as 3.

5: *SEARCH PERIOD* – for auto cycle adjustment (used on non-coin [OPL] only)
120 (adjustable from 1 - 255)

3: HI KEY SETTINGS (used on coin/debit only)

1: *TIME FOR AMOUNT TO START*
10 (adjustable from 1 - 99 minutes)

2: *TIME FOR TOP OFF*
10 (adjustable from 1 - 99 minutes)

3: *DRY TEMP*
160 (100° - 160° F / 38° - 71° C)

4: *COOL TIME* – adjusts length of cool down cycle at the end of a drying cycle.
2 (0 - 9 minutes)

5: *REVERSING MODE*
OFF/ON (feature is only available if model is set to reversing)

4: MED KEY SETTINGS (used on coin/debit only)

1: *TIME FOR AMOUNT TO START*
10 (adjustable from 1 - 99 minutes)

2: *TIME FOR TOP OFF*
10 (adjustable from 1 - 99 minutes)

3: *DRY TEMP*
130 (100° - 160° F / 38° - 71° C)

4: *COOL TIME* – adjusts length of cool down cycle at the end of a drying cycle.
2 (0 - 9 minutes)

5: *REVERSING MODE*
OFF/ON (feature is only available if model is set to reversing)

5: LOW KEY SETTINGS (used on coin/debit only)

1: *TIME FOR AMOUNT TO START*
10 (adjustable from 1 - 99 minutes)

2: *TIME FOR TOP OFF*
10 (adjustable from 1 - 99 minutes)

3: *DRY TEMP*
120 (100° - 160° F / 38° - 71° C)

4: *COOL TIME* – adjusts length of cool down cycle at the end of a drying cycle.
2 (0 - 9 minutes)

5: *REVERSING MODE*
OFF/ON (feature is only available if model is set to reversing)

6: VENDING OPTIONS (used on coin/debit only)

1. *CURRENCY SYMBOL*
US DOLLAR (\$)
UK POUND (£)
EURO (€)
YEN (¥)
TOKEN
NO SYMBOL
NO SYMBOL OR DECIMAL

2. *VENDING MODE*
ACCUMULATE TIME / ACCUMULATE COIN

NOTE: Refer to page 3 for explanation.

3. *VENDING SAFEGUARD*
BAD COIN RESET / BAD COIN LOCK OUT

NOTE: When a bad coin input is registered, the controller will either lockout for 30-seconds or immediately reset.

4. *CLEAR ESCROW*
0 (adjustable between 0 - 99 minutes, 0 being off)

NOTE: Sets duration of time before credit (minutes) will be deleted, if a temperature selection is not made after it has been stopped.

5. *CLEAR COIN VAULT*
NO/YES

6. *LEFT COIN VALUE*
.25 (adjustable between 1 - 2500)

7. *RIGHT COIN VALUE*
.10 (adjustable between 1 - 2500)

8. *AMOUNT TO START*
.25 (adjustable between 1 - 2500)

9. *AMOUNT FOR TOP OFF* – amount for additional time after amount to start has been achieved.
.25 (adjustable between 1 - 2500)

10. *DEBIT CARD SETUP*
OFF/GEN 1 / GEN 2

3: DIAGNOSTIC MODE

1: FAULT RECORDING

1: UPPER DRYER FAULTS*

When a fault is recorded on the top pocket, it can be viewed in this location. If no fault(s) have been recorded, then "NO UPPER FAULTS" will be displayed.

1: (Description of fault)

2: (Description of fault)

3: (Description of fault)

4: (Description of fault)

5: (Description of fault)

2: LOWER DRYER FAULTS*

When a fault is recorded on the bottom pocket, it can be viewed in this location. If no fault(s) has been recorded, then "NO LOWER FAULTS" will be displayed.

1: (Description of fault)

2: (Description of fault)

3: (Description of fault)

4: (Description of fault)

5: (Description of fault)

* Single units will only have one set of faults.

3: EVENTS

E1:XX
E2:XX
E3:XX
E4:XX
E5:XX
E6:XX
E7:XX
E8:XX
E9:XX
EA:XX
EB:XX
EC:XX
ED:XX
RESET

This will reset all of the event counts to 0.

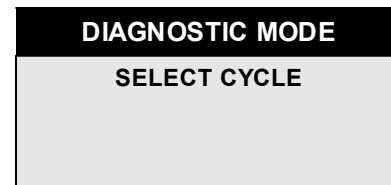
All CODES starting with an "E" represent an event. An event failure is one that would still allow the dryer to run in a safe condition. The number after the "E" code indicates the amount of times that event failure occurred. The 13 Event Code failures are listed in the following table.

EVENT I.D.	FAILURE DESCRIPTION
E1	Top Radiant Sensor fault count
E2	Top Burner Ignitor fault count
E3	Top Exhaust High Limit
E4	Bottom Radiant sensor fault count
E5	Bottom Burner ignitor fault count
E6	Bot Exhaust High Limit
E7	Coin 1 Bad Coin count
E8	Coin 2 Bad Coin Count
E9	Upper pocket forward rotation sensor fault count
EA	Upper pocket reverse rotation sensor fault count
EB	Lower pocket forward rotation sensor fault count
EC	Lower pocket reverse rotation sensor fault count
ED	S.A.F.E. DISABLED – Water not connected

2: DIAGNOSTIC CYCLE

Diagnostic Mode enables the user to run the dryer(s) and access items to troubleshoot a problem with the dryer.

When the diagnostic menu is first selected, the controls will prompt the user to start a cycle as seen below.



Note

Once a cycle is selected, the control will clear the fault condition so that dryer can be started. This will also clear all credit in escrow and any cycle time remaining on both pockets.

When the dryer is still in an idle state, a cycle must be selected. Once a cycle is selected, the unit will enter into Running Mode. The cycle's time and temperature will correspond to the selected cycle's parameter settings under SETUP Mode.

Once a cycle has been selected the keys will now enable the user to access different features.

- Pressing the HI/UP ARROW key will increase the time of the current running cycle. (1 minute at a time.)
- Pressing the LOW/DOWN ARROW key will decrease the time of the current running cycle. (1 minute at a time.)
- Pressing the PAUSE/STOP key will pause the current running cycle.
- Pressing the MED/ENTER key will access the HELP MENU.



Note

If the program key switch is toggled while a cycle is running and no diagnostic codes are being reported, the current diagnostic cycle will continue to run in Customer Mode. Once the cycle has finished the control should return to operating in the normal Customer Mode.

When a cycle is running, the control will display DIAGNOSTIC MODE at the top of the display.

If a fault occurs during Diagnostic Mode, the control will enter into a fault cool down and the occurring fault will be displayed. The fault can be cleared by reentering the diagnostic cycle.

3: HELP MENU

The help menu allows the user to view the status of different parts of the dryer. When a feature is highlighted, the center section will list that feature and its current status. The items in the help menu will refer to the current running cycle that was selected in Diagnostic Mode.

Pressing the HI/UP ARROW key will allow the user to move the highlighted bar around the help menu screen. For example, highlighting "S" will show the status of the sail switch.

Pressing the PAUSE/STOP key will return the controls to Diagnostic Mode.

The table below shows the standard features available and the symbol they correlate with.

FEATURE SYMBOL	FEATURE TEXT	FEATURE	FEATURE INFORMATION
EXH	EXHAUST TEMP PROBE	Exhaust Temperature Probe	(in Deg. F or C)
AXL	AXIAL TEMP PROBE	Axial Thermistor Probe	(in Deg. F or C)
RPM	TUMBLER ROTATION SPEED	Tumbler Speed in Revolutions Per Minute	R.P.M.
MIN	TIME REMAINING	Time remaining in the diag. cycle	0 to 99 (in minutes)
CODE	HELP CODE MENU	Help Menu Code	Help Codes
T1	THERMOSTAT BURNER 1	Thermostat (Heat Output Burner 1)	ON - OFF
T2*	THERMOSTAT BURNER 2	Thermostat (Heat Output Burner 2)	ON - OFF
H1	HEAT RETURN BURNER 1	Heat Return Burner 1	ON - OFF
H2*	HEAT RETURN BURNER 2	Heat Return Burner 2	ON - OFF
C1	HEAT RELAY 1 CONTACTS	Heat relay 1 contacts	OPEN - CLOSED
C2*	HEAT RELAY 2 CONTACTS	Heat relay 2 contacts	OPEN - CLOSED
B	BLOWER	Fan output	ON - OFF
F	FORWARD	Forward drive output	ON - OFF
R	REVERSE	Shows reversing relay is on	ON - OFF
D	DOOR	Main Door	OPEN - CLOSED
L	LINT	Lint Door	OPEN - CLOSED
P	WATER PRESSURE	H ₂ O Input	ON - OFF
S	SAIL SWITCH	Sail Switch	OPEN - CLOSED
V	VAULT SWITCH	Vault Switch	OPEN - CLOSED
W	WATER OUTPUT	S.A.F.E. output	ON - OFF

If the help menu feature "CODE" is selected, the center section will present "Help Codes" and "Events". All of the items in the code menu will automatically scroll up and continue to scroll until LOW/DOWN ARROW key is pressed to select a new help menu feature.

All CODES starting with an "H" represent some condition that could interfere with the proper functioning of the dryer. There could be up to 3 "H" codes listed within the HELP MENU.

- H1 represents the last failure recorded.
- H2 represents the second to last failure recorded.
- H3 represents the third to last failure recorded.

Each Help Code will be followed by a two digit code. This two digit code will reflect a particular issue.

HELP CODE	CODE DESCRIPTION
81	Lower Exhaust Probe Fault
86	Upper Exhaust Probe Fault
87	Upper Axial Probe Fault
82	Lower Axial Probe Fault
89	Upper Sail Switch Open Fault
88	Upper Sail Switch Closed Fault
84	Lower Sail Switch Open Fault
83	Lower Sail Switch Closed Fault
90	Upper Rotation Sensor Fault
91	Lower Rotation Sensor Fault
92	Gen 2 Card Reader Communication Fault
E1	Top Radiant Sensor fault count
E2	Top Burner Ignitor fault count
E3	Top Exhaust High Limit
E4	Bottom Radiant sensor fault count
E5	Bottom Burner Ignitor fault count
E6	Bottom Exhaust High Limit
E7	Coin 1 Bad Coin count
E8	Coin 2 Bad Coin Count
E9	Upper pocket forward rotation sensor fault count
EA	Upper pocket reverse rotation sensor fault count
EB	Lower pocket forward rotation sensor fault count
EC	Lower pocket reverse rotation sensor fault count
ED	S.A.F.E. DISABLED – Water not connected

If a fault occurs while in Help Mode, the fault will be displayed as a Help Code or Event Code.

Codes can be cleared by pressing and holding the PAUSE/STOP key for 3-seconds.

The last item listed in the code menu will identify the revision of the software that is being used on the control board.

Faults

Exhaust Probe

An exhaust probe fault occurs when the control detects that the exhaust temperature transducer is reading a temperature that is out of the probe's normal operating temperature range for more than 3-seconds. There is an automatic fault clearing feature for this fault. If the fault condition no longer exists, the control will clear the fault condition and return to READY Mode.

Axial Probe

An axial thermistor probe fault occurs when the control detects that the axial thermistor is reading a temperature that is out of the probe's normal operating temperature range for more than 30-seconds, usually an open or shorted probe condition. There is an automatic fault clearing feature for this fault. If the fault condition no longer exists, the control will clear the fault condition and return to READY Mode.

Sail Switch Closed

A sail switch closed fault occurs when a cycle is starting up from either READY Mode, PAUSE Mode or any other idle state. Once a temperature/cycle is selected the control will start the time and verify the sail switch is open, if it is not, the control will display on the screen that the control is "STARTING" and will not turn on the FAN, DRIVE or HEAT. The control will allow the sail switch 10-seconds to open before the control faults out with a SAIL SWITCH CLOSED FAULT. Once a SAIL SWITCH CLOSED FAULT is detected the control will log the fault and will not allow the cycle to continue. The control will display "SAIL SWITCH CLOSED FAULT, SELECT CYCLE TO RESTART, when the fault is detected.

Sail Switch Open

A sail switch open fault occurs when a cycle is starting from either READY Mode, PAUSE Mode or any other idle state. If the sail switch does not close within the allotted 10-seconds the control will log the fault and will not allow the cycle to continue. The control will display "SAIL SWITCH OPEN FAULT, CHECK MAIN DOOR AND LINT ACCESS AND SELECT CYCLE TO RESTART". A sail switch open fault can also occur once a cycle is in process. If the control detects that the sail switch has opened, the heat will immediately turn off and if the sail switch fails to close within the allotted 30-seconds, the control will fault and display "SAIL SWITCH OPEN FAULT, CHECK MAIN DOOR AND LINT ACCESS AND SELECT CYCLE TO RESTART".

Rotation Sensor Fault

A rotation sensor fault occurs when the control is in a cycle and does not detect any rotation sensor pulses in more than 10-seconds.

Gen 2 Card Reader Communication Fault

This fault occurs when the control has not received a health check function from the Gen 2 debit card reader in 30-seconds. If this fault occurs in Ready or Vending Modes, the control will log the fault and display "OUT OF ORDER". Once the control enters READY Mode and the fault has not been corrected or cleared, the control will display "OUT OF ORDER". The fault is self clearing; therefore, once communication is reestablished, the control will clear the OUT OF ORDER condition and allow full dryer functionality again.

Exhaust High Temp Fault

An exhaust high temperature fault occurs when the exhaust probe is detecting a tumbler temperature that is 20° F above the maximum dryer temperature set point for more than 10-seconds.

Blocked Coin Drop

This fault occurs if the control senses a blockage in the coin input. If the coin input is blocked for more than 8-seconds the control will go to out of order and will not allow the control to start a cycle. This fault has both automatic and manual fault clearing. If the condition is corrected the control will recover from out of order immediately after the blockage is no longer seen.

Events

Radiant Sensor Fault Count

A radiant sensor fault count will occur when a gas model dryer attempts to turn on the burner system and never receives a 120V return signal within a predefined time.

Burner Igniter Fault Count

A burner ignition fault count will occur when a gas model dryer attempts to turn on the burner system and receives a 120V on the burner return signal but it does not transition to a 0V return signal within a predefined time.

Exhaust High Limit

This location is a count of the times that the exhaust high limit has been sensed in the open position.

Bad Coin Count

This location is a count of all the bad coin occurrences that were detected from the coin input.

Forward Rotation Sensor Fault

A forward rotation fault pertains only to reversing machines. The way this fault works is if the dryer is reversing and is running a cycle that has the reversing option enabled, if a rotation sensor fault condition is detected, the drive output would be shut off. Then the dryer will transition to a reversing drive output. If the dryer continues to run without an issue, the machine will continue to run with the forward drive output disabled until the next cycle is started. If the Reversing Mode also fails the control will enter a ROTATION SENSOR FAULT disabling the machine. The next cycle should operate with both drive outputs, that way, if the issue still exists the control will fault out again disabling the fault drive output.

Reverse Rotation Sensor Fault

REVERSE ROTATION SENSOR FAULT is identical to FORWARD ROTATION FAULT, however it pertains to the reversing drive output instead of the forward drive output.

S.A.F.E. Disabled – Water Not Connected

This event pertains only to machines with a fire detection system. If the control senses a lack of water pressure, this event will appear.



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