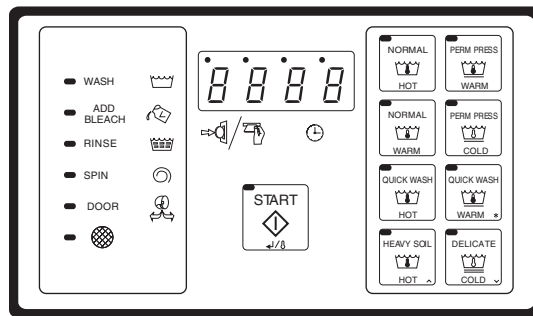


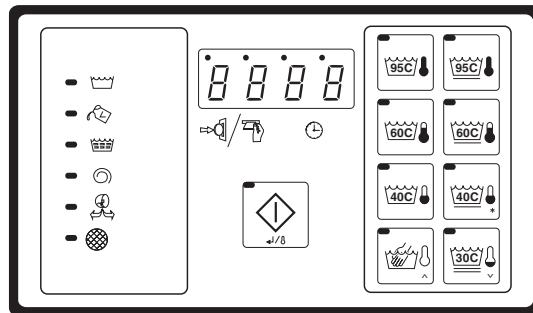
# Washer-Extractors

Cabinet Hardmount  
B-Series Microcomputer for Coin Models  
2 Speed and Variable-Speed  
Refer to Page 7 for Model Identification



DOMESTIC MODELS

CHM482R



INTERNATIONAL MODELS

CHM488R

**Keep These Instructions for Future Reference.**

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



[www.comlaundry.com](http://www.comlaundry.com)

Part No. F232157R7  
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# Safety Information

## Explanation of Safety Messages

Precautionary statements (“DANGER,” “WARNING,” and “CAUTION”), followed by specific instructions, are found in this manual and on machine decals. These precautions are intended for the personal safety of the operator, user, servicer, and those maintaining the machine.

	<b>DANGER</b>
<b>DANGER indicates the presence of a hazard that will cause severe personal injury, death, or substantial property damage if the danger is ignored.</b>	

	<b>WARNING</b>
<b>WARNING indicates the presence of a hazard that can cause severe personal injury, death, or substantial property damage if the warning is ignored.</b>	


	<b>CAUTION</b>
<b>CAUTION indicates the presence of a hazard that will or can cause minor personal injury or property damage if the caution is ignored.</b>	

Additional precautionary statements (“IMPORTANT” and “NOTE”) are followed by specific instructions.

**IMPORTANT:** The word “IMPORTANT” is used to inform the reader of specific procedures where minor machine damage will occur if the procedure is not followed.

**IMPORTANT:** The word “NOTE” is used to communicate installation, operation, maintenance or servicing information that is important but not hazard related.

## Important Safety Instructions

	<b>WARNING</b>
<b>To reduce the risk of fire, electric shock, serious injury or death to persons when using your washer, follow these basic precautions:</b>	
W023	


1. Read all instructions before using the washer.
2. Refer to the GROUNDING INSTRUCTIONS in the INSTALLATION manual for the proper grounding of the washer.
3. Do not wash textiles that have been previously cleaned in, washed in, soaked in, or spotted with gasoline, kerosene, waxes, cooking oils, dry-cleaning solvents, or other flammable or explosive substances as they give off vapors that could ignite or explode.
4. Do not add gasoline, dry-cleaning solvents, or other flammable or explosive substances to the wash water. These substances give off vapors that could ignite or explode.
5. Under certain conditions, hydrogen gas may be produced in a hot water system that has not been used for two weeks or more. HYDROGEN GAS IS EXPLOSIVE. If the hot water system has not been used for such a period, before using a washing machine or combination washer-dryer, turn on all hot water faucets and let the water flow from each for several minutes. This will release any accumulated hydrogen gas. The gas is flammable; do not smoke or use an open flame during this time.
6. Do not allow children to play on or in the washer. Close supervision of children is necessary when the washer is used near children. This is a safety rule for all appliances.
7. Before the washer is removed from service or discarded, remove the door to the washing compartment.
8. Do not reach into the washer if the wash drum is moving.

## Safety Information


9. Do not install or store the washer where it will be exposed to water and/or weather.
10. Do not tamper with the controls.
11. Do not repair or replace any part of the washer, or attempt any servicing unless specifically recommended in the user-maintenance instructions or in published user-repair instructions that the user understands and has the skills to carry out.
12. To reduce the risk of an electric shock or fire, DO NOT use an extension cord or an adapter to connect the washer to the electrical power source.
13. Use washer only for its intended purpose, washing textiles.
14. Never wash machine parts or automotive parts in the machine. This could result in serious damage to the basket.
15. ALWAYS disconnect the washer from electrical supply before attempting any service. Disconnect the power cord by grasping the plug, not the cord.
16. Install the washer according to the installation instructions. All connections for water, drain, electrical power and grounding must comply with local codes and be made by licensed personnel when required.
17. To reduce the risk of fire, textiles which have traces of any flammable substances such as vegetable oil, cooking oil, machine oil, flammable chemicals, thinner, etc. or anything containing wax or chemicals such as in mops and cleaning cloths, must not be put into the washer. These flammable substances may cause the fabric to catch on fire by itself.
18. Do not use fabric softeners or products to eliminate static unless recommended by the manufacturer of the fabric softener or product.
19. Keep washer in good condition. Bumping or dropping the washer can damage safety features. If this occurs, have washer checked by a qualified service person.
20. If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent.
21. Be sure water connections have a shut-off valve and that fill hose connections are tight. CLOSE the shut-off valves at the end of each wash day.
22. Loading door MUST BE CLOSED any time the washer is to fill, tumble or spin. DO NOT bypass the loading door switch by permitting the washer to operate with the loading door open.
23. Always read and follow manufacturer's instructions on packages of laundry and cleaning aids. Heed all warnings or precautions. To reduce the risk of poisoning or chemical burns, keep them out of the reach of children at all times (preferably in a locked cabinet).
24. Always follow the fabric care instructions supplied by the textile manufacturer.
25. Never operate the washer with any guards and/or panels removed.
26. DO NOT operate the washer with missing or broken parts.
27. DO NOT bypass any safety devices.
28. Failure to install, maintain, and/or operate this washer according to the manufacturer's instructions may result in conditions which can produce bodily injury and/or property damage.


**NOTE: The WARNINGS and IMPORTANT SAFETY INSTRUCTIONS appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution and care must be exercised when installing, maintaining, or operating the washer.**


Any problems or conditions not understood should be reported to the dealer, distributor, service agent or the manufacturer.

	<b>WARNING</b>
<p>This machine must be installed, adjusted, and serviced by qualified electrical maintenance personnel familiar with the construction and operation of this type of machinery. They must also be familiar with the potential hazards involved. Failure to observe this warning may result in personal injury and/or equipment damage, and may void the warranty.</p>	
SW004	

**IMPORTANT:** Ensure that the recommended clearances for inspection and maintenance are provided. Never allow the inspection and maintenance space to be blocked.

	<b>WARNING</b>
<p>Install the machine on a level floor of sufficient strength. Failure to do so may result in conditions which can produce serious injury, death and/or property damage.</p>	
W703	

	<b>CAUTION</b>
<p>Be careful around the open door, particularly when loading from a level below the door. Impact with door edges can cause personal injury.</p>	
SW025	

	<b>WARNING</b>
<p>Never touch internal or external steam pipes, connections, or components. These surfaces can be extremely hot and will cause severe burns. The steam must be turned off and the pipe, connections, and components allowed to cool before the pipe can be touched.</p>	
SW014	

## Safety Decals

Safety decals appear at crucial locations on the machine. Failure to maintain legible safety decals could result in injury to the operator or service technician.

To provide personal safety and keep the machine in proper working order, follow all maintenance and safety procedures presented in this manual. If questions regarding safety arise, contact the manufacturer immediately.

Use manufacturer-authorized spare parts to avoid safety hazards.


## Operator Safety

	<b>WARNING</b>
<b>NEVER insert hands or objects into basket until it has completely stopped. Doing so could result in serious injury.</b>	
<small>SW012</small>	

To ensure the safety of machine operators, the following maintenance checks must be performed daily:

1. Prior to operating the machine, verify that all warning signs are present and legible. Missing or illegible signs must be replaced immediately. Make certain that spares are available.
2. Check door interlock before starting operation of the machine:
  - a. Attempt to start the machine with the door open. The machine should not start with the door open.
  - b. Close the door without locking it and attempt to start the machine. The machine should not start with the door unlocked.
  - c. Close and lock the door and start a cycle. Attempt to open the door while the cycle is in progress. The door should not open.If the door lock and interlock are not functioning properly, call a service technician.
3. Do not attempt to operate the machine if any of the following conditions are present:
  - a. The door does not remain securely locked during the entire cycle.
  - b. Excessively high water level is evident.
  - c. Machine is not connected to a properly grounded circuit.

Do not bypass any safety devices in the machine.

	<b>WARNING</b>
<b>Never operate the machine with a bypassed or disconnected balance system. Operating the machine with severe out-of-balance loads could result in personal injury and serious equipment damage.</b>	
<small>SW039</small>	



# Introduction

## Model Identification

Information in this manual is applicable to these models:

HC20BC2	HC30BY2	HC60BXF	SC20BX2	SC40BL2	SC60BYF
HC20BL2	HC40BC2	HC60BYF	SC20BY2	SC40BX2	SC60BY2
HC20BX2	HC40BL2	HC60BY2	SC25BC2	SC40BY2	SC80BCV
HC20BY2	HC40BX2	HC80BCV	SC25BL2	SC50BC2	SC80BLV
HC25BC2	HC40BY2	HC80BLV	SC25BX2	SC50BY2	SC80BXV
HC25BL2	HC50BC2	HC80BXV	SC25BY2	SC60BC2	SC80BYV
HC25BX2	HC50BY2	HC80BYV	SC30BC2	SC60BCF	SC125BCV
HC25BY2	HC60BC2	HC125BCV	SC30BL2	SC60BL2	SC125BYV
HC30BC2	HC60BCF	HC125BYV	SC30BX2	SC60BLF	
HC30BL2	HC60BLF	SC20BC2	SC30BY2	SC60BX2	
HC30BX2	HC60BX2	SC20BL2	SC40BC2	SC60BXF	

## Introduction

### Nameplate Location

The nameplate is located at the rear of the machine and inside door. Always provide the machine's serial number and model number when ordering parts or when seeking technical assistance.

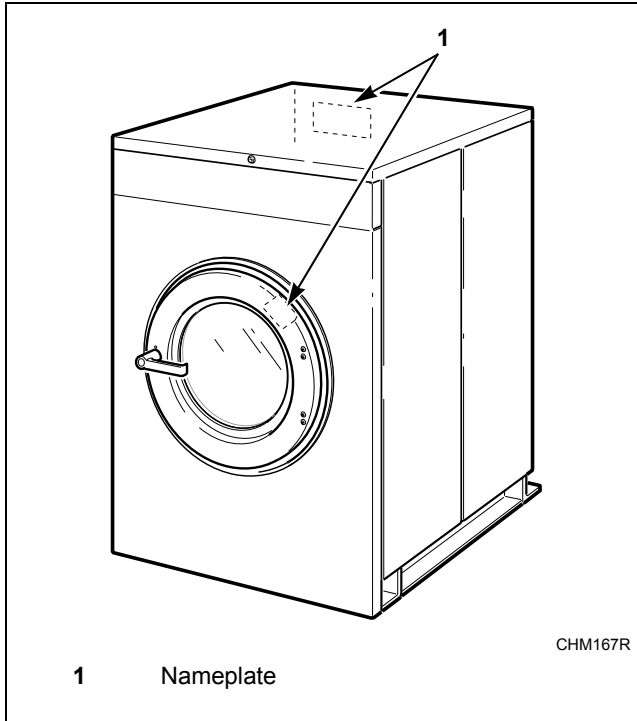


Figure 1

### Replacement Parts

If literature or replacement parts are required, contact the source from whom the machine was purchased or contact Alliance Laundry Systems at (920) 748-3950 for the name and address of the nearest authorized parts distributor.

### Customer Service

For technical assistance, call (920) 748-3121 Ripon, Wisconsin.

## Electronic Control Unit

The “B” electronic control is composed of the electronic control unit and the control fuse board with wiring harness. Only an authorized person should look inside the control compartment. First TURN OFF POWER, open lid and remove any cover present. Make sure door lock circuit has fully discharged. The door unlock capacitor can retain high electrical charge, even when the machine’s electrical inputs are disconnected, until it has discharged. Some machines are equipped with an orange or red indicator light facing upward in the control compartment. If this is on, wait until light goes off (indicating when high voltage in the door lock circuit has discharged). The components are described below.

This portion of the control contains the “intelligence” – the micro-controller and the miscellaneous components on the printed circuit (PC) board. The board has a metal cover, which MUST be in place at all times during machine operation. Operation of the machine without this cover installed will void the warranty.

The control unit monitors and responds to input, gives information about the status of the washer and monitors and responds to inputs from the user interface (keypad). The control provides signals to the control output unit, which in turn operates the components that control the machine functions. This is located behind the machine control panel.

## Control Output Fuse Board

This portion of the control contains the power supply for the control unit, and also the switching devices which power the components in the machine, all of which are on the output PC board. The switching devices are controlled by the control unit, and are solid state.

## Summary of Control Outputs and Inputs

### Outputs

General outputs provide signals to operate the following components.

1. Hot Fill Valve (HF)
2. Cold Fill Valve (CF)
3. Drain Valve (normally open) (DR)
4. Door Lock Solenoid Coil (DL)
5. Door Unlock Solenoid Coil (DU)
6. Supply 1 (detergent) (S1)

7. Supply 2 (bleach) (S2)
8. Supply 3 (sour/softener) (S3)
9. Optional 3rd (Extra) Fill Inlet (governed by the configuration settings) (S4)
10. Optional Heat (HT)
11. \*Prep for Card Reader or Central Pay (“machine available signal”)

For standard models, the components for outputs shown as “optional” will not be populated on the output printed circuit board.

AC outputs are solid state outputs that operate either 120 Volt AC or 220 Volt AC (nominal voltage) components, depending on the control voltage configuration. Outputs are fused appropriately.

### Inputs

1. Low Water Level
2. Medium Water Level
3. High Water Level
4. Door
5. Coin 1 Signal
6. Coin 2 Signal
7. \*Prep for Card Reader or Central Pay (“start pulse”)

\* This allows machine to interface with the card reader or the central pay system. “Start Pulse” originates from the reader/central pay system, and this satisfies the programmed vend. B control provides “Machine Available” signal to reader/central pay when it is ready to accept payment. Refer to Machine Electrical Schematic.

### Control Voltage

The control power supply can be configured to operate on 110 Volt AC nominal RMS input voltage 50/60 Hertz, OR 220 Volt AC nominal RMS input voltage 50/60 Hertz.

### Harnessing

Wiring harnesses are modular – harnesses common to various configurations are similar, while those specific to a certain configuration can be added. There are harnesses for inputs to the control unit, for outputs from the control power/output unit to the machine components, and for the main incoming power to the control power/output unit.

## Introduction

### Communications

#### Central Pay System

##### (Central Pay System Models Only)

The models are usually designated by the “Prep for Central Pay” option. The model number will have an “L” in the 6th digit (i.e. \*C40BL2OU6001). Refer to ***Nameplate Location***. The control will accept a start pulse from the central pay system and will give a “machine available” signal.

\* Denotes Brand

For detailed information on the Central Pay System Communications, refer to the manufacturer.

#### Third Party Card Reader

##### (Card Reader Models Only)

The models are usually designated by the “Prep for Card Reader” option. The model number will have a “Y” in the 6th digit (i.e. \*C40BY2OU6001). Refer to ***Nameplate Location***. The control will accept communications with a Card Reader in order to perform vending transactions when a card is inserted to pay for cycles.

\* Denotes Brand

For detailed information on the Card Reader Communications, refer to the manufacturer.

Model Number Familiarization Guide	
Sample Model Number: <b>*C40BY2OU60001</b>	
<b>*C</b>	Model Number Prefix
<b>40</b>	Washer-Extractor Capacity (pounds dry weight of laundry)
<b>B</b>	Type of Electrical Control
<b>Y</b>	Actuation (Y = Prep for Card Reader)
<b>2</b>	Washer-Extractor Speed Capability (2 = 2 speed)
<b>O</b>	Electrical Characteristics
<b>U6</b>	Design Series
<b>0001</b>	Option Identification (varies from machine to machine)

\* Denotes Brand

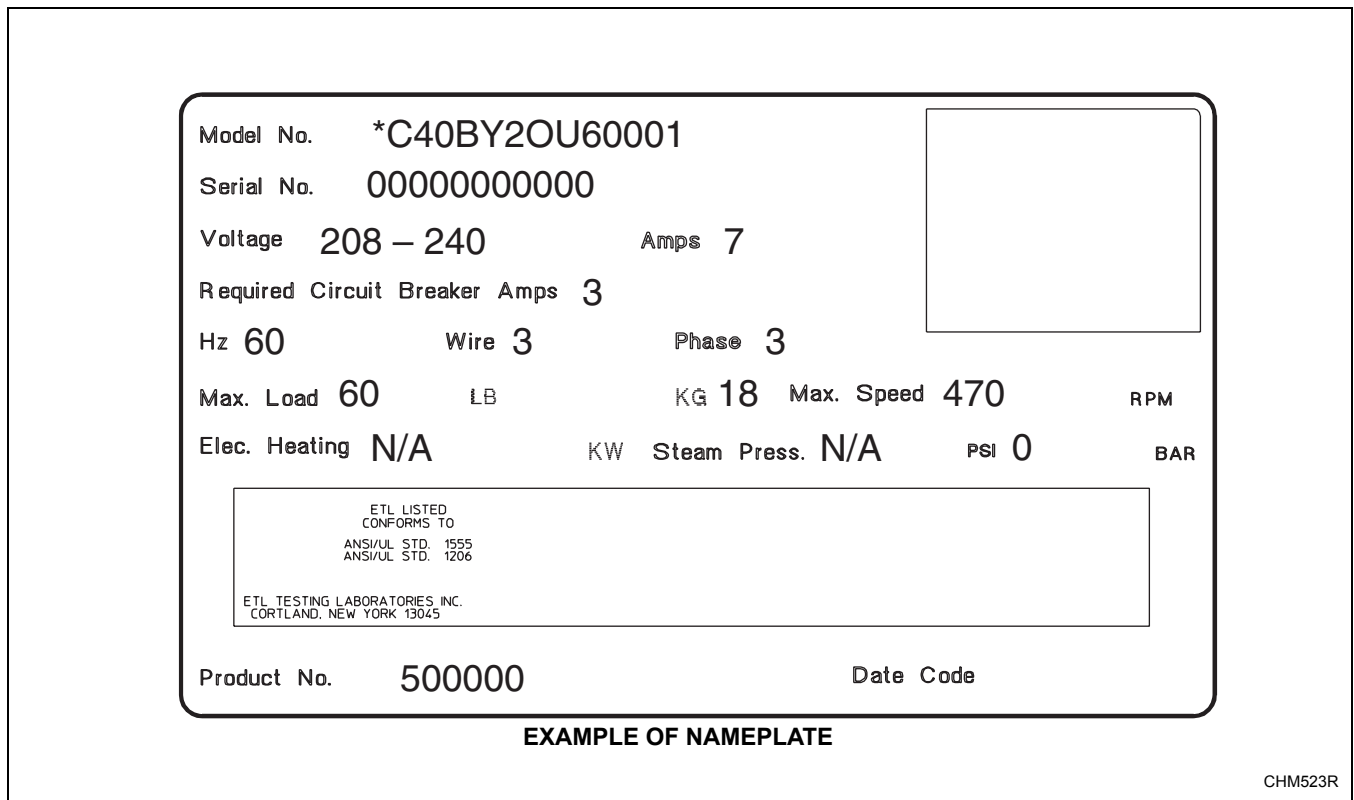


Figure 2

# Programming

**NOTE: The machines are factory programmed with basic cycles to make the units operational without programming at installation.**

## Entering Program Mode

1. Open machine lid.
2. Locate Program/Run switch on the computer board. This is accessed through a cutout in the metal control unit cover. This switch protrudes from the rear of the electronic control unit cover.
3. Flip switch to the left (as seen from front of machine) to enter PROGRAM Mode.
4. Display will show “0000” or temperature or “tSFL” (depending on version of the control).

## Determining Firmware ID Code

1. Turn on the main power source (circuit breaker or cut-off switch on wall).
2. Display will show Firmware ID code (i.e., “C2dS” and “CvdS” etc...).
3. Record Firmware ID Code for future reference.

## Programming Vend Price (For Models with Firmware ID Code “C2dS” and “CvdS”)

### Setup Mode

**NOTE: In SETUP Mode, certain machine functions can be configured. The settings in this mode are related to how the machine is equipped from the factory. Usually, these would not be changed in the field.**

**NOTE: Enter SETUP Mode through the PROGRAM Mode. Refer to *Entering Program Mode*.**

1. Press (\*) keypad. Display shows machine model size (capacity). Displayed capacity must match machine size. Press (^) keypad to change the capacity. (This should already be set correctly from the factory, and normally should never need to be changed).
2. Press START (Enter) keypad.
3. Display shows “FAR” or “CEL”.

**NOTE: This option selects whether temperatures display in degrees Fahrenheit (F) or Celsius (C), if control is equipped with a temperature sensor. Press the (^) or (v) keypad to change degrees “FAR” or “CEL”.**

4. Press START (Enter) keypad.
5. If model displays “HEAt” or “noHt”, change the selection by pressing the (^) or (v) keypad. If model displays “CArd” or “COIn”, skip to step# 8.
6. Press START (Enter) keypad to continue to the next step.
7. “EFIL” or “nEFL” will display in certain models. “EFIL” means the capability to control an extra fill valve with programmable water level (same as regular fills) is enabled. Machine MUST be equipped with the extra valve for this to work properly. “nEFL” means the extra fill valve option is disabled or not installed on machine.

**NOTE: If neither message displays, the extra fill capability is not present. If either message displays, changing the selection is an option by pressing the (^) or (v) keypad. Press START (Enter) keypad to continue to the next option.**

8. If model displays the message “CArd” or “COIn”, change the selection by pressing the (^) or (v) keypad.
9. Press START (Enter) keypad to continue to the next selection.

**NOTE: Select “COIn used by accessory pay system. Contact the manufacturer of the accessory pay system if not working properly**

10. “bEEP” or “nobP” will display in certain models. If “bEEP” is set, control will beep during Add Bleach (Supply 2) and at end of cycle after several seconds while displaying “dOnE”. If “nobP” displays, control will NOT beep during Add Bleach (Supply 2) or at end of cycle. This does not affect the short beep when a keypad is pressed or a coin is inserted and it does not affect the beep during an alarm. Press the (^) or (v) keypad to change “bEEP”/“nobP” selection.
11. Press START (Enter) keypad to continue to next step.
12. “PtIn” means the control will display remaining time in a cycle without fill and drain times. “EtIn” means the control will display estimated remaining time in a cycle including fill and drain time.
13. Press the (^) or (v) keypad to change “PtIn”/ “EtIn” selection.
14. Press START (Enter) keypad to continue to the next step.

**NOTE: If machine is equipped with a card reader, or interfaces with a control/remote pay system, setting “con1”/ “dEno” and “con2”/ “dEno” equal to the vend start amount (“Strt”/ “Ant”) will allow starting with one pulse and is recommended. The card or central remote pay vend amount should match the “Strt”/ “Ant” setting.**

15. Display shows “con1”, “dEno” next, then a number such as 25. This means that the coin 1 denomination is 25 cents for single coin meters. For example, a U.S. quarter coin meter would be set for 25 cents, or this would be the amount for one of the two denominations for a dual coin meter, such as a U.S. quarter for a dollar/quarter dual coin meter. The vend price programmed above will count down by this amount each time a coin is added.
16. Press the (^) or (v) keypad to decrease or increase this amount.
17. When correct, press START (Enter) keypad.

## Programming

18. Display shows “con2”, “dEno” next, then a number such as 100. This means that the coin 2 denomination is 100 cents. This is the coin denomination for coin meters that can process two types of coins – such as a U.S. quarter/dollar coin meter. The second coin input would be one dollar. For single coin meters, press START (Enter) keypad to continue. The vend price programmed above will count down by this amount each time this second coin type is added.
19. Press the (^) or (v) keypad to decrease or increase this amount.
20. When correct, press START (Enter) keypad.
21. Display shows “Strt”, “ANt” next, then a number such as 150. This means that the start amount is 150 cents. This is the vend price required to operate a wash cycle.
22. Press the (v) or (^) keypad to increase or decrease this amount.
23. When correct, press START (Enter) keypad.
24. Display shows “0000” when complete. Return the Program/Run switch to the right and close the lid. The display will show new vend price.
7. Press START (Enter) keypad. Displays show a number (up to 4 digits) showing how many complete cycles have been operated. This excludes cycles stopped because of an error.
8. Press START (Enter) keypad.
9. If display does not show “E Pr”, control will revert to normal PROGRAM Mode.
10. If display shows “E Pr”, this is for factory reference regarding power interruption. Press START (Enter) keypad. A number will display. Press START (Enter) keypad. After a brief pause, the control will display normal PROGRAM Mode.

## Programming Cycle Segments

The machine is preprogrammed with eight wash cycle formulas that can be edited.

To edit any of these cycles, enter PROGRAM Mode. Refer to **Entering Program Mode**. In PROGRAM Mode, cycles are selected by number (1 through 8) as opposed to the RUN Mode, where cycles are selected by pressing one of the eight corresponding keypads. The keypads must serve different functions in each mode because there are more functions than keypads in PROGRAM Mode.

In RUN Mode the top left keypad selects Cycle 1, the (^) keypad directly below it selects Cycle 2, etc. *Figure 3* shows which keypad selects each cycle in RUN Mode.

## Cycle and Error Count

The control logs cycle count (total of all cycles completed).

## Cycle and Error Count addition

1. To read, enter PROGRAM Mode. Refer to **Entering Program Mode**.
2. Press START (Enter) keypad. Display shows “Erdrn” (indicates Drain Error count).
3. Press START (Enter) keypad. Display shows a number (2 or 3 digits) showing how many drain errors have occurred. This number can range from ‘00’ to ‘255’, and cannot be set to zero.
4. Press START (Enter) keypad. Display shows “ErFL” (indicates Fill Error count).
5. Press START (Enter) keypad. Display shows a number (2 or 3 digits showing how many fill errors have occurred. This number can range from ‘00’ to ‘255’, and cannot be set to zero.
6. Press START (Enter) keypad. Display shows “CYC” (indicates Cycle count).
1. After entering PROGRAM Mode, display will show “0000” or temperature (if machine is configured for heat) or “tSFL”.
2. Press the (^) keypad to enter Cycle Programming Mode.
3. The display will reference cycles by number. Cycle 1 will show first.
4. Use the (^) or (v) keypad to select cycle to be edited.
5. Press START (Enter) keypad to move into the menu of options.



## Programming Vend Price (For Earlier Models)

### Setup Mode

**NOTE: In SETUP Mode, certain machine functions can be configured. The settings in this mode are related to how the machine is equipped from the factory. Usually, these would not be changed in the field.**

**NOTE: Enter SETUP Mode through the PROGRAM Mode. Refer to *Entering Program Mode*.**

1. Press (\*) keypad. Display shows machine model size (capacity). Displayed capacity must match machine size.
2. Press (^) keypad to change the capacity. (This should already be set correctly from the factory, and normally should never need to be changed).
3. Press START (Enter) keypad.
4. Display shows "FAr" or "CEL".

**NOTE: This option selects whether temperatures display in degrees Fahrenheit (F) or Celsius (C), if control is equipped with a temperature sensor. Press the (^) or (v) keypad to change degrees "FAr" or "CEL".**

5. Press START (Enter) keypad.
6. If model displays "HEAt" or "noHt", change the selection by pressing the (^) or (v) keypad.
7. If model displays "CArd" or "COIn", skip to step #10.
8. Press START (Enter) keypad to continue to the next step.
9. "EFIL" or "nEFL" will display in certain models. "EFIL" means the capability to control an extra fill valve with programmable water level (same as regular fills) is enabled. Machine MUST be equipped with the extra valve for this to work properly. "nEFL" means the extra fill valve option is disabled or not installed on machine.

**NOTE: If neither message displays, the extra fill capability is not present. If either message displays, changing the selection is an option by pressing the (^) or (v) keypad. Press START (Enter) keypad to continue to the next option.**

10. If model displays the message "CArd" or "COIn", change the selection by pressing the (^) or (v) keypad.
11. When correct, press START (Enter) keypad to continue to the next selection.

**NOTE: Select "COIn" for regular coin drop meter or if coin inputs are used by accessory pay system. Contact the manufacturer of the accessory pay system if not working properly.**

12. "bEEP" or "nobP" will display in certain models. If "bEEP" is set, control will beep during Add Bleach (Supply 2) and at end of cycle after several seconds while displaying "dOnE". If "nobP" displays, control will NOT beep during Add Bleach (Supply 2) or at end of cycle. This does not affect the short beep when a keypad is pressed or a coin is inserted and it does not affect the beep during an alarm.
13. Press the (^) or (v) keypad to change "bEEP"/"nobP" selection.
14. Press START (Enter) keypad to continue to next step.

## Programming

**NOTE: If machine is equipped with a card reader, or interfaces with a control/remote pay system, setting “con1”/ “dEno” and “con2”/ “dEno” equal to the vend start amount (“Strt”/ “Ant”) will allow starting with one pulse and is recommended. The card or central remote pay vend amount should match the “Strt”/ “Ant” setting.**

15. Display shows “con1”, “dEno” next, then a number such as 25. This means that the coin 1 denomination is 25 cents for single coin meters. For example, a U.S. quarter coin meter would be set for 25 cents or this would be the amount for one of the two denominations for a dual coin meter, such as a U.S. quarter for a dollar/quarter dual coin meter. The vend price programmed above will count down by this amount each time a coin is added.
16. Press the (^) or (v) keypad to decrease or increase this amount.
17. When correct, press START (Enter) keypad.
18. Display shows “con2”, “dEno” next, then a number such as 100. This means that the coin 2 denomination is 100 cents. This is the coin denomination for coin meters that can process two types of coins – such as a U.S. quarter/dollar coin meter. The second coin input would be one dollar. For single coin meters, press START (Enter) keypad to continue. The vend price programmed above will count down by this amount each time this second coin type is added.
19. Press the (^) or (v) keypad to decrease or increase this amount.
20. When correct, press START (Enter) keypad.
21. Display shows “Strt”, “Ant” next, then a number such as 150. This means that the start amount is 150 cents. This is the vend price required to operate a wash cycle.
22. Press the (v) or (^) keypad to decrease or increase this amount.
23. When correct, press START (Enter) keypad.
24. Display shows “0000” when complete. Return the Program/Run switch to the right and close the lid. The display will show new vend price.

## Cycle and Error Count

The control logs cycle count (total of all cycles completed).

1. To read, enter PROGRAM Mode. Refer to *Entering Program Mode*.
2. Press START (Enter) keypad. Display will show the cycle count.
3. Press START (Enter) keypad. Display will show certain error conditions that may have been recorded by the control.
4. Read the information when consulting technical assistance as needed.
5. Step through the error log by pressing START (Enter) keypad repeatedly until display reverts to normal PROGRAM Mode (“0000” or temperature).

## Programming Cycle Segments

The machine is preprogrammed with eight wash cycle formulas that can be edited.

To edit any of these cycles, enter PROGRAM Mode. Refer to *Entering Program Mode*. In PROGRAM Mode, cycles are selected by number (1 through 8) as opposed to the RUN Mode, where cycles are selected by pressing one of the eight corresponding keypads. The keypads must serve different functions in each mode because there are more functions than keypads in PROGRAM Mode.

In RUN Mode the top left keypad selects Cycle 1, the (^) keypad directly below it selects Cycle 2, etc. *Figure 3* shows which keypad selects each cycle in RUN Mode.

1. After entering PROGRAM Mode, display will show “0000” or temperature (if machine is configured for heat).
2. Press the (^) keypad to enter Cycle Programming Mode. The display will reference cycles by number. Cycle 1 will show first.
3. Use the (^) or (v) keypad to select cycle to be edited.
4. Press START (Enter) keypad to move into the menu of options.

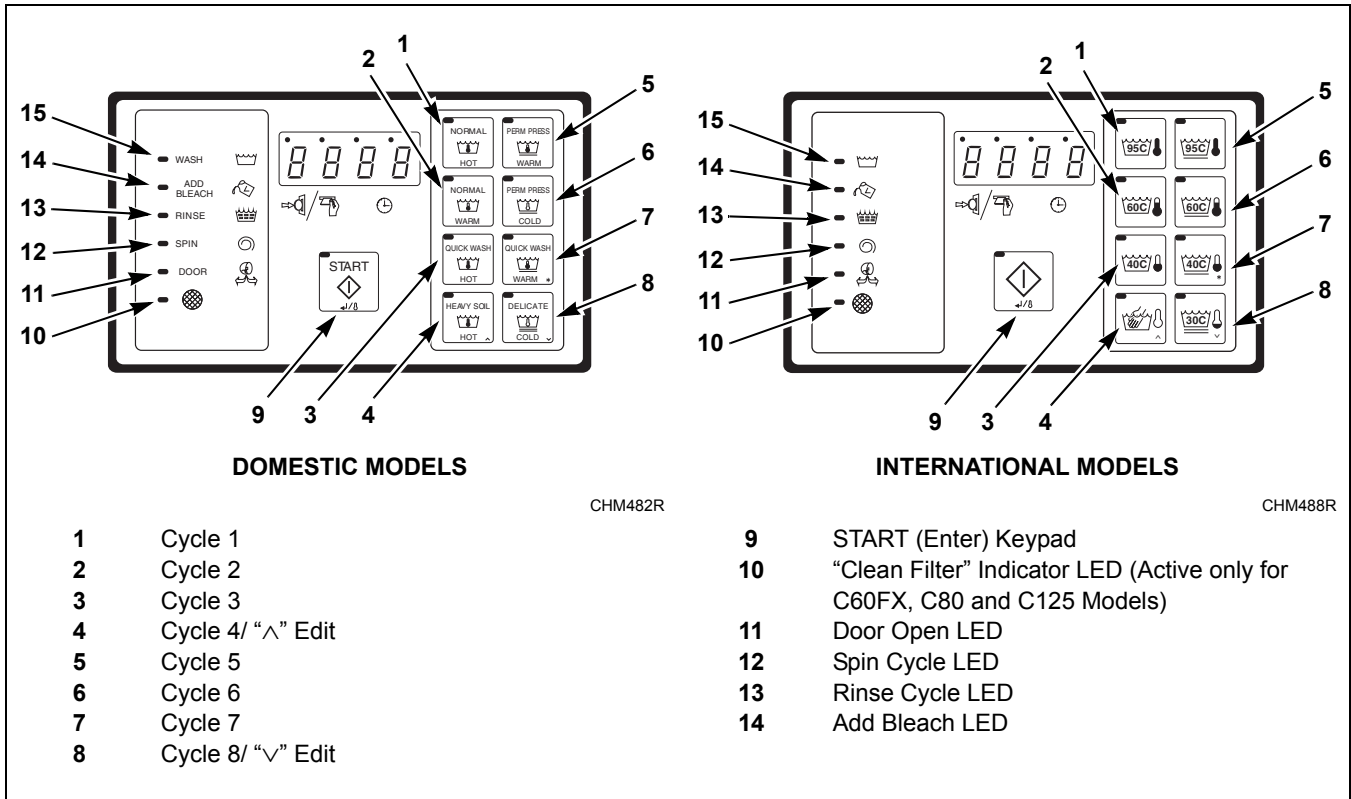


Figure 3

**NOTE: If the version of control in machine is capable of reading temperature, pressing the START (Enter) keypad while a wash is running will cause the display to show temperature. Depending on version of control, this will either revert to minutes remaining after several seconds, or START (Enter) keypad must be pressed a second time to revert to minutes remaining.**

### Options for Each Segment

Cycle Steps Available (NOTE: WASH, ADD BLEACH, RINSE and SPIN LEDs light ONLY when a cycle formula is in operation.)	Display	Setting Options for Cycle Steps
<b>Wash 1 (displayed as “USH1”)</b>		
Time for Agitation (excludes fill, drain, spin and heat)	GEnt	0 or 2-30 minutes in agitation step (increases/decreases in one-minute increments). <i>Refer to Table 3 for operation of each agitation segment</i>
	norñ	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra fill (must be configured for “EFIL” in SETUP Mode)
	HFIL	
	bFIL	
	EFIL	
Fill water level control	LO	Low, Medium or High water level
	nEd	
	HI	
Supply	SUP0	SUP0 for No Supply or Supply 1-3,6 ( <i>Refer to Table 2 for operation of each supply selection</i> )
	SUP1	
	SUP2	
	SUP3	
	SUP6	
Heat (Models with heat or heat capability)	HEAt	00F (no heat for segment) or 80°F to 205°F
	noHt	00C (no heat for segment) or 27°C to 95°C
Drain (Final segment drains in stop routine if No Drain is programmed)	drAI	Drain or No Drain (if No Drain programmed, will skip spin segment associated with Drain segment)
	nodr	
Spin time	SPIn	00 for No Spin or 30-240 seconds (increases/decreases in one-second increments)
	tInE	
<b>Wash 2 (displayed as “USH2”)</b>		
Time for Agitation (excludes fill, drain, spin and heat)	GEnt	0 or 2-20 minutes in agitation step (increases/decreases in one-minute increments). <i>Refer to Table 3 for operation of each agitation segment</i>
	norñ	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra fill (must be configured for “EFIL” in SETUP Mode)
	HFIL	
	bFIL	
	EFIL	
Fill water level control	LO	Low, Medium or High water level
	nEd	
	HI	
Supply	SUP0	SUP0 for No Supply or Supply 1-3,6 ( <i>Refer to Table 2 for operation of each supply selection</i> )
	SUP1	
	SUP2	
	SUP3	
	SUP6	

Table 1 (continued)

Table 1 (continued)

<b>Cycle Steps Available</b> (NOTE: WASH, ADD BLEACH, RINSE and SPIN LEDs light ONLY when a cycle formula is in operation.)	<b>Display</b>	<b>Setting Options for Cycle Steps</b>
Heat (Models with heat or heat capability)	HEAt	00F (no heat for segment) or 80°F to 205°F 00C (no heat for segment) or 27°C to 95°C
	noHt	
Drain (Final segment drains in stop routine if No Drain is programmed)	drAI	Drain or No Drain (if No Drain programmed, will skip spin segment associated with Drain segment)
	nodr	
Spin time	SPIn	00 for No Spin or 30-240 seconds (increases/decreases in one-second increments)
<b>Wash 3 (displayed as “USH3”)</b>		
Time for Agitation (excludes fill, drain, spin and heat)	GEnt	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). <i>Refer to Table 3 for operation of each agitation segment</i>
	norñ	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra fill (must be configured for “EFIL” in SETUP Mode)
	HFIL	
	bFIL	
	EFIL	
Fill water level control	LO	Low, Medium or High water level
	nEd	
	HI	
Supply	SUP0	SUP0 for No Supply or Supply 1-3,6 ( <i>Refer to Table 2 for operation of each supply selection</i> )
	SUP1	
	SUP2	
	SUP3	
	SUP6	
Heat (Models with heat or heat capability)	HEAt	00F (no heat for segment) or 80°F to 205°F 00C (no heat for segment) or 27°C to 95°C
	noHt	
Drain (Final segment drains in stop routine if No Drain is programmed)	drAI	Drain or No Drain (if No Drain programmed, will skip spin segment associated with Drain Segment)
	nodr	
Spin time	SPIn	00 or 30-240 seconds (increases/decreases in one-second increments)
<b>Wash 4 (displayed as “USH4”)</b>		
Time for Agitation (excludes fill, drain, spin and heat)	GEnt	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). <i>Refer to Table 3 for operation of each agitation segment</i>
	norñ	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra fill (must be configured for “EFIL” in SETUP Mode)
	HFIL	
	bFIL	
	EFIL	
Fill water level control	LO	Low, Medium or High water level
	nEd	
	HI	

Table 1 (continued)

## Programming

Table 1 (continued)

Cycle Steps Available (NOTE: WASH, ADD BLEACH, RINSE and SPIN LEDs light ONLY when a cycle formula is in operation.)	Display	Setting Options for Cycle Steps
Supply	SUP0	SUP0 for No Supply or Supply 1-3,6 ( <i>Refer to Table 2 for operation of each supply selection</i> )
	SUP1	
	SUP2	
	SUP3	
	SUP6	
Heat (Models with heat or heat capability)	HEAt	00F (no heat for segment) or 80°F to 205°F
	noHt	00C (no heat for segment) or 27°C to 95°C
Drain (Final segment drains in stop routine if No Drain is programmed)	drAI	Drain or No Drain (if No Drain programmed, will skip spin segment associated with Drain segment)
	nodr	
Spin time	SPIn	00 for No Spin or 30-240 seconds (increases/decreases in one-second increments)
	tInE	
<b>Rinse 1 (displayed as “rln1”)</b>		
Time for Agitation (excludes fill, drain, spin and heat)	GEnt	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). <i>Refer to Table 3 for operation of each agitation segment</i>
	norñ	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra fill (must be configured for “EFIL” in SETUP Mode)
	HFIL	
	bFIL	
	EFIL	
Fill water level control	LO	Low, Medium or High water level
	nEd	
	HI	
Supply	SUP0	SUP0 for No Supply or Supply 1-3,6 ( <i>Refer to Table 2 for operation of each supply selection</i> )
	SUP1	
	SUP2	
	SUP3	
	SUP6	
Heat (Models with heat or heat capability)	HEAt	00F (no heat for segment) or 80°F to 205°F
	noHt	00C (no heat for segment) or 27°C to 95°C
Drain (Final segment drains in stop routine if No Drain is programmed)	drAI	Drain or No Drain (if No Drain programmed, will skip spin segment associated with Drain segment)
	nodr	
Spin time	SPIn	00 for No Spin or 30-240 seconds (increases/decreases in one-second increments)

Table 1 (continued)

Table 1 (continued)

Cycle Steps Available (NOTE: WASH, ADD BLEACH, RINSE and SPIN LEDs light ONLY when a cycle formula is in operation.)	Display	Setting Options for Cycle Steps
<b>Rinse 2 (displayed as “rln2”)</b>		
Time for Agitation (excludes fill, drain, spin and heat)	GEnt	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). <i>Refer to Table 3 for operation of each agitation segment</i>
	norñ	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra fill (must be configured for “EFIL” in SETUP Mode)
	HFIL	
	bFIL	
	EFIL	
Fill water level control	LO	Low, Medium or High water level
	nEd	
	HI	
Supply	SUP0	SUP0 for No Supply or Supply 1-3,6 ( <i>Refer to Table 2 for operation of each supply selection</i> )
	SUP1	
	SUP2	
	SUP3	
	SUP6	
Heat (Models with heat or heat capability)	HEAt	00F (no heat for segment) or 80°F to 205°F
	noHt	00C (no heat for segment) or 27°C to 95°C
Drain (Final segment drains in stop routine if No Drain is programmed)	drAI	Drain or No Drain (if No Drain programmed, will skip spin segment associated with Drain segment)
	nodr	
Spin time	SPIn	00 or 30-240 seconds (increases/decreases in one-second increments)
<b>Rinse 3 (displayed as “rln3”)</b>		
Time for Agitation (excludes fill, drain, spin and heat)	GEnt	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). <i>Refer to Table 3 for operation of each agitation segment</i>
	norñ	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra fill (must be configured for “EFIL” in SETUP Mode)
	HFIL	
	bFIL	
	EFIL	
Fill water level control	LO	Low, Medium or High water level
	nEd	
	HI	
Supply	SUP0	SUP0 for No Supply or Supply 1-3,6 ( <i>Refer to Table 2 for operation of each supply selection</i> )
	SUP1	
	SUP2	
	SUP3	
	SUP6	

Table 1 (continued)

## Programming

Table 1 (continued)

<b>Cycle Steps Available (NOTE: WASH, ADD BLEACH, RINSE and SPIN LEDs light ONLY when a cycle formula is in operation.)</b>	<b>Display</b>	<b>Setting Options for Cycle Steps</b>
Heat (Models with heat or heat capability)	HEAt	00F (no heat for segment) or 80°F to 205°F 00C (no heat for segment) or 27°C to 95°C
	noHt	
Drain (Final segment drains in stop routine if No Drain is programmed)	drAI	Drain or No Drain (if No Drain programmed, will skip spin segment associated with Drain segment)
	nodr	
Spin time	SPIn	00 for No Spin or 30-240 seconds (increases/decreases in one-second increments)
	tInE	
<b>Rinse 4 (displayed as “rln4”)</b>		
Time for Agitation (excludes fill, drain, spin and heat)	GEnt	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). <i>Refer to Table 3 for operation of each agitation segment</i>
	norIn	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra fill (must be configured for “EFIL” in SETUP Mode)
	HFIL	
	bFIL	
	EFIL	
Fill water level control	LO	Low, Medium or High water level
	nEd	
	HI	
Supply	SUP0	SUP0 for No Supply or Supply 1-3,6 ( <i>Refer to Table 2 for operation of each supply selection</i> )
	SUP1	
	SUP2	
	SUP3	
	SUP6	
Heat (Models with heat or heat capability)	HEAt	00F (no heat for segment) or 80°F to 205°F 00C (no heat for segment) or 27°C to 95°C
	noHt	
Drain (Final segment drains in stop routine if No Drain is programmed)	drAI	Drain or No Drain (if No Drain programmed, will skip spin segment associated with Drain segment)
	nodr	
Spin time	SPIn	00 for No Spin or 1-10 minutes (increases/decreases in one-minute increments)

Table 1



**NOTE: If the wash load becomes out of balance, the machine will attempt to balance the load. After three failed attempts the display will light the leftmost digit and a lower spin will be used to complete the cycle. Refer to *Figure 4*.**

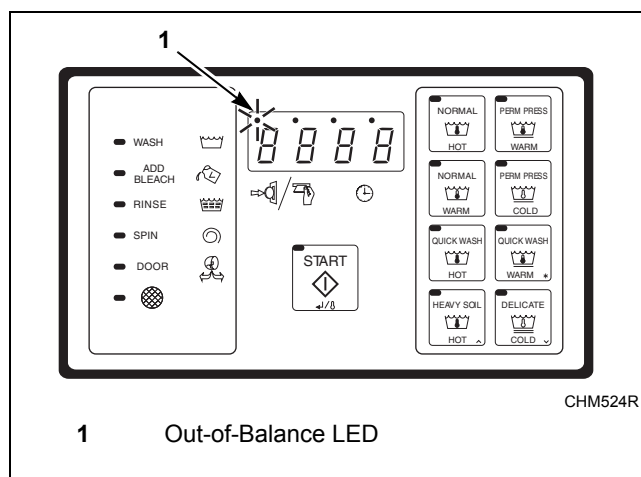


Figure 4

Supply Programmed	External Chemical Supply Signal	Compartment Flushed
SUP0	None	None
SUP1	Supply 1	Compartment 1
SUP2	Supply 2*	Compartment 2
SUP3	Supply 3	Compartment 3
SUP6	Supply 6**	Compartment 1 and 2

Table 2

**\*NOTE: ADD BLEACH LED lights if Supply 2 is the only supply programmed. If set up for "bEEP"(refer to SETUP Mode section), buzzer will sound on and off for the first eight seconds. The Supply 2 and ADD BLEACH LED remain on for 45 seconds or until the fill is complete, whichever comes first.**

**\*\*NOTE: Selecting "EFIL" (Extra fill) in SETUP Mode will remove supply 6 as optional supply signals.**

## Programming

### To Edit an Entire Wash Cycle Formula

1. Enter PROGRAM Mode. Refer to *Entering Program Mode*.
2. Press the (∧) keypad until display shows “CY01”.
3. Press the (∧) or (∨) keypad until cycle to be edited is displayed.
4. Press START (Enter) keypad to select the cycle desired. Refer to *Figure 3*, showing which cycle number corresponds to each keypad when in RUN Mode.

#### Agitation for the cycle

5. With display showing “CY\_x” (x = cycle number), press the START (Enter) keypad.
6. Display shows either “nor $\Pi$ ” (for normal agitation), or “GEnt” (for gentle agitation). Refer to *Table 3*.
7. Press the (∧) or (∨) keypad to alter the selection, or the START (Enter) keypad to continue.

Display	Meaning
nor $\Pi$	12 seconds forward, 3 seconds pause, 12 seconds reverse, 3 seconds pause, and repeat for programmed time.
GEnt	3 seconds forward, 12 seconds pause, 3 seconds reverse, 12 seconds pause and repeat for programmed time

Table 3

### Wash 1 – Wash 4

**NOTE: Programming a time other than “00” for Wash 1 will make the WASH indicator LED light while this step is running, but NOT in PROGRAM Mode.**

8. The main display shows “USH1” indicating you are in the Wash segment (number will reflect selected Wash cycle 1-4).
9. Press START (Enter) keypad. Display shows agitation time during the step: “00” (skips segment) or 2-30 minutes. Wash 2 agitation’s time can be 2-20 minutes, 2-15 minutes for Wash 3 and Wash 4 or “00” to skip Wash 2, Wash 3 or Wash 4. This is the time after the fill and before the drain and does not include spin time or time to first reach a programmed temperature (if machine is configured for heat).

10. Press the (∧) or (∨) keypad to alter the selection, or the START (Enter) keypad to continue.
11. Display shows “CFIL”, “HFIL”, “bFIL” or “EFIL” for Cold, Hot, Both (warm) or Extra fill, respectively.
12. Press the (∧) or (∨) keypad to alter the selection, or the START (Enter) keypad to continue.


**NOTE: Extra fill (“EFIL”) is possible only if configured for “EFIL” in SETUP Mode. If model is not configured for the extra fill valve, “nEFL” will display. If configured, a third valve can be controlled.**

13. Display shows “LO”, “nEd”, or “HI” for Low, Medium, or High water level, respectively.
14. Press the (∧) or (∨) keypad to alter the selection, or the START (Enter) keypad to continue.
15. Display shows “SUP0”, “SUP1”, “SUP2”, “SUP3”, or “SUP6” (or “S 12” depending on version of control). Refer to *Table 2* for operation of each supply selection.
16. Press the (∧) or (∨) keypad to alter the selection, or the START (Enter) keypad to continue.

**NOTE: If programmed for “SUP2”, the ADD BLEACH indicator LED light turns on and is set up for “bBEEP” the buzzer sounds for the first eight seconds Supply 2 is on.**

#### Heated Models Only

17. Display shows temperature in degrees F or C. Display will show degrees F if configured for “FAR” in SETUP Mode, or degrees C if configured for “CEL” in SETUP Mode. Range is 80°F to 205°F, or 00F (no heat for segment), or 27°C to 95°C, or 00C (no heat for segment).

	<b>WARNING</b>
<b>To prevent personal injury, avoid contact with inlet water temperatures higher than 125° Fahrenheit (51° Celsius) and hot surfaces.</b>	
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18. Press the (∧) keypad to increase, or (∨) keypad to decrease temperature in one-degree increments.

The control will energize heat and pause cycle timing for up to 40 minutes until the programmed temperature is first reached.

**NOTE: If temperature is not reached after 40 minutes, control resumes cycle.**

After cycle resumes, control will attempt to maintain programmed temperature if it senses water in the machine.

**NOTE: Temperature display applies ONLY if machine is configured for “HEAT” in SETUP Mode. Machine must be equipped with electric or steam heat and a temperature sensor. If configured for “noHt” (no heat capability) in SETUP Mode, temperature display does not appear in the segment. After temperature setting, control will skip to “drAI”/“nodr” or Spin Time, depending on version.**

19. If display shows “drAI”/“nodr” during segment programming, a drain step option will appear at the end of the segment.
20. Select “drAI” for a drain step followed by an optional spin. Select “nodr” for no drain step.

**NOTE: The machine will proceed directly to the next segment if “nodr”.**

21. Change the selection by pressing the (^) or (v) keypad, or the START (Enter) keypad to continue.
22. If “drAI” is selected (or if your model does not provide the option of selecting “drAI”/“nodr”), the display will show “SPIn” one second, “tInE” one second, and then the time for spin: “00” (no spin) or 30-240 seconds.
23. Change the selection by pressing the (^) or (v) keypad or the START (Enter) keypad to continue.

## Rinse 1 – Rinse 4

**NOTE: Programming a time other than “00” for this step will make the RINSE indicator LED light while this step is running, but not in PROGRAM Mode.**

24. The main display shows “rIN1” indicating you are in the Rinse segment (number will represent Rinse cycle selected 1-4).
25. Press START (Enter) keypad. Display shows the time for agitation during the step: “00” (skips segment) or 2-15 minutes. This is the time after the fill and before the drain and does not include spin time.
26. Press the (^) or (v) keypad to alter the selection, or the START (Enter) keypad to continue.

27. Display shows “CFIL”, “HFIL”, “bFIL” or “EFIL” for Cold, Hot, Both (warm) or Extra fill.
28. Press the (^) or (v) keypad to alter the selection, or the START (Enter) keypad to continue.


**NOTE: Extra fill (“EFIL”) is possible only if configured for “EFIL” in SETUP Mode. If configured, a third valve can be controlled.**

29. Display shows “LO”, “nEd”, or “HI” for Low, Medium, or High water level, respectively.
30. Press the (^) or (v) keypad to alter the selection, or the START (enter) keypad to continue.
31. Display shows “SUP0”, “SUP1”, “SUP2”, “SUP3”, or “SUP6” (or “S 12” depending on version of control). Refer to *Table 2* for operation of each supply selection.
32. Press the (^) or (v) keypad to alter the selection, or the START (Enter) keypad to continue.

**NOTE: If programmed for “SUP2”, the ADD BLEACH indicator LED light turns on and is set up for “bEEP” the buzzer sounds for the first eight seconds Supply 2 is on.**

## Heated Models Only

33. Display shows temperature in degrees F or C. Display will show degrees F if configured for “FAR” in SETUP Mode, or degrees C if configured for “CEL” in SETUP Mode. Range is 80°F to 205°F, or 00F (no heat for segment), or 27°C to 95°C, or 00C (no heat for segment).

	<b>WARNING</b>
<b>To prevent personal injury, avoid contact with inlet water temperatures higher than 125° Fahrenheit (51° Celsius) and hot surfaces.</b>	
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34. Press the (^) keypad to increase, or (v) keypad to decrease temperature. Temperature changes in one-degree increments.

The control will energize heat and pause cycle timing for up to 40 minutes until the programmed temperature is first reached.

**NOTE: If temperature not reached after 40 minutes, control resumes cycle.**

After cycle resumes, control will attempt to maintain programmed temperature if it senses water in the machine.

## Programming

**NOTE: Temperature display applies ONLY if machine is configured for “HEAT” in SETUP Mode. Machine must be equipped with electric or steam heat and a temperature sensor. If configured for “noHt” (no heat capability) in SETUP Mode, temperature display does not appear in the segment. After temperature setting, control will skip to “drAI”/“nodr” or Spin Time, depending on version. If “HEAT”/ “noHt” does not appear in SETUP Mode, no heating is possible.**

35. If display shows “drAI”/“nodr” during segment programming, a drain step option will appear at the end of the segment.
36. Select “drAI” for a drain step followed by an optional spin. Select “nodr” for no drain step.

**NOTE: The machine will proceed directly to the next segment if “nodr”.**

37. Change the selection by pressing the (∧) or (∨) keypad or the START (Enter) keypad to continue.
38. If “drAI” is selected (or if your model does not provide the option of selecting “drAI”/“nodr”), the display will show “SPIn” one second, “tInE” one second, and then the time for spin: “00” (no spin) for 30-240 seconds IF you are in Rinse 1, 2, or 3. If you are in Rinse 4, the time for spin will show 0 or 1-10 minutes.
39. Change the selection by pressing the (∧) or (∨) keypad, or the START (Enter) keypad to continue.

**IMPORTANT: The spin time in Rinse 4 is programmed in minutes (0-10 minutes, in one-minute increments), while other spins are in seconds to allow for shorter times (such as 45 seconds). (Rinse 4 segment should usually be used as the final rinse, even where there may be fewer than four rinses. Program zero time for preceding rinses you wish to exclude.)**

40. Display shows “0000” if control cannot read temperature or a temperature if control is capable of a temperature reading.
41. Exit PROGRAM Mode by moving the Program/Run switch back to the right as seen from the front of the machine.

**NOTE: The SPIN indicator LED will automatically light during the wash cycle when the last spin programmed in a cycle is operating (regardless of which segment).**

## Abnormal Conditions

### Door Will Not Lock

If the door handle has not been properly positioned to allow locking the door, the control will sense this and retract the door lock solenoid. The display will show “----” for about 5 seconds, then will flash “SHUt”/“dOOr” for about 5 seconds while sounding the buzzer, prompting the user to close the door properly. The DOOR indicator LED then lights. The machine user should properly shut the door, then press START (Enter) again. If the door is still not locking correctly, the process above will repeat up to five times. After this, the display flashes “CAnT”/“LOC” (cannot lock door). The user can cause this to start over (five more attempts) by pressing START (Enter) keypad twice. If this continues, it indicates a problem, and a qualified service technician should be consulted.

### Door Open During Operation

If the control senses either a momentary or sustained open door while the machine is operating in a wash cycle, the control immediately attempts to halt rotation of the cylinder. All outputs not required to effect rapid halting of the cylinder rotation de-energize immediately. The message “dOOr” then displays as long as the condition persists. Regardless of the duration of the open door condition, once it is recognized by the control, the control aborts the cycle and goes to the stop routine even if the door is closed.

### Excessive Fill Time

Fill times exceeding 10 minutes cause the cycle to abort. Display flashes “StOP”/“FILL” and sounds the buzzer for 10 seconds prior to entering the stop routine (display shows “01” minutes remaining while in the stop routine). The Fill Error Count will increase by one. Refer to *Cycle and Error Count* section.

### Out-of-Balance

If the machine goes out of balance, the machine will attempt to balance the load. After three attempts, the display will light the leftmost digit and a lower spin will be used.



## WARNING

**Operating the machine with severe out-of-balance loads could result in personal injury and serious equipment damage.**

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## Drain Error (For Models With Firmware ID Code “C2dS” and “CvdS”)

If machine has not drained within 4 minutes 15 seconds, display flashes “ErDn”, time remaining, and buzzer beeps. The buzzer stops beeping after 30 seconds while display flashes “ErDn” until machine empties. If machine empties, ending Drain Error condition, display stops flashing, buzzer turns off, and remaining cycle time displays as the cycle resumes.

If machine does not empty, display continues flashing “ErDn”. The drain error counter increases by one. Refer to *Cycle and Error Count* section.

## Clogged Filter (All C80 and C60 X Voltage ONLY Models)

A clogged filter can cause the inverter drive to run at an elevated temperature. If the control senses an elevated inverter drive temperature, the bottom indicator LED on front panel decal lights. Check and clean the drive compartment filter if necessary. The light turns off AFTER one cycle runs at normal temperature.

## Door Will Not Unlock

If the door solenoid cannot retract (unlocking the door) at the end of the stop routine, the display will show “----” for ten seconds. In all models except an early version of the 125, control attempts to unlock the door again by pulsing the door solenoid every ten seconds for a total of five times. An early version of the 125 model has a door unlock button.

The display then flashes “CANt”/“OPEn”, indicating it cannot unlock the door. This indicates a problem, and a qualified service technician should be consulted.

At the end of a cycle or at power up, before the control will allow the door to unlock, control checks for low, medium or high water level. Control allows the door to unlock only when machine is empty. If any water level is indicated, display shows “FULL” while keeping all outputs off. This condition could indicate a slow drain system or a mechanical blockage of the drain. Contact an authorized service person, mentioning display on control.

## On Board Battery Problem

If certain functions require the on board battery (dependent on specific machines) and if battery charge is low, or battery is removed, the control will display “bAtt”. This is displayed several seconds after power is applied to the control. Contact an authorized service person if condition continues.

## Temperature Probe Malfunction

If display shows “+SFL”, “-19C”, or “00F”, the temperature probe may need to be replaced. If problem persists after changing probe, contact an authorized service person.

## Rapid Advance (For Models With Firmware ID Code “C2dS” and “CvdS”)

### Enabling Rapid Advance

**NOTE: Rapid Advance can only be used during a cycle operation.**

To enable Rapid Advance while a cycle is in progress, machine must be in PROGRAM Mode. Refer to *Entering Program Mode*.

### How to Rapid Advance During All Steps (Except First Fill Step)

1. Make sure Rapid Advance is enabled.
2. Enter PROGRAM Mode. Refer to *Entering Program Mode*.
3. Press the Advance (^) keypad to advance to desired step.
4. Display will show recalculated time remaining.

### How to Rapid Advance (During First Fill Step)

1. Make sure Rapid Advance is enabled.
2. While machine is filling with water, enter PROGRAM Mode. Refer to *Entering Program Mode*.
3. To advance to the next step, press START (Enter) keypad to turn off the ability to change cycles.
4. Press the Advance (^) keypad to advance to desired step.
5. Display will show recalculated time remaining.

**NOTE: If control is set up for ‘EtIn’, the remaining cycle time after using Rapid Advance step is calculated as if control was configured for ‘PtIn’. This is because any time estimations following advance would be inaccurate. After the cycle ends, and the ADVANCE Mode is disabled, the next cycle display remaining cycle time based on the ‘EtIn’ configuration.**

## Programming

### Agitation Step

Advance the cycle by pressing “^” keypad to skip to the drain step. Filling, supply flushing and other signals turn off. Cycle remaining time is recalculated as the total remaining time after the agitation.

### Drain Step

Advance the cycle by pressing “^” keypad to skip the drain step and the following spin step. The spin step is skipped because the drain step needs to be completed to balance the load. The next programmed step after the spin begins. Cycle remaining is recalculated as the total remaining time after the drain and spin steps.

### Spin Step

Advance the cycle by pressing “^” keypad to skip the spin step. The next step after the spin begins. Cycle remaining is recalculated as the total remaining time after the spin step.

## Temporary Free Mode

An authorized operator can enable a Free Cycle operation that overrides the programmed vend start amount. After running the Free Cycle, which can be any of the eight cycles, the control reverts to the usual programmed vend.

**NOTE: The cycle counter DOES count the free cycle.**

- To run a temporary Free Cycle, follow the steps below. Enter PROGRAM Mode. Display shows “0000” or temperature or “tSFL” (depending on version of control).
- Press the (v) keypad. Display shows “FrEE”.
- While display shows “FrEE”, return the Program/Run switch to the RUN position. Then press a cycle keypad to select one of the eight cycles. Press START (Enter) to begin the cycle. When the cycle concludes, vend reverts to the programmed amount.

## Test Cycle

The test cycle provides a convenient means of troubleshooting and testing all machine functions quickly.

1. Enter PROGRAM Mode. Display shows “0000” or temperature or “tSFL” (depending on version of control).
2. Press the (v) keypad. Display shows “FrEE”.
3. Press the START (Enter) keypad. Display shows “tEst”.
4. Return the Program/Run switch to the right. Display will show the vend price.
5. Enter coins or make payment so that the vend amount counts down. When vend is satisfied, the display will show “tEst” and the START (Enter) keypad LED will flash on and off. Press the START (Enter) keypad to begin the test cycle.
6. Press START (Enter) keypad. The door locks and the TEST Mode starts.
7. Display shows “SPC?”. This is a special factory test procedure. Simply ignore it and the machine will advance into the test cycle after about five seconds or go to “bAL?” if variable-speed.

**NOTE: For variable-speed models ONLY, display shows “bAL?”. This is a factory test. Disregard the display. Machine will begin the test cycle after a few seconds.**

## Permanent Factory Diagnostic Test Cycle

Warm fill to low water level	Display flashes “bFIL”/ “LO” (keypad WASH LED on), no agitation
	<i>Outputs: Motor OFF, Drain closed, hot fill on, cold fill on</i>
Pause after reaching low water level	Display shows “LO” (no flashing), LOW water level dot ON, no agitation (keypad WASH LED on); pauses until operator presses (^) keypad
	<i>Outputs: Motor OFF, Drain closed</i>
Drain (can advance to next step by pressing (^) keypad here)	Display shows “drAI”, no agitation (keypad WASH LED on)
	<i>Outputs: Motor OFF, Drain open</i>
Cold fill to medium level	Display flashes “CFIL”/ “nEd” (keypad WASH LED on), no agitation.
	<i>Outputs: Motor OFF, Drain closed, cold fill on</i>
Pause after reaching medium water level	Display shows “nEd” (no flashing), LOW and MEDIUM water level dots ON no agitation (keypad WASH LED on); pauses until operator presses ^ keypad
	<i>Outputs: Motor OFF, Drain closed</i>
Hot fill to high level	Display flashes “HFIL”/ “HI” (keypad WASH LED on), no agitation.
	<i>Outputs: Motor OFF, Drain closed, hot fill on</i>
Pause after reaching high water level	Display shows “HI” (no flashing), LOW, MEDIUM, & HIGH water level dots ON, no agitation (keypad WASH LED on); pauses until operator presses ^ keypad
	<i>Outputs: Motor OFF, Drain closed</i>
Heat to 45°C (110°F) <b>SKIPS THIS STEP</b> if machine does not have heat capability (“noHt” selected in SETUP Mode)	Display flashes “HEAT” and the temperature inside the machine while agitating in forward and reverse; continues until temperature reaches 45°C (110°F), then advances to next step. (keypad WASH LED on)
	<i>Outputs: Motor alternates forward 12 seconds, off 3 seconds, reverse 12 seconds, off 3 seconds and repeats; Drain closed; Heat ON UNTIL 45°C (110°F) reached</i>
Extra fill spare – 5 seconds (skips this if not selected in SETUP Mode)	Display flashes “EFIL” (keypad RINSE LED on)
	<i>Outputs: Motor alternates forward 12 seconds, off 3 seconds, reverse 12 seconds, off 3 seconds and repeats; Drain closed; “S4” output ON.</i>
Supply 1: 5 seconds (Heat signal also on (IF at least low water level – verifies output even if not heated model)	Display shows “SUP1” (keypad WASH LED on)
	<i>Outputs: Motor alternates forward 12 seconds, off 3 seconds, reverse 12 seconds, off 3 seconds and repeats; Drain closed; Supply 1 ON, HT ON, cold fill ON</i>
Supply 2: 5 seconds (Heat on also)	Display shows “SUP2” (keypad ADD BLEACH LED on)
	<i>Outputs: Motor alternates forward 12 seconds, off 3 seconds, reverse 12 seconds, off 3 seconds and repeats; Drain closed; Supply 2 ON, HT ON, cold fill ON</i>
Supply 3: 5 seconds (Heat on also)	Display shows “SUP3” (keypad RINSE LED on)
	<i>Outputs: Motor alternates forward 12 seconds, off 3 seconds, reverse 12 seconds, off 3 seconds and repeats; Drain closed; Supply 3 ON, HT ON, cold fill ON</i>
Pause 5 seconds, then Forward wash speed – 2 minutes	Display shows “For”
	<i>Outputs: Motor operates wash speed forward; drain closed</i>

Table 4 (Continued)

## Programming

Table 4 (Continued)

Pause 5 seconds, then Reverse wash speed – 2 minutes, then pause several seconds before entering drain (next step)	Display shows “rEv”
	<i>Outputs: Motor operates wash speed reverse; drain closed</i>
Drain (cannot advance to spin here)	For 2 speed models: Display flashes “drAI”/ “For” (keypad RINSE LED on) For variable-speed models: Display flashes “drAI”/ “For” while operating in low speed forward; then flashes “drAI”/ “dISt” while operating at distribution speed. If balance fails, repeats the “drAI”/ “For” then “drAI”/ “dISt” sequence above and balance indicator is on during “drAI”/ “For” message (rebalance attempt). Tries up to 10 times in TEST cycle then aborts test cycle.
	<i>Outputs: Drain closed for first part of step (less than 20 seconds), then drain off.</i>
	<i>2 speed models: Wash speed forward Variable-speed: Forward during “drAI”/ “For”; distribution during “drAI”/ “dISt”.</i>
Spin – 3 minutes	For 2 speed models: display shows “SPn” (keypad SPIN LED on) For variable-speed models: display shows “SPn1” (keypad SPIN LED on)
	Outputs: Spin (low spin for variable speed-see motor chart below)(*)
Highest Spin speed (variable-speed models ONLY) – 3 minutes	For 2 speed models: this step is skipped (goes to coast, the next step) For variable-speed models: display shows “SPn2” (keypad SPIN LED on)
	Outputs: Highest spin speed selected (see motor chart below)(*)
Coast	Displays “SdLY” (spin delay coast)
	<i>Outputs: all off</i>
Stop routine.	Display shows “01” (1 minute remaining). Agitates briefly then unlocks the door, shows “dOnE” while sounding the buzzer 10 seconds; “dOnE” shows for 20 more seconds. (DOOR LED on while showing “dOnE”, meaning “door ready to open”).

Table 4

(\*) For certain 125 models, the RPM may display.

**NOTE: ON appears ONLY where motor control outputs are on (otherwise they are off). Outputs referenced are on control unit fuse board. Outputs are as labeled on the fuse board.**

Motor Speed Chart								
	Variable-speed motor control outputs – applies only for variable-speed models					2 speed motor outputs		
	STF	STR	RH	RM	RL	Fwd	Rev	Spin
Motor off (no rotation)								
Wash speed forward	ON			ON		ON		
Wash speed reverse		ON		ON			ON	
Distribution (variable-speed ONLY)	ON		ON			NA	NA	NA
Spin (low spin speed “SPn1” for variable-speed)	ON			ON	ON			ON
Highest spin (“SPn2” – variable-speed ONLY)	ON		ON		ON	NA	NA	NA

NA – Not Applicable

Table 5

**NOTE: For variable-speed machines smaller than C80, SPn1 and SPn2 are not the same speed.**



## Cycle Charts

Domestic Coin Cycles								
Cycle Steps	Normal Hot	Normal Warm	Quick Hot	Heavy Soil	Perm Press Warm	Perm Press Cold	Quick Warm	Delicate Cold
Cycle reference (display in PROGRAM Mode)	CY01	CY02	CY03	CY04	CY05	CY06	CY07	CY08
Agitation (sec)	12/3/12 Normal	12/3/12 Normal	12/3/12 Normal	12/3/12 Normal	12/3/12 Normal	12/3/12 Normal	12/3/12 Normal	3/12/3 Gentle
Wash 1 (WASH LED)								
Time for agitation (min.)	4	4	4	6	4	4	4	4
Fill valves (temperature)	Hot	Both (warm)	Hot	Hot	Both (warm)	Cold	Both (warm)	Cold
Fill water level	Low	Low	Low	Low	Low	Low	Low	Med
Supply	2	2	2	2	2	2	2	2
Heat (if enabled)								
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if "drain") seconds								
Wash 2 (WASH LED)								
Time for agitation (min.)								
Fill valves (temperature)								
Fill water level								
Supply								
Heat (if enabled)								
Cooling or no cooling								
Drain								
Spin (only if "drain") seconds								
Wash 3 (WASH LED)								
Time for agitation (min.)								
Fill valves (temperature)								
Fill water level								
Supply								
Heat (if enabled)								
Drain								
Spin (only if "drain") seconds								
Wash 4 (WASH LED)								
Time for agitation (min.)								
Fill valves (temperature)								
Fill water level								
Supply								
Drain								
Spin (only if "drain") seconds								

Table 6 (Continued)

**Programming**

Table 6 (Continued)

<b>Cycle Steps</b>	<b>Normal Hot</b>	<b>Normal Warm</b>	<b>Quick Hot</b>	<b>Heavy Soil</b>	<b>Perm Press Warm</b>	<b>Perm Press Cold</b>	<b>Quick Warm</b>	<b>Delicate Cold</b>
Agitation in effect for cycle								
Rinse 1 (RINSE LED)								
Time for agitation (min.)	2	2	2	3	2	2	2	2
Fill valves (temperature)	Cold	Cold	Cold	Cold	Cold	Cold	Cold	Cold
Fill water level	High	High	High	High	High	High	High	High
Supply	0	0	0	0	0	0	0	0
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if “drain”) seconds								
Rinse 2 (RINSE LED)								
Time for agitation (min.)	2	2		2	2	2		2
Fill valves (temperature)	Cold	Cold		Cold	Cold	Cold		Cold
Fill water level	Low	Low		Low	Low	Low		High
Supply	0	0		0	0	0		3
Drain	Yes	Yes		Yes	Yes	Yes		Yes
Spin (only if “drain”) seconds								120
Rinse 3 (RINSE LED)								
Time for agitation (min.)								
Fill valves (temperature)								
Fill water level								
Supply								
Heat (if enabled)								
Drain								
Spin (only if “drain”) seconds								
Rinse 4 (RINSE LED)								
Time for agitation (min.)	2	2	2	2	2	2	2	
Fill valves (temperature)	Cold	Cold	Cold	Cold	Cold	Cold	Cold	
Fill water level	Low	Low	High	Low	Low	Low	High	
Supply	3	3	3	3	3	3	3	
Heat (if enabled)								
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Spin (only if “drain”) minutes	4	4	4	4	3	3	3	

Table 6

International Coin Cycles								
Cycle Steps	Normal 95°C	Normal 60°C	Normal 40°C	Gentle Cold	Perm Press 95°C	Perm Press 60°C	Default Perm Press 40°C	Gentle 30°C
Agitation	12/3/12 Normal	12/3/12 Normal	12/3/12 Normal	3/12/3 Gentle	12/3/12 Normal	12/3/12 Normal	3/12/3 Gentle	3/12/3 Gentle
Wash 1 (WASH LED)								
Time for agitation (min.)	2	2	2	2	2	2	2	2
Fill valves (temperature)	Both (warm)	Both (warm)	Both (warm)	Cold	Both (warm)	Both (warm)	Both (warm)	Cold
Fill water level	Low	Low	Low	High	Low	Low	Low	High
Supply	1	1	1	1	1	1	1	1
Heat (if enabled)	40°C	40°C	40°C	0	40°C	40°C	40°C	0
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if “drain”) minutes	0	0	0	0	0	0	0	0
Wash 2 (WASH LED)								
Time for agitation (min.)	6	6	6		6	6	6	3
Fill valves (temperature)	Hot	Both (warm)	Both (warm)		Hot	Both (warm)	Both (warm)	Cold
Fill water level	Low	Low	Low		Low	Low	Low	High
Supply	6	6	6		6	6	6	6
Heat (if enabled)	95°C	60°C	40°C		95°C	60°C	40°C	30°C
Drain	No	No	No		No	No	No	Yes
Spin (only if “drain”) minutes	0	0	0		0	0	0	0
Wash 3 (WASH LED)								
Time for agitation (min.)	2	2	2		2	2	2	
Fill valves (temperature)	Cold	Cold	Cold		Cold	Cold	Cold	
Fill water level	High	High	High		High	High	High	
Supply	0	0	0		0	0	0	
Heat (if enabled)	No	No	No		No	No	No	
Drain	Yes	Yes	Yes		Yes	Yes	Yes	
Spin (only if “drain”) minutes	0	0	0		0	0	0	
Wash 4 (WASH LED)								
Time for agitation (min.)								
Fill valves (temperature)								
Fill water level								
Supply								
Heat (if enabled)								
Drain								
Spin (only if “drain”) minutes								

Table 7 (Continued)

**Programming**

Table 7 (Continued)

<b>Cycle Steps</b>	<b>Normal 95°C</b>	<b>Normal 60°C</b>	<b>Normal 40°C</b>	<b>Gentle Cold</b>	<b>Perm Press 95°C</b>	<b>Perm Press 60°C</b>	<b>Default Perm Press 40°C</b>	<b>Gentle 30°C</b>
Agitation	12/3/12 Normal	12/3/12 Normal	12/3/12 Normal	3/12/3 Gentle	12/3/12 Normal	12/3/12 Normal	3/12/3 Gentle	3/12/3 Gentle
Rinse 1 (RINSE LED)								
Time for agitation (min.)								
Fill valves (temperature)								
Fill water level								
Supply								
Drain								
Spin (only if “drain”) seconds								
Rinse 2 (RINSE LED)								
Time for agitation (min.)	2	2	2		2	2	2	2
Fill valves (temperature)	Cold	Cold	Cold		Cold	Cold	Cold	Cold
Fill water level	High	High	High		High	High	High	High
Supply	0	0	0		0	0	0	0
Heat	No Heat	No Heat	No Heat		No Heat	No Heat	No Heat	No Heat
Drain	Yes	Yes	Yes		Yes	Yes	Yes	Yes
Spin (only if “drain”) seconds	0	0	0		0	0	0	0
Rinse 3 (RINSE LED)								
Time for agitation (min.)	2	2	2	2	2	2	2	2
Fill valves (temperature)	Cold	Cold	Cold	Cold	Cold	Cold	Cold	Cold
Fill water level	High	High	High	High	High	High	High	High
Supply	0	0	0	0	0	0	0	0
Heat	No Heat	No Heat	No Heat	No Heat	No Heat	No Heat	No Heat	No Heat
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if “drain”) seconds	60	60	60	60	60	60	60	60
Rinse 4 (RINSE LED)								
Time for agitation (min.)	3	3	3	3	3	3	3	3
Fill valves (temperature)	Cold	Cold	Cold	Cold	Cold	Cold	Cold	Cold
Fill water level	High	High	High	High	High	High	High	High
Supply	3	3	3	3	3	3	3	3
Heat	No Heat	No Heat	No Heat	No Heat	No Heat	No Heat	No Heat	No Heat
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if “drain”) minutes	5	5	5	2	3	3	3	2

Table 7

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