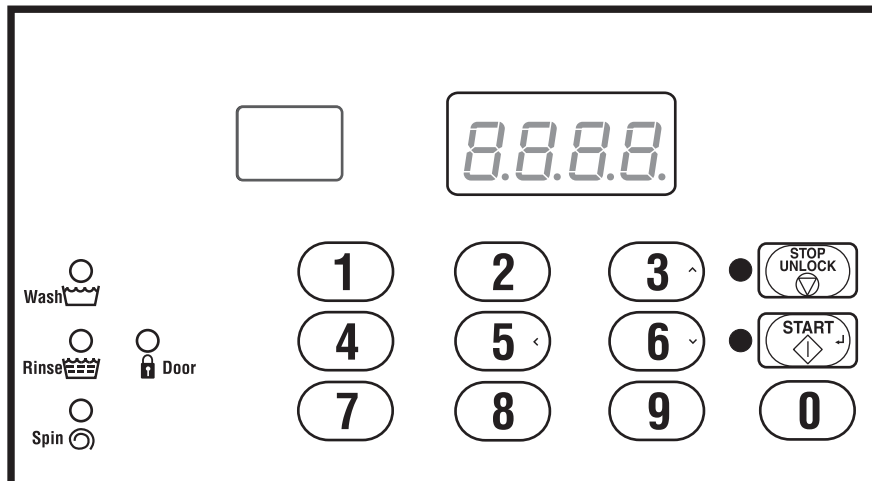



Washer-Extractor

Refer to Page 4 for Model Numbers



Keep These Instructions for Future Reference.

(If this machine changes ownership, this manual must accompany machine.)

	WARNING
<p>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.</p> <p style="text-align: right;">W030</p>	

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 machines. These factors MUST BE supplied by the person(s) installing, maintaining, or operating the machine.

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

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Model Identification

Information in this manual is applicable to these machine models:

UWL035K12	UWL065K2M	UWN060K1M	UWU045K2L
UWL035K1L	UWL080K1M	UWN065K1L	UWU045K2M
UWL035K1M	UWL100K1M	UWN065K1M	UWU060K12
UWL045K1L	UWL125K1M	UWN065K2L	UWU060K1L
UWL045K1M	UWN035K12	UWN065K2M	UWU060K1M
UWL045K2L	UWN035K1L	UWN080K1M	UWU065K1L
UWL045K2M	UWN035K1M	UWN100K1M	UWU065K1M
UWL060K12	UWN045K1L	UWN125K1M	UWU065K2L
UWL060K1L	UWN045K1M	UWU035K12	UWU065K2M
UWL060K1M	UWN045K2L	UWU035K1L	UWU080K1M
UWL065K1L	UWN045K2M	UWU035K1M	UWU100K1M
UWL065K1M	UWN060K12	UWU045K1L	UWU125K1M
UWL065K2L	UWN060K1L	UWU045K1M	

Preliminary Information

About the Control

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

The control allows the owner to program custom cycles, retrieve audit information, run diagnostic tests, and other programmable features. Refer to ***Programming Control*** for a list of features. Machines shipped from the factory have a default cycle of Cycle #5 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 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 keypads and status words of the control.

Power Failure Recovery

If a cycle is in progress and the power fails for less than five seconds, the cycle status is saved in memory. When the power recovers, the machine will resume into the previously active cycle.

If the length of the power failure is greater than five seconds, the control will end the cycle and the display will revert back to Start Mode.

Communications

The control may be programmed manually or by infra-red communication with an external device.

Infra-red Communications

An external device, such as a PDA, allows the owner to program and retrieve information from the control without touching the keypad. An external device greatly expands the programming options available to the owner. However, it is not required to program and operate the machine. The operation of an external device and the advanced features available are covered separately in the instructions included with the external device software. Contact Alliance Laundry Systems for a list of approved PDAs and other external devices.

Control Identification

Select Cycle Pads (Refer to *Figure 1*)

SELECT CYCLE pads are used to select the specific washer cycle. These pads are numbered 0-9 and allow the user to select a cycle other than the default cycle (#5). The SELECT CYCLE keypads are not active after a cycle has been started. Pressing the flashing START pad will confirm the selection and the cycle will begin.

The SELECT CYCLE pads are used in various combinations for programming cycles, retrieving audit information, running diagnostic tests, and other operations. These instructions cover the manual programming and data retrieval options.

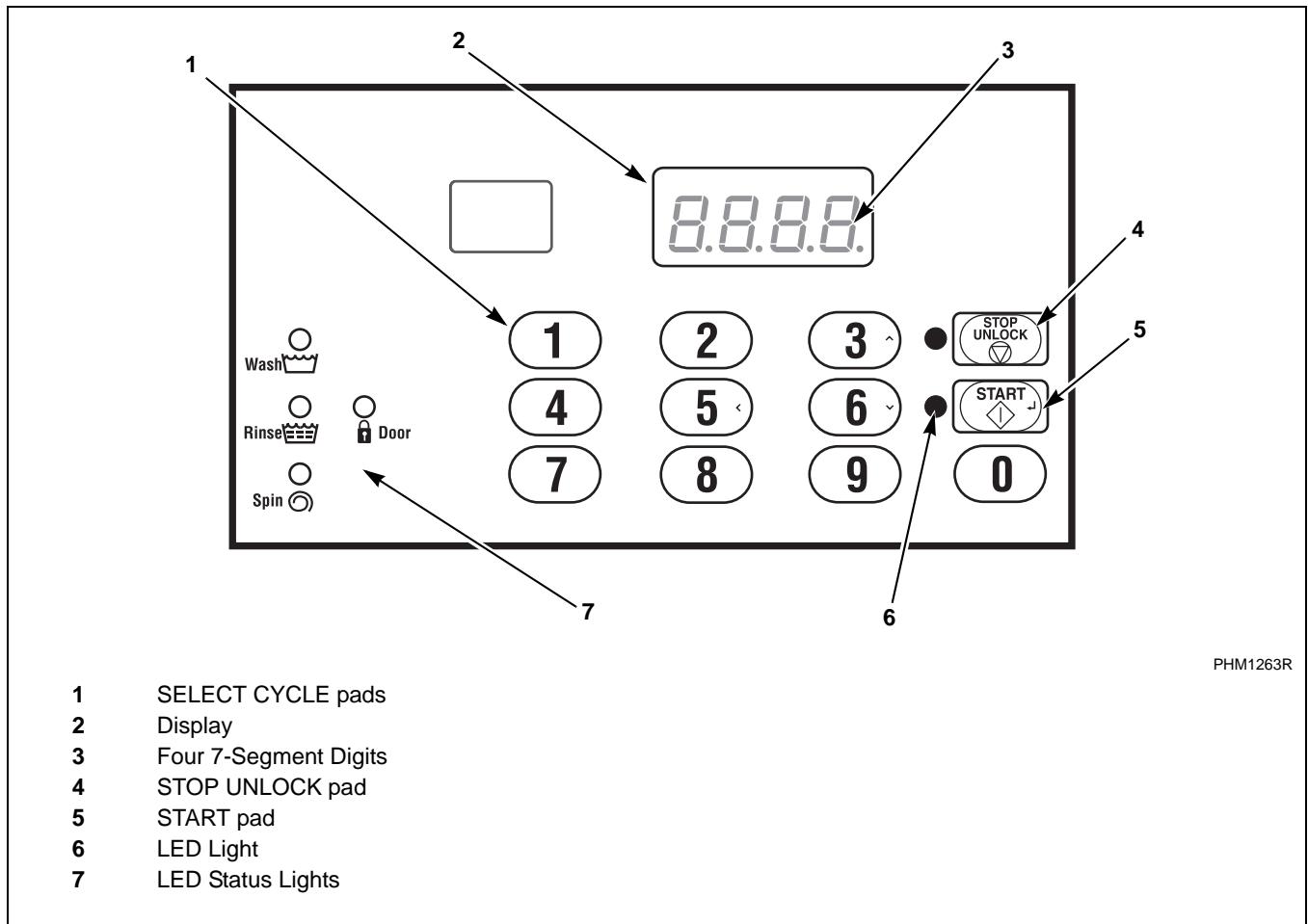


Figure 1

Display Identification

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

Light Emitting Diodes (LEDs) are used to indicate the chosen cycle, cycle status, when the bleach compartment is dispensing, and door lock information. See below for information on each LED.

WASH LED

Wash LED is lit at the beginning of a wash portion of the cycle and will remain lit until the wash is complete.

RINSE LED

Rinse LED is lit at the beginning of a rinse portion of the cycle and will remain lit until the rinse is complete.

SPIN LED

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

DOOR LED

Door LED is lit whenever the door is locked.

Four 7-Segment Digits

The 7-Segment Digits are used to display the time remaining in a cycle, 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*).

Machine 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 second. If the control was not powered down during a running cycle, it will enter Start Mode.

Door Locking Mode

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

Stop Mode

The control enters this mode if the user stops the cycle by pressing the STOP keypad. If control does not detect water or cylinder rotation it will enter End Of Cycle Mode.

Start Mode

The control enters this mode when machine is ready for operation. The display will show “CYxx” where “xx” is the cycle number.

After pressing the START keypad, with the door closed and locked, the cycle will begin. The cycle cannot be changed once the cycle has started.

End of Cycle Mode

When a cycle is complete, the control will display “00” and will prompt for door unlock by flashing STOP/ UNLOCK LED until the machine door is unlocked and opened. When this event occurs, the display will revert back to Start Mode.

Cycle Sequence

Upon the start of a cycle, the control will display the total cycle time. The appropriate LEDs will light while the machine passes through different cycle steps. The user will not be able to change cycles or water temperature.

Run Mode

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

Signals

There are two options when a signal can be used during the machine operation. These two options are listed below:

1. **End of Cycle Signal**
By default, this signal is turned off. If turned on, the signal sounds for three (3) seconds at the end of a cycle.
2. **Signal On Keypad Depression**
By default, this signal is turned on and sounds for a quarter of a second each time a keypad is pressed.

NOTE: Refer to *Programming Control* to program signal options.

Special Features

Programming Control

The control allows the machine owner to program the control with the use of the keypad. Cycle options may be programmed, audit information may be viewed and diagnostic tests may be run by pressing combinations of the select cycle keypads.

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

Collecting Audit Information

The control will store audit information in its memory that can be retrieved by pressing various combinations of Select Cycle keypads. The control will record total machine cycles.

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

NOTE: Additional audit information is retrievable with an external device, using infra-red communications. Refer to the appropriate instruction manual.

Testing Machine and Control Functions

Special diagnostic features built into the control allow the owner to run specific diagnostic tests. By opening and closing the top cover and then pressing various sequences of Select Cycle keypads, the owner may retrieve or perform the following tests:

- Front End Control Software Version Number
- Output Board Control Software Version Number
- Output Board Water Level Sensor Trim Value
- Top Cover Opening Test
- Door Switch Input Test
- Door Lock Input Test
- Show Fill Time Test
- Show Drain Time Test
- Temperature Sensor Display Test
- Start Pulse Test
- VFD Balance Input Test
- 24 VAC Switch Input Test
- VFD Drive Fault Input Test
- Frame Balance Switch Input Test
- VFD Balance Weight Test (Design 1 models only)
- Drive DC Bus Display Test (Design 4 models only)
- Water Purge Test
- Water Leak Detection test
- Drive Software Version Number (Design 4 models only)

- Drive Parameter Table Version Number (Design 4 models only)
- Drive Type (Design 4 models only)

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

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 shakeout. 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*.

Communications Mode

This feature allows the control to communicate with an external device using infra-red communications. This allows the 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*.

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 six simple steps below.

How to Enter the Manual Mode

1. If the machine is in an active cycle, rapid advance through the cycle. Refer to the *Rapid Advance Feature*.
2. Press and hold the #4 keypad and the #1 keypad at the same time.
3. The display will show “rAPd”.
4. Press the #3 (^) keypad or the #6 (v) keypad to scroll through the options until the desired option appears in the display.
5. Press the START (enter) keypad.

Manual Mode is broken into three groups: Manual Programming, Manual Rapid Advance and Manual Diagnostics. Manual Programming can only be turned on or off with an external device. Refer to the appropriate instruction manual. Manual Rapid Advance and Manual Diagnostics can be turned on and off using an external device or by manual programming (refer to 13 and 15 of *Programming Control*).

By default, all groups are turned “on”.

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

Manual Programming

Manual Programming (Prog)

Manual Read Audit (AUdt)

Manual Reset (rSEt)

Manual Rapid Advance

Rapid Advance (rAPd)

Manual Diagnostics

Manual Diagnostic Tests (dIAG)

If a group is turned off, the display will change from the selected feature to “OFF” when the START pad is pressed and an audio signal will sound for one (1) second. The display will then return to the selected feature. The features in the group cannot be entered.

Programming Control

What Can Be Programmed?

This feature allows the owner to program cycle information and other features by using the keypads. The control must have the Manual Programming Mode enabled, which is the factory default. This mode can only be turned “OFF” and “on” by using an external device. Refer to this section when programming the control.

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 more advanced users, a quick reference list (refer to *Table 1*) of the options available through the Manual Programming Mode is available. Programming Flowcharts (refer to *Figures Figure 2-Figure 6*) are located on the following pages.

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	Value Range
1	“dCYC”	Default Cycle	“Cy05”*	“Cy01”-“Cy30”*
2	“AUd”	Audio Signal	“29”*	“0”-“31”*
3	“Err-”	Errors	—	—
a.	“E FL”	Fill Errors	“on”	“on”/“oFF”
b.	“E dr”	Drain Error	“on”	“on”/“oFF”
c.	“E Ub”	Unbalance Error Display	“on”	“on”/“oFF”
d.	“E oP”	Open Thermister Error Display	“on”	“on”/“oFF”
e.	“E SH”	Shorted Thermistor Error Display	“on”	“on”/“oFF”
f.	“E Ht”	Heat Error Display (Heater only)	“on”	“on”/“oFF”
g.	“LEr-”	Water Leak Detection Error	—	—
1.	“LEr1”	Water Leak Detection During a Machine Cycle (On/Off)	“oFF”	“on”/“oFF”
2.	“LEr2”	Water Leak Detection Day of Week Enable	“127”*	“0”-“127”*
3.	“LEr3”***	Number of Cycles Between Water Leak Detection During a Machine Cycle	“0”	“0”-“127”
h.	“E Sd”	Slow Drain Detection	“oFF”	“on”/“oFF”
4	“Cy--”	Cycle Programming	Refer to <i>Cycle Chart</i> for default cycle information	
a.	“Agl”	Cycle Agitate	—	—
1.	“tyPE”	Agitate Type	**	“1”-“4”*
2.	“ASPd”	Agitate Speed (VFD only)	**	“Lo”/“rEg”*
b.	“Segx” (1-8)	Cycle Segment Programming	—	—
1.	“SgEn”	Segment Enable/Disable	**	“on”/“oFF”
2.	“FILL”	Fill Step	—	—
a.	“FLEn”	Fill Step Enable/Disable	**	“on”/“oFF”
b.	“FLEU”	Fill Level	**	“HI”/“nEd”/“Lo” or 1-30

Table 1 (continued)

Programming Control

Table 1 (continued)

Option Number	Option Display	Description	Default Value	Value Range
c.	“tEnP”	Fill Temperature	**	“CoLd”/“Uarn”/“Hot” or 35°F-194°F/2°C-90°C
3.	“SUPL”	Supply Step	—	—
a.	“SUEn”	Supply Step Enable/Disable	**	“on”/“oFF”
b.	“dISP”	Dispenser Options	**	Display will show “SX”
c.	“S1”	Supply #1	**	“on”/“oFF”
d.	“S2”	Supply #2	**	“on”/“oFF”
e.	“S3”	Supply #3	**	“on”/“oFF”
f.	“S4”	Supply #4	**	“on”/“oFF”
g.	“SdUr”	Supply Duration	**	Press START keypad to access options
h.	“SEC”	Seconds	**	0-59
i.	“nIn”	Minutes	**	0-9
4.	“AgSt”	Agitate Step	—	—
a.	“AgEn”	Agitate Step Enable/Disable	**	“on”/“oFF”
b.	“AdUr”	Agitate Duration (in minutes)	**	1-30 for agitate types 1 or 2; 1-180 for agitate types 3 or 4
c.	“HEAT”	Heat in Agitate (if heater is present)	**	“oFF”/“1”/“2”**
5.	“drAn”	Drain Step	—	“on”/“oFF”
6.	“SPIn”	Spin Step	—	—
a.	“SPEn”	Extract Step Enable/Disable	**	“on”/“oFF”
b.	“SSEC”	Extract Seconds	**	0-59
c.	“SnIn”	Extract Minutes	**	Intermediate Extract: Min. Step Time = 30 seconds, Max. Step Time = 3:59 minutes Final Extract: Min. Step Time = 30 seconds, Max. Step Time = 9:59 minutes
d.	“SSPd”	Extract Speed (VFD only)	**	“1”-“3”*
c.	“Cnin”***	Cycle Time in Minutes (If PCTd is enabled)	0	0-255 minutes
5	“bALr”	Number of Balance Retries (VFD only)	3 (Design 1 and 2) 1 (Design 4)	1-7
6	“lRA”	IR Access (On/Off)	“on”	“on”/“oFF”
7	“t FC”	Fahrenheit/Celsius	“FAHr”	“FAHr”/“CEL”
8	“FH”	Hot Water Temperature	140°F (60°C)	35°F-194°F/2°C-90°C
9	“FHC”	Warm Water Temperature	100°F (38°C)	35°F-194°F/2°C-90°C
10	“FC”	Cold Water Temperature	35°F (2°C)	35°F-194°F/2°C-90°C
11	“Codn”	Cooldown Enable/Temperature	“oFF”	“oFF” or 50°F-160°F/10°C-71°C
12	“PtEn”	Production Test Cycle (On/Off)	“on”	“on”/“oFF”
13	“rAEEn”	Manual Rapid Advance (On/Off)	“on”	“on”/“oFF”

Table 1 (continued)

Table 1 (continued)

Option Number	Option Display	Description	Default Value	Value Range
14	“nCtd”	No Cycle Time Display	“oFF”	“on”/“oFF”
15	“PCtd”***	Programmable Cycle Time Display	0	0 = Disabled / 1 = Enabled
16	“SdAd”	Slow Drain Detection Adjust	0	0-255 seconds
17	“rtC-”	Real Time Clock	—	—
a.	“rtC1”	Set Real Time Clock Minutes	—	00-59
b.	“rtC2”	Set Real Time Clock Hours	—	00-23
c.	“rtC3”	Set Real Time Clock Day	—	“001” (Sunday)-“007” (Saturday)
d.	“rtC4”	Set Real Time Clock Date	—	1-31
e.	“rtC5”	Set Real Time Clock Month	—	1-12
f.	“rtC6”	Set Real Time Clock Year	—	00 (2000)-99
g.	“rtC7”	Daylight Saving Option	“on”	“on”/“oFF”
18	“dAE n”	Manual Diagnostics (On/Off)	“on”	“on”/“oFF”
19	“FLo”	Low Water Level	3	1-10
20	“FnEd”	Medium Water Level	15	11-20
21	“FHI”	High Water Level	27	21-30
22	“tCF”	Temperature Controlled Fill	“oFF”	“on”/“oFF”
23	“ALd”	Auto-Water Leak Detection	—	—
a.	“ALd1”	Auto-Water Leak Detection (On/Off and cycles)	“oFF”	“oFF”/0-127 (Cycles)
b.	“ALd2”	Auto-Water Leak Detection Hour	0	0-23
c.	“ALd3”	Auto-Water Leak Detection Day of Week	“127”*	“0”-“127”*

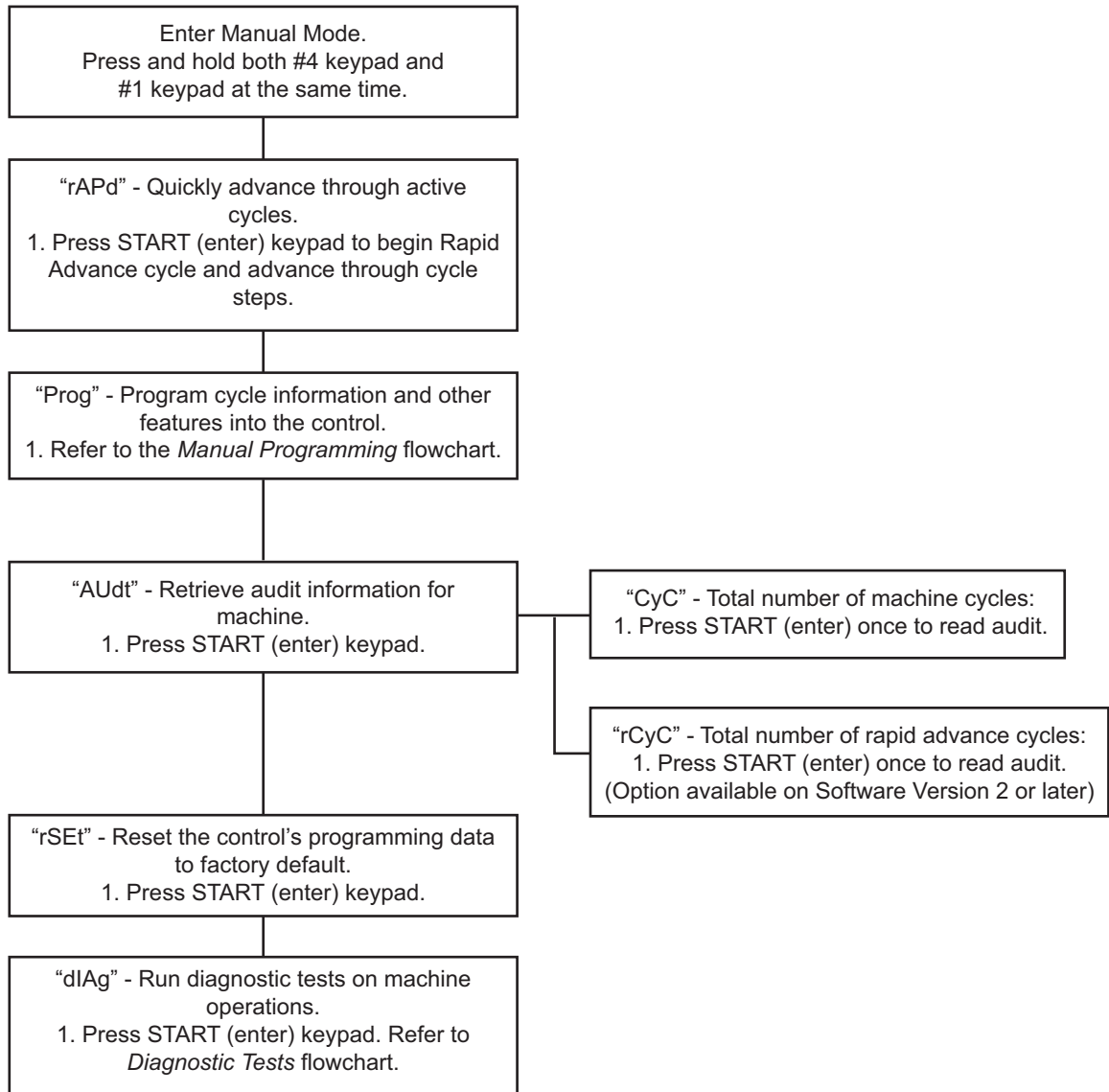
*Refer to programming section for value definition.

**Refer to the Operation Manual for default cycle setting information.

***Available on Software Version 2 or later.

Table 1

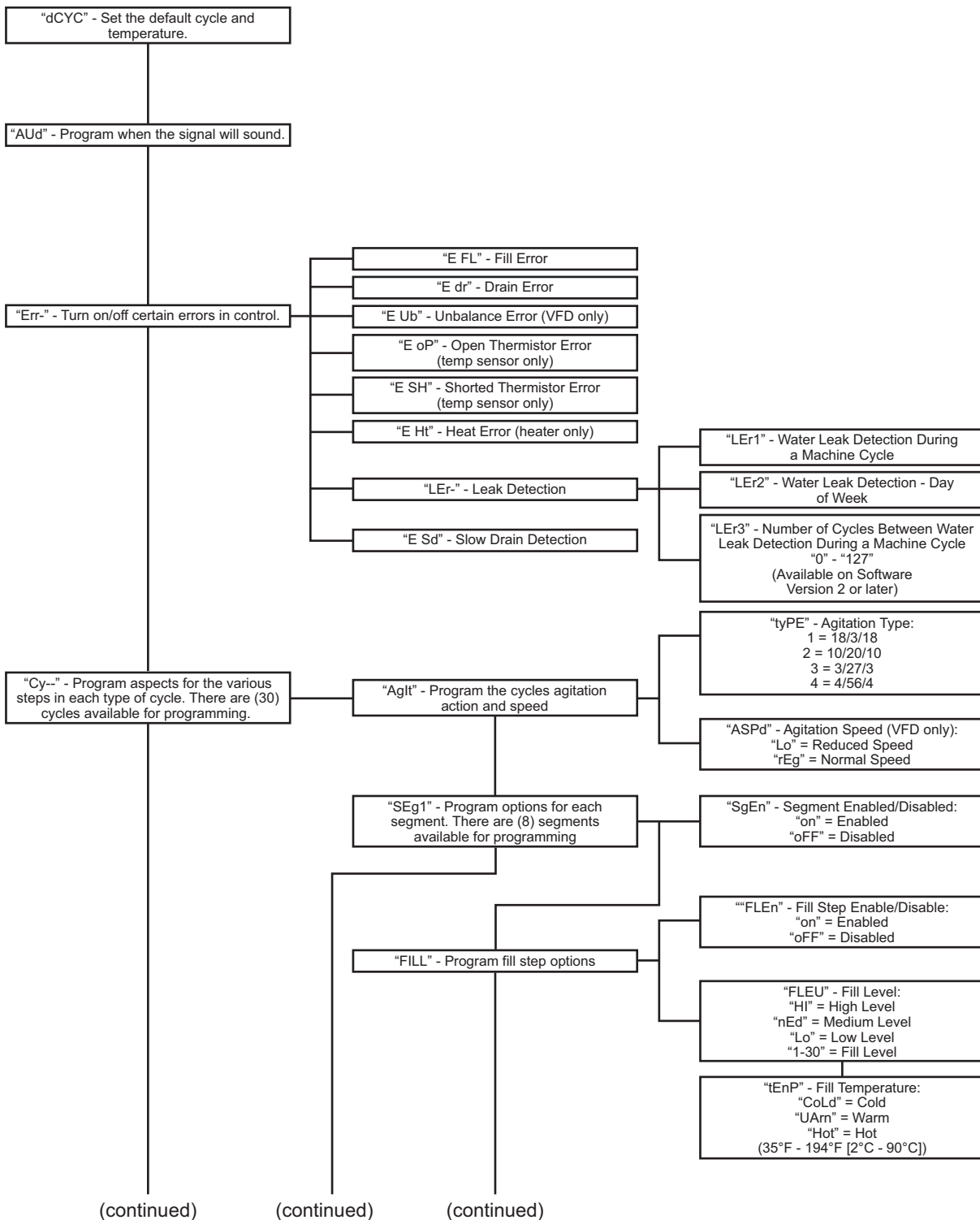
Manual Mode Flowchart



PHM1485R

Figure 2

Manual Programming Flowchart (1 of 3)



PHM1486R

Figure 3

Manual Programming Flowchart (2 of 3)

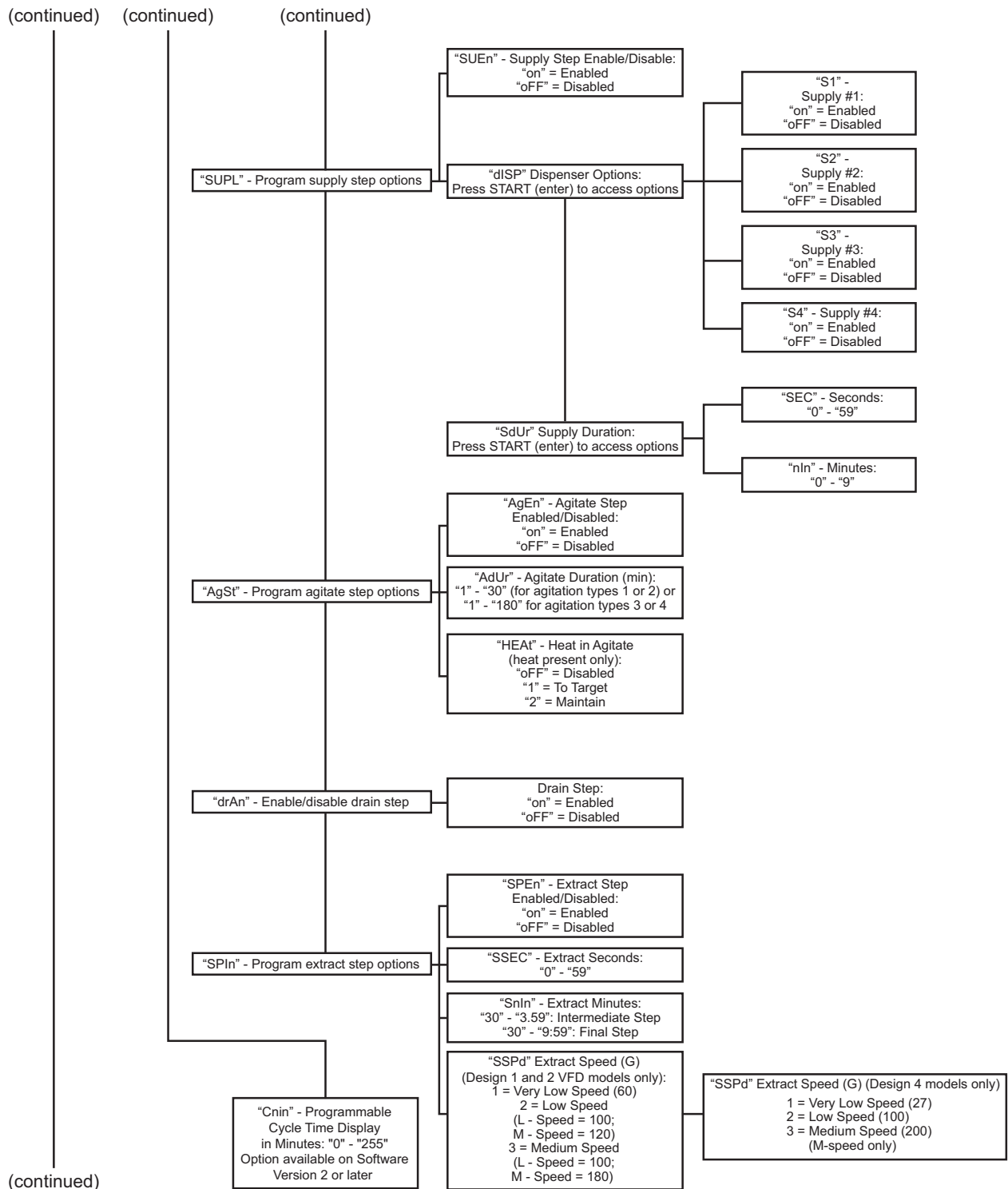
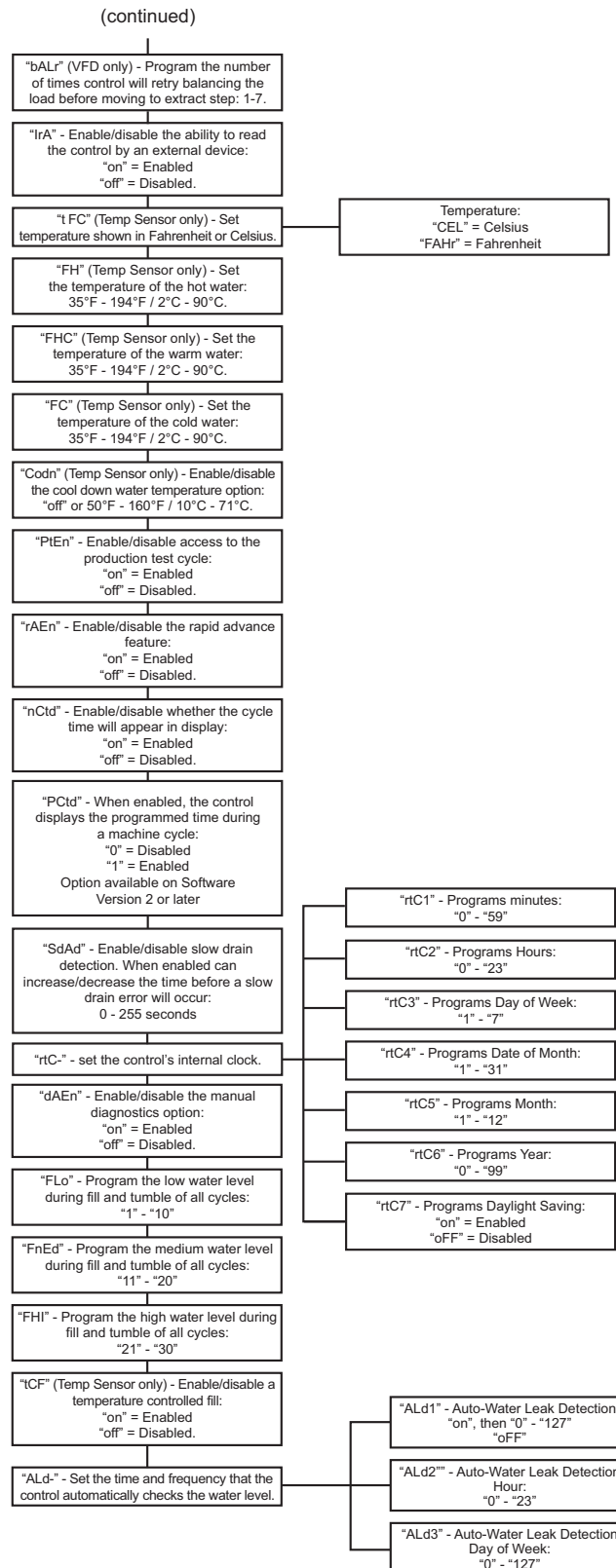


Figure 4

PHM1487R

Manual Programming Flowchart (3 of 3)



PHM1488R

Figure 5

Diagnostic Tests Flowchart

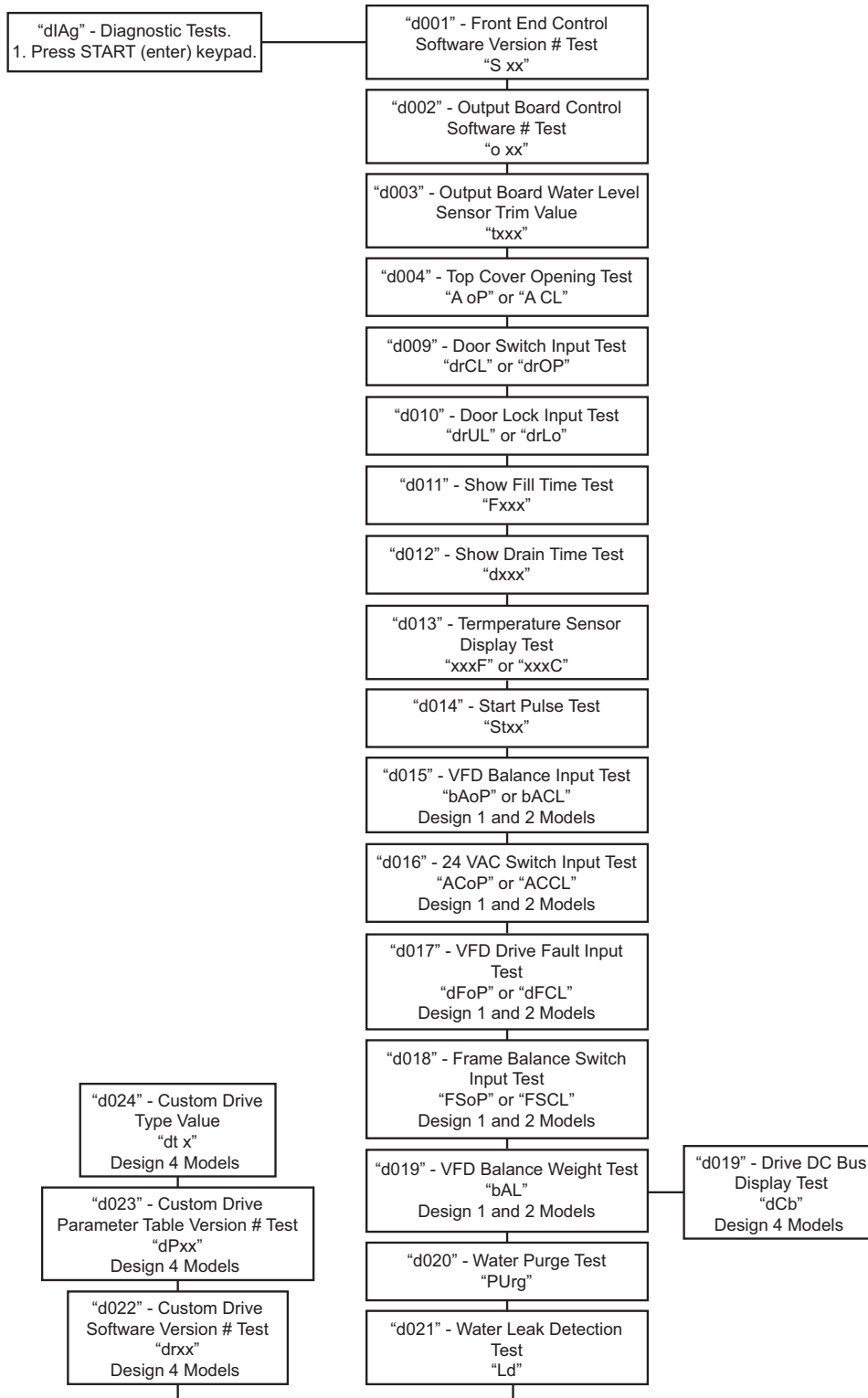


Figure 6

1. Default Cycle “dCYC”

This option allows the owner to set the default cycle the machine will enter when in the Ready Mode.

How to Program Default Cycle

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. 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.

NOTE: The default cycle can be set from 1 to 30.

4. Press the #3 (^) or the #6 (v) keypad to increase or decrease the current number to the desired number.
5. Press the START (enter) keypad when the correct number appears in the display. The next option, “AUd”, will appear in the display.

NOTE: To program “AUd” (Audio Signal), refer to option 2 To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

Programming Control

2. Audio Signal “AUd”

This option allows the owner to program when the signal will sound.

There are two occasions when a signal may sound during operation. These two occasions are listed below:

1. End of Cycle Signal

By default, the signal is turned off. If turned on, the signal will sound for three (3) seconds at the end of a cycle.

2. 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.

How to Program the Audio Signal

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) 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. Locate the desired number in the first column of *Table 2* on the following page.
6. Press the #3 (^) or the #6 (v) keypad to increase or decrease the current number until correct.

For Example: A user might wish to have the signal sound only when a keypad is pressed. Entering the number “1” in step 5 would turn off all the options except KEYPAD. In this instance, the signal would sound only when a keypad is pressed.

7. Press the START (enter) keypad when the correct number appears in the display. The next option, “Err-”, will appear in the display.

NOTE: To program “Err-” (Errors), refer to .option 3 To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

How to Read Table 2

To determine the correct number required to program the Audio Signal, use the following chart. The Signal Value column contains the number required in step 6. The other columns correspond to individual options.

Each column of options contains a unique combination of the words “on” and “OFF” that indicates if that column’s option is turned on or off when the Signal Value is entered. Select the desired combination of options and enter the number found in the Signal Value column.

The default value programmed at the factory is 1.

Signal Value	Start Mode (Not Used)	Remove Card (Not Used)	Coin/ Card Input (Not Used)	End of Cycle	Key Pressed
0	OFF	OFF	OFF	OFF	OFF
1*	OFF	OFF	OFF	OFF	ON
2	OFF	OFF	OFF	ON	OFF
3	OFF	OFF	OFF	ON	ON
4	OFF	OFF	ON	OFF	OFF
5	OFF	OFF	ON	OFF	ON
6	OFF	OFF	ON	ON	OFF
7	OFF	OFF	ON	ON	ON
8	OFF	ON	OFF	OFF	OFF
9	OFF	ON	OFF	OFF	ON
10	OFF	ON	OFF	ON	OFF
11	OFF	ON	OFF	ON	ON
12	OFF	ON	ON	OFF	OFF
13	OFF	ON	ON	OFF	ON
14	OFF	ON	ON	ON	OFF
15	OFF	ON	ON	ON	ON
16	ON	OFF	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON
18	ON	OFF	OFF	ON	OFF
19	ON	OFF	OFF	ON	ON
20	ON	OFF	ON	OFF	OFF
21	ON	OFF	ON	OFF	ON
22	ON	OFF	ON	ON	OFF
23	ON	OFF	ON	ON	ON
24	ON	ON	OFF	OFF	OFF
25	ON	ON	OFF	OFF	ON
26	ON	ON	OFF	ON	OFF
27	ON	ON	OFF	ON	ON
28	ON	ON	ON	OFF	OFF
29	ON	ON	ON	OFF	ON
30	ON	ON	ON	ON	OFF
31	ON	ON	ON	ON	ON

*Factory default setting

Table 2

Programming Control

3. Error Code Programming “Err-”

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

How to Program Error Code Programming

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) 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. Refer to *Table 3* for a list of programmable error code parameters.
5. Press the #3 (^) or the #6 (v) keypad to select error code.
6. Press the START (enter) keypad when the correct code appears in the display. The current status will appear in the display.
 “On” = Error Code Enabled
 “OFF” = Error Code Disabled
7. Press the #3 (^) or the #6 (v) keypad to change the status.
8. Press the START (enter) keypad when the correct status appears in the display. The next Error Code Programming option will appear in the display.

NOTE: To program “Cy--” (Cycle Programming), press the #5 (<) keypad, then the #3 (^) keypad and refer to *option 4*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

9. Press the #5 (<) keypad until the control returns to Start Mode.

“E FL”	Fill Error	
“E dr”	Drain Error	
“E Ub”	Unbalance Error Display (VFD only)	
“E oP”	Open Thermistor Error Display	
“E SH”	Shorted Thermistor Error Display	
“E Ht”	Heat Error Display (Heater only)	
“LEr-”	Leak Detection Error If water leak detection during a machine cycle is enabled, then, on the enabled day(s) of the week, the control will check for water leaks during running machine cycles. If a leak is detected, the control will display the “E Ld” error for one minute after the cycle is completed. It will also light the right-most decimal point on the display. To turn off the right-most decimal point on the display, press the START keypad 3 times (within 5 seconds) anytime after the first fill. The water leak detector diagnostic test can be used to verify the leak.	
	“LEr1”	Water Leak Detection During a Machine Cycle - Determines if water level drops below target level.
	“LEr2”	Water Leak Detection During Machine Cycle Day of Week Enable (Refer to <i>Figure 3</i> for Day(s) of the Week Enabled Values)
	“LEr3”	Number of Cycles Between Water Leak Detection During a Machine Cycle (Option available on Software Version 2 or later.)
“ESd”	Slow Drain Detection Determines if machine is draining slower than normal. If Slow Drain Detection is enabled, the control will check for slow drain operation during running machine cycles. If a slow drain is detected, the control will display the “ESd” error for one minute after the cycle is completed. It will also light the right-most decimal point on the display. For machines equipped with Software Version 2 or later, to turn off the right-most decimal point on the display, press the START keypad 3 times (within 5 seconds) anytime after the first fill.	

Table 3

Day(s) of the Week Enabled Values							
Day Of Week Value	SAT	FRI	THUR	WED	TUE	MON	SUN
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	OFF	OFF	OFF	ON
2	OFF	OFF	OFF	OFF	OFF	ON	OFF
3	OFF	OFF	OFF	OFF	OFF	ON	ON
4	OFF	OFF	OFF	OFF	ON	OFF	OFF
5	OFF	OFF	OFF	OFF	ON	OFF	ON
6	OFF	OFF	OFF	OFF	ON	ON	OFF
7	OFF	OFF	OFF	OFF	ON	ON	ON
8	OFF	OFF	OFF	ON	OFF	OFF	OFF
9	OFF	OFF	OFF	ON	OFF	OFF	ON
10	OFF	OFF	OFF	ON	OFF	ON	OFF
11	OFF	OFF	OFF	ON	OFF	ON	ON
12	OFF	OFF	OFF	ON	ON	OFF	OFF
13	OFF	OFF	OFF	ON	ON	OFF	ON
14	OFF	OFF	OFF	ON	ON	ON	OFF
15	OFF	OFF	OFF	ON	ON	ON	ON
16	OFF	OFF	ON	OFF	OFF	OFF	OFF
17	OFF	OFF	ON	OFF	OFF	OFF	ON
18	OFF	OFF	ON	OFF	OFF	ON	OFF
19	OFF	OFF	ON	OFF	OFF	ON	ON
20	OFF	OFF	ON	OFF	ON	OFF	OFF
21	OFF	OFF	ON	OFF	ON	OFF	ON
22	OFF	OFF	ON	OFF	ON	ON	OFF
23	OFF	OFF	ON	OFF	ON	ON	ON
24	OFF	OFF	ON	ON	OFF	OFF	OFF
25	OFF	OFF	ON	ON	OFF	OFF	ON
26	OFF	OFF	ON	ON	OFF	ON	OFF
27	OFF	OFF	ON	ON	OFF	ON	ON
28	OFF	OFF	ON	ON	ON	OFF	OFF
29	OFF	OFF	ON	ON	ON	OFF	ON
30	OFF	OFF	ON	ON	ON	ON	OFF
31	OFF	OFF	ON	ON	ON	ON	ON
32	OFF	ON	OFF	OFF	OFF	OFF	OFF
33	OFF	ON	OFF	OFF	OFF	OFF	ON
34	OFF	ON	OFF	OFF	OFF	ON	OFF
35	OFF	ON	OFF	OFF	OFF	ON	ON
36	OFF	ON	OFF	OFF	ON	OFF	OFF
37	OFF	ON	OFF	OFF	ON	OFF	ON
38	OFF	ON	OFF	OFF	ON	ON	OFF
39	OFF	ON	OFF	OFF	ON	ON	ON

Table 4 (continued)

Programming Control

Table 4 (continued)

Day(s) of the Week Enabled Values							
Day Of Week Value	SAT	FRI	THUR	WED	TUE	MON	SUN
40	OFF	ON	OFF	ON	OFF	OFF	OFF
41	OFF	ON	OFF	ON	OFF	OFF	ON
42	OFF	ON	OFF	ON	OFF	ON	OFF
43	OFF	ON	OFF	ON	OFF	ON	ON
44	OFF	ON	OFF	ON	ON	OFF	OFF
45	OFF	ON	OFF	ON	ON	OFF	ON
46	OFF	ON	OFF	ON	ON	ON	OFF
47	OFF	ON	OFF	ON	ON	ON	ON
48	OFF	ON	ON	OFF	OFF	OFF	OFF
49	OFF	ON	ON	OFF	OFF	OFF	ON
50	OFF	ON	ON	OFF	OFF	ON	OFF
51	OFF	ON	ON	OFF	OFF	ON	ON
52	OFF	ON	ON	OFF	ON	OFF	OFF
53	OFF	ON	ON	OFF	ON	OFF	ON
54	OFF	ON	ON	OFF	ON	ON	OFF
55	OFF	ON	ON	OFF	ON	ON	ON
56	OFF	ON	ON	ON	OFF	OFF	OFF
57	OFF	ON	ON	ON	OFF	OFF	ON
58	OFF	ON	ON	ON	OFF	ON	OFF
59	OFF	ON	ON	ON	OFF	ON	ON
60	OFF	ON	ON	ON	ON	OFF	OFF
61	OFF	ON	ON	ON	ON	OFF	ON
62	OFF	ON	ON	ON	ON	ON	OFF
63	OFF	ON	ON	ON	ON	ON	ON
64	ON	OFF	OFF	OFF	OFF	OFF	OFF
65	ON	OFF	OFF	OFF	OFF	OFF	ON
66	ON	OFF	OFF	OFF	OFF	ON	OFF
67	ON	OFF	OFF	OFF	OFF	ON	ON
68	ON	OFF	OFF	OFF	ON	OFF	OFF
69	ON	OFF	OFF	OFF	ON	OFF	ON
70	ON	OFF	OFF	OFF	ON	ON	OFF
71	ON	OFF	OFF	OFF	ON	ON	ON
72	ON	OFF	OFF	ON	OFF	OFF	OFF
73	ON	OFF	OFF	ON	OFF	OFF	ON
74	ON	OFF	OFF	ON	OFF	ON	OFF
75	ON	OFF	OFF	ON	OFF	ON	ON
76	ON	OFF	OFF	ON	ON	OFF	OFF
77	ON	OFF	OFF	ON	ON	OFF	ON
78	ON	OFF	OFF	ON	ON	ON	OFF
79	ON	OFF	OFF	ON	ON	ON	ON
80	ON	OFF	ON	OFF	OFF	OFF	OFF
81	ON	OFF	ON	OFF	OFF	OFF	ON
82	ON	OFF	ON	OFF	OFF	ON	OFF
83	ON	OFF	ON	OFF	OFF	ON	ON

Table 4 (continued)

Table 4 (continued)

Day(s) of the Week Enabled Values							
Day Of Week Value	SAT	FRI	THUR	WED	TUE	MON	SUN
84	ON	OFF	ON	OFF	ON	OFF	OFF
85	ON	OFF	ON	OFF	ON	OFF	ON
86	ON	OFF	ON	OFF	ON	ON	OFF
87	ON	OFF	ON	OFF	ON	ON	ON
88	ON	OFF	ON	ON	OFF	OFF	OFF
89	ON	OFF	ON	ON	OFF	OFF	ON
90	ON	OFF	ON	ON	OFF	ON	OFF
91	ON	OFF	ON	ON	OFF	ON	ON
92	ON	OFF	ON	ON	ON	OFF	OFF
93	ON	OFF	ON	ON	ON	OFF	ON
94	ON	OFF	ON	ON	ON	ON	OFF
95	ON	OFF	ON	ON	ON	ON	ON
96	ON	ON	OFF	OFF	OFF	OFF	OFF
97	ON	ON	OFF	OFF	OFF	OFF	ON
98	ON	ON	OFF	OFF	OFF	ON	OFF
99	ON	ON	OFF	OFF	OFF	ON	ON
100	ON	ON	OFF	OFF	ON	OFF	OFF
101	ON	ON	OFF	OFF	ON	OFF	ON
102	ON	ON	OFF	OFF	ON	ON	OFF
103	ON	ON	OFF	OFF	ON	ON	ON
104	ON	ON	OFF	ON	OFF	OFF	OFF
105	ON	ON	OFF	ON	OFF	OFF	ON
106	ON	ON	OFF	ON	OFF	ON	OFF
107	ON	ON	OFF	ON	OFF	ON	ON
108	ON	ON	OFF	ON	ON	OFF	OFF
109	ON	ON	OFF	ON	ON	OFF	ON
110	ON	ON	OFF	ON	ON	ON	OFF
111	ON	ON	OFF	ON	ON	ON	ON
112	ON	ON	ON	OFF	OFF	OFF	OFF
113	ON	ON	ON	OFF	OFF	OFF	ON
114	ON	ON	ON	OFF	OFF	ON	OFF
115	ON	ON	ON	OFF	OFF	ON	ON
116	ON	ON	ON	OFF	ON	OFF	OFF
117	ON	ON	ON	OFF	ON	OFF	ON
118	ON	ON	ON	OFF	ON	ON	OFF
119	ON	ON	ON	OFF	ON	ON	ON
120	ON	ON	ON	ON	OFF	OFF	OFF
121	ON	ON	ON	ON	OFF	OFF	ON
122	ON	ON	ON	ON	OFF	ON	OFF
123	ON	ON	ON	ON	OFF	ON	ON
124	ON	ON	ON	ON	ON	OFF	OFF
125	ON	ON	ON	ON	ON	OFF	ON
126	ON	ON	ON	ON	ON	ON	OFF
127	ON	ON	ON	ON	ON	ON	ON

Table 4

4. Cycle Programming “Cy--”

This option allows the owner to program different aspects for various steps in each type of cycle. There are 30 cycles available for programming.

How to Enter Cycle Programming

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “Cy--” appears in the display. Press the START (enter) keypad and “Cy01” will appear in the display.
4. Press the #3 (^) or the #6 (v) keypad to scroll through the 30 cycles to program. Press the START (enter) keypad when the desired cycle appears in the display.
5. The first Cycle Programming option, “Agit”, will appear in the display.

NOTE: To program “Agit” (Cycle Agitate), continue to next option. To program other options, press the #3 (^) or the #6 (v) keypad and refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

How to Program Cycle Agitate “Agit”

This option allows the owner to program the cycle’s agitation action and speed. These options apply to the entire cycle.

1. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable Cycle Programming options until “Agit” appears in the display.
2. When “Agit” appears in the display, press the START (enter) keypad. The first Cycle Agitate option will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options. Refer to *Table 5*.
4. Press the START (enter) keypad when the desired programmable option appears in the display. The current status will appear in the display. Refer to *Table 5*.

Final Spin Step	Description	Status
“tyPE”	Agitate Type	1-4 1 = 18/3/18 Agitation Action 2 = 10/20/10 Agitation Action 3 = 3/27/3 Agitation Action 4 = 4/56/4 Agitation Action
“ASPd”	Agitate Speed (VFD only)	“Lo” = Reduced Speed “rEg” = Normal Speed

Table 5

5. Press the #3 (^) or the #6 (v) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The next Cycle Agitate option will appear in the display.

NOTE: To program “SEg1” (Cycle Segment 1) press the #5 (<) keypad and continue to next Cycle Programming option. To program other options, press the #5 (<) keypad and refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

How to Program Cycle Segment “SEg1”

There are eight programmable cycle segments. Within each segment, there are several programmable options.

1. Press the #3 (∧) or the #6 (∨) keypad to scroll through the eight programmable Cycle Segments until the desired segment appears in the display.
2. When the desired segment appears in the display, press the START (enter) keypad. “SgEn” (Segment Enable/Disable) will appear in the display.
3. Press the #3 (∧) or the #6 (∨) keypad to scroll through the Cycle Segment programmable options.

NOTE: If the Segment Enable/Disable is programmed “OFF”, the other Cycle Segment programming options can’t be accessed.

4. Press the START (enter) keypad when the desired Cycle Segment programmable option appears in the display.

Programming Segment Enable/Disable

1. When “SgEn” appears in the display, press the START (enter) keypad. The current Segment Enable/Disable status will appear in the display.
“On” = Segment is enabled
“OFF” = Segment is disabled
2. Press the #3 (∧) or the #6 (∨) keypad to change the current status.

NOTE: If the Segment Enable/Disable is programmed “OFF”, the other Cycle Segment programming options can’t be accessed.

3. Press the START (enter) keypad when the desired status appears in the display. The next Cycle Segment option, “FILL”, will appear in the display.

NOTE: To program “FILL” (Fill Step), continue to next Cycle Segment option. To program other options, press the #3 (∧) or the #6 (∨) keypad and refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

Programming Fill Step

1. When “FILL” appears in the display, press the START (enter) keypad. The first Fill step programming option will appear in the display.
2. Press the #3 (∧) or the #6 (∨) keypad to scroll through the programmable Fill step options. Refer to *Table 6*.

NOTE: Fill Step “FLEn” must be enabled to scroll through all Fill Step options.

3. Press the START (enter) keypad when the desired option appears in the display. The current status will appear in the display. Refer to *Table 6*.

Fill Step	Description	Status
“FLEn”	Fill Step Enable/Disable	“on”/“OFF”
“FLEU”	Fill Level	“HI” = high level “nEd” = medium level “Lo” = low level “1-30”
“tEnP”	Fill Temperature	“CoLd” = Cold “UArn” = Warm “Hot” = Hot (35°F-194°F [2°C-90°C])

Table 6

4. Press the #3 (∧) or the #6 (∨) keypad to change the current status.
5. Press the START (enter) keypad when the desired status appears in the display. The next Fill step option will appear in the display.

NOTE: To program “SUPL” (Supply Step), continue to next Cycle Segment option. To program other options, press the #3 (∧) or the #6 (∨) keypad the and refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

Programming Control

Programming Supply Step

1. When “SUPL” appears in the display, press the START (enter) keypad. The first Supply step programming option will appear in the display.
2. Press the #3 (∧) or the #6 (∨) keypad to scroll through the programmable Supply step options. Refer to *Table 7*.

NOTE: Supply Step “SUEn” must be enabled to scroll through all Supply Step options.

3. Press the START (enter) keypad when the desired option appears in the display. The current status value will appear in the display. Refer to *Table 7*.

Supply Step	Description	Status/Value
“SUEn”	Supply Step Enable/Disable	“on”/“oFF”
“dISP”	Dispenser Options	Press START (enter) to access options
“S1”	Supply #1	“on”/“oFF”
“S2”	Supply #2	“on”/“oFF”
“S3”	Supply #3	“on”/“oFF”
“S4”	Supply #4	“on”/“oFF”
“SdUr”	Supply Duration	Press START (enter) to access options
“SEC”	Seconds	0-59
“nIn”	Minutes	0-9

Table 7

4. Press the #3 (∧) or the #6 (∨) keypad to change the current status/value.
5. Press the START (enter) keypad when the desired status/value appears in the display. The next Supply step option will appear in the display.

NOTE: To program “AgSt” (Agitate Step), continue to next Cycle Segment option. If in the Dispenser Options or Supply Duration programming option, press the #5 (<) keypad first. To program other options, press the #3 (∧) or the #6 (∨) keypad and refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Ready Mode.

Programming Agitate Step

1. When “AgSt” appears in the display, press the START (enter) keypad. The first Agitate step programming option will appear in the display.
2. Press the #3 (∧) or the #6 (∨) keypad to scroll through the programmable Agitate step options. Refer to *Table 8*.

NOTE: Agitate Step “AgEn” must be enabled to scroll through all Agitate step options.

3. Press the START (enter) keypad when the desired option appears in the display. The current status/value will appear in the display. Refer to *Table 8*.

Agitate Step	Description	Status/Value
“AgEn”	Agitate Step Enable/Disable	“on”/“oFF”
“AdUr”	Agitate Duration (in minutes)	1-30 Minutes for agitate types 1 or 2 1-180 Minutes for agitate types 3 or 4 (Refer to Cycle Agitate)
“HEAT”	Heat in Agitate (If heater is present)	“oFF”, 1 or 2 1 = To Target 2 = Maintain

Table 8

4. Press the #3 (∧) or the #6 (∨) keypad to change the current status/value.
5. Press the START (enter) keypad when the desired status/value appears in the display. The next Agitate step option will appear in the display.

NOTE: To program “drAn” (Drain Step), continue to next Cycle Segment option. To program other options, press the #3 (∧) or the #6 (∨) keypad and refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

Programming Drain Step

1. When “drAn” appears in the display, press the START (enter) keypad. The current status will be displayed.
2. Press the #3 (∧) or the #6 (∨) keypad to change the current status.
 “on” = Drain step is enabled
 “oFF” = Drain step is disabled

NOTE: Drain must be enabled to activate Extract step.

3. Press the START (enter) keypad when the desired status appears in the display. The next Cycle Segment option, “SPIn”, will appear in the display.

NOTE: To program “SPIn” (Extract Step), continue to next Cycle Segment option. To program other options press the #3 (∧) or the #6 (∨) keypad and refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Ready Mode.

Programming Extract Step

1. When “SPIn” appears in the display, press the START (enter) keypad. The first Extract step programming option will appear in the display.
2. Press the #3 (∧) or the #6 (∨) keypad to scroll through the programmable Extract step options. Refer to *Table 9*.

NOTE: Extract Step “SPEn” must be enabled to scroll through all Extract step options.

3. Press the START (enter) keypad when the desired option appears in the display. The current status/value will appear in the display. Refer to *Table 9*.

Extract Step	Description	Status/Value
“SPEn”	Extract Step Enable/Disable	“on”/“oFF”
“SSEC”	Extract Seconds	0-59
“SnIn”	Extract Minutes	Intermediate Extract: Minimum Step Time = 30 seconds Maximum Step Time = 3:59 minutes Final Extract: Minimum Step Time = 30 seconds Maximum Step Time = 9:59 minutes
“SSPd”	Extract Speed (G) (Design 1 and 2 VFD models only)	1 = very low speed (60) 2 = low speed (L-speed = 100; M-speed = 120) 3 = medium speed (L-speed = 100; M-speed = 180)
	Extract Speed (G) (Design 4 models only)	1 = very low speed (27) (L and M-speed) 2 = low speed (100) (L and M-speed) 3 = medium speed (200) (M-speed)

Table 9

4. Press the #3 (∧) or the #6 (∨) keypad to change the current status/value.
5. Press the START (enter) keypad when the desired status/value appears in the display.

NOTE: To program “Cnin” (Cycle Time Display), continue to next Cycle Segment option. To program other options press the #3 (∧) or the #6 (∨) keypad and refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

Programming Control

Programming Cycle Time Display

NOTE: This option is not available on Software Version 1.

NOTE: This programmable option (Cnin) will only appear if the Programmable Cycle Time Display option (PCtd) has been enabled.

1. When “Cnin” appears in the display, press the START (enter) keypad. The current status will be displayed.
2. Press the #3 (^) or the #6 (v) keypad to change the current value. The cycle time display can be set from 0 to 255 minutes.
3. Press the START (enter) keypad when the desired value appears in the display.

NOTE: To program another cycle, repeat Cycle Programming steps. To program other options press the the #3 (^) or the #6 (v) keypad and refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

5. Number of Balance Retries “bALr” (Variable Frequency Drives Only)

This option allows the owner to program how many times the control will retry balancing the load before moving into Extract step.

How to Program Number of Balance Retries

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad, and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “bALr” appears in the display.
4. When “bALr” appears in the display, press the START (enter) keypad. The current value will appear in the display.
5. Press the #3 (^) or the #6 (v) keypad to increase or decrease the current value.

NOTE: The number of balance retries can be set from 1-7. Design 1 and 2 default number of balance retries is 3 and Design 4 default number of balance retries is 1.

6. Press the START (enter) keypad when the desired value appears in the display. The next option, “lrA”, will appear in the display.

NOTE: To program “lrA” (IR Access [on/off]), refer to *option 6*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

6. IR Access (On/Off) “IrA”

This option allows the owner to enable or disable allowing the control to be read by an external device.

How to Program the IR Access (On/Off)

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “IrA” appears in the display.
4. When “IrA” appears in the display, press the START (enter) keypad. The current IR Access status will appear in the display.
“On” = Option Enabled
“OFF” = Option Disabled
5. Press the #3 (^) or the #6 (v) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The next option, “t FC” will appear in the display.

NOTE: To program “t FC” (Fahrenheit/Celsius), refer to *option 7*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

7. Fahrenheit/Celsius “t FC”

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

How to Program Fahrenheit/Celsius

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) 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 Fahrenheit/Celsius setting.
CEL = Celsius
FAHr = Fahrenheit
5. Press the #3 (^) or the #6 (v) keypad to increase or decrease the current number to the desired number.
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, “FH”, will appear in the display.

NOTE: To program “FH” (Hot Water Temperature), refer to *option 8*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

Programming Control

8. Hot Water Temperature “FH”

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

How to Program Hot Water Temperature

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “FH” appears in the display.
4. When “FH” appears in the display, press the START (enter) keypad. A number will appear in the display. This number corresponds to the current Hot Water Temperature value.
5. Press the #3 (^) or the #6 (v) keypad to increase or decrease the current Hot Water Temperature value to the desired Hot Water Temperature value.

NOTE: Hot Water Temperature is selectable between 35° and 194° Fahrenheit (2° and 90° Celsius). Default temperature is 140° Fahrenheit (60° Celsius).

NOTE: Refer to *option 7* to select Celsius or Fahrenheit display.

6. Press the START (enter) keypad when the correct number appears in the display. The next option, “FHC”, will appear in the display.

NOTE: To program “FHC” (Warm Water Temperature), refer to *option 9*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

9. Warm Water Temperature “FHC”

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

How to Program Warm Water Temperature

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “FHC” appears in the display.
4. When “FHC” appears in the display, press the START (enter) keypad. A number will appear in the display. This number corresponds to the current Warm Water Temperature value.
5. Press the #3 (^) or the #6 (v) keypad to increase or decrease the current Warm Water Temperature value to the desired Warm Water Temperature value.

NOTE: Warm Water Temperature is selectable between 35° and 194° Fahrenheit (2° and 90° Celsius). Default temperature is 100° Fahrenheit (38° Celsius).

NOTE: Refer to *option 7* to select Celsius or Fahrenheit display.

6. Press the START (enter) keypad when the correct number appears in the display. The next option, “FC”, will appear in the display.

NOTE: To program “FC” (Cold Water Temperature), refer to *option 10*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

10. Cold Water Temperature “FC”

This option allows the owner to program the cold water temperature for models equipped with temperature sensing capabilities.

How to Program Cold Water Temperature

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “FC” appears in the display.
4. When “FC” appears in the display, press the START (enter) keypad. A number will appear in the display. This number corresponds to the current Cold Water Temperature value.
5. Press the #3 (^) or the #6 (v) keypad to increase or decrease the current Cold Water Temperature value to the desired Cold Water Temperature value.

NOTE: Cold Water Temperature is selectable between 35° and 194° Fahrenheit (2° and 90° Celsius). Default temperature value is 35° Fahrenheit (2° Celsius).

NOTE: Refer to *option 7* to select Celsius or Fahrenheit display.

6. Press the START (enter) keypad when the correct number appears in the display. The next option, “Codn”, will appear in the display.

NOTE: To program “Codn” (Cooldown Enable/ Temperature), refer to *option 11*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

11. Cooldown Enable/Temperature “Codn”

This option allows the owner to enable or disable the Cooldown Water Temperature option. If enabled, the owner can also set the cooldown water temperature.

How to Program Cooldown Enable/ Temperature

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “Codn” appears in the display.
4. When “Codn” appears in the display, press the START (enter) keypad. A number or “off” will appear in the display. The number corresponds to the current Cooldown Water Temperature value, and “OFF” appears when cooldown is disabled.
5. Press the #3 (^) or the #6 (v) keypad to change the current status.

NOTE: Cooldown Water Temperature is selectable between 50° and 160° Fahrenheit (10° and 71° Celsius). Default is off.

6. Press the START (enter) keypad when the desired value appears in the display.

NOTE: Refer to *option 7* to select Celsius or Fahrenheit display.

7. Press the START (enter) keypad when the correct number appears in the display. The next option, “PtEn”, will appear in the display.

NOTE: To program “PtEn” (Production Test Cycle [on/off]), refer to *option 12*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

Programming Control

12. Production Test Cycle (On/Off) “PtEn”

This option allows the owner to enable or disable access to the production test cycle. Refer to *Production Test Cycle* section for more information.

How to Program the Production Test Cycle (On/Off)

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “PtEn” appears in the display.
4. When “PtEn” appears in the display, press the START (enter) keypad. The current Production Test Cycle status will appear in the display.
“on” = Option Enabled
“off” = Option Disabled
5. Press the #3 (^) or the #6 (v) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The next option, “rAEn”, will appear in the display.

NOTE: To program “rAEn” (Manual Rapid Advance [on/off]), refer to *option 13*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

13. Manual Rapid Advance (On/Off) “rAEn”

This option allows the owner to enable or disable the rapid advance feature. Refer to *Rapid Advance Feature* section for more information.

How to Program the Manual Rapid Advance (On/Off)

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “rAEn” appears in the display.
4. When “rAEn” appears in the display, press the START (enter) keypad. The current Manual Rapid Advance status will appear in the display.
“on” = Option Enabled
“off” = Option Disabled
5. Press the #3 (^) or the #6 (v) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The next option, “rtc-”, will appear in the display.

NOTE: To program “nCtd” (No Cycle Time Display), refer to *option 14*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

14. No Cycle Time Display “nCtd”

This option allows the owner to enable or disable whether the cycle time will appear in the display.

How to Program in the Cycle Time Display

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCyC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “nCtd” appears in the display.
4. When “nCtd” appears in the display, press the START (enter) keypad. The current No Cycle Time Display status will appear in the display.
“on” = Option Enabled
“oFF” = Option Disabled
5. Press the #3 (^) or the #6 (v) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The next option, “PCtd” will appear in the display.

NOTE: To program “PCtd” (Programmable Cycle Time Display), refer to *option 15*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

15. Programmable Cycle Time Display “PCtd”

NOTE: This option is available on Software Version 2 or later only.

This option allows the owner to display either the normal remaining cycle time or the programmed time during a machine cycle.

How to Program the Programmable Cycle Time Display

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCyC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “PCtd” appears in the display.
4. When “PCtd” appears in the display, press the START (enter) keypad. The current Programmable Cycle Time Display status will appear in the display.
“0” = Option Disabled
“1” = Option Enabled
5. Press the #3 (^) or the #6 (v) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The next option, “SdAd”, will appear in the display.

NOTE: To program “SdAd” (Slow Drain Detection Adjust), refer to *option 16*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

16. Slow Drain Detection Adjust “SdAd”

This option allows the owner to increase or decrease the slow drain detection threshold by adding additional seconds to the threshold value. When enabled it increases the time before a Slow Drain Error will occur.

How to Program the Pause/Resume Mode

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “SdAd” appears in the display.
4. When “SdAd” appears in the display, press the START (enter) keypad. The current Slow Drain Detection Adjust Value will appear in the display.
“on” = Option Enabled
“oFF” = Option Disabled
5. Press the #3 (^) or the #6 (v) keypad to change the current value.
6. Press the START (enter) keypad when the desired value appears in the display. The next option, “rtc”, will appear in the display.

NOTE: To program “rtc” (Set Real-Time Clock), refer to *option 17*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

17. Set Real-Time Clock “rtC-”

This option allows the owner to set the control’s internal clock to the correct time and date.

How to Program the Time and Date

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “rtC-” appears in the display. Press the START keypad and “rtC1” will appear in the display.
4. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options. Refer to *Figure 10*.

“rtC1”	Programs Minutes
“rtC2”	Programs Hours
“rtC3”	Programs Day of Week
“rtC4”	Programs Date of Month
“rtC5”	Programs Month
“rtC6”	Programs Year
“rtC7”	Programs Daylight Saving

Table 10

5. When the desired option appears in the display, press the START (enter) keypad. The current value will appear in the display.
6. Press the #3 (^) or the #6 (v) keypad to increase or decrease the minutes, hours, day of week, date of the month, month, year to the correct time or date.

NOTE: The hours will be displayed in military time. For day of week, Sunday is considered day one (001), Monday is day two (002) and so on. For year, the year 2000 is “00”, the year 2001 is “01” and so on.

If programming Daylight Saving, “rtC7”, “on” enables Daylight Saving Time and “OFF” disables Daylight Saving Time.

7. Press the START (enter) keypad when the correct time or date appears in the display. The next Set Real-Time Clock option will appear in the display.

NOTE: To program “dAEn” (Manual Diagnostics [on/off]), press the #5 (<) keypad and refer to *option 18*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

Programming Control

18. Manual Diagnostics (On/Off) “dAEEn”

This option allows the owner to enable or disable the manual diagnostics option. Refer to *Testing Machine and Electronic Control Functions* section for more information.

How to Program the Manual Diagnostics (On/Off)

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “dAEEn” appears in the display.
4. When “dAEEn” appears in the display, press the START (enter) keypad. The current Manual Diagnostics status will appear in the display.
“On” = Option Enabled
“OFF” = Option Disabled
5. Press the #3 (^) or the #6 (v) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The next option, “FLO”, will appear in the display.

NOTE: To program “FLO” (Low Water Level), refer to *option 19*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

19. Low Water Level “FLO”

This option allows the owner to program the low water level during fill and tumble of all cycles.

How to Program Low Water Level

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “FLO” appears in the display.
4. When “FLO” appears in the display, press the START (enter) keypad. A number will appear in the display. This number corresponds to the current low water level during tumble and fill of all cycles.
5. Press the #3 (^) or the #6 (v) keypad to increase or decrease the current water level to the desired water level.

NOTE: The Low Water Level value can be set from 1 to 10.

6. Press the START (enter) keypad when the correct number appears in the display. The next option, “FnEd”, will appear in the display.

NOTE: To program “FnEd” (Medium Water Level), refer to *option 20*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

20. Medium Water Level “FnEd”

This option allows the owner to program the medium water level during fill and tumble of all cycles.

How to Program Medium Water Level

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “FnEd” appears in the display.
4. When “FnEd” appears in the display, press the START (enter) keypad. A number will appear in the display. This number corresponds to the current medium water level during tumble and fill of all cycles.
5. Press the #3 (^) or the #6 (v) keypad to increase or decrease the current water level to the desired water level.

NOTE: The Medium Water Level value can be set from 11 to 20.

6. Press the START (enter) keypad when the correct number appears in the display. The next option, “FHI”, will appear in the display.

NOTE: To program “FHI” (High Water Level), refer to *option 21*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

21. High Water Level “FHI”

This option allows the owner to program the high water level during fill and tumble of all cycles.

How to Program High Water Level

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “FHI” appears in the display.
4. When “FHI” appears in the display, press the START (enter) keypad. A number will appear in the display. This number corresponds to the current high water level during tumble and fill of all cycles.
5. Press the #3 (^) or the #6 (v) keypad to increase or decrease the current water level to the desired water level.

NOTE: The High Water Level value can be set from 21 to 30.

6. Press the START (enter) keypad when the correct number appears in the display. The next option, “tCF”, will appear in the display.

NOTE: To program “tCF” (Temperature Controlled Fill), refer to *option 22*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

22. Temperature Controlled Fill Enable/Disable “tCF”

This option allows the owner to enable or disable a Temperature Controlled Fill. When enabled, the control will regulate the temperature of the fill to the temperature programmed in *options 8, 9 and 10*.

How to Program Temperature Controlled Fill

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCYC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “tCF” appears in the display.
4. When “tCF” 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 Controlled Fill status.
“on” = Temperature Controlled Fill Enabled
“off” = Temperature Controlled Fill Disabled
5. Press the #3 (^) or the #6 (v) keypad to change the current status.
6. Press the START (enter) keypad when the desired status appears in the display. The next option, “ALd”, will appear on the display.

NOTE: To program “ALd” (Auto-Water Leak Detection), refer to *option 23*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Start Mode.

23. Auto-Water Leak Detection “ALd”

This option allows the owner to set the time and frequency that the control automatically checks the water level. The owner programs which day(s) of the week and hours of day(s) they want this test to occur. The owner may also program this test to only occur after XX number of machine cycles have been completed since the last time the test was run. In order for this Auto-Water Leak Detection test to occur, the machine’s door must be closed.

How to Program Auto-Water Leak Detection

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “Prog” appears in the display. Press the START (enter) keypad and “dCyC” will appear in the display.
3. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options until “ALd-” appears in the display. Press the START keypad and “ALd1” will appear in the display.
4. Press the #3 (^) or the #6 (v) keypad to scroll through the programmable options. Refer to *Table 11*.

“ALd1”	Auto-Water Leak Detection (“oFF” or “0” through “127” cycles [on] - Number of completed cycles after which this test will occur)
“ALd2”	Auto-Water Leak Detection Hour (“0” - “23” - Hour of the day this test will occur)
“ALd3”	Auto-Water Leak Detection Day of Week (“0” - “127” - Refer to <i>Table 4</i>)

Table 11

5. When the desired option appears in the display, press the START (enter) keypad. The current value will appear in the display.
6. Press the #3 (^) or the #6 (v) keypad to enable during cycles, disable, increase or decrease the hours or day.

NOTE: The hours will be displayed in military time. For day, Sunday is considered day one (001), Monday is day two (002) and so on.

7. Press the START (enter) keypad when the correct value appears in the display. The next option, “dCyC” will appear in the display.

NOTE: To program “dCyC” (Default Cycle), refer to *option 1*. To program other options, refer to the appropriate section.

How to Exit Programming Feature

Press the #5 (<) keypad until the control returns to Ready Mode.

Collecting Audit Information

This feature allows the owner to retrieve audit information stored in the machine by pressing a sequence of pads on the control.

How to Enter Audit Feature

1. Control must be in Manual Mode to start. Refer to *Entering the Manual Mode*.
2. Press the #3 (∧) or the #6 (∨) keypad until “AUdt” appears.
3. Press the START (enter) keypad. “CyC” will appear.

How to Read Audit Data

1. Use the #3 (∧) or the #6 (∨) keypad to scroll through various options until the desired option is shown in the display. Refer to the Audit Options List, *Table 12*, for an explanation of the audit options available.

Audit Options List		
#	Display	Description
1	“CyC”	Total # of machine cycles
2	“rCyC”*	Total # of rapid advance cycles

*Option available on Software Version 2 or later.

Table 12

2. Press the START (enter) keypad **once** to start the audit count. At this point, the display will show the first four-digit segment of the audit value. If the audit count is 10,000 or higher, press the START (enter) keypad again to view the last four digits of the number.

NOTE: The display can show up to 4 digits at one time. Audit counts 10,000 or higher are separated into two 4-digit segments. Each time the START (enter) keypad is pressed in step 2, the display will show the next 4-digit segment in the audit value. If the value is 9,999 or less, only one 4-digit segment will be shown.

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 #5 (<) keypad.

Manual Reset

This feature allows the owner to reset the machine 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 *Table 1*.

How to Enter Manual Reset

1. Control must be in Manual Mode to start. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until "rSEt" appears.
3. Press the START (enter) keypad. The control will be blank until the programming is complete. Once the program has been reset, the control will display the next Manual Mode option, "dIAG".

Testing Machine and Electronic Control Functions

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

- Front End Control Software Version Number
- Output Board Control Software Version Number
- Output Board Water Level Sensor Trim Value
- Top Cover Opening Test
- Door Switch Input Test
- Door Lock Input Test
- Show Fill Time Test
- Show Drain Time Test
- Temperature Sensor Display Test
- VFD Balance Input Test
- 24 VAC Switch Input Test
- VFD Drive Fault Input Test
- Frame Balance Switch Input Test
- VFD Balance Weight Test (Design 1 and 2 models only)
- Water Purge Test
- Water Leak Detection Test

The following are available on Design 4 models only:

- Drive Software Version Number
- Drive Parameter Table Version Number
- Drive Type Value
- Drive DC Bus Display Test

How to Enter Diagnostic Testing Feature

1. Control must be in Manual Mode. Refer to *Entering the Manual Mode*.
2. Press the #3 (^) or the #6 (v) keypad until “dlAg” appears.
3. Press the START (enter) keypad. Display will change to “d001” indicating the front end control software version number test.
4. Press the #3 (^) or the #6 (v) keypad to scroll through the diagnostic test options.

How to Start Tests

To start a diagnostic test, refer to the quick reference chart (*Table 13*). 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 Diagnostic Testing Feature

Press the #5 (<) keypad. The display will return to the previous mode of operation.

Diagnostic (Testing) Mode – Quick Reference Chart		
Test Number	Diagnostic Mode	Display
“d001”	Front End Control Software Version # Test	“S xx”
“d002”	Output Board Control Software # Test	“o xx”
“d003”	Output Board Water Level Sensor Trim Value	“txxx”
“d004”	Top Cover Opening Test	“A oP” or “A CL”
“d009”	Door Switch Input Test	“drCL” or “drOP”
“d010”	Door Lock Input Test	“drUL” or “drLO”
“d011”	Show Fill Time Test	“Fxxx”
“d012”	Show Drain Time Test	“dxxx”
“d013”	Temperature Sensor Display Test	“xxxF” or “xxxC”
“d014”	Start Pulse Test	“Stxx”
“d015”	VFD Balance Input Test (Design 1 and 2)	“bAoP” or “bACL”
“d016”	24 VAC Switch Input Test (Design 1 and 2)	“ACoP” or “ACCL”
“d017”	VFD Drive Fault Input Test (Design 1 and 2)	“dFoP” or “dFCL”
“d018”	Frame Balance Switch Input Test	“FSoP” or “FSCL”
“d019”	VFD Balance Weight Test (Design 1 and 2)	“bAL”
	Drive DC Bus Display Test (Design 4)	“dCb”
“d020”	Water Purge Test	“PUrg”
“d021”	Water Leak Detection Test	“Ld”
“d022”	Drive Software Version Number (Design 4)	“drxx”
“d023”	Drive Parameter Table Version Number (Design 4)	“dPxx”
“d024”	Drive Type Value (Design 4)	“dt x”

Table 13

Diagnostic Test Descriptions

Front End Control Software Version Number Test

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

To enter, press the START (enter) keypad. The display will show “S xx” where “xx” is the front end control software version number.

To exit the Front End Control Software Version Number Test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

Output Board Control Software Version Number

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

To enter, press the START (enter) keypad. The display will show “O xx” where “xx” is the output board control software version number.

To exit the Output Board Control Software Version Number Test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

Output Board Water Level Sensor Trim Value

This option displays the output board water level sensor trim value. To start test, control must be in the Diagnostic Testing Mode. Refer to *How to Enter Diagnostic Testing Feature* at the beginning of this section.

To enter, press the START (enter) keypad. The display will show “txxx” where “xxx” is the trim value sent from the output board to the front end control.

To exit the Output Board Water Level Sensor Trim Value, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

Top Cover Opening Test

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

To enter, press the START (enter) keypad. The display will show “A oP” when the top cover switch is open and “A CL” when the top cover switch is closed.

The top cover switch has to be closed for at least one (1) second and opened for at least a half a second for the display to change. This test will add a count to the top cover opening counter for the audit and save the date/time for every opening of the test.

To exit the Top Cover Opening Test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

Door Switch Input Test

This test will display whether the machine door is open or closed.

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

To enter, press the START (enter) keypad. If the door is closed, the display will show “drCL”. If the door is open, the display will show “drOP”.

To exit the test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

Door Lock Input Test

This test will display whether the door is locked or unlocked.

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

To exit the test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

Show Fill Time Test

This test will display the average low level fill time. This average will be calculated by taking the average of the last 10 fill times from the start of the fill until the low level is reached.

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

To enter, press the START (enter) keypad. The display will show “Fxxx”. The “xxx” will be the average fill time in seconds.

To exit the Show Fill Time Test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

Show Drain Time Test

This test will display the average drain time. This average will be calculated by taking the average of the last 10 drain times.

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

To enter, press the START (enter) keypad. The display will show “dxxx”. The “xxx” will be the average drain time in seconds.

To exit the Show Drain Time Test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

Temperature Sensor Display Test

This test is only available on machines equipped with a temperature sensor. This option displays the temperature sensed at the sensor.

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

To enter, press the START (enter) keypad. The display will show “xxxF” for the temperature in degrees Fahrenheit or “xxxC” for the temperature in degrees Celcius. The display will show “SH” if the sensor is shorted or “OP” if the control senses an open sensor.

To exit the Temperature Sensor Display Test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

VFD Balance Input Test (Design 1 and 2 Models)

This option tests the VFD balance switch.

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

To enter, press the START (enter) keypad. If the VFD balance switch is open, indicating poor balance, the display will show “bAoP”. If the switch is closed, indicating good balance, the display will show “bACL”.

To exit the test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

24 VAC Switch Input Test (Design 1 and 2 Models)

This option tests the 24 VAC switch.

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

To enter, press the START (enter) keypad. If the 24 VAC switch is open, the display will show “ACoP”. If the switch is closed, the display will show “ACCL”.

To exit the test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

VFD Drive Fault Input Test (Design 1 and 2 Models)

This option tests the drive fault input.

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

To enter, press the START (enter) keypad. If the drive fault input is open, the display will show “dFoP”. If the switch is closed, the display will show “dFCL”.

To exit the test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

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Frame Balance Switch Input Test

This option tests the frame balance switch.

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

To enter, press the START (enter) keypad. If the frame balance switch is open, the display will show “FSOP”. If the switch is closed, the display will show “FSCL”.

To exit the test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

VFD Balance Weight Test (Design 1 and 2 Models)

This test is only available on machines equipped with a variable frequency motor drive.

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

To enter, press the START (enter) keypad. The display will show “bAL” and the START keypad LED will flash. Close the door. Press the START (enter) keypad. The door will lock. The motor will turn at distribution speed. The control monitors the VFD balance switch for frequency and displays a corresponding message. Refer to *Table 14*.

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

Table 14

Press the START (enter) keypad to stop the test. The door will not unlock until the basket stops or the coast time has expired.

Drive DC Bus Display Test (Design 4 Models)

This test is only available on machines equipped with a custom drive.

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

To enter, press the START (enter) keypad. The display will show “dCb” and the START keypad LED will flash. Close the door.

Press the START (enter) keypad. The door will lock. The control will turn on the drive and ramp up the motor to distribution speed. The drive’s DC Bus Voltage will display.

Water Purge Test

This option empties all water from the machine.

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

To enter, press the START (enter) keypad. The display will show “PURg” and the START keypad LED will flash. Close the door. Press the START (enter) keypad. The door will lock. The display will show “FLSH”. The control will energize all water valves and supply outputs while keeping the drain valves open.

The test will end, return to Water Purge Test start prompt, and door will unlock if any keypad is pressed, the door is unlocked or opened, if an end test communication is received or if two minutes has occurred since the test began. The control will prevent the door from being unlocked until there is no water in the machine.

Water Leak Detection Test

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

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

To enter, press the START (enter) keypad. The display will show “Ld” and the START keypad LED will flash if the door is closed. Press the START (enter) keypad. The door will lock. The control closes the drain valve, turns the pump off and fills the machine with cold water to low level. The water level is monitored for 2 minutes and the display shows an alternating horizontal segment while the control is monitoring the water level. If the water level is the same after 2 minutes, control will display “PASS”, water will drain, door will unlock and control will return to Ready Mode.

If water level is lower, indicating a leak in the drain, control will display “FAIL”, water will drain, door will unlock and water leak detection error will display as “E Ld”.

On Design 4 models, if water level is higher, indicating a leak in the fill valve, control will display “FAIL”, water will drain, door will unlock and water leak detection error will display as “E LF”.

Drive Software Version Number Test (Design 4 models only)

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

To enter, press the START (enter) keypad. The display will show “drxx” where “xx” is the custom drive software version number.

To exit the Custom Drive Software Version Number Test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

Drive Parameter Table Version Number (Design 4 models only)

This option displays the custom drive parameter table version number. To start test, control must be in the Diagnostic Testing Mode. Refer to *How to Enter Diagnostic Testing Feature* at the beginning of this section.

To enter, press the START (enter) keypad. The display will show “dPxx” where “xx” is the custom drive parameter table version number.

To exit the Custom Drive Parameter Table Version Number Test, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

Drive Type Value (Design 4 models only)

This option displays the custom drive type value. To start test, control must be in the Diagnostic Testing Mode. Refer to *How to Enter Diagnostic Testing Feature* at the beginning of this section.

To enter, press the START (enter) keypad. The display will show “dt x” where “x” is the custom drive type value. Refer to *Figure 15*.

Display	Drive Type
“dt 1”	2 HP drive
“dt 2”	3 HP drive
“dt 3”	5 HP 280V drive
“dt 4”	5 HP 480V drive

Table 15

To exit the Custom Drive Type Value, press the #5 (<) keypad. The control will return to the Diagnostic Testing Mode.

Production Test Cycle

To Enter Production Test Cycle

1. Be certain control is in Ready Mode and top cover or coin vault is open.
2. While pressing and holding the #3 keypad with one hand, press the #7 keypad with the other hand.
3. 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.
4. The control will advance through the sequence of test steps whenever any key is pressed. Refer to *Table 16* for all tests in the Production Test Cycle.

To Exit Production Test Cycle

To exit a test step, power down the machine.

Testing Machine and Electronic Control Functions

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.
“Ct 3”	Control Type	xx is the control type.
“oPL”	Control Type	OPL.
“USA”	Control Type	Domestic
“drAn” or “PUnP”	Drain Type	Drain or Pump.
“tEnP”	Temp Sensor	Step skipped if not Temperature Sensor-equipped.
“HEAt”	Heater	Step skipped if not heater-equipped.
“rot”	Rotation Sensor	Step skipped if not Rotation Sensor-equipped.
“L dC” or “L AC”	Door Lock Type	“L dC” if 24 VDC lock or “L AC” if 240 VAC unlock solenoid.
“droP” or “drCL”	Door Status	Door open or closed.
“drUL” or “drLo”	Door Lock Status	Door will lock.
“8.8.8.8.” + all LEDs	Display Test	All display elements are lit.
“PAXx” where xx = 1 through 12	Keypad Test step	Advance after all keypads are pressed.
“A xx”	Top Cover Switch Test	xx is either “CL” for closed or “oP” for open.
“Cxxx” or “Pxxx”	Machine Type/Size	
“drxx”	Drive Software Version Number	xx is the drive software version number. Design 4 models only.
“dPxx”	Drive Parameter Table Version Number	xx is the drive parameter table version number. Design 4 models only.
“dt x”	Drive Type Value	xx is the drive type value. Design 4 models only.
“HFIL”	Hot Fill to Low Level	All water outputs turned off when Low Level reached.
“CFIL”	Cold Fill to Low Level	All water outputs turned off when Low Level reached.
“bFIL”	Warm Fill to Low Level	All water outputs turned off when Low Level reached.
“bFIH”	Warm Fill to High Level	All water outputs turned off when High Level reached.
“S1”	Supply #1	
“S2”	Supply #2	
“S3”	Supply #3	
“S4”	Supply #4	

Table 16 (continued)

Table 16 (continued)

Production Test Cycle Quick Reference Chart		
Display	Test Mode	Comments
“oFLo”	Warm Fill to Overflow	
“xxxF” degrees F or “xxxC” degrees C depending on the Fahrenheit/Celsius programming parameter	Heat water to 110°F or display temperature	xxx is degree temperature. This step skipped if not temp- sensor-equipped. Heater turned off when temperature reached.
“LoAg” then “ xxx”	Reduced Wash Speed Forward with no agitation action	This step skipped on 2 Speed models.
“ Ag” then “ xxx”	Wash Speed Forward with no agitation action	
“ rAg” then “ xxx”	Wash Speed Reverse with no agitation action	
“drAl” then “ xxx”	Drain Distribution Speed	
“PUrg”	Factory Valve Purge	
“SP 1” then “ xxx”	Extract Speed #1 “very low”	This step skipped on 2 Speed models.
“SP 2” then “ xxx”	Extract Speed #2 “low”	This step skipped on 2 Speed models.
“SP 3” then “ xxx”	Extract Speed #3 “medium”	This step skipped on 2 Speed Design 1 and 2 models and L-Speed Design 4 models.
“SPIn” (2 Speed models) then “ xxx”		This step skipped on VFD models.
“Prdn”	End of test	Turn Power off

Table 16

NOTE: On models equipped with a rotation sensor, “xxx” will represent RPM’s and it will alternate with the other display.

Error Codes

Following is a list of possible error codes for an electronic control. Errors beginning with “EI” refer to external device Infra-red communication errors. All other errors refer to machine errors.

Display	Description	Cause/Corrective Action
EI01	Transmission Failure	Communication failure. Re-aim external device and try again.
EI02	Time-out Error	Communication failure. Re-aim external device and try again.
EI03	Invalid Command Code	Communication successful, but the command was not valid for this machine type, or the control could not perform the command in its current mode of operation. Ensure data is for current machine type and control is in correct mode.
EI04	Expecting Upload Request	Communication failure. Re-aim external device and try again.
EI05	Invalid or Out-of-Range Data	The value in at least one of the programming options is invalid or out of range. Recheck the programming option’s value and try again.
EI09	CRC-16 Error	Communication failure. Re-aim external device and try again.
EI0A	Framing Error	Communication error. Re-aim external device and try again.
EI0C	Time-out Exceeded	Communication error. Re-aim external device and try again.
EI0E	Encryption Error	Communication error. Re-aim external device and try again. If the problem persists, check that the security code is correct.
EI0F	Infra-red Disabled	Communication failure or infra-red is disabled. Manually enable infra-red on control or re-aim external device and try again.
E FL	Fill Error	Programmed water level not reached within 10 minutes (or other programmed length of time) in any fill agitate cycle. End cycle. Power down machine to clear.
E SP	SPI Communications Error	Front End control cannot communicate with output board. Power down the machine, power up and try again.
E dL	Door Lock Error	Door does not lock immediately upon closing (open and reclose door) or doesn’t unlock 5 seconds after cycle completion. Power down machine and retry.
E do	Door Open Error	Control detects door open. 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.
door	Door Open Indicator	Door is not closed in Start Mode. If door is closed, check for improper wiring or faulty door switch.

Table 17 (continued)

Display	Description	Cause/Corrective Action
E dr	Drain Alarm Error	Machine not drained within 15 minutes (or other programmed length of time) in any drain step. End cycle. Power down machine to clear.
E Ht	Heat Alarm Error	Programmed heat alarm time of 120 minutes or other programmed length of time is exceeded. Turns 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 220°F (104°C) in machine equipped with temperature sensor. Heater and thermistor related operations are disabled for remainder of cycle.
E ro	Rotation Sensor Error	Invalid signal received from Rotation Sensor. Control will activate coast times to complete cycle.
E FS	Frame Balance Switch Error	Control detects Frame Balance Switch open. End cycle.
E db	Drive Balance Switch Error	Control detects VFD Balance Switch input closed at start of drain step. End cycle. Power down machine to clear.
E Ld	Water Leak Detection Error	Control senses a drop in water level during diagnostic testing, power down machine to clear. When error occurs during a cycle, “E Ld” is displayed for one minute after opening the door at the end of the cycle. When the error occurs during the test, “E Ld” is displayed immediately after the test until the machine is powered down to clear the error.
ESd	Slow Drain Error	Control shows error after door is open (when cycle is completed) for one minute, the error information will be logged in audit data.
E LF*	Water Leak Detection Error (Fill Valve)	Control senses an increase in water level during diagnostic testing, power down machine to clear. When error occurs during a cycle, “E LF” is displayed for one minute after opening the door at the end of the cycle. When error occurs during a test, “E LF” is displayed immediately after the test until the machine is powered down to clear the error.

*Design 4 models only.

Table 17 (continued)

Error Codes

Table 17 (continued)

Display	Description	Cause/Corrective Action
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 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.
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.

*Design 4 models only.

Table 17

Rapid Advance Feature

The Rapid Advance feature allows the owner to quickly advance through active cycles.

How to Use Rapid Advance

Control must be in an active cycle to use the Rapid Advance feature.

While in the Rapid Advance Mode, pressing the START (enter) keypad will advance the machine to the next cycle step. The cycle indicator lights will tell which cycle step the machine is in.

For Example: If the machine is in the first fill cycle step, pressing the START (enter) keypad will advance the machine into the Agitate cycle step.

Continue pressing the START (enter) keypad until the cycle is completed.

How to Exit Rapid Advance Feature

1. Advance through the cycles until reaching the Start Mode.

NOTE: The Rapid Advance option must be programmed “On” for Rapid Advance to work. Refer to *option 13 in Programming Control*.

Communications Mode

Infra-red Communications

The Infra-red Communications feature allows the control to communicate with an external device. The control can be programmed and have its data read without using the keypad. It may also be used to start and stop various diagnostic tests.

How to Begin Communications with An External Device

The control will go blank and the display will show “-C-” until the communication is complete. If an error occurs that terminates communication, the display will show “E1XX” (“XX” represents the error code).

NOTE: The Infra-red Communications option must be turned on. Refer to *option 6 in Programming Control*.

Default Cycles

Cycle Stops	Perm Press Light Soil	Cotton/Terry Light Soil	Perm Press Medium Soil	Cotton/Terry Medium Soil	Perm Press Heavy Soil	Cotton/Terry Heavy Soil	Rags Heavy Soil
Cycle reference (display in Program Mode)	CY01	CY02	CY03	CY04	CY05	CY06	CY07
Agitation type	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal
Wash 1 (Wash - ON/OFF)	ON	ON	ON	ON	ON	ON	ON
Time for agitation (min.)	7	7	2	2	2	2	2
Fill Temperature	Hot	Hot	Warm	Warm	Warm	Warm	Warm
Fill Level	Low	Low	High	High	High	High	High
Supply	S1, S2	S1, S2	OFF	OFF	OFF	OFF	OFF
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0	0	0
Wash 2 (Wash - ON/OFF)	OFF	OFF	ON	ON	ON	ON	ON
Time for agitation (min.)	2	2	6	6	7	7	10
Fill Temperature	Cold	Cold	Hot	Hot	Hot	Hot	Hot
Fill Level	Low	Low	Low	Low	Low	Low	Low
Supply	OFF	OFF	S1	S1	S1	S1	S1
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0	0	0
Wash 3 (Wash - ON/OFF)	OFF	OFF	ON	ON	ON	ON	ON
Time for agitation (min.)	2	2	6	7	7	7	6
Fill Temperature	Cold	Cold	Hot	Hot	Hot	Hot	Hot
Fill Level	Low	Low	Low	Low	Low	Low	High
Supply	OFF	OFF	S2	S2	S2	S2	S2
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0	0	0
Wash 4 (Wash - ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Time for agitation (min.)	2	2	2	2	2	2	2
Fill Temperature	Cold	Cold	Cold	Cold	Cold	Cold	Cold
Fill Level	Low	Low	Low	Low	Low	Low	Low
Supply	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0	0	0

(continued)

Default Cycles

(continued)

Cycle Stops	Perm Press Light Soil	Cotton/Terry Light Soil	Perm Press Medium Soil	Cotton/Terry Medium Soil	Perm Press Heavy Soil	Cotton/Terry Heavy Soil	Rags Heavy Soil	
Cycle reference (display in Program Mode)	CY01	CY02	CY03	CY04	CY05	CY06	CY07	
Agitation type	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	
Rinse 1 (Rinse - ON/OFF)	ON	ON	ON	ON	ON	ON	ON	
Time for agitation (min.)	2	2	2	2	2	2	2	
Fill Temperature	Warm	Warm	Hot	Hot	Hot	Hot	Hot	
Fill Level	High	High	Low	Low	Low	Low	High	
Supply	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Heat (if enabled)	No	No	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	0	0	0	0	0	0	0	
Rinse 2 (Rinse - ON/OFF)	ON	ON	ON	ON	ON	ON	ON	
Time for agitation (min.)	2	2	2	2	2	2	2	
Fill Temperature	Warm	Warm	Warm	Warm	Warm	Warm	Warm	
Fill Level	High	High	High	High	High	High	High	
Supply	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Heat (if enabled)	No	No	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	1 (Med.)	1 (Med.)	1 (Med.)	1 (Med.)	1 (Med.)	1 (Med.)	0	
Rinse 3 (Rinse - ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Time for agitation (min.)	2	2	2	2	2	2	2	
Fill Temperature	Cold	Cold	Cold	Cold	Cold	Cold	Cold	
Fill Level	Low	Low	Low	Low	Low	Low	Low	
Supply	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Heat (if enabled)	No	No	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	0	0	0	0	0	0	0	
Rinse 4 (Rinse - ON/OFF)	ON	ON	ON	ON	ON	ON	ON	
Time for agitation (min.)	4	4	4	5	4	5	4	
Fill Temperature	Warm	Warm	Warm	Warm	Warm	Warm	Warm	
Fill Level	Low	Low	Low	Low	Low	Low	Low	
Supply	S3, S4	S3, S4	S3, S4	S3, S4	S3, S4	S3, S4	S3, S4	
Heat (if enabled)	No	No	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	4 (Med.)	5 (Med.)	4 (Med.)	5 (Med.)	4 (Med.)	5 (Med.)	5 (Med.)	
Default Cycle Time (hh:mm:ss)	2-speed	00:29:20	00:30:20	00:41:50	00:43:50	00:42:50	00:44:50	00:44:50
	L-speed and M-speed (Design 1 and 2)	00:30:50	00:31:50	00:43:20	00:45:20	00:44:20	00:46:20	00:45:35
	L and M-speed (Design 4)	00:31:02	00:32:02	00:43:02	00:45:02	00:43:02	00:46:02	00:45:02

(continued)

(continued)

Cycle Stops	Reclaim	Delicates Cold	90C	60C	40C	90C Perm Press	60C Perm Press
Cycle reference (display in Program Mode)	CY08	CY09	CY10	CY11	CY12	CY13	CY14
Agitation type	18/3/18 Normal	10/20/10 Gentle	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal
Wash 1 (Wash - ON/OFF)	ON	ON	ON	ON	ON	ON	ON
Time for agitation (min.)	2	6	2	2	2	2	2
Fill Temperature	Warm	Cold	Warm	Warm	Warm	Warm	Warm
Fill Level	High	High	Low	Low	Low	Low	Low
Supply	OFF	S1	OFF	OFF	OFF	OFF	OFF
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0	0	0
Wash 2 (Wash - ON/OFF)	ON	ON	ON	ON	ON	ON	ON
Time for agitation (min.)	12	2	6	6	6	6	6
Fill Temperature	Hot	Cold	Hot	Hot	Hot	Hot	Hot
Fill Level	Low	High	Low	Low	Low	Low	Low
Supply	S1	OFF	S1, S2	S1, S2	S1, S2	S1, S2	S1, S2
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0	0	0
Wash 3 (Wash - ON/OFF)	ON	OFF	OFF	OFF	OFF	OFF	OFF
Time for agitation (min.)	12	2	2	2	2	2	2
Fill Temperature	Hot	Cold	Cold	Cold	Cold	Cold	Cold
Fill Level	High	Low	High	High	High	High	High
Supply	S2	OFF	OFF	OFF	OFF	OFF	OFF
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0	0	0
Wash 4 (Wash - ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Time for agitation (min.)	2	2	2	2	2	2	2
Fill Temperature	Cold	Cold	Cold	Cold	Cold	Cold	Cold
Fill Level	Low	Low	Low	Low	Low	Low	Low
Supply	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0	0	0

(continued)

Default Cycles

(continued)

Cycle Stops	Reclaim	Delicates Cold	90C	60C	40C	90C Perm Press	60C Perm Press	
Cycle reference (display in Program Mode)	CY08	CY09	CY10	CY11	CY12	CY13	CY14	
Agitation type	18/3/18 Normal	10/20/10 Gentle	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	18/3/18 Normal	
Rinse 1 (Rinse - ON/OFF)	ON	ON	ON	ON	ON	ON	ON	
Time for agitation (min.)	4	2	2	2	2	2	2	
Fill Temperature	Cold	Cold	Cold	Cold	Cold	Cold	Cold	
Fill Level	High	High	High	High	High	High	High	
Supply	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Heat (if enabled)	No	No	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	0	0	0	0	0	0	0	
Rinse 2 (Rinse - ON/OFF)	ON	OFF	ON	ON	ON	ON	ON	
Time for agitation (min.)	2	2	2	2	2	2	2	
Fill Temperature	Warm	Cold	Cold	Cold	Cold	Cold	Cold	
Fill Level	High	Low	High	High	High	High	High	
Supply	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Heat (if enabled)	No	No	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	1 (Med.)	0	1 (Med.)	1 (Med.)	1 (Med.)	1 (Med.)	1 (Med.)	
Rinse 3 (Rinse - ON/OFF)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Time for agitation (min.)	2	2	2	2	2	2	2	
Fill Temperature	Cold	Cold	Cold	Cold	Cold	Cold	Cold	
Fill Level	Low	Low	Low	Low	Low	Low	Low	
Supply	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Heat (if enabled)	No	No	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	0	0	0	0	0	0	0	
Rinse 4 (Rinse - ON/OFF)	ON	ON	ON	ON	ON	ON	ON	
Time for agitation (min.)	4	4	3	3	3	3	3	
Fill Temperature	Warm	Cold	Cold	Cold	Cold	Cold	Cold	
Fill Level	Low	High	High	High	High	High	High	
Supply	S3, S4	S3, S4	S3, S4	S3, S4	S3, S4	S3, S4	S3, S4	
Heat (if enabled)	No	No	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	5 (Med.)	3 (Low)	5 (Med.)	5 (Med.)	5 (Med.)	3 (Med.)	3 (Med.)	
Default Cycle Time (hh:mm:ss)	2-speed	00:55:50	00:26:20	00:32:20	00:32:20	00:32:20	00:30:20	00:30:20
	L-speed and M-speed (Design 1 and 2)	00:57:20	00:27:05	00:33:50	00:33:50	00:33:50	00:31:50	00:31:50
	L and M-speed (Design 4)	00:57:02	00:26:02	00:34:02	00:34:02	00:34:02	00:32:02	00:32:02

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Cycle Stops	40C Perm Press	70C Perm Press	50C Gentle	30C Gentle	Blank
Cycle reference (display in Program Mode)	CY15	CY16	CY17	CY18	CY19-CY30
Agitation type	18/3/18 Normal	18/3/18 Normal	10/20/10 Gentle	10/20/10 Gentle	18/3/18 Normal
Wash 1 (Wash - ON/OFF)	ON	ON	ON	ON	OFF
Time for agitation (min.)	2	2	2	2	2
Fill Temperature	Warm	Warm	Warm	Cold	Cold
Fill Level	Low	Low	Low	High	Low
Supply	OFF	OFF	OFF	OFF	OFF
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0
Wash 2 (Wash - ON/OFF)	ON	ON	ON	ON	OFF
Time for agitation (min.)	6	6	6	3	2
Fill Temperature	Hot	Hot	Hot	Cold	Cold
Fill Level	Low	Low	Low	High	Low
Supply	S1, S2	S1, S2	S1, S2	S1, S2	OFF
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0
Wash 3 (Wash - ON/OFF)	OFF	OFF	OFF	OFF	OFF
Time for agitation (min.)	2	2	2	2	2
Fill Temperature	Cold	Cold	Cold	Cold	Cold
Fill Level	Low	High	High	Low	Low
Supply	OFF	OFF	OFF	OFF	OFF
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0
Wash 4 (Wash - ON/OFF)	OFF	OFF	OFF	OFF	OFF
Time for agitation (min.)	2	2	2	2	2
Fill Temperature	Cold	Cold	Cold	Cold	Cold
Fill Level	Low	Low	Low	Low	Low
Supply	OFF	OFF	OFF	OFF	OFF
Heat (if enabled)	Yes	Yes	Yes	Yes	Yes
Drain	Yes	Yes	Yes	Yes	Yes
Spin (min.)	0	0	0	0	0

(continued)

Default Cycles

(continued)

Cycle Stops	40C Perm Press	70C Perm Press	50C Gentle	30C Gentle	Blank	
Cycle reference (display in Program Mode)	CY15	CY16	CY17	CY18	CY19-CY30	
Agitation type	18/3/18 Normal	18/3/18 Normal	10/20/10 Gentle	10/20/10 Gentle	18/3/18 Normal	
Rinse 1 (Rinse - ON/OFF)	ON	ON	ON	ON	OFF	
Time for agitation (min.)	2	2	2	2	2	
Fill Temperature	Cold	Cold	Cold	Cold	Cold	
Fill Level	High	High	High	High	Low	
Supply	OFF	OFF	OFF	OFF	OFF	
Heat (if enabled)	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	0	0	0	0	0	
Rinse 2 (Rinse - ON/OFF)	ON	ON	ON	ON	OFF	
Time for agitation (min.)	2	2	2	2	2	
Fill Temperature	Cold	Cold	Cold	Cold	Cold	
Fill Level	High	High	High	High	Low	
Supply	OFF	OFF	OFF	OFF	OFF	
Heat (if enabled)	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	1 (Med.)	1 (Med.)	1 (Low)	1 (Low)	0	
Rinse 3 (Rinse - ON/OFF)	OFF	OFF	OFF	OFF	OFF	
Time for agitation (min.)	2	2	2	2	2	
Fill Temperature	Cold	Cold	Cold	Cold	Cold	
Fill Level	Low	Low	Low	Low	Low	
Supply	OFF	OFF	OFF	OFF	OFF	
Heat (if enabled)	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	0	0	0	0	0	
Rinse 4 (Rinse - ON/OFF)	ON	ON	ON	ON	OFF	
Time for agitation (min.)	3	3	3	3	2	
Fill Temperature	Cold	Cold	Cold	Cold	Cold	
Fill Level	High	High	High	High	Low	
Supply	S3, S4	S3, S4	S3, S4	S3, S4	OFF	
Heat (if enabled)	No	No	No	No	No	
Drain	Yes	Yes	Yes	Yes	Yes	
Spin (min.)	3 (Med.)	3 (Med.)	3 (Low)	2 (Low)	0	
Default Cycle Time (hh:mm:ss)	2-speed	00:30:20	00:30:20	00:30:20	00:26:20	00:00:20
	L-speed and M-speed (Design 1 and 2)	00:31:50	00:31:50	00:31:50	00:27:50	00:00:20
	L and M-speed (Design 4)	00:32:02	00:32:02	00:29:32	00:25:32	00:00:32