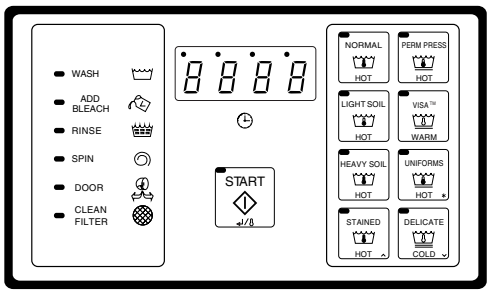
Washer-Extractors

Cabinet Hardmount

B-Series Microcomputer for OPL Models
2 Speed and Variable-Speed

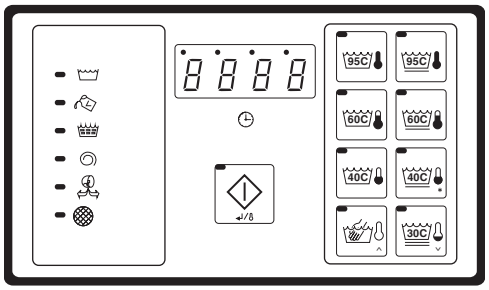
Refer to Page 2 for Model Identification

Programming



DOMESTIC MODELS

CHM522N



INTERNATIONAL MODELS

CHM1764C

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

Alliance Laundry Systems

www.comlaundry.com

Part No. F232179R5
November 2008

Table of Contents

Model Identification

Information in this manual is applicable to these models:

HC20BN2	HC60BNF	SC50BN2	UC30BN2	UC80BNV
HC30BN2	HC80BNV	SC60BN2	UC40BN2	
HC40BN2	SC20BN2	SC60BNF	UC50BN2	
HC50BN2	SC30BN2	SC80BNV	UC60BN2	
HC60BN2	SC40BN2	UC20BN2	UC60BNF	

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.

DANGER

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

WARNING

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

CAUTION

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

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

WARNING

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

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.

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.

WARNING

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.

SW004

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

WARNING

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.

W703

CAUTION

Be careful around the open door, particularly when loading from a level below the door. Impact with door edges can cause personal injury.

SW025

WARNING

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.

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

WARNING

NEVER insert hands or objects into basket until it has completely stopped. Doing so could result in serious injury.

SW012

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.

WARNING

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.

SW039

Programming

NOTE: The machines are factory-programmed with basic cycles to make the units operational without programming at the 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 the front of machine) to enter PROGRAM Mode.
4. Display will show "0000" or temperature (depending on version of 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., "o2IF", "ovUF" and etc…).
3. Record Firmware ID Code for future reference.

Setup Mode (For Models With Firmware ID Code "o2IF", "ovUF", "ovIF", "o2UF", "C2PA" and "o2PA")

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 this field.

NOTE: Enter SETUP Mode through the PROGRAM Mode.

1. Press (*) keypad. Display will show "FAr" or "CEL".

NOTE: This selects whether temperatures display in degrees Fahrenheit (F) or Celsius (C), if control is equipped with a temperature sensor. Change selection by pressing (∧) or (∨) keypad.

NOTE: Changing degrees "FAr" or "CEL" only has an effect if the control has a temperature probe connected and/or heat capability.

2. Press START (Enter) keypad.
3. Model will display "HEAt" or "noHt". Change the selection by pressing the (∧) or (∨) keypad.
4. Press START (Enter) keypad to continue to the next step.

NOTE: If set for "HEAt", the control has heat capability enabled. The washer-extractor MUST have electric or steam heat and a temperature probe. If display shows "noHt" or if the message "HEAt" or "noHt" does NOT display, the control does NOT have heat capability.

5. Certain models will display "EFIL" or "ESUP". For these models, the control provides a spare output (for certain models). The spare output can be set up to control an extra fill valve ("EFIL"), with the ability to fill to a programmable water level (just as for regular fills), OR the spare output can be set up to control an extra chemical supply signal ("ESUP").
6. Press START (Enter) keypad.
7. Certain models display "bEEP" (control sounds beeper during Add Bleach [Supply 2]) or "nobP" (control does NOT sound beeper during Add Bleach [Supply 2]). Change selection by pressing (∧) or (∨) keypad.
8. Press START (Enter) keypad.

NOTE: If "EFIL" or "ESUP" does NOT display, the extra fill capability is NOT present. If either message does display, change the selection by pressing the (∧) or (∨) keypad. Press START (Enter) keypad to return to PROGRAM Mode. Refer to "Programming Cycle Segments" section for additional information.

9. "Adv" or "noAd" will display. If "Adv" is set, control will advance to the next step when (∧) keypad is pressed during a regular cycle. If "noAd" is set, control cannot advance during a regular cycle, but can advance during the factory test cycle when (∧) keypad is pressed.
10. Press START (Enter) keypad to continue to next step.
11. "PtIn" or "EtIn" will display. "PtIn" means control will display remaining time in a cycle without fill and drain times. "EtIn" means control will display an estimated remaining time in a cycle including times for a fill and drain. Press the (∧) or (∨) keypad to change "PtIn"/ "EtIn" selection.
12. Press START (Enter) keypad to continue to the next step.

Cycle and Error Count

1. To read, enter PROGRAM Mode. Refer to ***Entering Program Mode***.
2. Press START (Enter) keypad. Display shows "Erdn" (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).
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.

Setup Mode (For Earlier Models)

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 this field.

NOTE: Enter SETUP Mode through the PROGRAM Mode.

1. Press (*) keypad. Display will show "FAr" or "CEL".

NOTE: This selects whether temperatures display in degrees Fahrenheit (F) or Celsius (C), if control is equipped with a temperature sensor. Change selection by pressing (∧) or (∨) keypad.

NOTE: Changing degrees "FAr" or "CEL" only has an effect if the control has a temperature probe connected and/or heat capability.

2. Press START (Enter) keypad.
3. Model will display "HEAt" or "noHt". Change the selection by pressing the (∧) or (∨) keypad.
4. Press START (Enter) keypad to continue to the next step.

NOTE: If set for "HEAt", the control has heat capability enabled. The washer-extractor MUST have electric or steam heat and a temperature probe. If display shows "noHt" or if the message "HEAt" or "noHt" does NOT display, the control does NOT have heat capability.

5. Certain models will display "EFIL" or "ESUP". For these models, the control provides a spare output (for certain models). The spare output can be set up to control an extra fill valve ("EFIL"), with the ability to fill to a programmable water level (just as for regular fills), OR the spare output can be set up to control an extra chemical supply signal ("ESUP").
6. Press START (Enter) keypad.
7. Certain models display "bEEP" (control sounds beeper during Add Bleach [Supply 2]) or "nobP" (control does NOT sound beeper during Add Bleach [Supply 2]). Change selection by pressing (∧) or (∨) keypad.
8. Press START (Enter) keypad.

NOTE: If "EFIL" or "ESUP" does NOT display, the extra fill capability is NOT present. If either message does display, change the selection by pressing the (∧) or (∨) keypad. Press START (Enter) keypad to return to PROGRAM Mode. Refer to "Programming Cycle Segments" section for additional information.

Cycle and Error Count

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

1. To read, enter 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. Press START (Enter) keypad. Display will show drain error conditions (“Erdn”) that may have been recorded by the control.
5. Press START (Enter) keypad. Display will show fill error conditions (“ErFL”) that may have been recorded by the control.
6. Read the information when consulting technical assistance as needed.
7. Step through the error log by pressing START (Enter) keypad repeatedly until display reverts to normal PROGRAM Mode (“0000” or a temperature).

Programming Cycle Segments

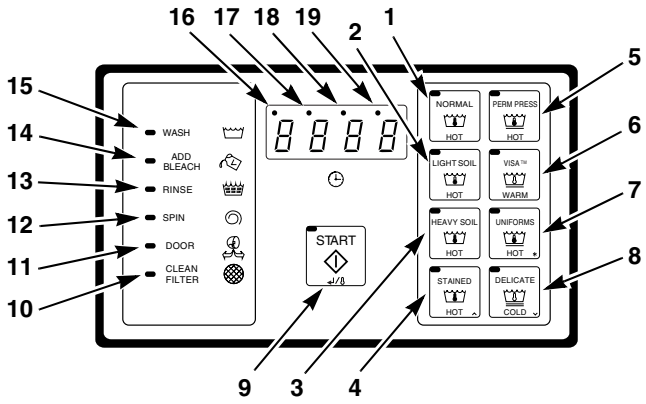
The machine is preprogrammed with eight wash cycle formulas that can be edited.

To edit any of these cycles, enter PROGRAM Mode. 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 keys. The keys must serve different functions in each mode because there are more functions than keys in PROGRAM Mode.

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

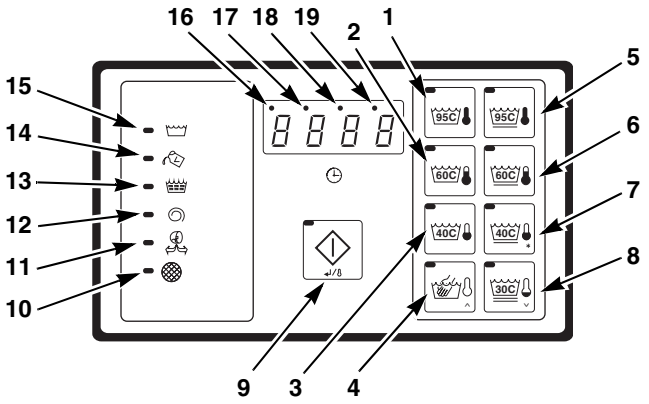
1. Enter PROGRAM Mode, display will show "tSFL" or "0000" if machine does not have a temperature probe or heat capability.
2. Press the (∧) keypad to enter Cycle Programming Mode. The display will reference cycles by number. Cycle 1 will show first.
3. Use the (∧) or (∨) keypad to select cycle to be edited.
4. Press START (Enter) keypad to move into the menu of options.

NOTE: While cycle is running, pressing the START (Enter) keypad shows the temperature. Pressing the START (Enter) keypad again returns display to time remaining or displays temperature for several seconds, depending on version software.



DOMESTIC MODELS

CHM522N



INTERNATIONAL MODELS

CHM1764C

1	Cycle 1
2	Cycle 2
3	Cycle 3
4	Cycle 4/"∧" Edit
5	Cycle 5
6	Cycle 6
7	Cycle 7
8	Cycle 8/"∨" Edit
9	START (Enter) Keypad
10	CLEAN FILTER Indicator LED (Active only for C80 models)
11	Door Open LED
12	Spin Cycle LED
13	Rinse Cycle LED
14	Add Bleach LED
15	Wash Cycle LED
16	Out-of-Balance Indicator Dot (Variable-speed only)
17	High Water Level Indicator Dot
18	Medium Water Level Indicator Dot
19	Low Water Level Indicator Dot

Figure 1

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
Wash 1 (displayed as "USH1")		
Time for Agitation (excludes fill, drain, spin and heat)	norn	0 or 2-30 minutes in agitation step (increases/decreases in one-minute increments). *Refer to Table 3 for operation of each agitation segment*
	GEnt	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra Fill*
	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- 7 *(Refer to Table 2 for operation of each supply selection)*
	SUP1	
	SUP2	
	SUP3	
	SUP4	
	SUP5	
	SUP6	
	SUP7	
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	
Wash 2 (displayed as "USH2")		
Time for Agitation (excludes fill, drain, spin and heat)	norn	0 or 2-20 minutes in agitation step (increases/decreases in one-minute increments). *Refer to Table 3 for operation of each agitation segment*
	GEnt	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra Fill*
	HFIL	
	bFIL	
	EFIL	

*Extra Fill (EFIL) possible only if international model configured for "EFIL" in SETUP mode.

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**
Wash 2 (displayed as "USH2")		
Fill water level control	LO	Low, Medium or High water level
	nEd	
	HI	
Supply	SUP0	SUP0 for No Supply or Supply 1- 7 *(Refer to Table 2 for operation of each supply selection)*
	SUP1	
	SUP2	
	SUP3	
	SUP4	
	SUP5	
	SUP6	
	SUP7	
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)
Wash 3 (displayed as "USH3")		
Time for Agitation (excludes fill, drain, spin and heat)	norn	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). *Refer to Table 3 for operation of each agitation segment*
	GEnt	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra Fill*
	HFIL	
	bFIL	
	EFIL	
Fill water level control	LO	Low, Medium or High water level
	nEd	
	HI	

*Extra Fill (EFIL) possible only if international model configured for "EFIL" in SETUP mode.

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**
Wash 3 (displayed as "USH3")		
Supply	SUP0	SUP0 for No Supply or Supply 1- 7 *(Refer to Table 2 for operation of each supply selection)*
	SUP1	
	SUP2	
	SUP3	
	SUP4	
	SUP5	
	SUP6	
	SUP7	
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	
Wash 4 (displayed as "USH4")		
Time for Agitation (excludes fill, drain, spin and heat)	norn	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). *Refer to Table 3 for operation of each agitation segment*
	GEnt	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra Fill*
	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- 7 *(Refer to Table 2 for operation of each supply selection)*
	SUP1	
	SUP2	
	SUP3	
	SUP4	
	SUP5	
	SUP6	
	SUP7	

*Extra Fill (EFIL) possible only if international model configured for "EFIL" in SETUP mode.

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**
Wash 4 (displayed as "USH4")		
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	
Rinse 1 (displayed as "rIN1")		
Time for Agitation (excludes fill, drain, spin and heat)	norn	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). *Refer to Table 3 for operation of each agitation segment*
	GEnt	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra Fill*
	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- 7 *(Refer to Table 2 for operation of each supply selection)*
	SUP1	
	SUP2	
	SUP3	
	SUP4	
	SUP5	
	SUP6	
	SUP7	
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)

*Extra Fill (EFIL) possible only if international model configured for "EFIL" in SETUP mode.

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**
Rinse 2 (displayed as "rIN2")		
Time for Agitation (excludes fill, drain, spin and heat)	norn	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). *Refer to Table 3 for operation of each agitation segment*
	GEnt	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra Fill*
	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- 7 *(Refer to Table 2 for operation of each supply selection)*
	SUP1	
	SUP2	
	SUP3	
	SUP4	
	SUP5	
	SUP6	
	SUP7	
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	
Rinse 3 (displayed as "rIN3")		
Time for Agitation (excludes fill, drain, spin and heat)	norn	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). *Refer to Table 3 for operation of each agitation segment*
	GEnt	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra Fill*
	HFIL	
	bFIL	
	EFIL	
Fill water level control	LO	Low, Medium or High water level
	nEd	
	HI	

*Extra Fill (EFIL) possible only if international model configured for "EFIL" in SETUP mode.

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**
Rinse 3 (displayed as "rIN3")		
Supply	SUP0	SUP0 for No Supply or Supply 1- 7 *(Refer to Table 2 for operation of each supply selection)*
	SUP1	
	SUP2	
	SUP3	
	SUP4	
	SUP5	
	SUP6	
	SUP7	
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)
Rinse 4 (displayed as "rIN4")		
Time for Agitation (excludes fill, drain, spin and heat)	norn	0 or 2-15 minutes in agitation step (increases/decreases in one-minute increments). *Refer to Table 3 for operation of each agitation segment*
	GEnt	
Fill valves (temperature)	CFIL	Cold, Hot or Both (warm) water fills or Extra Fill*
	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- 7 *(Refer to Table 2 for operation of each supply selection)*
	SUP1	
	SUP2	
	SUP3	
	SUP4	
	SUP5	
	SUP6	
	SUP7	

*Extra Fill (EFIL) possible only if international model configured for "EFIL" in SETUP mode.

Table 1 (Continued)

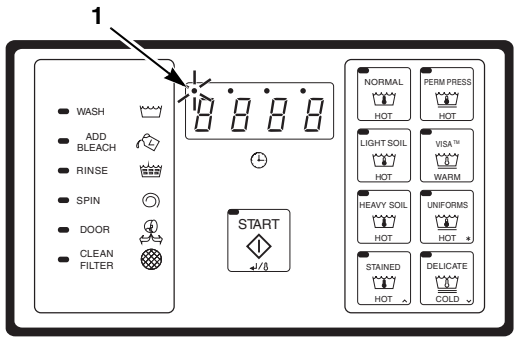
Table 1 (Continued)

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**
Rinse 4 (displayed as "rIN4")		
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	

*Extra Fill (EFIL) possible only if international model configured for "EFIL" in SETUP mode.

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 2*.



1 Out-of-Balance LED

Figure 2

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
SUP4	Supply 4	No compartment Flush*
SUP5	Supply 5***	No compartment Flush*
SUP6	Supply 6***	No compartment Flush*
SUP7	Supply 7	Compartment 3

Table 2

NOTE: External chemical supply signals and any related flush valves will activate approximately 15 seconds after machine begins to fill with water. If programmed water level is reached prior to 15 seconds, no chemical supply signal will be activated.

***NOTE: Only supply 2 (SUP2) and supply 3 (SUP3) have independent water valves to flush their respective compartment. Compartment 1 will flush whenever machine is filling with water.**

****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 5 and supply 6 as optional supply signals.**

To Edit an Entire Wash Cycle Formula

1. Enter PROGRAM Mode. Refer to ***Entering Program Mode Section***.
2. Press the (∧) keypad until display shows "CY01".
3. Press the (∧) or (∨) keypad until cycle to be edited is displayed.
4. Press START keypad to select the cycle desired. Refer to *Figure 1*, 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 "norn" (for normal agitation), or "GEnt" (for gentle agitation). Refer to *Table 3*.
7. Press the (∧) or (∨) keypad to alter the selection, or the START keypad to continue.

Display	Meaning
norn	12 seconds forward, 3 seconds pause, 12 seconds reverse, 3 seconds pause and repeat for the programmed time
GEnt	3 seconds forward, 12 seconds pause, 3 seconds reverse, 12 seconds pause and repeat for the 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 segment 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 your 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" (for Cold, Hot, or Both [warm]) or "EFIL".
12. Press the (∧) or (∨) keypad to alter the selection, or the START (Enter) keypad to continue.

NOTE: Extra Fill ("EFIL") possible only if configured for "EFIL" in SETUP Mode. If configured, a third fill 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", "SUP4", "SUP5", "SUP6" or "SUP7". 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: "SUP5" and "SUP7" appear ONLY if control is configured for "ESUP" in SETUP Mode. If the alternate function is selected ("EFIL"), the output will function as an additional fill valve signal with a programmable water level. In this case, extra supply function would NOT be available.

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

17. Press the (∧) or (∨) keypad to alter the selection or START (Enter) keypad to continue.

The leftmost supply compartment (as seen from front of machine), which can be used for detergent, flushes during fill cycles whether Supply 1 option is enabled or disabled. When Supply 1 option is enabled, Supply 1 (S1) output energizes and is available for external chemical supply if desired. The Supply 2 option controls the middle compartment, which can be used for bleach. Supply 3 and Supply 7 options control the rightmost compartment, which can be used for fabric softener. Supply 4, Supply 5 and Supply 6 options control external chemical supplies, as desired.

NOTE: For additional assistance, refer to installation instructions.

Heated Models Only

18. 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).
19. 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 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.

20. If display shows "drAI"/"nodr" during segment programming, a drain step option can be selected.
21. 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".

22. Change the selection by pressing the (∧) or (∨) keypad.
23. Press START (Enter) keypad to continue.
24. 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.
25. Change the selection by pressing the (∧) or (∨) keypad.
26. Press START (Enter) keypad to continue.
27. Then enter the next segment (USH2, USH3, USH4, or after USH4, "rIN1" segment).

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.

28. The main display shows "rIN1" indicating you are in the Rinse segment (number will represent Rinse cycle selected 1-4).
29. Press START (Enter) keypad.
30. 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.
31. Press the (∧) or (∨) keypad to alter the selection, or the START (Enter) keypad to continue.
32. Display shows "CFIL", "HFIL", "bFIL" (for Cold, Hot, Both [warm]) or "EFIL".
33. Press the (∧) or (∨) keypad to alter the selection, or the START (Enter) keypad to continue.

NOTE: Extra Fill ("EFIL") possible only if configured for "EFIL" in SETUP Mode. If configured, a third valve can be controlled.

34. Display shows "LO", "nEd", or "HI" for Low, Medium, or High water level, respectively.
35. Press the (∧) or (∨) keypad to alter the selection, or the START (Enter) keypad to continue.
36. Display shows "SUP0", "SUP1", "SUP2", "SUP3", "SUP4", "SUP5", "SUP6" or "SUP7". Refer to *Table 2* for operation of each Supply selection.
37. Press the (∧) or (∨) keypad to alter the selection, or the START (Enter) keypad to continue.

NOTE: "SUP5" and "SUP7" appear ONLY if control is configured for "ESUP" in SETUP Mode. If the alternate function is selected ("EFIL"), the output will function as an additional fill valve signal with a programmable water level. In this case, extra supply function would NOT be available.

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

38. Press the (∧) or (∨) keypad to alter the selection or START (Enter) keypad to continue.

The leftmost supply compartment (as seen from front of machine), which can be used for detergent, flushes during fill cycles whether Supply 1 option is enabled or disabled. When Supply 1 option is enabled, Supply 1 (S1) output energizes and is available for external chemical supply if desired. The Supply 2 option controls the middle compartment, which can be used for bleach. Supply 3 and Supply 7 options control the rightmost compartment, which can be used for fabric softener. Supply 4, Supply 5 and Supply 6 options control external chemical supplies, as desired.

NOTE: For additional assistance, refer to installation instructions.

Heated Models Only

39. 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).
40. Press the (∧) keypad to increase, or (∨) 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.

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.

41. If display shows "drAI"/"nodr" during segment programming, a drain step option can be selected. 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".

42. Change the selection by pressing the (∧) or (∨) keypad.
43. Press the START (Enter) keypad to continue.
44. 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.
45. If you are in Rinse 4, the time for spin will show 0 or 1-10 minutes.
46. Change the selection by pressing the (∧) or (∨) keypad.
47. Press the START (Enter) keypad to continue.
48. Then enter the next segment (rIN2, rIN3 or rIN4 or exit if rIN4 is complete).

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 "00" time for preceding rinses you wish to exclude.)

49. Display shows "0000" or "tSFL" (or temperature if your machine is configured for Heat).
50. 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 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, and 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 if the door is closed (otherwise all outputs turn off and display shows “dOOr”).

Excessive Fill Time

Fill times exceeding 10 minutes cause the cycle to abort. Display flashes “StOP”/“FILL” or “ErFL” and sounds the buzzer for ten 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 failed attempts, the display will light the leftmost digit and a lower spin will be used to complete the cycle.

WARNING

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

W728

Clogged Filter (C80 Models Only)

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 a normal temperature.

Door Will Not Open

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 a qualified service technician about display on control.

Excessive Drain Time

If cycle aborts, with display flashing “Erdn” with buzzer sounding, the machine did not empty after 4 minutes 15 seconds in a drain step.

Drain Error (For Models With Firmware ID Code “o2IF”, “ovUF”, “ovIF”, “o2UF”, “C2PA” and “o2PA”)

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.

Temperature Probe Sensor Problem

If display shows “tSFL”, the machine has a temperature sensor failure. This could mean the sensor is not connected or the sensor has failed.

Clean Fan LED On

Variable-Speed Models Only

If the bottom indicator LED on front panel decal lights, the temperature sensor in the inverter drive compartment is indicating the temperature is undesirably high. Check and clean the drive compartment filter if necessary. Once corrected, the light turns off AFTER one cycle runs at a normal temperature.

WARNING

To reduce risk of electric shock, severe injury or death, allow machine power to remain off for three minutes minimum prior to working in and around AC drive. Proceed with caution.

W662

Rapid Advance (For Models With Firmware ID Code “o2IF”, “ovUF”, “ovIF”, “o2UF”, “C2PA” and “o2PA”)

NOTE: Rapid Advance (“Adv”) possible only if configured for “Adv” in SETUP mode. Refer to SETUP Mode.

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

1. Make sure Rapid Advance is enabled.
2. Press the Advance (∧) keypad to advance to desired step.
3. 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, to advance to the next step, press START (Enter) keypad to turn off the ability to change cycles.
3. Press the Advance (∧) keypad to advance to desired step.
4. 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.

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 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 programmed step after the spin begins. Cycle remaining is recalculated as the total remaining time after the spin step.

Test Cycle

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

1. Enter PROGRAM Mode.
2. Press the (∨) keypad. Display shows “tESt”.
3. Return the Program/Run switch to the right.
4. Press the START (Enter) keypad. The door locks and the TEST Mode starts.
5. Display shows “SPC?”. This is a factory TEST procedure. 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 also a special factory test procedure. Ignore it and the machine will begin the test cycle after a few seconds.

Control Test	
Warm fill to low water level	Display flashes “bFIL”/“LO” (WASH LED on), no agitation
	Outputs: Motor OFF, Drain closed, hot fill on, cold fill on
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
	Outputs: Motor OFF, Drain closed
Drain (can advance to next step by pressing (∧) keypad here)	Display shows “drAI”, no agitation (keypad WASH LED on)
	Outputs: Motor OFF, Drain open
Cold fill to medium level	Display flashes “CFIL”/“nEd” (keypad WASH LED on), no agitation.
	Outputs: Motor OFF, Drain closed, cold fill on
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
	Outputs: Motor OFF, Drain closed
Hot fill to high level	Display flashes “HFIL”/“HI” (keypad WASH LED on), no agitation.
	Outputs: Motor OFF, Drain closed, hot fill on
Pause after reaching high water level	Display shows “HI” (no flashing), LOW, MEDIUM, and HIGH water level dots ON, no agitation (keypad WASH LED on); pauses until operator presses (∧) keypad
	Outputs: Motor OFF, Drain closed
Heat to 110°F (45°C) **SKIPS THIS STEP** 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 110°F (45°C), then advances to next step. (keypad WASH LED on)
	Outputs: Motor alternates forward 12 seconds, off 3 seconds, reverse 12 seconds, off 3 seconds and repeats; Drain closed; Heat ON UNTIL 110°F (45°C) reached
Extra supply / fill spare – 5 seconds (depends on setup)	Display flashes ‘ESUP’ / ‘EFIL’ (keypad RINSE LED on)
	Outputs: Motor alternates forward 12 seconds, off 3 seconds, reverse 12 seconds, off 3 seconds and repeats; Drain closed; ‘AF’ output ON.
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)
	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
Supply 2: 5 seconds (Heat on also)	Display shows ‘SUP2’ (keypad ADD BLEACH LED on)
	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
Supply 3: 5 seconds (Heat on also)	Display shows ‘SUP3’ (keypad RINSE LED on)
	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
Supply 4: 5 seconds	Display shows ‘SUP4’ (keypad RINSE LED on)
	Outputs: Motor alternates forward 12 seconds, off 3 seconds, reverse 12 seconds, off 3 seconds and repeats; Drain closed; Supply 4 ON, cold fill ON
Pause 5 seconds, then Forward wash speed – 60 seconds	Display shows ‘For’
	Outputs: Motor operates wash speed forward; drain closed

Table 4 (Continued)

Table 4 (Continued)

Control Test	
Pause 5 seconds, then Reverse wash speed – 60 seconds, pause several seconds before entering drain (next step)	Display shows 'rEv'
	Outputs: Motor operates wash speed reverse; drain closed
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.
	Outputs: Drain closed for first part of step (less than 20 seconds), then drain off. *2 speed models: Wash speed forward* *Variable-speed: Forward during "drAI"/"For"; distribution during "drAI"/"dISt".*
Spin: 2 minutes	Certain models display "SPIn" (keypad SPIN LED on) while other models display shows "SPn1" (keypad SPIN LED on)
	Outputs: Spin (low spin for variable-speed – refer to motor chart below)
Highest Spin speed (Variable-speed models ONLY): 2 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) or "HI"
	Outputs: Highest spin speed selected (refer to motor chart below)
Coast	Displays "SdLY" (spin delay coast)
	Outputs: All off
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").

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					Fixed-speed and 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 4

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

Cycle Charts for Domestic OPL (For Models Build After April 2005)

Models with these default cycles will display P-F5 after power is applied to machine.

Cycle Steps	Normal Hot	Light Soil Hot	Heavy Soil Hot	Stained Hot	Perm Press Hot	Visa® Warm	Uniforms	Delicate Cold
Cycle reference (display in PROGRAM mode)	CY01	CY02	CY03	CY04	CY05	CY06	CY07	CY08
Agitation in effect for cycle (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 indicator)								
Time for agitation (min)	6	6	2	10	7	2	2	5
Fill valves (temperature)	Hot	Hot	Both (warm)	Hot	Hot	Both (warm)	Both (warm)	Cold
Fill water level	Low	Low	High	Low	Low	High	High	High
Supply	1	1	0	6	1	0	1	1
Heat (if enabled)								
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if ‘drain’) seconds	0	0	0	0	0	0	0	0
Wash 2 (WASH indicator)								
Time for agitation (min)	6		7	10	4	12	6	
Fill valves (temperature)	Hot		Hot	Hot	Hot	Both (warm)	Both (warm)	
Fill water level	Low		Low	Low	High	Low	High	
Supply	2		1	6	2	1	0	
Heat (if enabled)								
Drain	Yes		Yes	Yes	Yes	Yes	Yes	
Spin (only if ‘drain’) seconds	0		0	0	0	0	0	
Wash 3 (WASH indicator)								
Time for agitation (min)			7			7		
Fill valves (temperature)			Hot			Both (warm)		
Fill water level			Low			Low		
Supply			2			2		
Heat (if enabled)								
Drain			Yes			Yes		
Spin (only if ‘drain’) seconds			0			0		

Table 5 (Continued)

Table 5 (Continued)

Cycle Steps	Normal Hot	Light Soil Hot	Heavy Soil Hot	Stained Hot	Perm Press Hot	Visa® Warm	Uniforms	Delicate Cold
Wash 4 (WASH indicator)								
Time for agitation (min)								
Fill valves (temperature)								
Fill water level								
Supply								
Heat (if enabled)								
Drain								
Spin (only if ‘drain’) seconds								
Rinse 1 (RINSE indicator)								
Time for agitation (min)	2	2	2	2	4	2	2	2
Fill valves (temperature)	Hot	Both (warm)	Hot	Both (warm)	Hot	Both (warm)	Both (warm)	Cold
Fill water level	High	High	High	High	High	High	High	High
Supply	0	0	0	0	0	0	0	0
Heat (if enabled)								
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if ‘drain’) seconds	0	0	0	0	0	0	0	0
Rinse 2 (RINSE indicator)								
Time for agitation (min)	2	2	2	2	2	2	2	2
Fill valves (temperature)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Cold
Fill water level	High	High	High	High	High	High	High	High
Supply	0	0	0	0	0	0	0	0
Heat (if enabled)								
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if ‘drain’) seconds	60	60	60	60	60	60	60	0
Rinse 3 (RINSE indicator)								
Time for agitation (min)								
Fill valves (temperature)								
Fill water level								
Supply								
Heat (if enabled)								
Drain								
Spin (only if ‘drain’) seconds								

Table 5 (Continued)

Table 5 (Continued)

Cycle Steps	Normal Hot	Light Soil Hot	Heavy Soil Hot	Stained Hot	Perm Press Hot	Visa® Warm	Uniforms	Delicate Cold
Rinse 4 (RINSE indicator)								
Time for agitation (min)	4	4	4	4	4	4	4	2
Fill valves (temperature)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Cold
Fill water level	Low	Low	Low	Low	Low	Low	Low	Low
Supply	3	3	3	3	3	0	3	3
Heat (if enabled)								
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if ‘drain’) minutes	6	6	6	6	4	4	4	4

Table 5

Cycle Charts for Domestic OPL (For Models Built Before April 2005)

Models with these default cycles will display P-F1 after power is applied to machine.

Cycle Steps	Normal Hot	Light Soil Hot	Heavy Soil Hot	Stained Hot	Perm Press Hot	Visa® Warm	Uniforms	Delicate Cold
Cycle reference (display in PROGRAM mode)	CY01	CY02	CY03	CY04	CY05	CY06	CY07	CY08
Agitation in effect for cycle (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 indicator)								
Time for agitation (min)	2	7	2	4	7	2	2	5
Fill valves (temperature)	Both (warm)	Both (warm)	Both (warm)	Cold	Hot	Both (warm)	Both (warm)	Cold
Fill water level	High	Low	High	Med	Low	High	High	High
Supply	0	2	0	1	2	0	0	1
Heat (if enabled)	0	0	0	0	0	0	0	0
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if ‘drain’) seconds	0	0	0	0	0	0	0	0
Wash 2 (WASH indicator)								
Time for agitation (min)	7	2	7	9	2	7	7	
Fill valves (temperature)	Hot	Hot	Hot	Hot	Hot	Both (warm)	Hot	
Fill water level	Low	High	Low	Low	High	Low	Low	
Supply	2	0	1	1	0	1	2	
Heat (if enabled)	0	0	0	0	0	0	0	
Drain	No	Yes	Yes	Yes	Yes	Yes	Yes	
Spin (only if ‘drain’) seconds	0	0	0	0	0	0	0	
Wash 3 (WASH indicator)								
Time for agitation (min)	2		6	9		7		
Fill valves (temperature)	Hot		Hot	Hot		Both (warm)		
Fill water level	High		Low	Low		Low		
Supply	0		2	2		2		
Heat (if enabled)	0		0	0		2		
Drain	Yes		No	No		No		
Spin (only if ‘drain’) seconds	0		0	0		0		

Table 6 (Continued)

Table 6 (Continued)

Cycle Steps	Normal Hot	Light Soil Hot	Heavy Soil Hot	Stained Hot	Perm Press Hot	Visa® Warm	Uniforms	Delicate Cold
Wash 4 (WASH indicator)								
Time for agitation (min)			2	4		2		
Fill valves (temperature)			Hot	Hot		Both (warm)		
Fill water level			High	High		High		
Supply			0	0		0		
Heat (if enabled)			0	0		0		
Drain			Yes	Yes		Yes		
Spin (only if ‘drain’) seconds			0	0		0		
Rinse 1 (RINSE indicator)								
Time for agitation (min)	4	4	4	4	4	2	4	
Fill valves (temperature)	Hot	Hot	Hot	Hot	Hot	Both (warm)	Both (warm)	
Fill water level	High	High	High	High	High	High	High	
Supply	0	0	0	0	0	0	0	
Heat (if enabled)	0	0	0	0	0	0	0	
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Spin (only if ‘drain’) seconds	0	0	0	0	0	0	0	
Rinse 2 (RINSE indicator)								
Time for agitation (min)	2	2	2	2	2	2	2	2
Fill valves (temperature)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Cold
Fill water level	High	High	Med	Med	High	High	High	High
Supply	0	0	0	0	0	0	0	0
Heat (if enabled)	0	0	0	0	0	0	0	0
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if ‘drain’) seconds	60	60	60	0	60	60	60	60
Agitation in effect for cycle								
Rinse 3 (RINSE indicator)								
Time for agitation (min)				2				
Fill valves (temperature)				Both (warm)				
Fill water level				Med				
Supply				0				
Heat (if enabled)				0				
Drain				Yes				
Spin (only if ‘drain’) seconds				60				

Table 6 (Continued)

Table 6 (Continued)

Cycle Steps	Normal Hot	Light Soil Hot	Heavy Soil Hot	Stained Hot	Perm Press Hot	Visa® Warm	Uniforms	Delicate Cold
Rinse 4 (RINSE indicator)								
Time for agitation (min)	4	4	3	3	4	4	4	2
Fill valves (temperature)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Both (warm)	Cold
Fill water level	Low	Low	Low	Low	Low	Low	Low	High
Supply	3	3	3	3	3	0	3	3
Heat (if enabled)	0	0	0	0	0	0	0	0
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if ‘drain’) minutes	6	6	6	6	4	3	4	4

Table 6

Cycle Charts for International OPL

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
Cycle reference (display in program mode)	CY01	CY02	CY03	CY04	CY05	CY06	CY07	CY08
Agitation in effect for cycle (sec)	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 indicator)								
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)	40c	40c	40c	No Heat	40c	40c	40c	No Heat
Drain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spin (only if ‘drain’) seconds	0	0	0	0	0	0	0	0
Wash 2 (WASH indicator)								
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)	95c	60c	40c		95c	60c	40c	30c
Drain	No	No	No		No	No	No	Yes
Spin (only if ‘drain’) seconds	0	0	0		0	0	0	0
Wash 3 (WASH indicator)								
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 Heat	No Heat	No Heat		No Heat	No Heat	No Heat	
Drain	Yes	Yes	Yes		Yes	Yes	Yes	
Spin (only if ‘drain’) seconds	0	0	0		0	0	0	

Table 7 (Continued)

Table 7 (Continued)

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
Wash 4 (WASH indicator)								
Time for agitation (min)								
Fill valves (temperature)								
Fill water level								
Supply								
Heat								
Drain								
Spin (only if ‘drain’) seconds								
Rinse 1 (RINSE indicator)								
Time for agitation (min)								
Fill valves (temperature)								
Fill water level								
Supply								
Heat								
Drain								
Spin (only if ‘drain’) seconds								
Rinse 2 (RINSE indicator)								
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

Table 7 (Continued)

Table 7 (Continued)

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
Rinse 3 (RINSE indicator)								
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 (if enabled)	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 indicator)								
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 (if enabled)	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