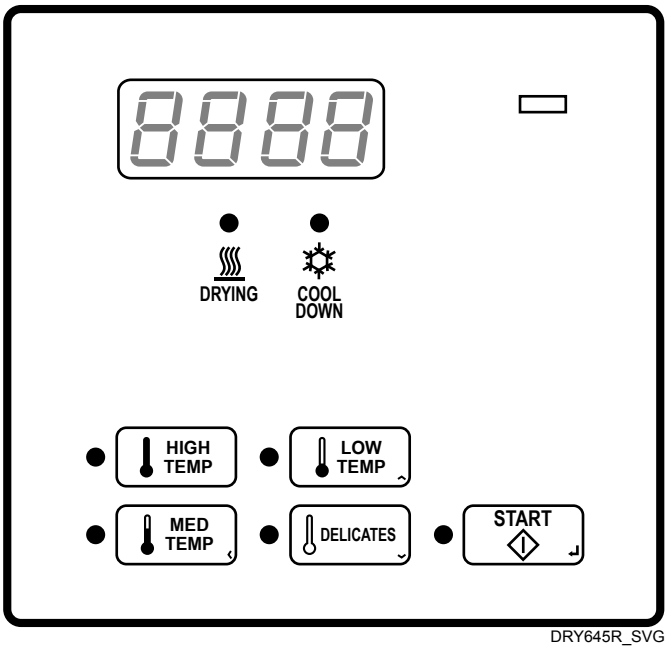
Dryer

Refer to Page 7 for Model Identification

Programming



DRY645R_SVG

Original Instructions
Keep These Instructions for Future Reference.
CAUTION: Read the instructions before using the machine.
(If this machine changes ownership, this manual must accompany machine.)

Alliance™ Laundry Systems

Part No. D516167ENR6
October 2022

WARNING

Failure to install, maintain, and/or operate this machine according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.

W030

WARNING

For your safety and to reduce the risk of fire or an explosion, do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

W022

NOTE: The WARNING and IMPORTANT instructions appearing in this manual are not meant to cover all possible conditions and situations that may occur. It must be understood that common sense, caution, and carefulness are factors which cannot be built into these washers. These factors MUST BE supplied by the person(s) installing, maintaining, or operating the unit.

Always contact the distributor, service agent, or the manufacturer about any problems or conditions you do not understand.

 Read all instructions before using unit.

 Hazardous voltage inside. Disconnect power before servicing.

This product uses FreeRTOS V7.2.0 (www.freertos.org).

Table of Contents

Model Identification

Information in this manual is applicable to these dryer models:

BDEBCAGS173TN01	HDEBXRGS153CW01	HTGBXASP095CW01	PDGBXRGS113CW02	SSEBCAGS153TW01
BDEBCAGS173TW01	HDEBXRGS173CW01	HTGBXASP114FW01	PDGBXRGS113TG02	SSEBCAGS173TW01
BDEBCRGS173TW01	HDEBXRGS303NW22	HTGBXASP124DW01	PDGBXRGS113TW02	SSEBCAGW153TW01
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BTEBXASG454NW36	HSGBCAGW113TW01	NTEBYASP543NW23	SDEBYRGS173TW01	STEBXASP304WW01
BTEBXASP434AW01	HSGBDAGW093CW01	NTGBXASP304NW01	SDGBCAGS113TQ01	STEBXASP434AW01
BTGBLASP304AW01	HSGBEAGW093CW01	NTLBXASP304NW26	SDGBCAGS113TW01	STEBXASP434AW12

Table continues...

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GDEBXABW403UN01	HTEBDASP285CW01	PDEBXRGS173CG02	SDGBXAGS113TW01	STGBXASP124DW01
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GDGBXABW303UN01	HTEBXASP134FW01	PDEBXRGS173TG02	SDGBXAGS543DW01	STGBXASP304AW12
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HDEBXAGS543FW01	HTGBDASP095CW01	PDGBXRGS113CG02	SDGBYRGS113TW01	TTEBXASP304NW22

Preliminary Information

About the Control

This control is an advanced, programmable computer that lets the owner control machine features by pressing a sequence of SELECT CYCLE pads. Refer to *Figure 1* .

The control allows the owner to program custom cycles, set vend prices, retrieve audit information, run diagnostic tests and other programmable features. Refer to Programming Control for a list of features. Dryers shipped from the factory have a default cycle (MED TEMP) built in. However, the owner can change the default cycle, or any cycle, as needs permit.

IMPORTANT: In the event of a power failure, the control will not have to be reprogrammed. It is designed with a memory system that will remember how it was programmed (for up to 10 years) until the electrical power is restored.

IMPORTANT: It is extremely important that the dryer has a positive ground and that all mechanical and electrical connections to the control are made before applying power to or operating the dryer.

Glossary of Terms

The following are a few terms and abbreviations to learn. These are referred to throughout the instructions.

Display – This term refers to the window area of the control that displays words and values.

LED (Light Emitting Diode) – This term refers to the lights next to the keypads and status words of the control.

FEC – Front End Control

I/O Board – Input/Output Board

OPL – On Premises Laundry

Power Failure Recovery

If a cycle is in progress and the power fails, the cycle status is saved in memory. When the power recovers, the dryer will resume into the previously active cycle (if so programmed by the owner), by pressing the START pad. If the power failure occurs while the control is in a fatal error mode, it will return to Ready Mode upon recovery.

Communications

The control may be programmed manually.

Serial Card Reader Communications (Card Models Only)

The control will accept communication with a serial card reader in order to perform vending transactions when a card is inserted to pay for cycles. The card reader can also allow the owner to program a limited number of features and collect audit information.

For detailed information on serial card reader communications, refer to instructions included with card reader.

Control Identification

SELECT CYCLE Pads

(Refer to *Figure 1*)

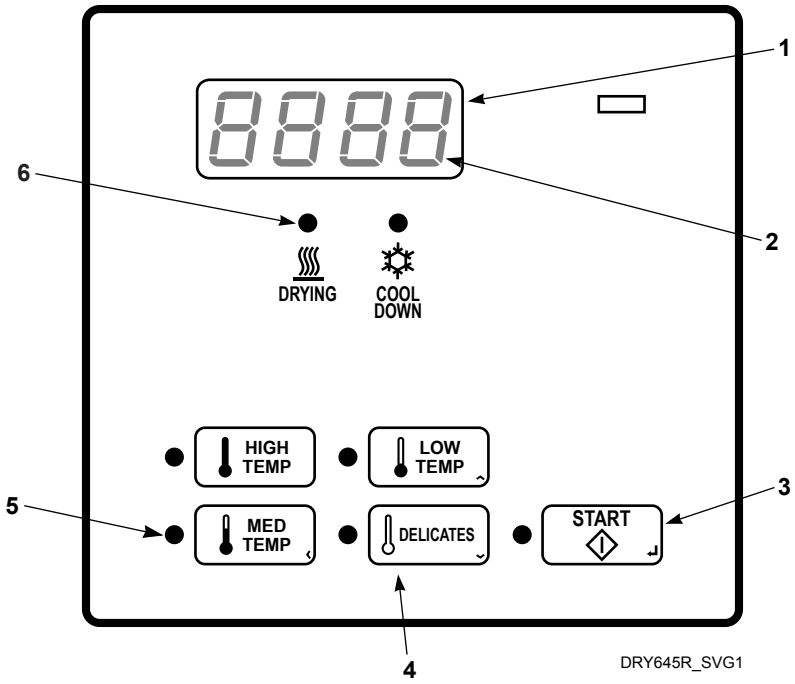
SELECT CYCLE pads are used to select the specific dryer cycle and temperature. These pads include HIGH TEMP, MED TEMP, LOW TEMP and DELICATES. The selection of one of these cycles will light up the corresponding LED. The factory default cycle is MED TEMP.

START Pad

(Refer to *Figure 1*)

The START pad is used to start the dryer after the full vend price has been satisfied and the dryer door is closed.

Both the START pad and the SELECT CYCLE pads are used in various combinations for programming cycles, retrieving audit information, running diagnostic tests, and other operations. During an active cycle (card reader equipped machines only), the START pad may be pressed (with a card inserted) to add time to a cycle.



1. Display
2. 7-Segment Digits
3. START Pad
4. SELECT CYCLE Pads
5. LED Light
6. LED Status Lights

Figure 1

Display Identification

Light Emitting Diodes (LEDs)

(Refer to *Figure 1*)

LIGHT EMITTING DIODES (LEDs) are used to indicate the chosen cycle and cycle status. See below for information on each LED.

START LED

The START pad LED flashes one second on and one second off whenever the dryer is not in a cycle, the full vend price has been satisfied, and the dryer door is closed. When the START pad is pressed, the cycle will begin or resume. The START LED will shut off when the START pad is pressed. The START LED will also flash any time a card is inserted to add time to the current cycle.

DRYING LED

The DRYING LED is lit to indicate that the heat portion of the cycle is currently in operation. The DRYING LED goes off when the COOL DOWN portion of the cycle begins.

COOL DOWN LED

The COOL DOWN LED is lit whenever the COOL DOWN portion of a heated cycle is active. The COOL DOWN LED will shut off when a cycle ends or more time is added, pushing the cycle back into the heated portion of a cycle.

Four 7-Segment Digits

The 7-SEGMENT DIGITS are used to display the time remaining in a cycle, vend price, error messages and descriptive codes. During diagnostic testing or manual programming of the control, these digits will display descriptive codes and values (as described in *Entering the Manual Mode*).

Dryer Operation

Power Up Mode

When power is applied to the dryer, the control becomes active. This mode sets the next mode before enabling power failure detection.

Ready Mode

In Ready Mode, the display shows the currently selected cycle and the full vend price is displayed.

The user may select a different cycle, if desired. If the vend price is not satisfied within 4.25 minutes, the dryer control will return to the Ready Mode. The display will continue to show the remaining vend needed to start a cycle.

Partial Vend Mode

The control enters this mode when part of the vend price has been entered, but not enough vend is entered to satisfy the vend price. The control will display the remaining vend price needed to start the cycle.

Additional Vend Mode

The control enters this mode if the cycle is changed to a cycle that requires more money. The additional vend price will flash one second on and one second off until a coin is entered, a start pulse is entered or a vend payment is received. If the vend price is not satisfied within 60 seconds or the door is opened, the control will go back to the first selection and the cycle will continue.

Start Mode

Vends may be satisfied by a coin drop, start pulses, or by a third party card reader. If a coin drop is used, the remaining vend price will decrease with each coin entry. If start pulses are used, the remaining vend price will decrease with each received pulse. Once the vend is satisfied, the START LED will begin to flash and signal will sound for ten seconds. If a third party card reader is used, the START LED will begin to flash when a valid cash card is entered into the reader.

When the START keypad is pressed, the dryer will start. The START LED will stop flashing and either the DRYING LED or the COOL DOWN LED will be lit. The display will change to show the remaining cycle time on the display. The DRYING LED will be lit during the heat portion of a heat cycle. The COOL DOWN LED will be lit during the cool down portion of a heat cycle .

When a cycle is complete, the display will show 00 until the door is opened, a key is pressed, a coin or card is entered, or a start pulse is received. When any of the above happens, the display will revert back to the Ready Mode.

Entering Coins

Coins are entered to satisfy the programmed vend price for a selected cycle. Coins may be entered before selecting a cycle or during an active cycle. When coins are entered during an active cycle, the time remaining is increased by the amount programmed by the owner (refer to *Programming Control*).

The owner may choose to add additional time for each coin entered. If coins are entered for an active cycle currently in the COOL DOWN Mode, coins entered may push the cycle back into the DRYING Mode. The maximum time for any cycle is 99 minutes.

Entering Cards

A card is entered to satisfy the programmed vend price for a selected cycle. The card may be entered before selecting a cycle or during an active cycle. When the card is entered during an active cycle and the START keypad is pressed, the time remaining is increased by the amount programmed by the owner. Refer to *Programming Control* section.

The owner may choose to add additional time by deducting a vend from the card or may require an additional full vend price be deducted from the card. If vend is deducted during an active heated cycle that is currently in the COOL DOWN Mode, the additional time added may put the cycle back into the DRYING Mode. The maximum time for any cycle is 99 minutes. Additional time cannot be added if it exceeds the 99 minute limit on a drying cycle.

Changing Active Cycles

In OPL machines, the active cycle may be changed at any time during dryer operation. In vend machines, the active cycle may be changed in the first five minutes for more expensive cycles. Cycles that are the same price or less expensive can be chosen anytime. In the last five minutes, a cycle can be changed with no change to vend or time remaining.

Opening the Dryer Door

Opening the dryer door in a running cycle will automatically stop the cycle. When the dryer door is opened, the DRYING LED or COOL DOWN LED is turned off.

Once the dryer door is closed, the START pad LED flashes at one second intervals until the START pad is pushed. Pressing the START pad will start or resume the active cycle.

Signals

There are four instances when a signal may sound during dryer operation. The owner may program the signal to be turned on or off . These four instances are listed below:

1. **Keypad Depression Signal**

The signal will sound for a quarter of a second each time a keypad is pressed.

2. **Coin Input/Start Pulse Input/Card Insertion Signal**

The signal will sound for a quarter of a second each time a coin or start pulse is received or a card is entered.

3. **Serial Command Signal**

This signal will sound for a quarter of a second each time the control receives a valid serial vend command.

4. **Signal for Start**

This signal will sound one second on and one second off for 10 seconds when START LED is flashing after vend has been satisfied.

Special Features

Programming Control

The control allows the dryer owner to program the control with the use of the keypad. Cycle and vend information may be programmed, audit information may be viewed and diagnostic tests may be run by pressing keypad combinations.

For details on programming cycle and vend information, refer to **Programming Control** .

Collecting Audit Information

The control will store audit information in its memory that can be retrieved by pressing various keypad combinations. The control will record coins entered, total machine cycles, top-offs, and total start pulses.

For more information on the audit features, refer to *Collecting Audit Information*.

NOTE: Additional audit information is retrievable with a card reader. Refer to the appropriate instruction manual.

NOTE: Additional audit information is retrievable with an external device, a card reader or a network. Refer to the appropriate instruction manual.

Testing Machine and Control Functions

Special programmable diagnostic features built into the control allow the owner to run specific diagnostic tests. By opening and closing the service door, with coin vault closed, and then pressing various sequences of keypads, the owner may retrieve and perform the following tests:

- Control Software Version Number
- Input/Output Board Software Version Number
- Service Door Opening Test
- Coin Vault Opening Test
- Coin Drop #1 Input Test
- Coin Drop #2 Input Test
- Vend Header Present Status Test
- Start Pulse Test
- Dryer-on Temperature Test
- Door Switch Input Test
- Thermistor Temperature Test
- Machine Configuration #1 Display Test
- Machine Configuration #2 Display Test
- Machine Configuration #3 Display Test
- Machine Configuration #4 Display Test
- Machine Configuration #5 Display Test

For detailed information on running diagnostic tests, refer to ***Testing Machine and Electronic Control Functions*** .

Rapid Advance Feature

This feature allows the user to quickly advance through an active dryer cycle or advance into a cycle from the Ready Mode. This feature is useful when tests must be performed immediately on a dryer currently in an active cycle. In this case, the user can quickly advance through the cycle to the Ready Mode. At this point, the user can perform the required tests and then return the dryer to the active cycle.

For detailed information on using the Rapid Advance feature, refer to Rapid Advance Feature.

Communications Mode

This feature allows the dryer control to communicate with a card reader. This allows the dryer control to be programmed and have its data read without using the keypad.

For more detailed information on using the Communications Mode feature, refer to **Communications Mode** section.

Coin Drop

The control will accept pulses from a single or dual coin drop to satisfy vend price. Each coin drop will have the ability to satisfy the vend.

Start Pulse Operation

The control will accept pulses from optional payment systems. The Start Pulse Mode allows the machine to go from the Ready Mode to the Start Mode after multiple pulses are received.

Service Door and Coin Vault Openings

The control will capture the times and dates of the last seven openings of the Coin Vault and the Service Door. The information is saved in memory. An open service door and a closed coin vault combined with various keypad presses allows the control to enter manual modes of operation. These modes include Manual Programming, Audit Collection, Diagnostics, Rapid Advance, and Reset to Factory Defaults.

OPL Mode

This feature allows the user to start a cycle without satisfying the vend price.

Press the START keypad to add time to the cycle.

For details on enabling OPL Mode, refer to *Programming Control*.

Opening the Service Door

Stacked Washers and Dryers, Stacked Dryers, Front Control Dryers, and Coin Rear Control Dryers

Models through Serial No. 1810000001

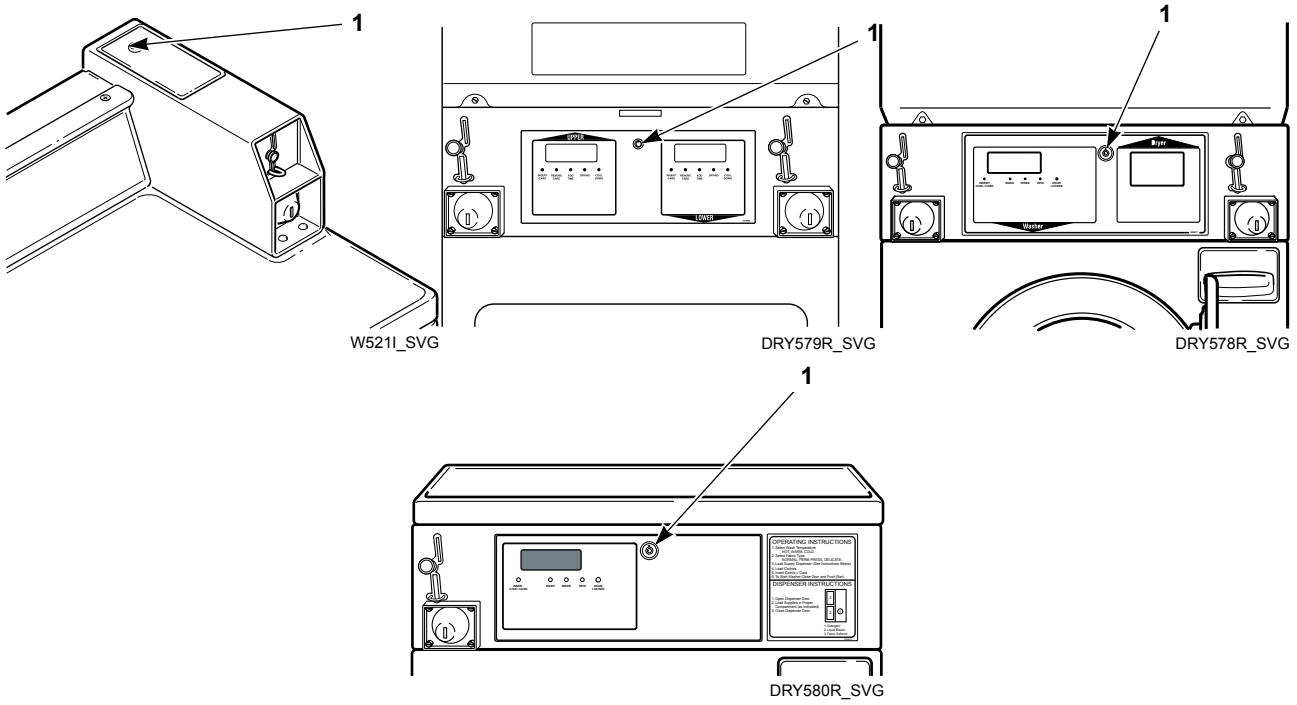
Manual programming requires the user to open and close the service door. Opening and closing the service door trips a switch allowing access to various programming options, diagnostics, and audit capabilities. On coin models, the coin vault switch must be closed to enter Manual Mode.

Models starting Serial No. 1810000001

Manual programming requires the user to unplug the bullet connector located between the “white/black” and “red/blue” wires. Reconnect the connector for normal operation.

After opening and closing the service door or unplugging the bullet connector, the programmer has 4.25 minutes to begin programming.

Refer to *Figure 2* for locating the service door.



1. Service Door

Figure 2

Rear Control Dryers with Card Reader

Manually programming the control requires the user to remove the control panel and unplug the bullet connector located between the “white/black” and “red/blue” wires or to insert an appropriate card into the reader. This will allow the user to access various programming options, diagnostics and audit capabilities. The control panel is located on the control hood. Refer to *Figure 2* .

Entering the Manual Mode

For programming, testing, and retrieving information from the control, it is often necessary to enter the Manual Mode by following the steps below.

For an overview of entering the Manual Mode, refer to the flowchart.

How to Enter the Manual Mode

1. If accessing Diagnostic Tests, be sure the dryer is in the Ready Mode before continuing to step 2. If the dryer is in an active cycle, rapid advance through the cycle. Refer to **Rapid Advance Feature** .
2. Coin Models through Serial No. 1810000001 – Open the service door. The coin vault switch must be closed to enter the Manual Mode.
3. All Other Models: Unplug bullet connector.
4. While pressing and holding the HIGH TEMP keypad with one hand, press the MED TEMP keypad with the other hand.
5. The display will show rAPd.
6. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the options until the desired option appears in the display.
7. Press the START (enter) keypad to enter the displayed mode.
8. To exit, press the MED TEMP (<) keypad. The control will revert back to Ready Mode.

By default, Manual Programming is turned on.

The manual features available in each group are as follows (the menu displayed on the display in this mode is in parenthesis).

Rapid Advance (rAPd)

Manual Programming (Prog)

Manual Read Audit (AUdt)

Manual Reset (rSEt)

Diagnostic Tests (d iAG)

If a manual parameter is unavailable (i.e. attempting to enter diagnostics while a cycle is running), an audio signal will sound for one second and the features in the parameter cannot be entered.

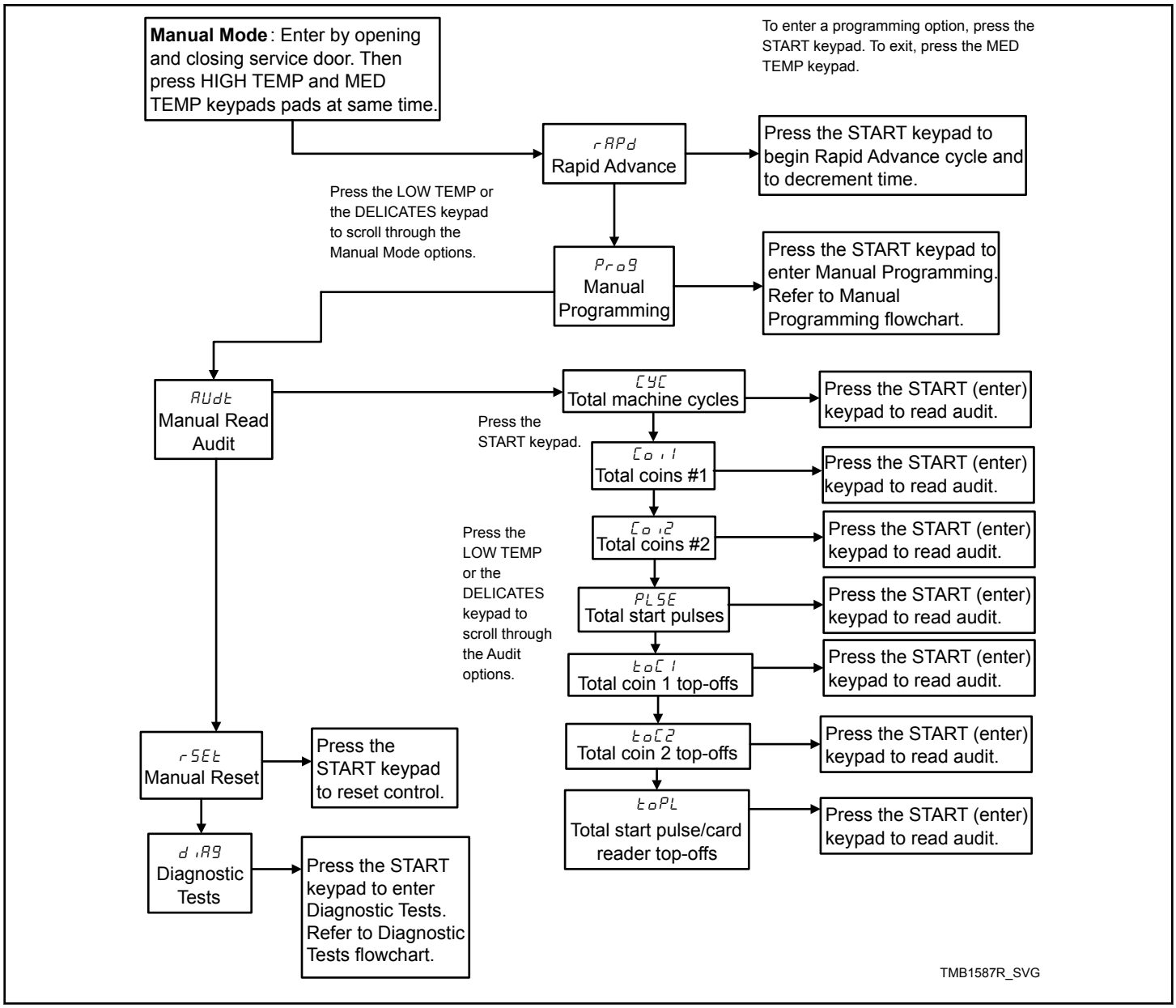


Figure 3

How to Exit Programming Feature

Press the MED TEMP (<) keypad until the control returns to Ready Mode.

Programming Control

What Can Be Programmed?

This feature allows the owner to program cycle parameters, standard vend pricing and other features by using the keypads.

This section offers a detailed description of all available programmable options.

Each description includes instructions on when and why the option might be used and, more importantly, how to program the option.

For an overview of the programming organization, refer to the flowcharts.

For more advanced users, a quick reference list of the options available through the programming mode is located on this page.

NOTE: The codes in the Option Display column of the Programmable Options List are what will show in the display when that option is selected.

Programmable Options Available

Option Number	Option Display	Description	Default Value	Value Range
1	AtS	Heat Cycle Vend Price	200	0-65535
2	CYCL	Heat Cycle Time Minutes	45	1-99
3	CYCS	Heat Cycle Time Seconds	0	0-59
4	C 1to	Coin 1 Top-Off Time Minutes	5	0-99
5	1toS	Coin 1 Top-Off Time Seconds	38	0-59
6	C2to	Coin 2 Top-Off Time Minutes	22	0-99
7	2toS	Coin 2 Top-Off Time Seconds	30	0-59
8	dEn 1	Coin #1 Value	25	1-65535
9	dEn2	Coin #2 Value	100	1-65535
10	PLSE	Start Pulse Value	25	1-65535
11	dCYC	Default Cycle	4	1 (High Temp), 2 (Low Temp)
12	CArd	Card Reader Display Control On/Off	oFF	on/oFF
13	AUd	Global Audio Signal (On/Off)	29	on/oFF
14	Err	Global Errors (On/Off)	on	on/oFF

Table continues...

Option Number	Option Display	Description	Default Value	Value Range
15	Cd	Cooldown Time	3 - North America 10 - Outside North America	1-15
16	t dF	Time Display Format	mm	mm (minutes only) or mmSS (minutes and seconds)
a	H i t	High Temperature	160°F/71°C	no heat, 100°-160°F/ 38°-71°C
b	mid t	Medium Temperature	155°F/68°C	no heat, 100°-160°F/ 38°-71°C
c	Lo t	Low Temperature	145°F/62°C	no heat, 100°-160°F/ 38°-71°C
d	dELt	Delicates Temperature	115°F/46°C	no heat, 100°-160°F/ 38°-71°C
21	t FC	Temperature (Fahrenheit/Celsius)	FAHr	FAHr/CELS
22	HtdP	Heat Indicator Decimal Point (On/Off)	oFF	on/oFF
23	oPL	OPL Mode Enable (On/Off)	oFF	on/oFF

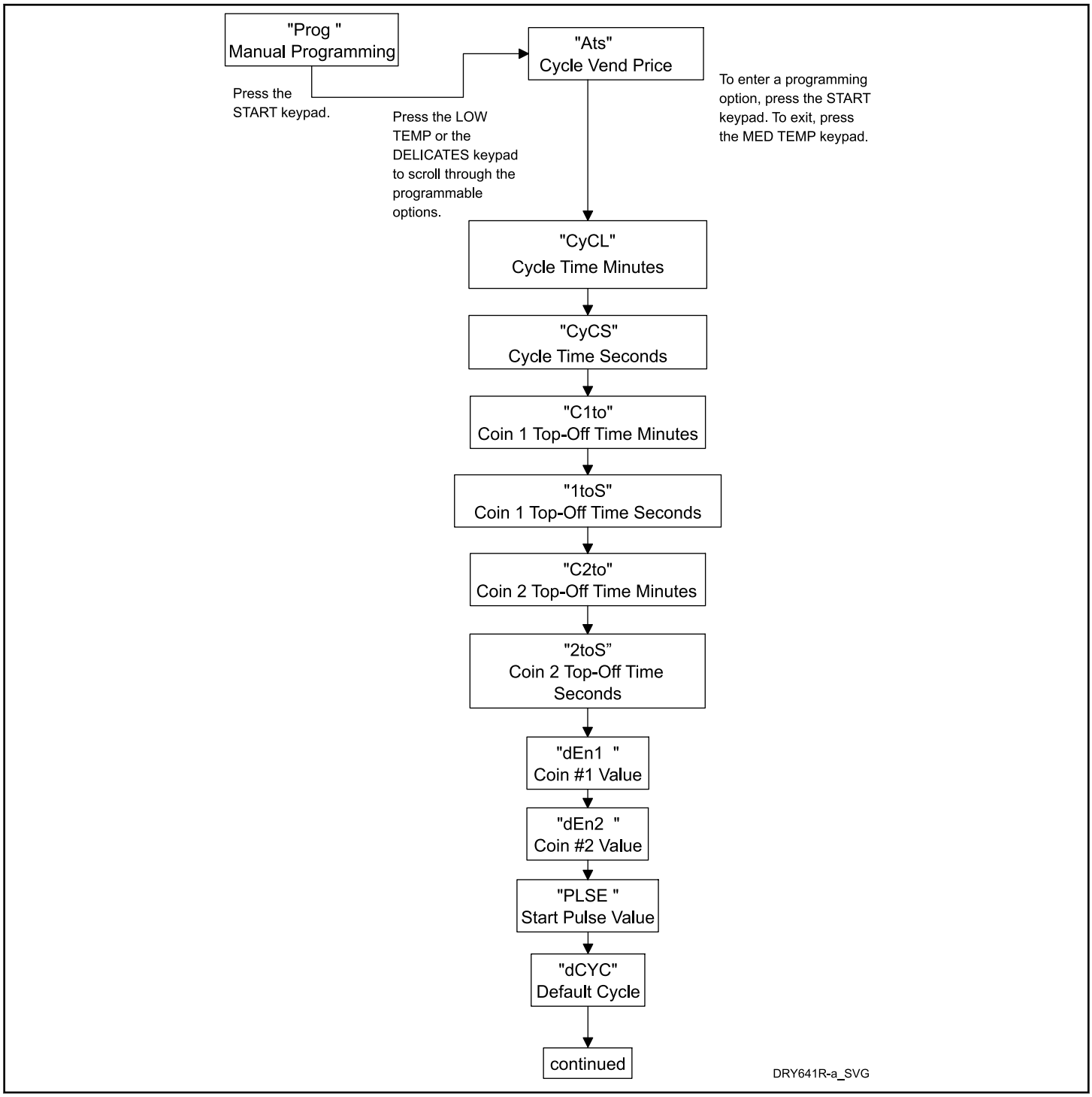


Figure 4

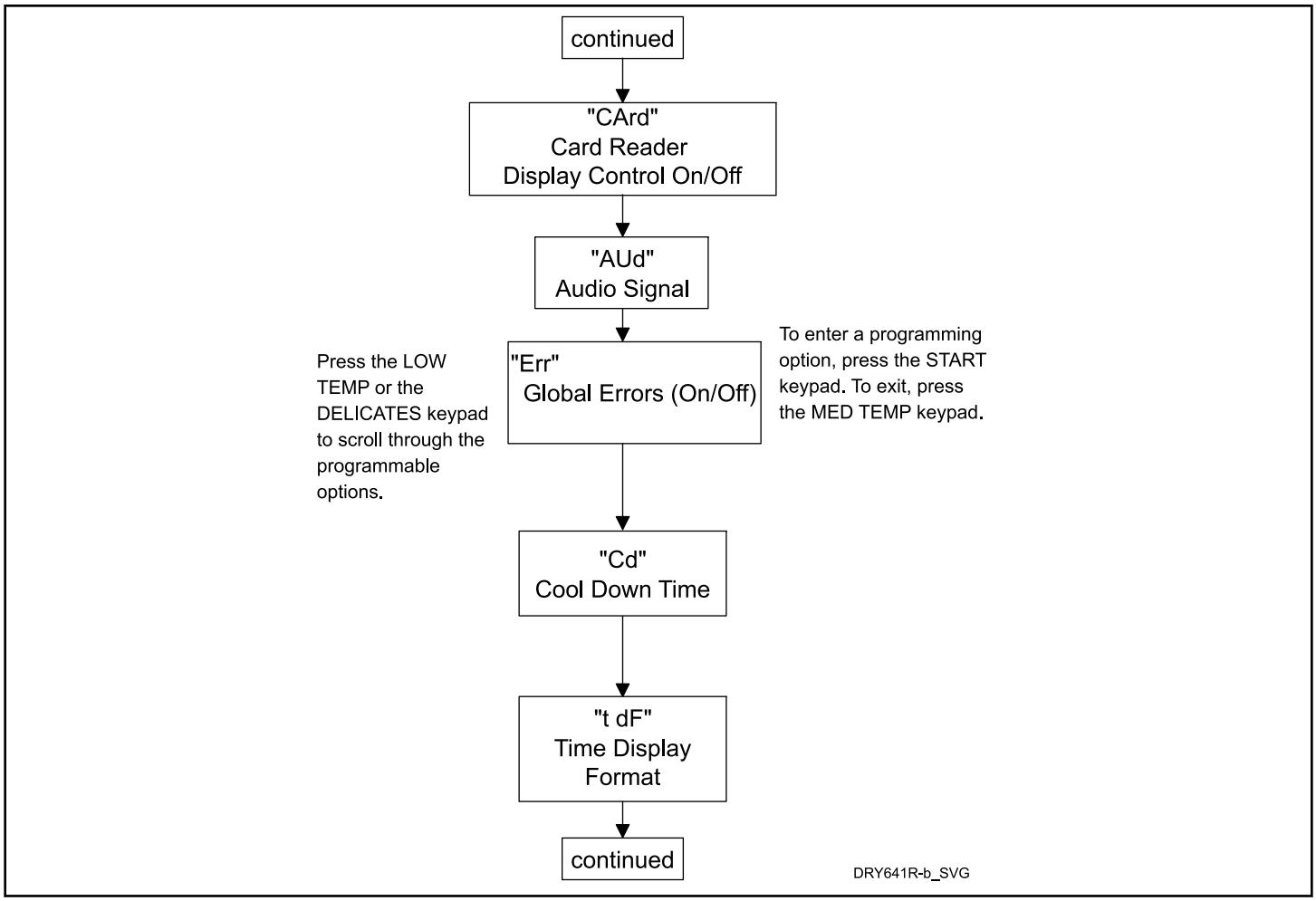


Figure 5

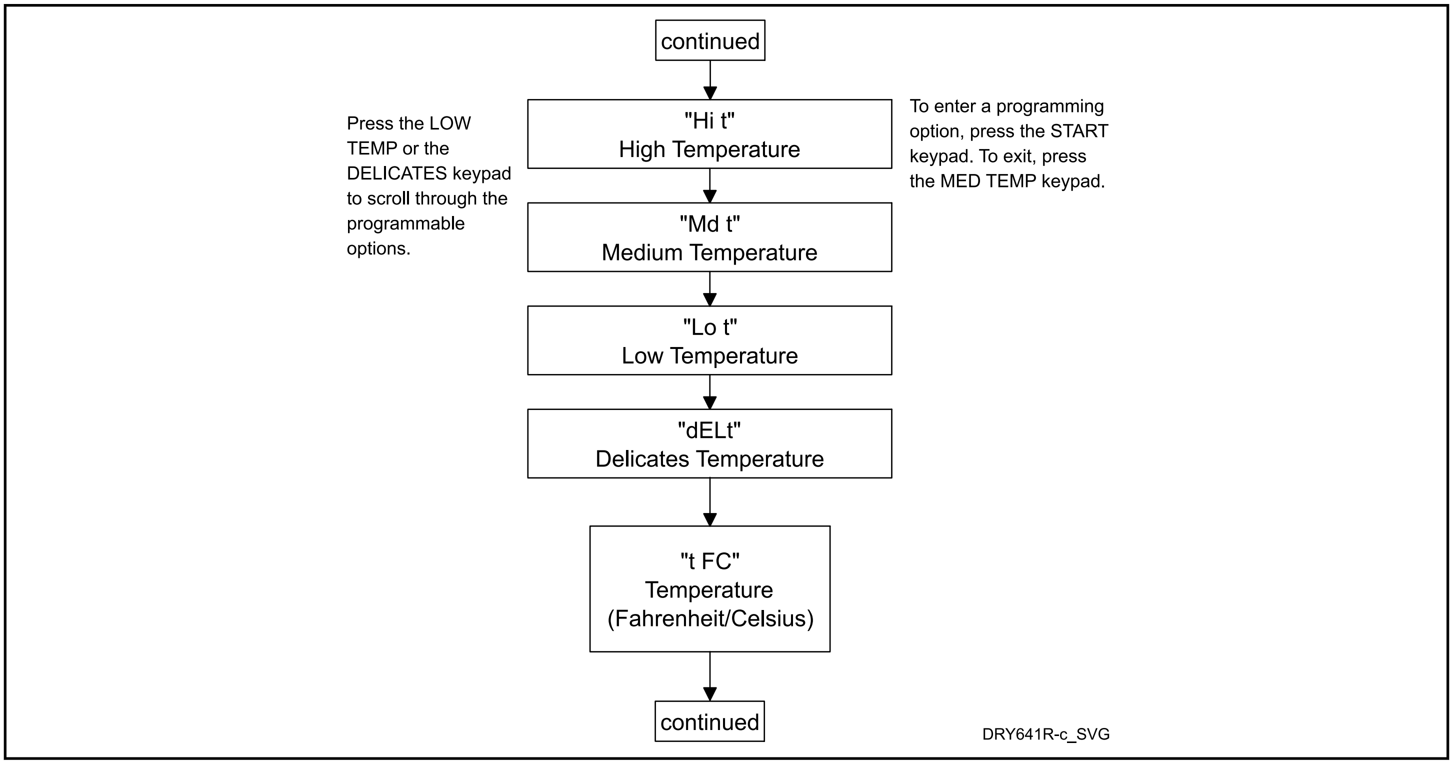


Figure 6

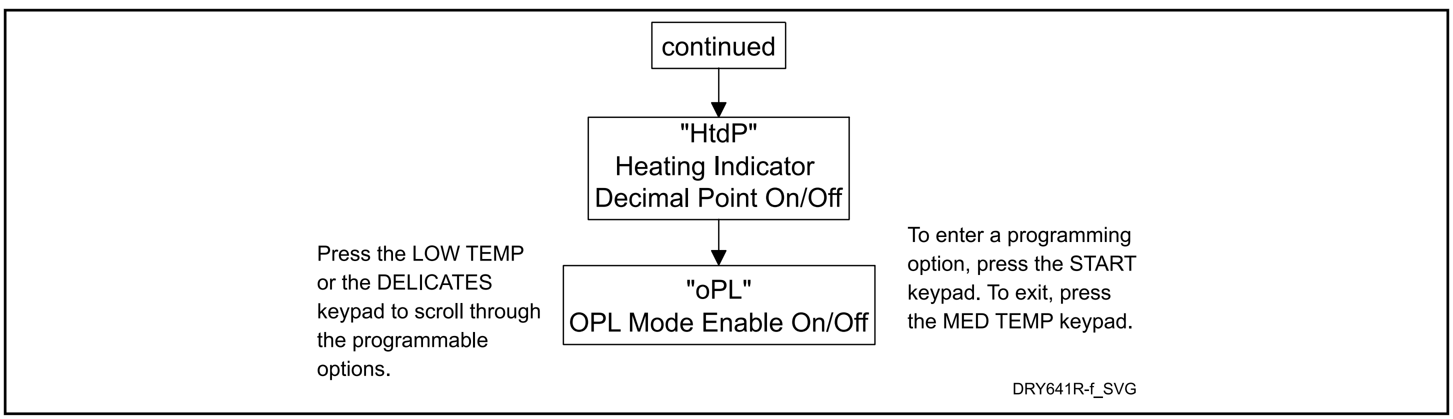


Figure 7

Vend Price AtS Changing Vend Price

This option allows the owner to set the vend price for a cycle. This vend price will be shown in the display when in Ready Mode.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. AtS will appear in the display. Press the START (enter) keypad.
4. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the value of the fourth digit.

   NOTE: The vend price can be set from 0 to 65,535. The default value is 25.

   NOTE: To go back to the current programmable option without changing the value press the MED TEMP (<) keypad.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the value of the active digit and the START (enter) keypad to enter the value of the digit and advance to the next digit.

6. Press the START (enter) keypad with the last active digit. The new value is saved and the next option will appear in the display.

Cycle Time Minutes CYCL

This option allows the owner to set the amount of time in minutes for all cycles.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and RES will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until CYCL appears in the display.
4. When CYCL appears in the display, press the START (enter) keypad.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the number of minutes displayed to the desired number of minutes.

   NOTE: Cycle time can be set from one (1) to 99 minutes.

   NOTE: The default value is 5.
6. Press the START (enter) keypad when the correct number of minutes appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Cycle Time Seconds CYCS

This option allows the owner to set the amount of time in seconds for all cycles.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and RES will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until CYCS appears in the display.
4. When CYCS appears in the display, press the START (enter) keypad.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the number of seconds displayed to the desired number of seconds.

   NOTE: Cycle time can be set from zero (0) to 59 seconds.

   NOTE: The default value is 0.
6. Press the START (enter) keypad when the correct number of seconds appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Coin 1 Top-Off Time Minutes C1to

This option allows the owner to set the amount of top-off time in minutes for Coin #1.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and RES will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until C1to appears in the display.
4. When C1to appears in the display, press the START (enter) keypad.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the number of minutes displayed to the desired number of minutes.

   NOTE: Top-Off minutes can be set from 0 to 99 minutes. The maximum amount of time for a cycle, including the top-off time, is 99 minutes. The minimum amount of time for top-off is 10 seconds. The minimum amount of time for a cycle is 1 minute.

   NOTE: The default for Coin 1 Top-Off Time Minutes is 5.
6. Press the START (enter) keypad when the correct number of minutes appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Coin 1 Top-Off Time Seconds 1toS

This option allows the owner to set the amount of top-off time in seconds for Coin #1.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and RES will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until 1toS appears in the display.
4. When 1toS appears in the display, press the START (enter) keypad.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the number of seconds displayed to the desired number of seconds.

   NOTE: Top-Off seconds can be set from 0 to 59 seconds. The maximum amount of time for a cycle, including the top-off time, is 99 minutes. The minimum amount of time for top-off is 10 seconds. The minimum amount of time for a cycle is 1 minute.

   NOTE: The default for Coin 1 Top-Off Time Seconds is 0.

6. Press the START (enter) keypad when the correct number of seconds appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Coin 2 Top-Off Time Minutes C2to

This option allows the owner to set the amount of top-off time in minutes for Coin #2.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until C2to appears in the display.
4. When C2to appears in the display, press the START (enter) keypad.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the number of minutes displayed to the desired number of minutes.

   NOTE: Top-Off minutes can be set from 0 to 99 minutes. The maximum amount of time for a cycle, including the top-off time, is 99 minutes. The minimum amount of time for top-off is 10 seconds. The minimum amount of time for a cycle is 1 minute.

   NOTE: The default for Coin 2 Top-Off Time Minutes is 20.
6. Press the START (enter) keypad when the correct number of minutes appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Coin 2 Top-Off Time Seconds 2toS

This option allows the owner to set the amount of top-off time in seconds for Coin #2.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until 2toS appears in the display.
4. When 2toS appears in the display, press the START (enter) keypad.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the number of seconds displayed to the desired number of seconds.

   NOTE: Top-Off seconds can be set from 0 to 59 seconds. The maximum amount of time for a cycle, including the top-off time, is 99 minutes. The minimum amount of time for top-off is 10 seconds. The minimum amount of time for a cycle is 1 minute.

   NOTE: The default for Coin 2 Top-Off Time Seconds is 0.
6. Press the START (enter) keypad when the correct number of seconds appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Coin #1 Value dEn1

This option allows the owner to set a specific numerical value for a coin entered. For example, in the United States the coin value for one quarter would be measured in cents (25). Therefore, the coin value entered for one quarter would 0025.

If the Heat Vend Price is set for 150, and the Coin #1 Value is set for 0025, the vend price displayed will decrease by 25 for each coin entered into coin drop #1.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until dEn1 appears in the display.
4. When dEn1 appears in the display, press the START (enter) keypad.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the value of the fourth digit.

   NOTE: The coin value can be set from 1 to 65,535. The default value is 25.

   NOTE: To go back to the current programmable option without changing the value press the MED TEMP (<) keypad.
6. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the value of the active digit and the START (enter) keypad to enter the value of the digit and advance to the next digit.
7. Press the START (enter) keypad with the last active digit. The new value is saved and the next option will appear in the display.

Coin #2 Value dEn2

This option allows the owner to set a specific numerical value for a coin entered when using the dual coin drop. For example, the coin value for a dollar coin would be measured in cents (100). Therefore, the coin value entered for one dollar coin would be 0100.

If the Heat Vend Price is set for 200, and the Coin #2 Value is set for 0 100, the vend price displayed will decrease by 100 for each dollar coin entered in coin drop #2.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until dEn2 appears in the display.
4. When dEn2 appears in the display, press the START (enter) keypad.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the value of the fourth digit.

   NOTE: The coin value can be set from 1 to 65,535. The default value is 100.

   NOTE: To go back to the current programmable option without changing the value press the MED TEMP (<) keypad.
6. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the value of the active digit and the START (enter) keypad to enter the value of the digit and advance to the next digit.
7. Press the START (enter) keypad with the last active digit. The new value is saved and the next option will appear in the display.

Start Pulse Value PLSE

This option allows the owner to program the value of the Start Pulse if used for multiple pulses with an after-market central card reader or pay system.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until PLSE appears in the display.
4. When PLSE appears in the display, press the START (enter) keypad.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the value of the fourth digit.

   NOTE: The Start Pulse Value can be set from 1 to 65,535. The default value is 25.

   NOTE: To go back to the current programmable option without changing the value press the MED TEMP (<) keypad.
6. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the value of the active digit and the START (enter) keypad to enter the value of the digit and advance to the next digit.
7. Press the START (enter) keypad with the last active digit. The new value is saved and the next option will appear in the display.

Default Cycle dCYC

This option allows the owner to set the default cycle the machine will enter when in the Ready Mode. When programming the default cycle, refer to *Table 1* .

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until dCYC appears in the display.
4. When dCYC appears in the display, press the START (enter) keypad. A number will appear in the display. This number corresponds to the current default cycle value. Refer to *Table 1*.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the current number to the desired number selected from *Table 1*.
6. Press the START (enter) keypad when the correct number appears in the display. The new value is saved and the next option will appear in the display.

How to Read Default Cycle Value Table

To determine the correct number required to program Default Cycle, use the following table. The Default Value column contains the number required in step 5.

The corresponding cycle LED will be lit while selecting a default cycle. For example, when the display shows 5, the Delicates LED is lit.

Default Cycle Value	Cycle Type
1	HIGH TEMP
2	LOW TEMP
4	MED TEMP
5	DELICATES

Table 1

NOTE: The default cycle programmed at the factory is 4, Med Temp.

Card Reader Display Control CArd

This option allows the owner to program whether the display is controlled by the machine's electronic control or by the card reader.

NOTE: This feature does not need to be programmed manually. The card reader itself makes this determination.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until CArd appears in the display.
4. When CArd appears in the display, press the START (enter) keypad. The current Card Reader Display Control status will appear in the display. on = Card Reader controls display oFF = Machine Electronic Control controls display

   NOTE: The default value is oFF.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The new value is saved and the next option will appear in the display.

Audio Signal AUd

This option allows the owner to program the signal on or off.

There are four occasions when a signal may sound during the dryer operation. These four occasions are listed below:

1. **Keypad Depression Signal**

By default, this signal is turned on and will sound for a quarter of a second. This signal will sound each time a keypad is pressed.

2. **Coin Input/Card Insertion Signal**

By default, this signal is turned on and will sound for a quarter of a second each time a coin or card is entered.

3. **Serial Command Signal**

By default, this signal is turned on and will sound for a quarter of a second each time the control receives a valid serial vend command.

4. **Signal for Start**

By default, this signal is turned on and will sound one second on and one second off for 10 seconds when START LED is flashing after vend price has been satisfied.

How to Program the Audio Signal

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until AUd appears in the display.
4. When AUd appears in the display press the START (enter) keypad. A number will appear in the display. This number corresponds to the current Audio Signal Programming Value.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to turn the audio on (29) or off (0).

   NOTE: The default setting programmed at the factory is 29.
6. Press the START (enter) keypad when the correct number appears in the display. The new value is saved and the next option will appear in the display.

Global Error Programming Err

This option allows the owner to turn on or turn off certain errors in the control.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until Err appears in the display.
4. When Err appears in the display, press the START (enter) keypad. The control will display on. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to toggle between on and oFF.
5. oFF indicates the option is disabled. on indicates the option is enabled. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to change the status.

   NOTE: The default value is on.
6. Press the START (enter) keypad when the correct status appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Cool Down Time Cd

This option allows the owner to set the amount of cool down time for all heat cycles.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.

3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until Cd appears in the display.
4. When Cd appears in the display, press the START (enter) keypad.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the number of minutes displayed to the desired number of minutes.

   NOTE: Cool down time can be set from one (1) to 15 minutes. The default values for each option are as follow: North America - 3 minutes, Outside North America - 10 minutes.
6. Press the START (enter) keypad when the correct number of minutes appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Time Display Format t dF

This option allows the owner to program the time display format.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and Ats will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until t dF appears in the display.
4. When t dF appears in the display, press the START (enter) keypad. The Time Display Format status will appear in the display.

   NOTE: The display format can be set to nn (minutes only) or nnss (minutes and seconds). The default format is nn.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The new value is saved and the next option will appear in the display.

High Temperature H i t

This option allows the owner to set the temperature of the high temperature cycle.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and Ats will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until H i t appears in the display.
4. When H i t appears in the display, press the START (enter) keypad. The current temperature set for High Temperature will appear in the display.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the current number of degrees displayed in the display to the desired number of degrees. Refer to *Table 2* for values.

Temperature Options
100°F [38°C]
105°F [41°C]
110°F [43°C]
115°F [46°C]
120°F [49°C]
125°F [52°C]
130°F [54°C]
135°F [57°C]
140°F [60°C]
145°F [62°C]
150°F [66°C]
155°F [68°C]
160°F [71°C]

Table 2

   NOTE: The default value is 160°F [71°C]
6. Press the START (enter) keypad when the correct number of degrees appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Medium Temperature Md t

This option allows the owner to set the temperature of the medium temperature cycle.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until Md t appears in the display.
4. When Md t appears in the display, press the START (enter) keypad. The current temperature set for Medium Temperature will appear in the display.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the current number of degrees displayed in the display to the desired number of degrees. Refer to *Table 1* for values.

   NOTE: The default value is 155°F [68°C] .
6. Press the START (enter) keypad when the correct number of degrees appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Low Temperature Lo t

This option allows the owner to set the temperature of the low temperature cycle.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until Lo t appears in the display.
4. When Lo t appears in the display, press the START (enter) keypad. The current temperature set for Low Temperature will appear in the display.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the current number of degrees displayed in the display to the desired number of degrees. Refer to *Table 1* for values.

   NOTE: The default value is 145°F [62°C] .
6. Press the START (enter) keypad when the correct number of degrees appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Delicates Temperature dELt

This option allows the owner to set the temperature of the delicates temperature cycle.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until dELt appears in the display.
4. When dELt appears in the display, press the START (enter) keypad. The current temperature set for High Temperature will appear in the display.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the current number of degrees displayed in the display to the desired number of degrees. Refer to *Table 1* for values.

   NOTE: The default value is 115°F [46°C] .
6. Press the START (enter) keypad when the correct number of degrees appears in the display. The new value is saved and the next option in the parameter will appear in the display.

Temperature (Fahrenheit/Celsius) t FC

This option allows the owner to set whether the display will be shown in Fahrenheit or Celsius.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until t FC appears in the display.
4. When t FC appears in the display, press the START (enter) keypad. A number will appear in the display. This number (found below) corresponds to the current Temperature (Fahrenheit/Celsius) setting. One (1) = Celsius Zero (0) = Fahrenheit

   NOTE: The default value is 0.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to increase or decrease the current number to the desired number.
6. Press the START (enter) keypad when the correct number appears in the display. The new value is saved and the next option will appear in the display.

Heating Indicator Decimal Point HtdP

This option allows the owner to enable or disable the heating indicator decimal point on the machine.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and AtS will appear in the display.

3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until HtdP appears in the display.
4. When HtdP appears in the display, press the START (enter) keypad. The current Heating Indicator Decimal Point Enable/ Disable status will appear in the display. on = Option Enabled oFF = Option Disabled

   NOTE: The default value is oFF.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The new value is saved and the next option will appear in the display.

OPL Parameters oPL

This option allows the owner to enable or disable the OPL Parameters in which no vend price needs to be satisfied to operate the machine.

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until Prog appears in the display. Press the START (enter) keypad and Rts will appear in the display.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the programmable options until oPL appears in the display.
4. When oPL appears in the display, press the START (enter) keypad. oFF will appear in the display.

NOTE: The default value is oFF.

5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The new value is saved and the next option will appear in the display.

Collecting Audit Information

This feature allows the owner to retrieve audit information stored in the dryer by pressing a sequence of pads on the control. For an explanation of the audit options available, refer to the Audit Options List on this page.

How to Enter Audit Feature

There are two methods the owner can use to enter the Audit Feature.

Entering the Audit Feature by Manual Mode

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until AUdt appears.
3. Press the START keypad. CYC will appear.

If the procedure did not work, the control will return to the Ready Mode.

Entering the Audit Feature with the Coin Vault Open

1. Open coin vault. The service door must be closed.
2. Press the START (enter) keypad.

How to Read Audit Data

1. Use the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the various options until the desired option is shown in the display. Refer to the Audit Options List, *Table 3* , for an explanation of the audit options available.

Audit Options List	
Display	Description
CYC	Total # of machine cycles
Co1	Total # of coins #1
Co2	Total # of coins #2
PLSE	Total # of start pulses
toC1	Total # of coin 1 top-offs
toC2	Total # of coin 2 top-offs
toPL	Total # of start pulse/card reader top-offs

Table 3

2. Once the desired option appears in the display, press the START (enter) keypad **once** to start the audit count. At this point, the display will show the audit value.
3. Press the START (enter) keypad again. The control will go to the next audit option in the Audit Options List.
4. To select other audit options, repeat steps 1 – 4.

How to Exit Audit Feature

Press the MED TEMP (<) keypad until the control returns to Ready Mode.

NOTE: To exit Audit Feature when using Coin Vault method, owner must close coin vault.

Manual Reset

This feature allows the owner to reset the dryer control's programming data to the factory default settings by pressing a sequence of pads on the control. For an explanation of the Factory Default Settings, refer to Default Dryer Settings.

How to Enter Manual Reset

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until rSEt appears.
3. Press the START (enter) keypad. The display will show no. Use the LOW TEMP (∧) or the DELICATES (∨) keypad to change to YES. If START (enter) keypad is pressed while YES is selected, the control will go to diAG. If no is selected, no change to programming will be made.

Testing Machine and Electronic Control Functions

This feature allows the owner to run diagnostic tests on various dryer operations without servicing the dryer. The following tests are available:

- Control Software Version Number
- Input/Output Board Software Number
- Service Door Opening Test
- Coin Vault Opening Test
- Coin Drop #1 Input Test
- Coin Drop #2 Input Test
- Vend Header Present Status Test
- Start Pulse Test
- Dryer-on Temperature Test
- Door Switch Input Test
- Thermistor Temperature Test
- Machine Configuration #1 Display Test
- Machine Configuration #2 Display Test
- Machine Configuration #3 Display Test
- Machine Configuration #4 Display Test
- Machine Configuratoin #5 Display Test

For an overview of the manual diagnostic test feature, refer to the flowchart on the following page.

How To Enter Testing Feature

1. Control must be in Ready Mode. If it is not, rapid advance through a cycle, refer to *Rapid Advance Feature*, or if coins or a card has been entered, refer to *Clearing the Vend Feature*.
2. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
3. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until d 19 appears.
4. Press the START (enter) keypad. Display will change to d 1 indicating the control software version number test.
5. Press the LOW TEMP (∧) or the DELICATES (∨) keypad to scroll through the diagnostic test options.

How to Start Tests

To start a diagnostic test, refer to the quick reference chart (*Table 1*). Press the START (enter) keypad when the desired test number is displayed. For detailed information on each test, read the appropriate description.

How to Exit Testing Feature

Press the MED TEMP (<) keypad. The display will return to Ready mode.

Diagnostic (Testing) Mode – Quick Reference Chart

Test Number	Diagnostic Mode	Display
d 1	Control Software Version # Test	SHHH
d 2	Input/Output Board Software Number	obHH
d 8	Service Door Opening Test	S oP or S CL
d 9	Coin Vault Opening Test	u oP or u CL
d 10	Coin Drop #1 Input Test	C 1HH
d 11	Coin Drop #2 Input Test	C2HH
d 12	Vend Header Present Status Test	CHoP (Open) or CHCL (Closed)

Table 4 *continues...*

Diagnostic (Testing) Mode – Quick Reference Chart		
d 13	Start Pulse Test	StHH
d 14	Dryer-on Temperature Test	HHHF or HHHC
d 15	Door Switch Input Test	droP, drCL
d 19	Thermistor Temperature Test	HHHF, HHHC, SH or oP
d 29	Machine Configuration #1 Display Test	AHHH
d 30	Machine Configuration #2 Display Test	bHHH
d 31	Machine Configuration #3 Display Test	CHHH
d 32	Machine Configuration #4 Display Test	dHHH
d 33	Machine Configuration #5 Display Test	EHHH

Table 4

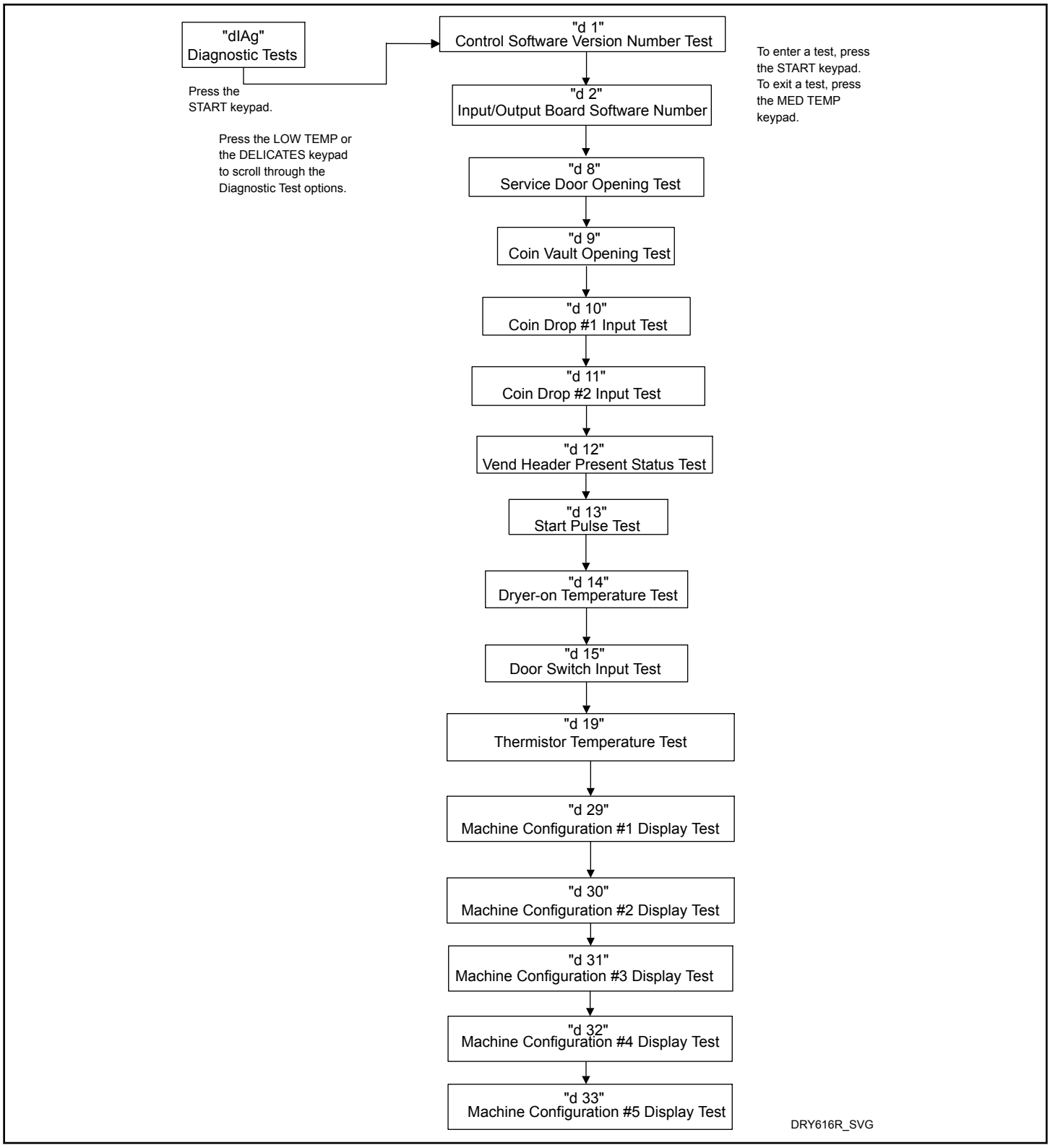


Figure 8

Diagnostic Test Descriptions

Control Software Version Number Test

This option displays the control software version number. To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the START (enter) keypad. The display will show SHHH where HHH is the software version number.

To exit the Software Version Number Test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Input/Output Board Software Version Number Test

This option displays the input/output board software version number. To start test, control must be in the Testing Mode. Refer to "How to Enter Testing Feature" at the beginning of this section.

To enter, press the START (enter) keypad. The display will show oHHH where HHH is the software version number.

To exit the Software Version Number Test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Service Door Opening Test

This option tests the service door switch. To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the START (enter) keypad. The display will show S oP when the service door switch is open and S CL when the service door switch is closed.

The service door switch has to be closed for at least one second and opened for at least a half a second to make a valid count. This test will add counts to the service door opening counter for the audit and save the date/time for each opening of the test.

To exit the Service Door Opening Test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Coin Vault Opening Test

This option tests the coin vault switch. To start test, the control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the START (enter) keypad. The display will show u oP when the coin vault switch is open and u CL when the coin vault switch is closed.

The coin vault switch has to be closed for at least one second and opened for at least a half a second to make a valid count. This test will add counts to the coin vault opening counter for the audit and save the time/date for each opening of the test.

To exit the Coin Vault Opening Test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Coin Drop #1 Input Test

This option tests coin drop #1. To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the START (enter) keypad. The display will show C 1HH. The HH will show the number of coins entered and will increment one for each coin entered in coin drop #1.

NOTE: Coins entered in test mode will not increment the total # of coins counter that is accessed in the audit feature.

To exit the Coin Drop #1 Input Test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Coin Drop #2 Input Test

This option tests coin drop #2. To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the START (enter) keypad. The display will show C2HH. The HH will show the number of coins entered and will increment one for each coin entered in coin drop #2.

NOTE: Coins entered in test mode will not increment the total # of coins counter that is accessed in the audit feature.

To exit the Coin Drop #2 Input Test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Vend Header Present Status Test

This option tests the status of the vend header present jumper.

To start test, control must be in Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the START (enter) keypad. The display will show CHCL if jumper is present and CHoP if jumper is not present.

To exit the Vend Header Present Status Test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Start Pulse Test

This option tests the Start Pulse. To start test, control must be in the Testing Mode. Refer to *How to Enter Testing Feature* at the beginning of this section.

To enter, press the START (enter) keypad. The display will show StHH. The HH will show the number of pulses entered. This test will add counts to the total number of Start Pulses counter.

To exit the Start Pulse Test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Dryer On Temperature Test

This option tests the temperature inside the cylinder while running a cycle.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature ” at the beginning of this section.

To enter, press the START (enter) keypad when the Start LED is flashing. The machine will run until it has reached the selected cycle temperature. The display will show HHHF for degrees in Fahrenheit or HHHC for degrees in Celsius. The HHH will show the degrees. During cool down, the control will display the time remaining as MM (minutes) or MM SS (minutes and seconds).

To exit the test, open the door. The control will then return to the testing mode.

NOTE: MED TEMP (<) keypad can't be used to exit Dryer On Temperature Test since it is needed to select the Medium cycle.

Door Switch Input Test

This option tests the door switch. To start test, control must be in the Ready Mode or Starting Mode. Refer to "How to Enter Testing Feature" at the beginning of this section.

To enter, press the START (enter) keypad. The display will show drOP if loading door is open or drCL if loading door is closed.

To exit the Door Switch Input Test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Thermistor Temperature Test

This option displays the temperature sensed at the thermistor in 5°F increments.

To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature ” at the beginning of this section.

To enter, press the START (enter) keypad. The display will show HHHF or HHHC. The F will show Fahrenheit, the C will show Celsius and the HHH will show degrees. If control senses a shorted thermistor, the display will show SH. If the control senses an open thermistor, the display will show oP.

To exit this test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Machine Configuration Display #1 Test

This option shows whether coin drops and communication interfaces are connected. To start test, control must be in the Testing Mode. Refer to “How to Enter Testing Feature” at the beginning of this section.

To enter, press the START (enter) keypad. The display will show AHHH, with HHH a number corresponding to whether or not coin drops are connected, or serial card reader or network board are connected.

Refer to *Table 5* for test information.

To exit Machine Configuration Display #1 Test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Machine Configuration Table

CONFIGVALUE	NETWORK BOARD PRESENT	VEND CONNECTION PRESENT	COIN DROP #2 PRESENT	COIN DROP #1 PRESENT
0	NO	NO	NO	NO
5	NO	YES	NO	YES
6	NO	YES	YES	NO
7	NO	YES	YES	YES
8	YES	NO	NO	NO
13	YES	YES	NO	YES
14	YES	YES	YES	NO
15	YES	YES	YES	YES

Table 5

Machine Configuration Display #2 Test

This option is not used on this model.

Machine Configuration Display #3 Test

This option is not used on this model.

Machine Configuration Display #4 Test

This option shows which dipswitches are set on the control.

To start test, control must be in the Testing Mode. Refer to "How to Enter Testing Feature" at the beginning of this section.

To enter, press the START (enter) keypad. The display will show dHHH, with HHH representing the machine capacity. Refer to table below.

Config Value	Payment System Present	120VAC Supply*
0	0	0
1	0	1
4	1	0
5	1	1

*120VAC is supplied to the control for 120VAC Single Phase and 240VAC Split Phase configurations.

If supply voltage is 100-127VAC per phase, the voltage configuration should be 120VAC.

If supply voltage is 200-240VAC per phase, the voltage configuration should be 240VAC.

To exit Machine Configuration Display #4 Test, press the MED TEMP (<) keypad. The control will return to the testing mode.

Machine Configuration Display #5 Test

This option is not used on this model.

Factory Test Cycle

To Enter Factory Test Cycle

1. Be certain control is in Ready Mode, and service door or coin vault is open.
2. While pressing and holding the HIGH TEMP keypad with one hand, press the LOW TEMP keypad with the other hand.
3. When the control enters the Factory Test Cycle, it will first display dr for product type (dryer).
4. The control will advance through the sequence of test steps whenever the START (enter) keypad is pressed, with the exception of the Keypad Test. Refer to *Table 6* for all tests in the Factory Test Cycle.

To Exit Factory Test Cycle

The test will be exited when the time reaches 00 on the control in Step #10. Otherwise, the control must be powered down to end the test.

Factory Test Cycle Quick Reference Table		
Display	Test Mode	Comments
dr	Machine Type	dr is the machine type (dryer)
SHHH	Software Version	HHH is the software version number.
obHH	Output Board Version Number	HH is the output board version number.
AH	Control Type	H is the feature level of the control.
HH	DipSwitch Configuration	HH is the machine type. 00 is 120V and 01 is 240V.
PAd or PAHH	Keypad Test	When a key is pressed, the control will display the number assigned to the keypad (4 - HIGH TEMP, 5 - LOW TEMP, 7 - MED TEMP, 8 - DELICATES, 9 - START). As each keypad is pressed, its corresponding LED will be lit and remain on for the duration of the test. When all keypads have been pressed, the control will advance to Show Entire Display Mode test cycle.
All LEDs and display segments will light	Show Entire Display Mode	This mode will light all display elements.

Table 6 *continues...*

CHCH	Coin Drop Test	H is the number of coins entered. If dual coin drops are installed, coin drop #1 will be shown on the left of the display and coin drop #2 will be shown on the right of the display. If a single coin drop is used, only one coin count will increment.
u oP or u CL	Coin Vault Switch Test	oP signifies the coin vault switch is open or CL signifies the coin vault switch is closed.
S oP or U CL	Service Door Switch Test	oP signifies the service door switch is open or CL signifies the service door switch is closed.
HHHF or HHHC	Thermistor Temperature Test	The temperature will be displayed in either Fahrenheit or Celsius, depending on machine's configuration. If control senses a shorted thermistor, SH will be displayed. If control senses an open thermistor, oP will be displayed.
PUSH, Strt, 10	10 Minute Test Cycle	Determines if dryer can function in a cycle for 10 minutes. LED display will flash one second on and one second off. If the door is opened while the START LED is flashing, the control will display "door" until the door is closed. While this 10 Minute Test Cycle is running, the START pad may be used to decrement the remaining cycle time. If power to the control is turned off before this test cycle has ended, the cycle is cleared. When the control is powered back up, it will be reset to Ready Mode.
Pd	Power Down	This is the final step of the Factory Test Cycle and when displayed it signifies the test has been completed.

Table 6

NOTE: If power to the control is turned off before 10 Minute Test Cycle has ended, the cycle will be cleared from control.

Error Codes

Following is a list of possible error codes for an electronic control. Errors beginning with E 1 refer to external device Infra-red communication errors. Errors beginning with EC refer to card reader errors. All other errors refer to machine errors.

Display	Description	Cause/ Corrective Action
E 101	Transmission Failure	Communication failure. Re-aim external device and try again.
E 102	Device Time-out	Communication failure. Re-aim external device and try again.
E 103	Invalid Command Code	Incorrect machine type. Before downloading, ensure data is for current machine type.
E 104	Command Packet Time Out	Communication failure. Re-aim external device and try again.
E 105	Invalid or Out-of-Range Data	Incorrect machine type. Before downloading, ensure data is for current machine type and values entered are within the minimum and maximum limits.
E 109	CRC-16 Error	Communication failure. Re-aim external device and try again.
E 10A	Framing Error	Communication error. Re-aim external device and try again.
E 10C	Time-out Exceeded	Communication error. Re-aim external device and try again.
E 10E	Encryption Error	Incorrect machine type. Before downloading, ensure data is for current machine type.
E 10F	Invalid Wake-up or Infra-red Disabled	Communication failure or infra-red is disabled. Manually enable infra-red on control or re-aim external device and try again.
EC02	Time-out Error	Communication failure. Try card again.
EC03	Invalid Command Code	Incorrect machine type. Before downloading, ensure data is for current machine type.
EC05	Invalid or Out-of-Range Data	Incorrect machine type. Before downloading, ensure data is for current machine type and values entered are within the minimum and maximum limits.
EC 11	No Card Reader Initialization	Communication is valid, but there is no card reader initialization. Power down, power up and try again.

Table 7 *continues...*

Display	Description	Cause/ Corrective Action
EC 18	No Communication	Card reader initialized, communication lost. Power down, power up and try again. If error persists, replace control or card reader.
EC 19	No Card Reader Communication and No Card Reader Initialization	Communication failure. Power down, power up, check connections, harness and try again. If error persists, replace control or card reader.
EC36	Audit Card Removed Prematurely	Re-insert Audit Card and wait until machine prompts for card removal.
Right most decimal point Lit	Network Communication Error	Communication problem. Wait for 1.5 minutes for error to clear. If error doesn't clear, power-down and power-up the machine. Check all network connections. If error persists, replace control or network board.
ALn	Break-in Alarm Error	Service the service door or coin vault switches.
oFF	Break-in Alarm Shutdown Error	Service the service door or coin vault switches.
Err	Coin Error	Invalid coin pulse or inoperative coin sensor. Check coin drop area and remove obstructions. If error persists, tampering may have occurred. Evaluate security procedures.
E SH	Shorted Thermistor Error	Dead short in thermistor circuit. Check wiring harness and remove any lint build-up around thermistor. If problem persists, replace thermistor or output board.
E oP	Open Thermistor Error	Physical open in thermistor circuit. Check wiring harness and remove any lint build-up around thermistor. If problem persists, replace thermistor or output board.
E id	Board ID	Incorrect replacement control. Replace user control or output board with correct part.

Table 7 *continues...*

Display	Description	Cause/ Corrective Action
E dS	Brownout/Voltage Configuration	Unexpected supply voltage. Check the harness connections between the user control and the output board. If the user control was replaced, set dipswitch #1 to the same setting as the previous control. If reworking the machine to use a different supply voltage, the dip switch #1 setting may need to be changed. If the dip switch #1 setting is changed, power down, power up and try again.
E nr	Output Board Not Ready	Hardware failure. Replace output board.
E bS	Output Board Communication	Hardware failure. Replace output board.
EnHH	Machine ID	Communication failure. Power down, power up and try again. If error persists, check connection between user control and Machine ID chip, or try replacing the user control or the Machine ID chip.
E Co	Output Board Communication	Communication failure. Power down, power up and try again. If error persists, check connection between user control and output board, or try replacing the user control or the output board.
E 59	Door Input Acquisition	Hardware failure. Replace output board.
E 60	Centrifugal Switch Input Acquisition	Hardware failure. Replace output board.
E 61	High Limit Thermostat Input Acquisition	Hardware failure. Replace output board.
E ro	Locked Rotor	The motor is not sensed as rotating when it should be. Check that nothing is obstructing motor rotation, check connection between user control and output board, or try replacing the user control or the output board.
E nS	Motor Output Shorted	Hardware failure. Replace output board.

Table 7

Rapid Advance Feature

How to Enter Rapid Advance from Ready Mode

1. If control is in Ready Mode, control must be put into Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the LOW TEMP (∧) or the DELICATES (∨) keypad until rAPd appears in the display.
3. Press the START (enter) keypad. The display will show PUSH then Strt followed by the cycle time.
4. Press the START (enter) keypad to start cycle.

While in the Rapid Advance Mode, pressing the START (enter) keypad will advance the cycle time by one minute. Pressing and holding the START (enter) keypad will advance the cycle four minutes for every second the START (enter) keypad is held down.

How to Enter Rapid Advance During an Active Cycle

1. Be certain service door is open.
2. While pressing and holding the HIGH TEMP keypad with one hand, press the MED TEMP keypad with the other hand. The display will show rAPd.

Control may be in an active cycle or in the ready mode to use the Rapid Advance feature.

How to Exit Rapid Advance Feature

Advance through the cycles until reaching the Ready Mode.

Power Fail Recovery

The Power Fail Recovery feature allows the cycle status to be saved in memory in the event of a power failure.

If a cycle is in progress when the power fails, the cycle status is saved in memory. When power recovers, the control will determine whether to automatically continue the cycle from the point it left off, requiring the user to press the START pad to continue the cycle.

Communications Mode

Card Reader Communications (Card Models Only)

The Card Reader Communications feature allows the control to communicate with the card reader. The control can be programmed for a limited number of options and have its data read without using the keypad.