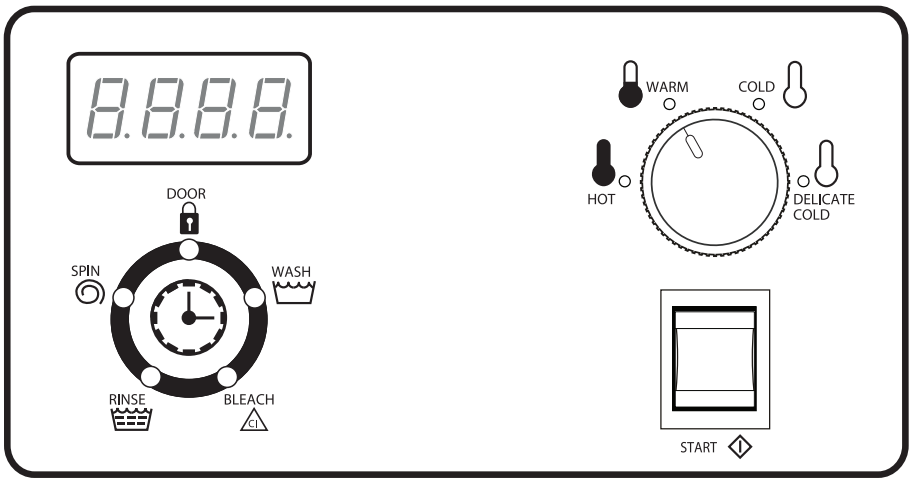
Washer-Extractor

Refer to Page 4 for Model Numbers

Programming



CHM495R

Keep These Instructions for Future Reference.
(If this machine changes ownership, this manual must accompany machine.)

Alliance Laundry Systems

www.comlaundry.com

Part No. F8208501R4
April 2012

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

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 washer-extractors. These factors MUST BE supplied by the person(s) installing, maintaining, or operating the washer-extractor.

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

Table of Contents

Model Identification

Information in this manual is applicable to these washer-extractor models:

HCD020GD2	HCU020GC2	SCD030GD2	SCN080GCF	SCU080GLF
HCL020GD2	HCU020GD2	SCD040GD2	SCN080GDF	SCU080GNF
HCL020GN2	HCU020GE2	SCD060GD2	SCN080GEF	SCU080GXF
HCL030GN2	HCU020GL2	SCL020GC2	SCN080GNF	SCU080GYF
HCL040GN2	HCU020GN2	SCL020GN2	SCN080GXF	UCL020GN2
HCL060GN2	HCU020GX2	SCL030GC2	SCN080GYF	UCL020GNF
HCL060GCF	HCU020GY2	SCL030GN2	SCU020GC2	UCL030GN2
HCN020GC2	HCU030GC2	SCL040GC2	SCU020GD2	UCL030GNF
HCN020GD2	HCU030GD2	SCL040GN2	SCU020GE2	UCL040GN2
HCN020GE2	HCU030GE2	SCL060GC2	SCU020GL2	UCL040GNF
HCN020GN2	HCU030GL2	SCL060GN2	SCU020GN2	UCL060GN2
HCN020GX2	HCU030GN2	SCL080GNF	SCU020GX2	UCL060GNF
HCN020GY2	HCU030GX2	SCN020GC2	SCU020GY2	UCL080GNF
HCN030GC2	HCU030GY2	SCN020GD2	SCU030GC2	UCN020GN2
HCN030GD2	HCU040GC2	SCN020GE2	SCU030GD2	UCN020GNF
HCN030GE2	HCU040GD2	SCN020GN2	SCU030GE2	UCN030GN2
HCN030GN2	HCU040GE2	SCN020GX2	SCU030GL2	UCN030GNF
HCN030GX2	HCU040GL2	SCN020GY2	SCU030GN2	UCN040GN2
HCN030GY2	HCU040GN2	SCN030GC2	SCU030GX2	UCN040GNF
HCN040GC2	HCU040GX2	SCN030GD2	SCU030GY2	UCN060GN2
HCN040GD2	HCU040GY2	SCN030GE2	SCU040GC2	UCN060GNF
HCN040GE2	HCU060GC2	SCN030GN2	SCU040GD2	UCN080GNF
HCN040GN2	HCU060GD2	SCN030GX2	SCU040GE2	UCU020GN2
HCN040GX2	HCU060GE2	SCN030GY2	SCU040GL2	UCU020GNF
HCN040GY2	HCU060GL2	SCN040GC2	SCU040GN2	UCU030GN2
HCN060GC2	HCU060GN2	SCN040GD2	SCU040GX2	UCU030GNF
HCN060GD2	HCU060GX2	SCN040GE2	SCU040GY2	UCU040GN2
HCN060GE2	HCU060GY2	SCN040GN2	SCU060GC2	UCU040GNF
HCN060GN2	HCU080GCF	SCN040GX2	SCU060GD2	UCU060GN2
HCN060GX2	HCU080GDF	SCN040GY2	SCU060GE2	UCU060GNF
HCN060GY2	HCU080GEF	SCN060GC2	SCU060GL2	UCU080GNF
HCN080GCF	HCU080GLF	SCN060GD2	SCU060GN2	UCZ020GN2
HCN080GDF	HCU080GNF	SCN060GE2	SCU060GX2	UCZ030GN2
HCN080GEF	HCU080GXF	SCN060GN2	SCU060GY2	VCU030GN2
HCN080GNF	HCU080GYF	SCN060GNF	SCU080GCF	VCU040GN2
HCN080GXF	HCZ020GN2	SCN060GX2	SCU080GDF	VCU060GN2
HCN080GYF	HCZ030GN2	SCN060GY2	SCU080GEF	VCU080GNF

Preliminary Information

About the Control

This control is a programmable computer that lets the owner control most machine features by setting dip switches and pressing buttons on the back of the control.

The control allows the owner to program custom cycles, set vend prices, retrieve audit information, run tests and other programmable features. Refer to ***Programming Control*** for a list of features.

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 until the electrical power is restored.

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

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.

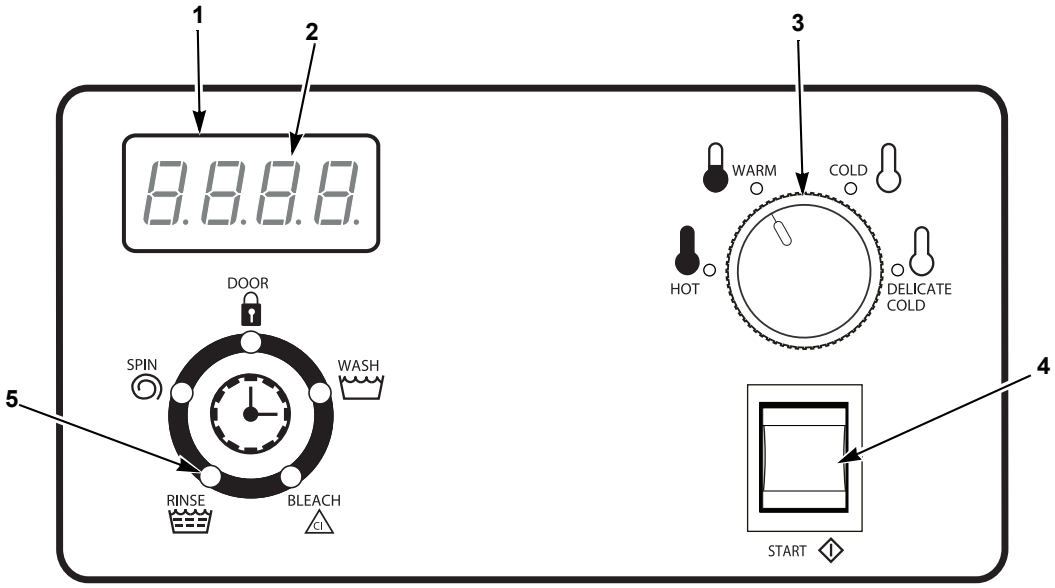
LED (Light Emitting Diode) – This term refers to the lights next to the status words of the control.

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 machine will resume into the previously active cycle if the power outage is less than five (5) seconds and the door is closed and locked.

If the length of the power failure is greater than five (5) seconds, the control will enter Start Mode and require pressing the start switch. If the power failure is greater than five (5) seconds and OPL Mode is enabled, the cycle can not be resumed.

Control Identification



CHM495R

1	Display
2	Four 7-Segment Digits
3	CYCLE/TEMPERATURE Selector Switch
4	START Switch
5	LED Status Lights

Figure 1

Display Identification

Light Emitting Diodes (LEDs) (Refer to *Figure 1*)

Light Emitting Diodes (LEDs) are used to indicate the cycle status and door lock information. See below for information on each LED.

WASH LED

Wash LED is lit during the wash and prewash portion of the cycle.

RINSE LED

Rinse LED is lit during the rinse portion of the cycle.

SPIN LED

Spin LED is lit during the Final Extract portion of the cycle.

DOOR LED

Door LED is lit whenever the door is locked. The door can't be opened when this LED is lit.

BLEACH LED

Bleach LED flashes one (1) second on and one (1) second off when the bleach dispenser is flushing.

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 manual programming of the control, these digits will display descriptive codes and values (as described in ***Entering the Manual Mode***).

Washer-Extractor Operation

Start Up

When power is applied to the machine, the control will display its software version as "S xx" ("xx" is the version number) for one (1) second. If the control was not powered down during a running cycle, it will enter the Ready Mode. The display will show "PAUS" if there is coast-down time remaining.

Ready Mode

For coin models, the full current vend price for the cycle appears in the display.

To start the cycle, the user must satisfy the vend price (on coin models) and then press the START switch.

The user will be able to select a different cycle/water temperature by turning the CYCLE/TEMPERATURE selector switch when the machine is in the Ready Mode or in the first fill step.

Partial Vend Mode (Vended Models Only)

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.

Signals

1. **Coin Models -** A signal will sound for a quarter of a second for every coin insertion.

Start Mode

The control enters this mode when the full vend price is satisfied, the vend price is zero or the control is in OPL Mode. The display will show "PUSH" for one (1) second, "Strt" for one (1) second and the current cycle time for one (1) second. If Start Mode is entered because the vend price is zero, the display will show "FrEE".

After pressing the START switch, the door will lock and the cycle will begin.

Door Locking Mode

The control enters this mode after the START switch is pressed in Start Mode. The control stays in Door Locking Mode until it confirms the door is closed and locked.

Run Mode

The control enters this mode when a cycle is running. The time remaining appears in the display, the status LEDs are lit and the loading door is locked.

Changing Cycles

Cycle/temperature can be changed anytime during the first fill step.

Door Unlock Mode

The control enters this mode after cycle has ended. The control waits for confirmation that door is unlocked. Once confirmation is received that door is unlocked, control will enter End of Cycle Mode.

End of Cycle Mode

When a cycle is complete, the control will display "00" until the washer door is opened, cycle switch is changed, or a coin is entered. When one of these options occurs, the display will revert back to the Ready Mode.

Special Features

Programming Control

The control allows the machine owner to program the control with the use of buttons on the back of the control. Cycle and vend options may be programmed.

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

Collecting Audit Information

The control will store audit information in its memory that can be retrieved in the Manual Mode.

The audit information stored is total cycle counts and total Rapid Advanced Cycle counts. The counters are not resettable.

Production Test Cycle

Special test features built into the control allow the owner to run specific tests.

The Production Test Cycle is entered by connecting the test harness to the test input on the control.

For detailed information, refer to ***Production Test Cycle***.

Rapid Advance Feature

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

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

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 start a cycle.

OPL Mode

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

For details on enabling OPL Mode, refer to ***Programming the DIP Switch***.

Power Save Mode (OPL Models Only)

This feature powers down the display after machine is idle for 4 minutes and 15 seconds.

To “wake up” the machine display, press the START switch.

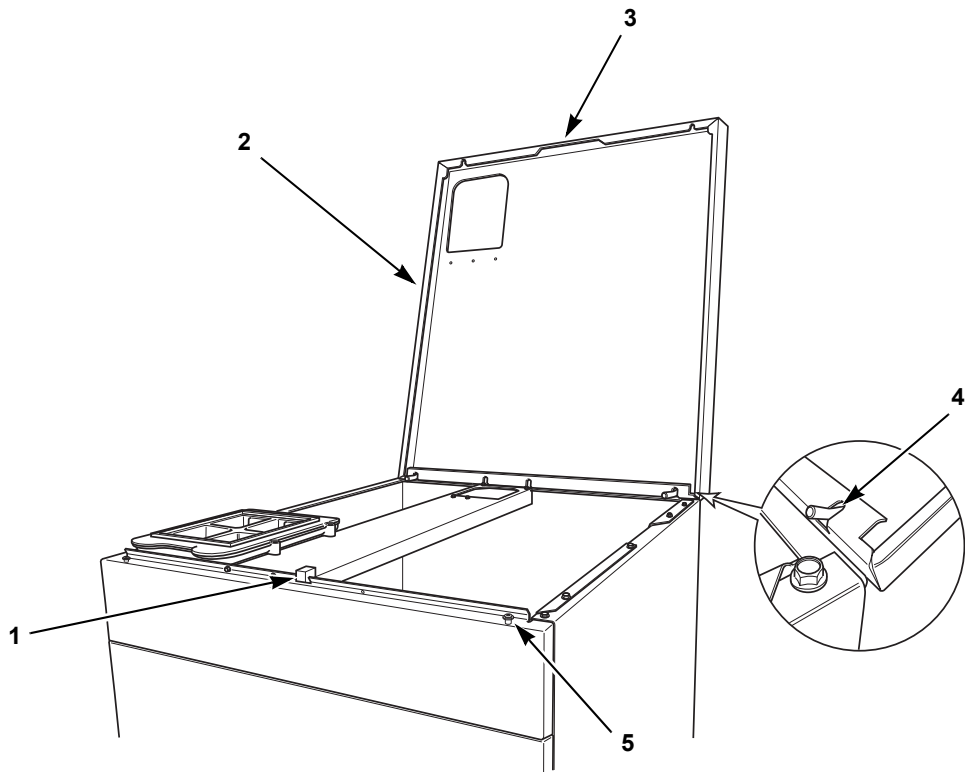
The Power Save Mode is a feature of the control and cannot be disabled in programming.

Opening the Top Cover

To manually program the control, the top cover must be opened. Opening and closing the top cover trips a switch which allows access to various programming options.

The top cover is located on the top of the machine.

1. Unlock top cover.
2. Slide the top cover forward slightly to move the notches away from the pegs on the front of the cabinet.
3. Lift the top cover up. To completely remove, lift top cover away from both top cover hinges. Refer to *Figure 2*.



1 Top Cover Latch
2 Top Cover
3 Top Cover Lock
4 Top Cover Hinge
5 Peg

Figure 2

Programming the DIP Switch

There is an 8 position DIP switch on the control board. This switch allows limited programming.

1. To access the DIP switch, open the machine's top cover. Refer to ***Opening the Top Cover*** and *Figure 3*.
2. Disconnect power from the machine. The control must be powered down to change the DIP switch setting.
3. Change the desired settings. Refer to *Table 1* for Design 1 models and *Table 2* for Design 2 models.
4. Reconnect the machine to electrical power. The control reads the DIP switch settings at power-up.

Dipswitch Settings for Design 1 models				
DIP Switch	**Description**	**Off State**	**On State**	**Default**
1	OPL Mode	OPL Mode Off	OPL Mode On	OFF
2	Heater	Heater Off	Heater On	OFF
3	Drain Option	Gravity Drain	Pump Drain	Gravity Drain
4	Drive Configuration	Contactor	VFD	OFF (2 Speed models) ON (F-Speed models)
5-8	Unused			

Table 1

Dipswitch Settings for Design 2 models				
DIP Switch	**Description**	**Off State**	**On State**	**Default**
1	OPL Mode	OPL Mode Off	OPL Mode On	OFF
2	Heater	Heater Off	Heater On	OFF
3	Drain Option	Gravity Drain	Pump Drain	Gravity Drain
4-8	Unused			

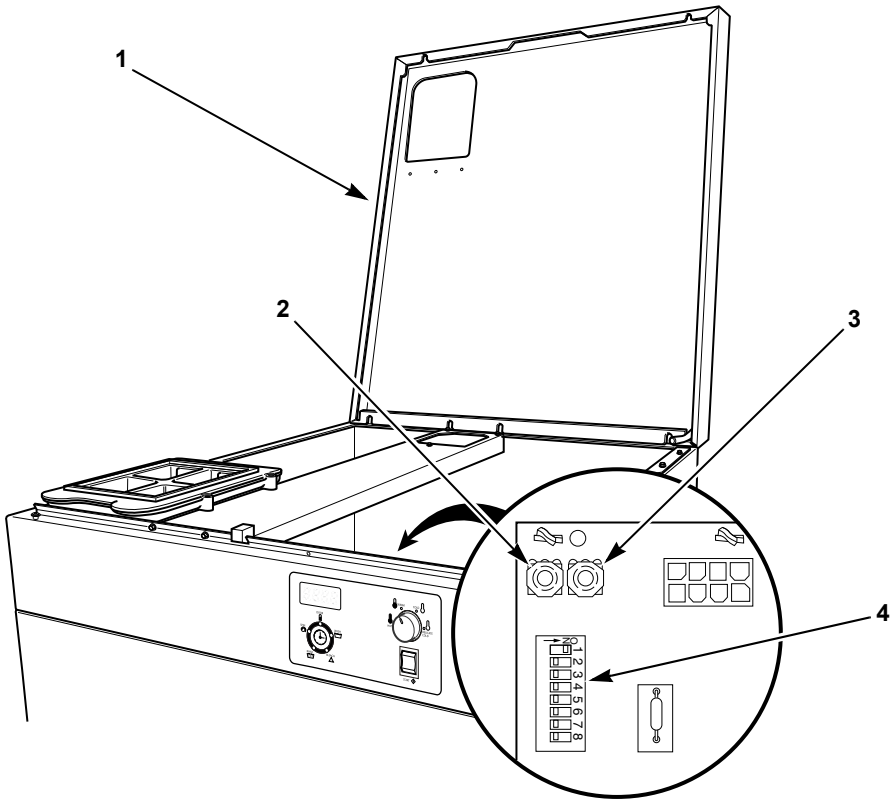
Table 2

Entering the Manual Mode

For programming and retrieving information from the control, it is necessary to enter the Manual Mode.

How to Enter the Manual Mode

1. Open the top cover. Refer to ***Opening the Top Cover***.
2. There are two buttons on the back of the control. Refer to *Figure 3*. Press the Right and Left Programming buttons at the same time.
3. The display will show "AtS".
4. Press the Right or Left Programming button to scroll through the options until the desired option appears in the display.
5. Press the Right and Left Programming buttons at the same time to enter an option.



1 Top Cover
2 Right Programming Button (as you are facing the machine)
3 Left Programming Button (as you are facing the machine)
4 DIP Switch

Figure 3

Programming Control

What Can Be Programmed?

This feature allows the owner to program cycle information, vend pricing and other features by using the buttons on the back of the control.

This section offers a detailed description of all 19 options available to program.

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

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

Programming options 1-8, 19-22 and 26-28 are accessible while the control is in Ready, Partial Vend, Start, Run and End of Cycle Modes. Programming options 9-18, 23 and 24 are only accessible in Ready Mode.

NOTE: The letters and numbers in the Option Display column of the Programmable Options list are what will be shown in the display when that option is selected.

Programmable Options Available

Option Number	Option Display	Description	Default Value	Default Value Range
1	“AtS”	Vend Price	150	0 - 9999
2	“dEn1”	Coin #1 Value	25	1 - 9999
3	“dEn2”	Coin #2 Value	100	1 - 9999
4	“ErrS”	Error Codes	on	on/oFF
5	“CoAU”	Coin Audio Beep	on	on/oFF
6	“CArd”	Card Display Option	oFF	on/oFF
7	“CyC”	Total # of Machine Cycles	*	N/A
8	“rCyC”	Total # of Rapid Advance Cycles	*	N/A
9	“PLEU”	Prewash Fill Level	HI	Stnd/HI
10	“ALEU”	Wash Fill Level	HI	Stnd/HI
11	“rLEU”	Rinse #1, #2 and #3 Fill Level	HI	Stnd/HI
12	“PrEn”	Prewash Enable	on	on/oFF
13	“PdUr”	Prewash Time	2	2 minutes/4 minutes
14	“AdUr”	Wash Time	6	6 minutes/8 minutes
15	“SPEn”	Intermediate Rinse Spins Enable	on	on/oFF
16	“r2En”	Rinse #2 Enable	on	on/oFF
17	“FH”	Hot Cycle Temp (Heat Enabled only)	60°C (140°F)	4°C - 90°C (39°F - 194°F)
18	“FHC”	Warm Cycle Temp (Heat Enabled only)	40°C (104°F)	4°C - 90°C (39°F - 194°F)
19	“CyCP”	Cycle Pause Enable (Gravity Drain only)	oFF	on/oFF
20	“LdEn”	Leak Detection During Cycle Enable	oFF	on/oFF
21	“SdEn”	Slow Drain Detection During Cycle Enable	oFF	on/oFF
22	“SdAd”	Slow Drain Detection Adjustment	0	0 - 255
23	“bALr”	Number of Balance Retries (Design 2 models)	1	1 - 7
24	“Ldt”	Leak Detection Test	N/A	N/A

*Read only - cannot be cleared.

Table 3 (continued)

Table 3 (continued)

Option Number	Option Display	Description	Default Value	Default Value Range
25	“bALt”	Balance Weight Test (F-speed Design 1 models only)	N/A	N/A
	“dCbt”	DC Bus Display Test (Design 2 models)	N/A	N/A
26	“DIPt”	DIP Switch Test	N/A	N/A
27	“rAPd”	Rapid Advance	N/A	N/A
28	“End”	Exit Manual Mode	N/A	N/A

*Read only - cannot be cleared.

Table 3

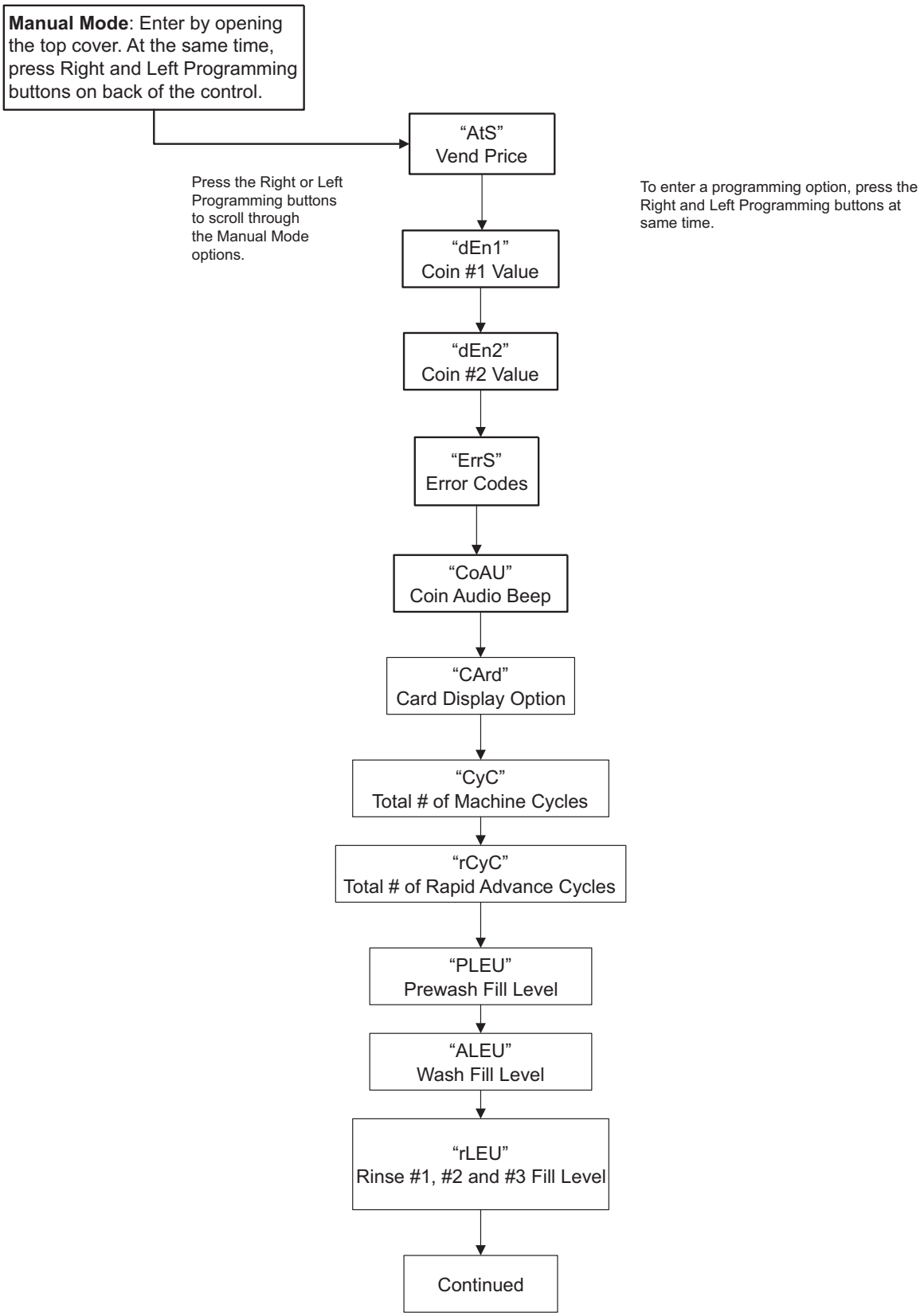


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Figure 4

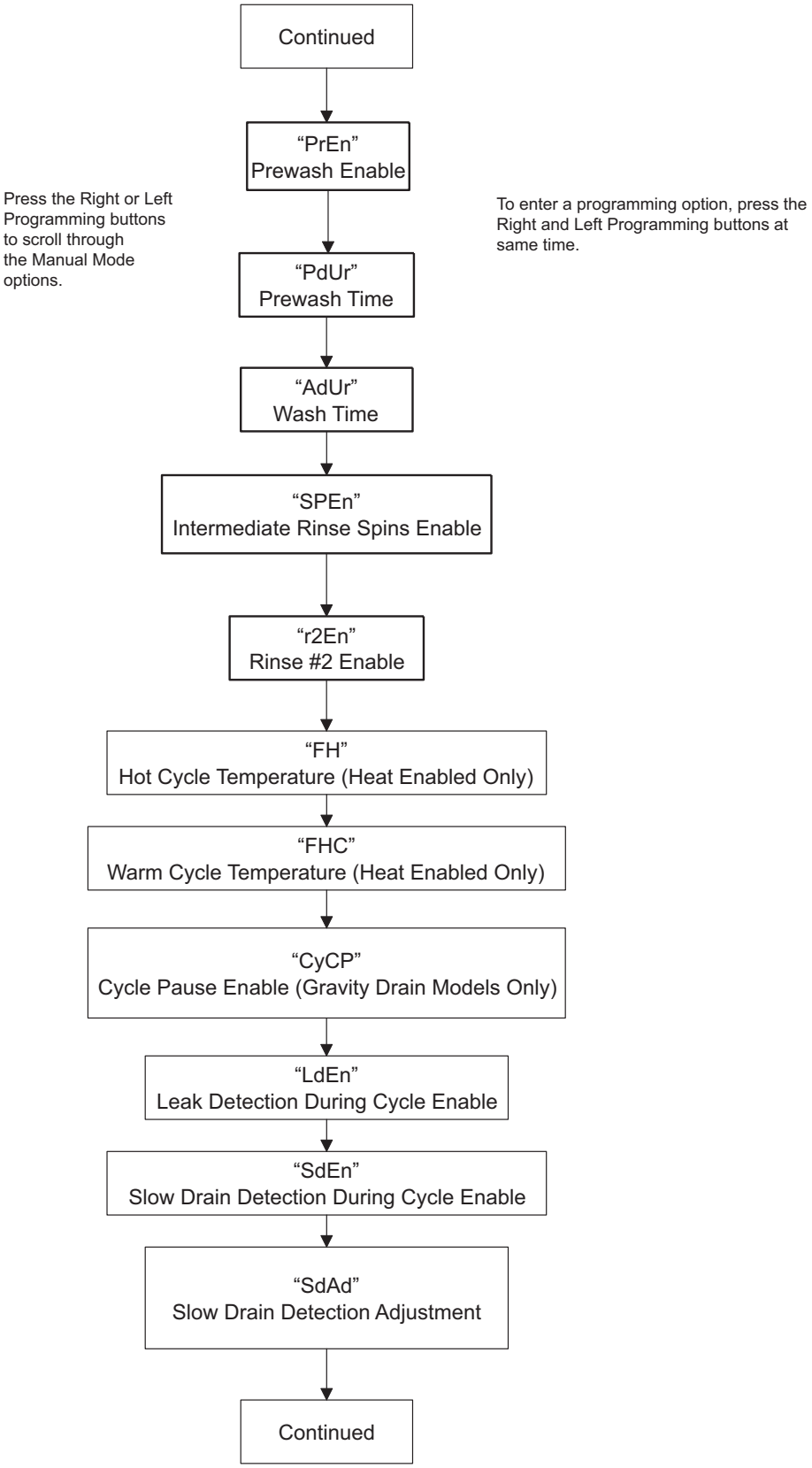

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Figure 5

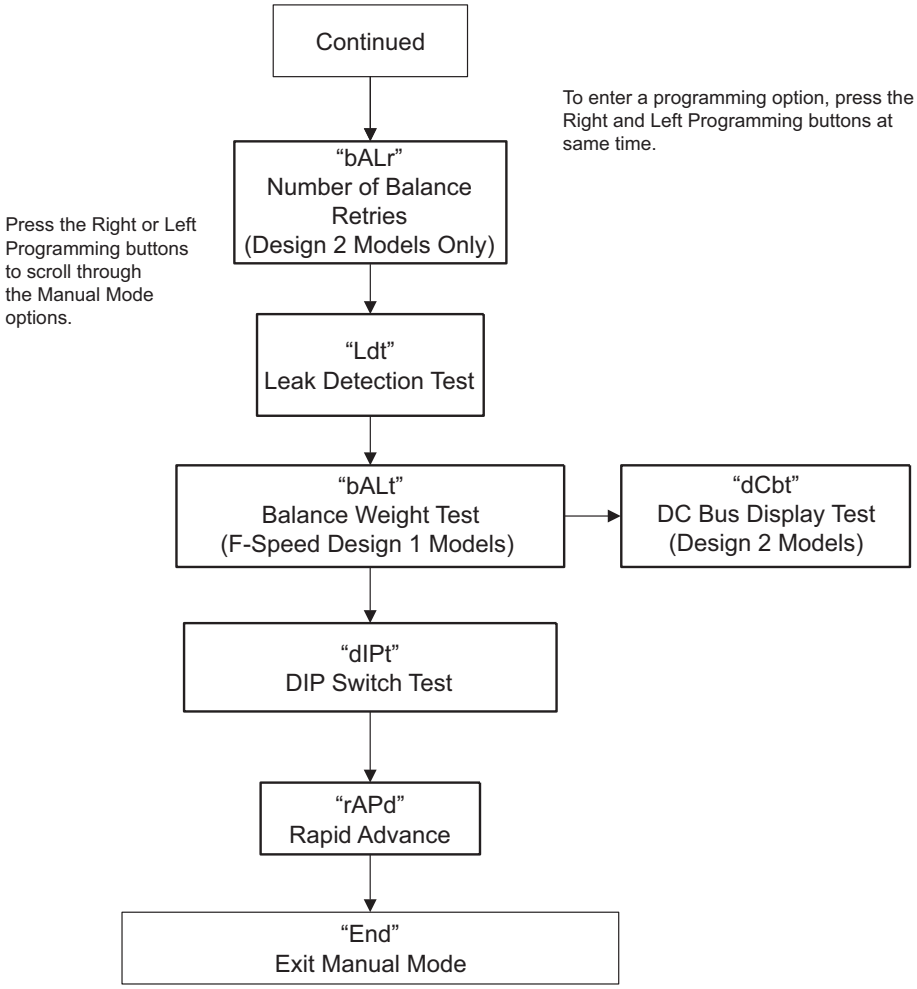

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Figure 6

1. Vend Price “AtS”

This option allows the owner to set the vend price.

How to Program the Vend Price

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or the Left Programming button until “AtS” appears in the display. Press the Right and Left Programming buttons at the same time. The current vend price will appear in the display.
3. There are four digits in the Vend Price.
4. Press the Right or Left Programming button to increase or decrease the value of the vend price.

NOTE: The vend price can be set from 1 to 9,999. The default value is 150.

5. Press the Right and Left Programming buttons at the same time to save the new vend price. The next available programming option will be displayed.

2. 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 be 0025.

If the Vend Price (*option 1*) is set for “0075”, and the Coin Value is set for “0025”, the vend price displayed will decrease by .25 for each coin entered.

How to Program Coin #1 Value

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “dEn1” appears in the display.
3. When “dEn1” appears in the display, press the Right and Left Programming buttons at the same time. The current Coin #1 value will appear in the display.
4. Press the Right or Left Programming button to increase or decrease the Coin #1 value.

NOTE: The coin value can be set from 1 to 9,999. The default value is 25.

5. Press the Right and Left Programming buttons at the same time to save the new value. The next available programming option will be displayed.

3. 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 (1.00). Therefore, the coin value entered for one dollar coin would be 0100.

If the Vend Price (*option 1*) is set for “0200”, and the Coin Value is set for “0100”, the vend price displayed will decrease by 1.00 for each dollar coin entered.

How to Program Coin #2 Value

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “dEn2” appears in the display.
3. When “dEn2” appears in the display, press the Right and Left Programming buttons at the same time. The current Coin #2 value will appear in the display.
4. Press the Right or Left Programming button to increase or decrease the Coin #2 value.

NOTE: The coin value can be set from 1 to 9,999. The default value is 100.

5. Press the Right and Left Programming buttons at the same time to save the new value. The next available programming option will be displayed.

4. Error Codes “ErrS”

This option allows the owner to turn on or off the error codes in the control. This option will enable or disable the Fill, Drain, Unbalance and Coin errors all together.

IMPORTANT: If the error codes are disabled and the machine encounters a Fill or Drain error, the machine will fill or drain indefinitely. If the error codes are disabled and the machine encounters an Unbalance or Coin error, the control will not display the error.

How to Program Error Codes

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “ErrS” appears in the display.
3. When “ErrS” appears in the display, press the Right and Left Programming buttons at the same time. The current error code status will appear in the display.
4. “oFF” indicates all errors are disabled. “on” indicates all errors are enabled. Press the Right or Left Programming button to change the status.

NOTE: The default value is on.

5. Press the Right and Left Programming buttons at the same time when the correct status appears in the display. The next available programming option will be displayed.

5. Coin Audio Beep “CoAU”

This option allows the owner to enable or disable the coin audio beep for each coin insertion.

How to Program the Coin Audio Beep

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “CoAU” appears in the display.
3. When “CoAU” appears in the display, press the Right and Left Programming buttons at the same time. The current Coin Audio Beep status will appear in the display.
   “on” = Option Enabled
   “oFF” = Option Disabled

NOTE: The default value is on.

4. Press the Right or Left Programming button to change the current status.
5. Press the Right and Left Programming buttons at the same time when the desired status appears in the display. The next available programming option will be displayed.

6. Card Display Option “CArd”

This option allows the owner to program whether the display will show “CArd” while vend is required.

How to Program the Card Display Option

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “CArd” appears in the display.
3. When “CArd” appears in the display, press the Right and Left Programming buttons at the same time. The current Card Display Option status will appear in the display.
   “on” = Card display enabled
   “oFF” = Card display disabled

NOTE: The default value is off.

4. Press the Right or Left Programming button to change the current status.
5. Press the Right and Left Programming buttons at the same time when the desired status appears in the display. The next available programming option will be displayed.

7. Total # of Machine Cycles “CyC”

This option allows the owner to access Machine Cycle counter audit information.

How to Enter Cycle Programming

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “CyC” appears in the display.
3. When “CyC” appears in the display, press the Right and Left Programming buttons at the same time. The Machine Cycle count will appear in the display. There are five digits in the Total # of Machine Cycles. If the cycle count is greater than 9,999, the fifth digit is “1-6”.

NOTE: The cycle counter ranges from 0-65,535. It is read-only and cannot be cleared.

4. Press the Right and Left Programming buttons at the same time. The next available programming option will be displayed.

8. Total # of Rapid Advance Cycles “rCyC”

This option allows the owner to access Rapid Advance Cycle counter audit information.

How to Enter Cycle Programming

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “rCyC” appears in the display.
3. When “rCyC” appears in the display, press the Right and Left Programming buttons at the same time. The Rapid Advance Cycle count will appear in the display. There are five digits in the Total # of Rapid Advance Cycles. If the cycle count is greater than 9,999, the fifth digit is “1-6”.

NOTE: The cycle counter ranges from 0-65,535. It is read-only and cannot be cleared.

4. Press the Right and Left Programming buttons at the same time. The next available programming option will be displayed.

9. Prewash Fill Level “PLEU”

This option allows the owner to set the prewash fill level to standard or high.

How to Program the Prewash Fill Level

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “PLEU” appears in the display.
3. When “PLEU” appears in the display, press the Right and Left Programming buttons at the same time. The current Prewash Fill Level will appear in the display.
   “Stnd” = Standard Fill Level
   “Hl” = High Fill Level

NOTE: The default value is “Hl”.

4. Press the Right or Left Programming button to change the current status.
5. Press the Right and Left Programming buttons at the same time when the desired status appears in the display. The next available programming option will be displayed.

10. Wash Fill Level “ALEU”

This option allows the owner to set the wash fill level to standard or high.

How to Program the Wash Fill Level

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “ALEU” appears in the display.
3. When “ALEU” appears in the display, press the Right and Left Programming buttons at the same time. The current Wash Fill Level will appear in the display.
   “Stnd” = Standard Fill Level
   “Hl” = High Fill Level

NOTE: The default value is “Hl”.

4. Press the Right or Left Programming button to change the current status.
5. Press the Right and Left Programming buttons at the same time when the desired status appears in the display. The next available programming option will be displayed.

11. Rinse #1, #2 and #3 Fill Level "rLEU"

This option allows the owner to set the rinse #1, #2 and #3 fill level to standard or high.

How to Program the Rinse #1, #2 and #3 Fill Level

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until "rLEU" appears in the display.
3. When "rLEU" appears in the display, press the Right and Left Programming buttons at the same time. The current Rinse #1, #2 and #3 Fill Level will appear in the display.
   "Stnd" = Standard Fill Level
   "Hl" = High Fill Level

NOTE: The default value is "Hl".

4. Press the Right or Left Programming button to change the current status.
5. Press the Right and Left Programming buttons at the same time when the desired status appears in the display. The next available programming option will be displayed.

12. Prewash Enable "PrEn"

This option allows the owner to enable or disable the prewash segment of a cycle.

How to Program Prewash Enable

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until "PrEn" appears in the display.
3. When "PrEn" appears in the display, press the Right and Left Programming buttons at the same time. The current Prewash Enable status will appear in the display.
   "on" = Option Enabled
   "oFF" = Option Disabled

NOTE: The default value is on.

4. Press the Right or Left Programming button to change the current status.
5. Press the Right and Left Programming buttons at the same time when the desired status appears in the display. The next available programming option will be displayed.

13. Prewash Time “PdUr”

This option allows the owner to set the duration of the prewash segment of a cycle.

How to Program the Prewash Time

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “PdUr” appears in the display.
3. When “PdUr” appears in the display, press the Right and Left Programming buttons at the same time. The current Prewash Time will appear in the display.
   “2” = Two Minutes
   “4” = Four Minutes

NOTE: The default value is 2.

4. Press the Right or Left Programming button to change the current time.
5. Press the Right and Left Programming buttons at the same time when the desired time appears in the display. The next available programming option will be displayed.

14. Wash Time “AdUr”

This option allows the owner to set the duration of the Wash segment of a cycle.

How to Program the Wash Time

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “AdUr” appears in the display.
3. When “AdUr” appears in the display, press the Right and Left Programming buttons at the same time. The current Wash Time will appear in the display.
   “6” = Six Minutes
   “8” = Eight Minutes

NOTE: The default value is 6.

4. Press the Right or Left Programming button to change the current time.
5. Press the Right and Left Programming buttons at the same time when the desired time appears in the display. The next available programming option will be displayed.

15. Intermediate Rinse Spins Enable “SPEn”

This option allows the owner to enable or disable intermediate rinse spins for Rinse #1 and Rinse #2 segments.

How to Program the Intermediate Rinse Spins Enable

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “SPEn” appears in the display.
3. When “SPEn” appears in the display, press the Right and Left Programming buttons at the same time. The current Intermediate Rinse Spins Enable status will appear in the display.
   “on” = Option Enabled
   “oFF” = Option Disabled

NOTE: The default value is on.

4. Press the Right or Left Programming button to change the current status.
5. Press the Right and Left Programming buttons at the same time when the desired time appears in the display. The next available programming option will be displayed.

16. Rinse #2 Enable “r2En”

This option allows the owner to enable or disable the Rinse #2 segment of a cycle.

How to Program Rinse #2 Enable

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “r2En” appears in the display.
3. When “r2En” appears in the display, press the Right and Left Programming buttons at the same time. The current Rinse #2 Enable status will appear in the display.
   “on” = Option Enabled
   “oFF” = Option Disabled

NOTE: The default value is on.

4. Press the Right or Left Programming button to change the current status.
5. Press the Right and Left Programming buttons at the same time when the desired status appears in the display. The next available programming option will be displayed.

17. Hot Cycle Temperature “FH” (Heat Enabled Only)

This option allows the owner to program the hot cycle temperature for models equipped with temperature sensing capabilities.

How to Program Hot Cycle Temperature

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “FH” appears in the display.
3. When “FH” appears in the display, press the Right and Left Programming buttons at the same time. A number will appear in the display. This number corresponds to the current Hot Cycle Temperature value.
4. Press the Right or Left Programming button to increase or decrease the current Hot Cycle Temperature value to the desired Hot Cycle Temperature value.

NOTE: Hot Cycle Temperature is selectable between 4° and 90° Celsius (39° and 194° Fahrenheit). Default temperature is 60° Celsius (140° Fahrenheit).

5. Press the Right and Left Programming buttons at the same time when the correct number appears in the display. The next available programming option will be displayed.

18. Warm Cycle Temperature “FHC” (Heat Enabled Only)

This option allows the owner to program the warm cycle temperature for models equipped with temperature sensing capabilities.

How to Program Warm Cycle Temperature

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “FHC” appears in the display.
3. When “FHC” appears in the display, press the Right and Left Programming buttons at the same time. A number will appear in the display. This number corresponds to the current Warm Cycle Temperature value.
4. Press the Right or Left Programming button to increase or decrease the current Warm Cycle Temperature value to the desired Warm Cycle Temperature value.

NOTE: Warm Cycle Temperature is selectable between 4° and 90° Celsius (39° and 194° Fahrenheit). Default temperature is 40° Celsius (104° Fahrenheit).

5. Press the Right and Left Programming buttons at the same time when the correct number appears in the display. The next available programming option will be displayed.

19. Cycle Pause Enable “CyCP” (Gravity Drain Models Only)

This option allows the owner to enable or disable the cycle pause feature. The cycle pause feature allows the user to pause a cycle within the first three (3) minutes of cycle start.

How to Program Cycle Pause Enable

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “CyCP” appears in the display.
3. When “CyCP” appears in the display, press the Right and Left Programming buttons at the same time. The current Cycle Pause Enable status will appear in the display.
   “on” = Option Enabled
   “oFF” = Option Disabled

NOTE: The default value is off.

4. Press the Right or Left Programming button to change the current status.
5. Press the Right and Left Programming buttons at the same time when the desired status appears in the display. The next available programming option will be displayed.

20. Leak Detection During Cycle Enable “LdEn”

This option allows the owner to enable or disable leak detection during a cycle.

For Design 1 Models, when enabled, at the end of the last agitate step in the cycle, the control monitors the water level for two (2) minutes. If water level drops below tolerance threshold, a Leak Detection error will be displayed at the end of the cycle.

For Design 2 Models, when enabled, at the end of the last agitate step in the cycle, the control monitors the water level for 60 seconds. If water level drops below tolerance threshold, a Water Leak Drain Valve error will be displayed at the end of the cycle. If the water level increases above tolerance threshold, a Water Leak Fill Valve error will be displayed at the end of the cycle.

How to Program Leak Detection During Cycle Enable

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “LdEn” appears in the display.
3. When “LdEn” appears in the display, press the Right and Left Programming buttons at the same time. The current Leak Detection During Cycle Enable status will appear in the display.
   “on” = Option Enabled
   “oFF” = Option Disabled

NOTE: The default value is off.

4. Press the Right or Left Programming button to change the current status.
5. Press the Right and Left Programming buttons at the same time when the desired status appears in the display. The next available programming option will be displayed.

21. Slow Drain Detection During Cycle Enable “SdEn”

This option allows the owner to enable or disable slow drain detection during a cycle.

How to Program Slow Drain Detection During Cycle Enable

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “SdEn” appears in the display.
3. When “SdEn” appears in the display, press the Right and Left Programming buttons at the same time. The current Slow Drain Detection During Cycle Enable status will appear in the display.
   “on” = Option Enabled
   “oFF” = Option Disabled

NOTE: The default value is off.

4. Press the Right or Left Programming button to change the current status.
5. Press the Right and Left Programming buttons at the same time when the desired status appears in the display. The next available programming option will be displayed.

22. Slow Drain Detection Adjustment “SdAd”

This option allows the owner to adjust the drain time that a Slow Drain Detection Error will occur. Slow Drain Detection must be enabled to scroll through the time values.

How to Program Slow Drain Detection Adjustment Value

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “SdAd” appears in the display.
3. When “SdAd” appears in the display, press the Right and Left Programming buttons at the same time. The current Slow Drain Detection Adjustment value will appear in the display.
4. Press the Right or Left Programming button to increase or decrease the desired value.

NOTE: The adjustment value can be set from 0 to 255. The default value is 0.

5. Press the Right and Left Programming buttons at the same time to save the new value. The next available programming option will be displayed.

23. Number of Balance Retries "bALr" (Design 2 Models Only)

This option allows the owner to program a specific number of retries a load is tried to be balanced.

How to Program Number of Balance Retries Value

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until "bALr" appears in the display.
3. When "bALr" appears in the display, press the Right and Left Programming buttons at the same time. The current Number of Balance Retries value will appear in the display.
4. Press the Right or Left Programming button to increase or decrease the desired value.

NOTE: Balance Retry value can be set from 1 to 7. The default value is 1.

5. Press the Right and Left Programming buttons at the same time to save the new value. The next available programming option will be displayed.

24. Leak Detection Test "Ldt"

This option allows the owner to test for a water leak in the machine.

How to Access Leak Detection Test

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until "Ldt" appears in the display.
3. When "Ldt" appears in the display, press the Right and Left Programming buttons at the same time. "Ld"will appear in the display.
4. Press the START switch to begin the test.
5. The display will show "Ld01" followed by "Ld02" and then "Ld03" and will monitor the water level for two (2) minutes and light the LEDs. If water level did not drop or increase, control will display "PASS" and machine will drain. If a drop in water level is detected, control will alternate the display between "FAIL" and "drAn". The control will display "E Ld" indicating a Leak Detection Drain Valve error.

   For Design 2 models, if an increase in water level is detected, control will alternate the display between "FAIL" and "FILL". The control will display "E LF" indicating a Leak Detection Valve Error.
6. When the test is complete, press the Right and Left Programming buttons at the same time to return to the Manual Mode. The next available programming option will be displayed.

25. Balance Weight Test “bALt” (F-speed Design 1 Models Only)

This option allows the owner to test the VFD Balance Switch.

How to Access Balance Weight Test

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “bALt” appears in the display.
3. When “bALt” appears in the display, press the Right and Left Programming buttons at the same time. “bAL” will appear in the display.
4. Press the START switch to begin the test.

NOTE: If the door is open the display will show “door”.

5. While running at distribution speed, the control monitors the Balance state. The control will display a corresponding message as in *Table 4*.

VFD Balance Switch Frequency	Description	Display Message
0	Switch is always closed	“CLoS”
1 Hz		“1 H”
2 Hz		“2 H”
3 Hz		“3 H”
3 Hz	Switch is always open	“oPEn”

Table 4

6. Press the START switch to stop the test.
7. Press the Right and Left Programming buttons at the same time. The next available programming option will be displayed.

25. DC Bus Display Test “dCbt” (Design 2 Models Only)

This option allows the owner to test the DC Bus at distribution speed.

How to Access DC Bus Display Test

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “dCbt” appears in the display.
3. When “dCbt” appears in the display, press the Right and Left Programming buttons at the same time. “dCb” will appear in the display.
4. Press the START switch to begin the test.
5. While running at distribution speed, the control monitors the DC bus value.
6. Press the START switch to stop the test.
7. Press the Right and Left Programming buttons at the same time. The next available programming option will be displayed.

26. DIP Switch Test “dIPt”

This option allows the owner to test the eight DIP switches.

How to Access DIP Switch Test

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.
2. Press the Right or Left Programming button to scroll through the programmable options until “dIPt” appears in the display.
3. When “dIPt” appears in the display, press the Right and Left Programming buttons at the same time.
4. The display will show “d1xx”, where xx is “on” indicating the DIP switch is on or “oFF” indicating the DIP switch is off. The control will test each of the eight (8) switches and display “d2xx”, “d3xx” and so on.
5. When the test is complete the control will display “donE”. Press the Right and Left Programming buttons at the same time to return to the manual mode. The next available programming option will be displayed.

27. Rapid Advance “rAPd”

This option allows the owner to quickly advance through active cycles.

How to Enter Rapid Advance

1. Control must be in Manual Mode. Refer to ***Entering the Manual Mode***.

NOTE: If the control is in OPL Mode, any cycle may be advanced by pressing the START switch at any time. The top cover does not need to be open.

2. Press the Right or Left Programming button to scroll through the programmable options until “rAPd” appears in the display.
3. When “rAPd” appears in the display, press the Right and Left Programming buttons at the same time. The control will exit Manual Mode, bypass Vend Mode, and enter Start Mode
4. Press the START switch to start cycle.
5. Pressing the START switch will advance the machine to the next Fill/Tumble or Drain cycle step (Extract steps are skipped). Continue pressing the START switch until the cycle is completed.

28. Exit Manual Mode “End”

This option allows the owner to exit the Manual Mode.

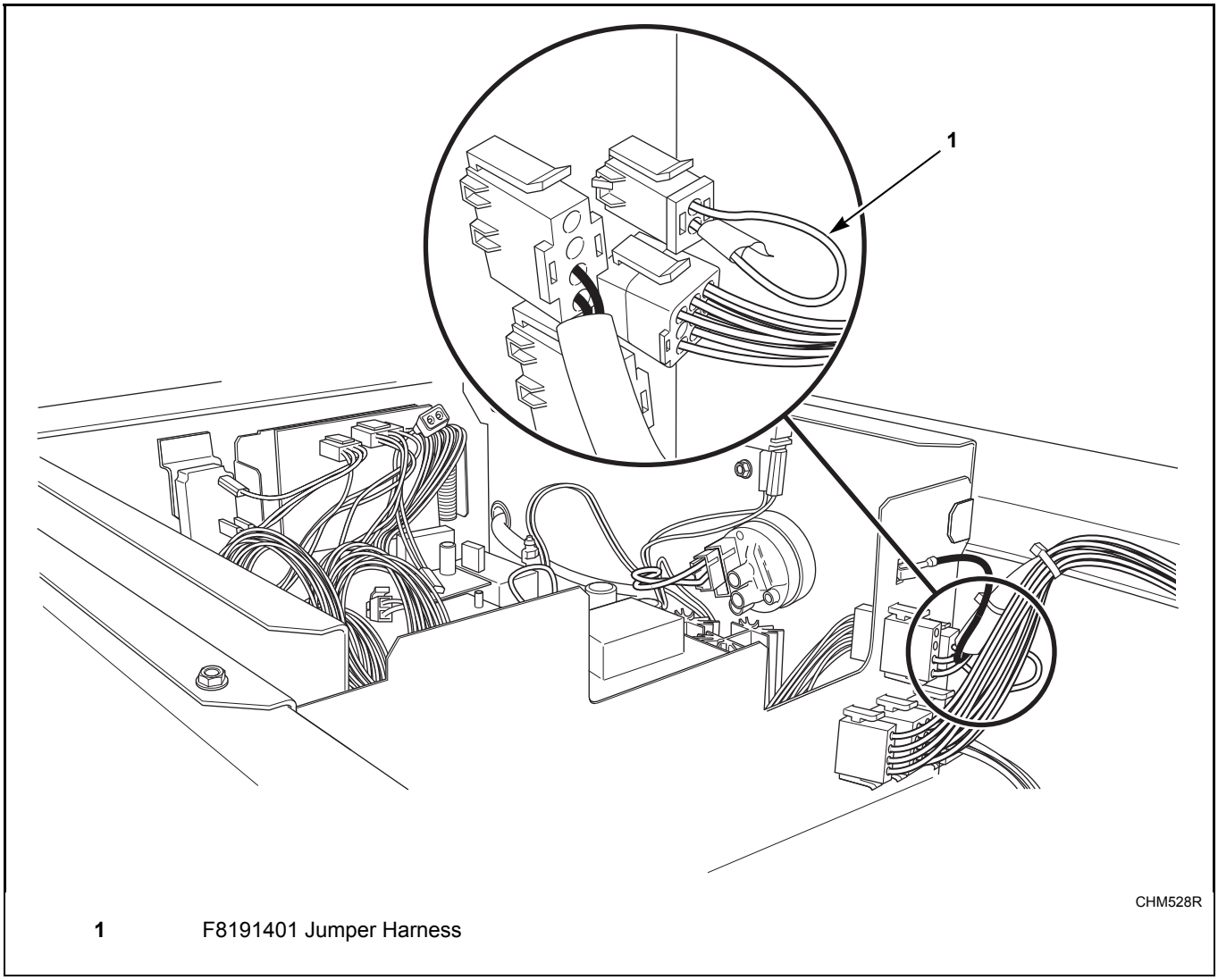
1. To exit the Manual Mode, press the Right or Left Programming button to scroll through the programmable options until “End” appears in the display.
2. When “End” appears in the display, press the Right and Left Programming buttons at the same time. The control will revert back to the previous control mode.

Production Test Cycle

To Enter Production Test Cycle

NOTE: Machine should be empty of water before starting Production Test Cycle.

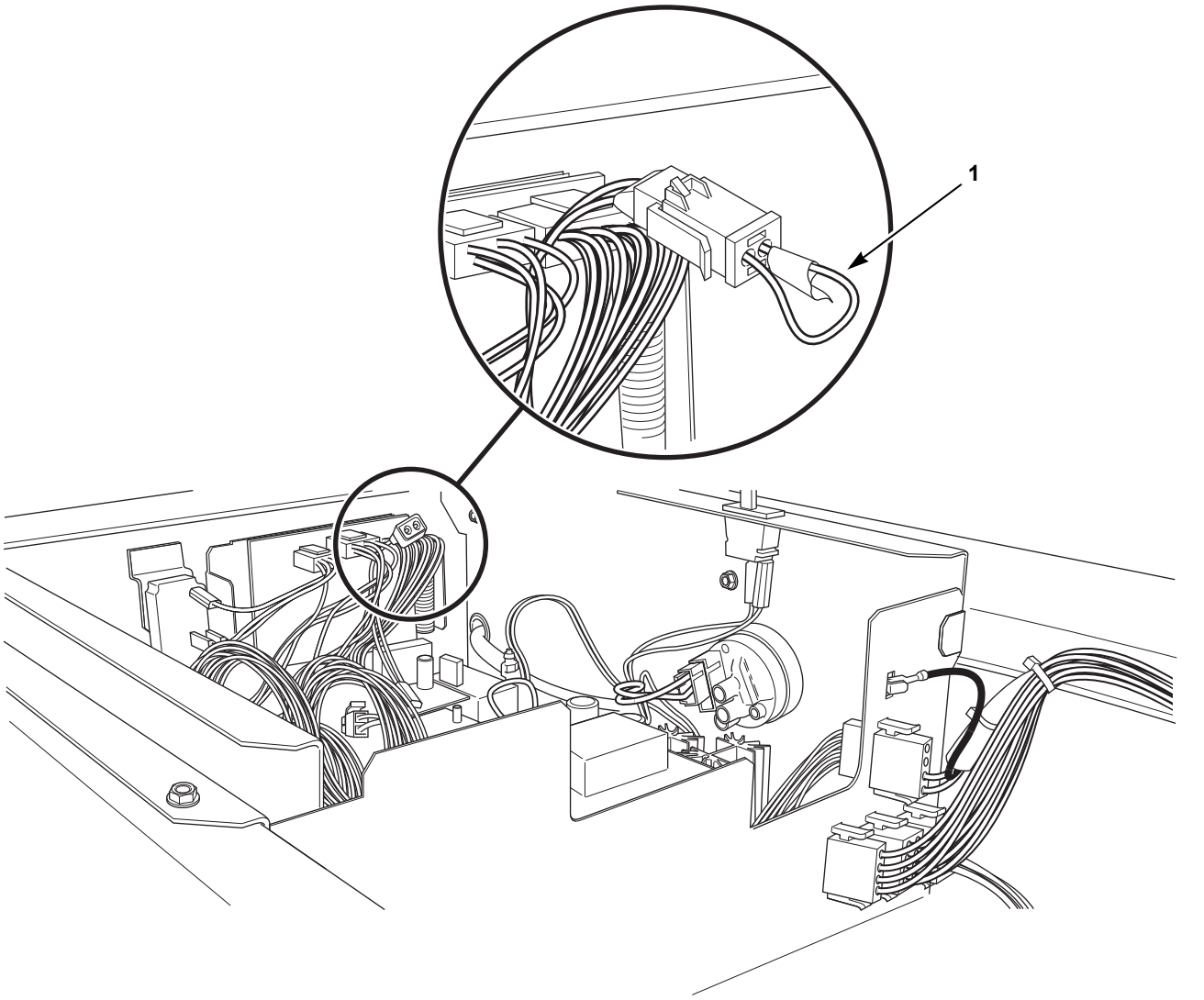
1. Disconnect the machine from electrical power.
2. Disconnect 2-pin jumper harness, Part No. F8191401, from Frame Balance Switch Harness. Refer to *Figure 7*.



1 F8191401 Jumper Harness

Figure 7

3. Connect jumper harness to H3 connector on control. Refer to *Figure 8*.



1 F8191401 Jumper Harness

Figure 8

4. Reconnect the machine to electrical power.
5. Remove jumper harness from control and reconnect to Frame Balance Switch Harness. Refer to *Figure 7*.

NOTE: If jumper harness is not reconnected to Frame Balance Switch Harness prior to entering Production Test cycle, a Frame Balance Switch Error will occur and control will display "E FS". Machine must be powered down to clear error.

6. When the control enters the Production Test Cycle, it will first display "S xx" with the "xx" showing the software version of the front end control.
7. The control will advance through the sequence of test steps whenever the START switch is pressed. Refer to *Table 5* for all tests in the Production Test Cycle.

To Exit Production Test Cycle

To exit a test step, power down the machine.

Production Test Cycle Quick Reference Chart		
Display	**Test Cycle Step**	**Comments**
“S xx”	FEC Control Software Version	xx is the software version number.
“o xx”	Output Board Software Version	xx is the software version number.
“CoIn” or “oPL”	Control Type	Coin or OPL
“drAn” or “PUnP”	Drain Type	Drain or Pump
“HEAt”	Heater	Step skipped if not heater-equipped.
“droP” or “drCL”	Door Status	Door open or closed
“drUL” or “drLo”	Door Lock Status	Door unlocked or locked
“8888” + all LEDs	Display Test	All display elements are lit and audio signal will sound for 15 seconds.
“CyCx”	Cycle/Temperature Selector Switch Test	x is a number corresponding to the cycle the selector switch is set to: 4 = Hot, 3 = Warm, 2 = Cold, 1 = Delicate Cold.
“A xx”	Top Cover Test	xx is either “CL” for closed or “oP” for open.
“U xx”	Coin Vault Switch Test	xx is either “CL” for closed or “oP” for open.
“CxCx”	Coin Drop Test	1st x is number of Coin Drop #1 coins. 2nd x is number of Coin Drop #2 coins. This step is skipped if OPL is enabled.
“C xx”	Machine Size	xx is machine size.
“drxx”	Drive Software Version Number	xx is the drive software version number. Design 2 models only.
“dPxx”	Drive Parameter Table Version Number	xx is the drive parameter table version number. Design 2 models only.
“dt x”	Drive Type Value	x is the drive type value. 1 = 2 HP drive; 2 = 3 HP drive; 3 = 5 HP 240V drive; 4 = 5 HP 480V drive. Design 2 models only.
“HFIL”	Hot Fill to Standard Level	All water outputs turned off when standard water level is reached.
“CFIL”	Cold Fill to Standard Level	All water outputs turned off when standard water level is reached.
“bFIL”	Warm Fill to Standard Level	All water outputs turned off when standard water level is reached.
“bFIH”	Warm Fill to High Level	All water outputs turned off when high water level is reached.
“C2Co”	Compartment #2 Cold Fill	Supply #1 is energized for 15 seconds. External Supply #1 is energized until START switch is pressed.
“C2Ho”	Compartment #2 Hot Fill	Supply #4 is energized for 15 seconds. External Supply #4 is energized until START switch is pressed.
“C3Co”	Compartment #3 Cold Fill	Supply #2 is energized for 15 seconds. External Supply #2 is energized until START switch is pressed.
“C4Ho”	Compartment #4 Hot Fill	Supply #3 is energized for 15 seconds. External Supply #3 is energized until START switch is pressed.
“xxxF”	Heat to 110°F	xxx is degree Fahrenheit temperature. This step skipped if not temp-sensor-equipped.
“Ag”	Wash Speed Forward	Start switch press will advance test step.
“rAg”	Wash Speed Reverse	Start switch press will advance test step.
“drAI”	Drain	Test cannot be advanced until machine is empty.

Table 5 (continued)

Table 5 (continued)

Production Test Cycle Quick Reference Chart		
Display	**Test Mode**	**Comments**
“PUrg”	Purge Test	Both water valves and all supply outputs turned on.
“SP 1” or “SPIn”	Very Low Speed Extract or Spin Contactor	
“SP 2”	Low Speed Extract	Step skipped on F-speed models.
“SP 3”	Medium Speed Extract	Step skipped on F-speed models.
“Prdn”	Power Down	Turn Power off. Remove factory test harness.

Table 5

Error Codes

Following is a list of possible error codes.

Display	Description	Cause/ Corrective Action
E FL	Fill Error	Programmed water level not reached within 10 minutes in any fill agitate cycle. End cycle. Power down machine to clear.
E SP	SPI Communications Error	Master control cannot communicate with motor control. Caused by transformer unplugged or wiring to motor control incorrect. Power down the machine, power up and try again.
E dL	Door Lock Error	Door does not lock 10 seconds after closing (open and reclose door) and pressing start or doesn't unlock 10 seconds after cycle completion. Display will show "E dL" for 1 second and then "door" for 1 second for up to 1 minute. Power down machine and retry.
E do	Door Opened During A Running Cycle	Control detects door open and door locked inputs high. Caused by pulling on door while locked or about to lock. Correct inoperative door locking system. End cycle. Power down machine to clear.
E Ub	Unbalance Error	Unable to balance load. Redistribute load and run cycle.
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 dr	Drain Alarm Error	Programmed water level not reached within 15 minutes in any drain step. End cycle. Power down machine to clear.
E Ht	Heater Error	Heat time of 120 minutes is exceeded. Turn off heater output for remainder of cycle.
E oP	Open Temperature Sensor Error	Control senses temperature less than 0°F (-18°C) in machine equipped with temperature sensor. Heater and thermistor related operations are disabled.
E SH	Shorted Temperature Sensor Error	Control senses temperature greater than 212°F (100°C) in machine equipped with temperature sensor. Heater and thermistor related operations are disabled. Disable thermistors, turn off heater output for remainder of cycle.
E FS	Frame Balance Switch Error	Control detects Frame Balance Switch open. End cycle. Power down machine to clear.
E db	Drive Balance Switch Error (F-speed models only)	Control detects VFD Balance Switch input closed at start of drain step. End cycle. Power down machine to clear.

Table 6 (continued)

Table 6 (continued)

Display	Description	Cause/ Corrective Action
E Pr*	Low Level Pressure Switch Error	If control senses that low level pressure switch is in incorrect position at any point after first fill step in production test cycle. Cycle will terminate. Power down machine to clear.
E Ld	Water Leak Detection Error - Drain Valve	If control senses a drop in water level during diagnostic testing, power down machine to clear. If control senses a drop in water level during machine cycle, control shows error after completed cycle, for one minute, when door is opened.
E LF**	Water Leak Detection Error - Fill Valve	If control senses an increase in water level during diagnostic testing, power down machine to clear. If control senses an increase in water level during machine cycle, control shows error after completed cycle, for one minute, when door is opened.
E Sd	Slow Drain Detection During a Machine Cycle	If control senses a longer than average drain time during machine cycle, control shows error after completed cycle, for one minute, when door is opened.
Ed01**	SPI Communication Error	Front End control cannot communicate with motor drive. Power down, verify input power and 6-pin communication connection on drive and Front End control, power up and try again.
Ed02**	DC Bus Error	The control detects the DC bus voltage is too high. Power down, verify line voltage is within specification, power up and try again.
Ed03**	Tachometer Error	The drive detects the tachometer input is damaged during power up or no tachometer signal is detected after initiating motor output. Power down, verify H3 on drive and tachometer connections on motor, power up and try again.
Ed04**	Locked Rotor Error	Motor does not reach speed at startup. Power down, verify motor mounting and look for obstructions, power up and try again.
Ed05**	IGBT Overcurrent Error	The drive detects an overcurrent shunt condition. Power down machine for a minimum of two minutes, verify the motor is not shorted phase to phase or phase to ground. Power up and try again. If problem persists, replace drive.
Ed06**	Thermal Error	The control detects a high IPM temperature. Power down, verify convection around drive heat sink, power up and try again.
Ed07**	No Setup Error	The drive receives movement commands without receiving a setup packet. Power down, power up and try again.

*Design 1 models only.
**Design 2

Table 6 (continued)

Table 6 (continued)

Display	Description	Cause/ Corrective Action
Ed08**	Max Over Current Error	The drive detects motor output overcurrent condition. Power down, power up and try again.
Ed09**	Current Sensor Error	The drive detects a current sensor is not operating properly at startup. Power down, power up and try again. If problem persists, replace drive.
Ed10**	Low DC Bus Error	The drive detects a low DC Bus voltage. Cycle will continue, no user input required.
Ed11**	Invalid Command Error	The drive received an invalid motor movement command. Cycle will continue, no user input required.

**Design 2 models only.

Table 6

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 the power failure lasted less than five (5) seconds, and the door is locked, the cycle will resume without requiring the user to press the START switch to restart.

If the power failure lasted longer than five (5) seconds and OPL Mode is turned off, the door is unlocked, the START switch must be pressed and the cycle will restart from the point it left off.

If the power failure lasted longer than five (5) seconds and OPL Mode is turned on, the cycle is lost and the control will return to Ready Mode.

If the power failure lasted longer than five (5) seconds and the coast down timer is not zero or there is water in the machine, the door will remain locked until the coast down time is zero or the machine is empty. The control will display “PAUS” until the coast down timer is zero.

Default Cycle Chart

Cycle Steps		Hot Wash	Warm Wash	Cold Wash	Delicates Cold
Agitation type		**18/3/18 Normal**	**18/3/18 Normal**	**18/3/18 Normal**	**3/12/3 Gentle**
Prewash (ON/OFF)		**ON**	**ON**	**ON**	**ON**
Time for agitation (min.)		2	2	2	2
Fill Temperature		Warm	Warm	Cold	Cold
Fill Level		High	High	High	High
Supply Compartment (External Supply)		C1 (S1)	C1 (S1)	C1 (S1)	C1 (S1)
Heat (if enabled)		No	No	No	No
Drain		Yes	Yes	Yes	Yes
Time for Drain (min.)		1	1	1	1
Wash					
Time for agitation (min.)		6	6	6	6
Fill Temperature		Hot	Warm	Cold	Cold
Fill Level		High	High	High	High
Supply Compartment (External Supply)		C1, C2, C3 (S1, S2)	C1, C2, C3 (S1, S2)	C1, C2, C3 (S1, S2)	C1, C2, C3 (S1, S2)
Heat (if enabled)		Yes	Yes	No	No
Drain		Yes	Yes	Yes	Yes
Time for Drain (min.)		1	1	1	1
Rinse 1					
Time for agitation (min.)		2	2	2	2
Fill Temperature		Cold	Cold	Cold	Cold
Fill Level		High	High	High	High
Supply Compartment (External Supply)		C1, C2, C3	C1, C2, C3	C1, C2, C3	C1, C2, C3
Heat (if enabled)		No	No	No	No
Drain		Yes	Yes	Yes	Yes
Time for Drain (min.)	Design 1 (2 speed)	1	1	1	1
	Design 1 (F- speed)	1:44	1:44	1:44	1:44
	Design 2	1	1	1	1
Spin (2 speed/F-speed)		Spin/Low	Spin/Low	Spin/Low	Spin/Low
Time for Spin (min.)		0:30	0:30	0:30	0:30

(continued)

Default Cycle Chart

(continued)

Cycle Steps		Hot Wash	Warm Wash	Cold Wash	Delicates Cold
Agitation type		**18/3/18 Normal**	**18/3/18 Normal**	**18/3/18 Normal**	**3/12/3 Gentle**
Rinse 2 (ON/OFF)		ON	ON	ON	ON
Time for agitation (min.)		2	2	2	2
Fill Temperature		Cold	Cold	Cold	Cold
Fill Level		High	High	High	High
Supply Compartment (External Supply)		C1, C2, C3	C1, C2, C3	C1, C2, C3	C1, C2, C3
Heat (if enabled)		No	No	No	No
Drain		Yes	Yes	Yes	Yes
Time for Drain (min.)	Design 1 (2 speed)	1	1	1	1
	Design 1 (F-speed)	1:44	1:44	1:44	1:44
	Design 2	1	1	1	1
Spin (2 speed/F-speed)		Spin/Low	Spin/Low	Spin/Low	Spin/Low
Time for Spin (min.)		0:30	0:30	0:30	0:30
Rinse 3					
Time for agitation (min.)		2	2	2	2
Fill Temperature		Cold	Cold	Cold	Cold
Fill Level		High	High	High	High
Supply Compartment (External Supply)		C1, C2, C3, C4 (S3, S4)	C1, C2, C3, C4 (S3, S4)	C1, C2, C3, C4 (S3, S4)	C1, C2, C3, C4 (S3, S4)
Heat (if enabled)		No	No	No	No
Drain		Yes	Yes	Yes	Yes
Time for Drain (min.)	Design 1 (2 speed)	1	1	1	1
	Design 1 (F-speed)	1:44	1:44	1:44	1:44
	Design 2	1:10	1:10	1:10	1:10
Spin (2 speed/F-speed)		Spin/Medium	Spin/Medium	Spin/Medium	Spin/Low
Time for Spin (min.)		5	5	5	4
Shakeout (min. or sec.)		Design 1: 1 min. Design 2: 32 sec.	Design 1: 1 min. Design 2: 32 sec.	Design 1: 1 min. Design 2: 32 sec.	Design 1: 1 min. Design 2: 32 sec.
Default Cycle Time (hh:mm:ss)*	**2 speed**	**00:27:00**	**00:27:00**	**00:27:00**	**00:26:00**
	F-speed (Design 1)	**00:30:31**	**00:30:31**	**00:30:31**	**00:30:00**
	F-speed (Design 2)	**00:25:42**	**00:25:42**	**00:25:42**	**00:25:32**

*** Total cycle time includes final spin coast down time.**