Hanging the Pump Cabinet

Review the installation requirements before installing Pump Cabinet (Section 2.0 of Installation Manual).
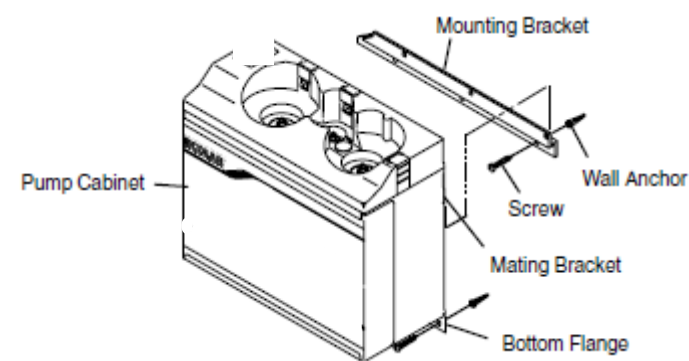
1. Position the offset bracket against the wall at eye level.

NOTE: On sheetrocked walls, align the center mounting hole to a wall Stud. Mounting bracket MUST BE securely anchored to the wall.

2. Using a pencil, outline each of the holes in the offset mounting bracket.
3. Drill the outlined holes with a 1/4" (6.35 mm) masonry bit and place a plastic wall anchor, into each hole.
4. Mount the bracket to the wall using the supplied screws into each wall anchor.

NOTE: Be careful when lifting the Pump Cabinet, it weighs 55 lbs (25 kg). If you must lift it yourself, hold it close to your body.

5. Lift the Pump Cabinet up and onto the mounting bracket, utilizing the mating bracket on the back of the cabinet.
6. With the Pump Cabinet on the wall, use a pencil to outline the center hole on the bottom flange.
7. Remove the Pump Cabinet from the wall.
8. Drill the outlined hole with a 1/4" (6.35 mm) masonry bit and place a wall anchor into the hole.
9. Lift the Pump Cabinet up and onto the mounting bracket, utilizing the mating bracket on the back of the cabinet.
10. Secure the bottom flange of the Pump Cabinet to the wall using the wall anchor.


Product Injection-Tube Installation

A single 1/2-inch (12.7 mm) O.D. Polyflo tube is used to deliver all three products to each laundry washing machine.

It is important the outlet tubing DOES NOT exceed 50-feet (15 meters) under normal installation.

1. Remove the front cover on the Pump Cabinet and locate the solenoid valves/check valves in the lower left–hand corner of the cabinet. Laundry machine #1 is located on the left, # 2 in the middle, and # 3 on the right.
2. Connect the 1/2-inch Polyflo tubing to the solenoid valves/check valves mentioned above. Secure the connection with a hose clamp- see picture below.
3. Route the opposite ends of the 1/2-inch Polyflo tubing to the designated laundry machines (laundry machine #1, #2, and #3).
4. Before connecting the tubing to the injection ports on the laundry machines, drill out the port to maximum diameter.
5. Otherwise, the pump won't be able to deliver the solution because of the back pressure, due to the small hole.
6. Anchor the tubing to the wall or rigid piping to keep the installation looking neat and clean.

Overflow Connection

An overflow for the Pump Cabinet's sump is provided to direct the solution to a drain should the pump or water fail. This overflow (black drain tube) is located underneath the Pump Cabinet.

1. Measure the distance to the floor drain and cut your 5/8-inch (15.88 mm) I.D. Mayon tubing to the desired length.
2. Connect the supplied hose barb into the black drain tube located hanging underneath the Pump Cabinet.
3. Secure the connection with a hose clamp provided in the installation kit.
4. Route the opposite end of the Mayon tubing to a floor drain or drain trench.
5. If possible, try to secure the end of the Mayon tube to the floor drain with a cable-tie. This prevents the hose from being "kicked around".

NOTE: If a drain is unavailable, an empty five gallon pail (19 liter) should be used.
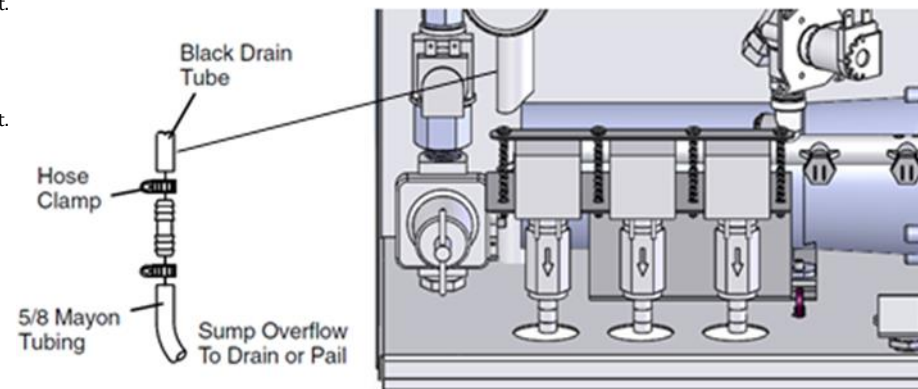
Machine Signal Interface (MSI) to Laundry Washer Wiring

1. **Be sure the circuit breaker supplying power to the laundry machine is disconnected.**
2. Remove the cover of the MSI module by removing the (4) screws that are on the cover.
3. Locate the washing machine supply signals inside the laundry machine. *Refer to the Laundry Machine Wiring Handbook or Call Technical Service.*
4. Route the supply signals through conduit or Seal–Tite into the conduit on the MSI module.
5. Connect the supply signals into the supply signal input board.
6. Set the address dial to the appropriate washer #1, #2, or # 3.
7. Repeat the preceding instructions for laundry machine MSI module # 2 and # 3 if required.
8. Re–connect the power to the laundry machine.

NOTE: Be sure to connect the green grounding wire from inside the MSI module to the laundry machine's earth ground. This is important for operator safety.

NOTE: The supply Signal Input board adjusts automatically to accept 24, 120 or 240 volt supply signals from the Washing machine.

NOTE: If Chart Stop feature is to be used, 2 additional wires must be pulled from Laundry Machine to Control Module.

Hot Water Supply Connection

Stainless Steel Braided Hose Plumbing Method

If you want to use a hose to supply water to the Pump Cabinet, the territory manager will be responsible for the correct hose and proper installation to their area or country.

Hard Copper Plumbing Method

If the water supply connection must be copper tubing, the territory manager will be responsible for the correct pipe fittings and connectors. The hot water supply line must be a minimum 3/8-inch I.D. (9.5 mm) copper tube. **Do not solder the inlet connection, damage to the pressure regulator and water strainer may occur.**

Pump Cabinet Power Supply

The territory manager will be responsible for the correct electrical power connector plug and proper installation, following local codes in their area or country. The Pump Cabinet's 9-foot (2.7 m) power cord can accept 230 VAC 50/60 Hz. If the power cord is not long enough, refer to Installation Manual for wire connections.
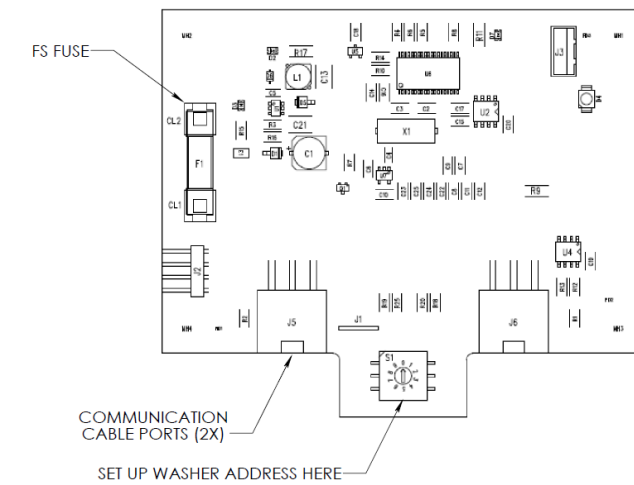
Communication Cables (RS-485 cables)

The RS-485 cables are used to connect signals between the Condor Controller, FS, MSI, and I/O board inside Pump Cabinet.

1. **Ensure that the Pump Cabinet's power is turned OFF before connecting or disconnecting any cables.**
2. Route cables between all modules, using a "daisy chain" or wiring in series.
3. After all modules are connected, insert end plugs in the ports at the start and end of the cable connections.

NOTE: If using the Formula Select (FS) modules, make sure to select washer number dial.

To Laundry Washer #1
(brown wires)

To Laundry Washer #2

To Laundry Washer #3
(pink wires)

MSI Wiring Diagram

SIGNAL 24 TO 240 VAC=J2
WHT=COMMON
BLU=S6
YEL=S5
ORG=S4
RED=S3
BRN=S2
BLK=S1

J3   J2

CHART STOP=J3
GRY=COMMON
GRY=NORM,CLOSED

GRN/YEL =
EARTH GROUND

J8=RS485
J9=RS485

ADDRESS SETTING
(WASHER 1, 2 or 3)

COMMUNICATION CABLE EXAMPLE (2-WASHER)

CONDOR
CONTROLLER

RS-485 PLUG
(DONGLE)

DISPENSER

FORMULA
SELECT (FS)

MACHINE SIGNAL
INTERFACE (MSI)

RS-485 PLUG
(DONGLE) OR
CABLE TO
WASHER #3

RS-485 CABLES

IO BOARD
CONNECTIONS

WASHER #1

WASHER #2

Introduction

This section describes how to initially program the Condor Controller. Initial or quickstart programming is accomplished by using the Program Menu.

Programming Overview

The controller is capable of displaying some graphics information, as well as text information. Icons are populated at the bottom of the controller display to indicate which soft keys (SK) are active.

Programming Icons

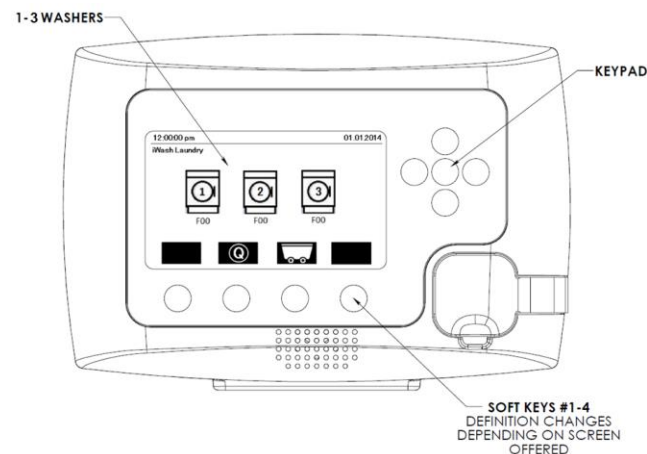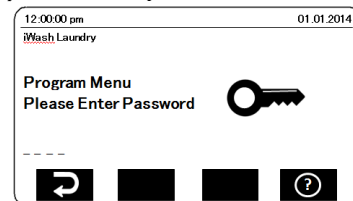| Icon	Description
◄►	Use Left or Right Arrow keys to adjust a programming item
▲▼	Use Up or Down Arrow keys to scroll through sub-menus displayed in screen
	Save to memory
	Back to previous screen (usually assigned to SK #1)
	Exit out of programming mode, back to main idle screen (customer's screen)
	Edit mode (note the use of a pencil)
	Copy mode
	Test a component (Formula Select, MSI, IO module for their revision of installed software)
	Edit a step (note the use of a pencil)
	Summary: list the information (in a formula)
	More: more information is available
	Edit product. (note the use of a pencil)
	Reset this selection ONLY
	Reset all (back to new factory settings)
	No (to confirm a selection)
	Yes (to confirm a selection)
	Disable (an audio alarm)
	Pump
	On: activate a component (pump or valve)
	Off: de-activate a component (pump or valve)
	Test the integrity of the pick-up probe and its wiring in a full container.
	Test the integrity of the pick-up probe and its wiring in an empty container.

Upon power up, the Condor will perform an initialization sequence (1-2 minutes) before displaying the main idle screen.

[diagram of controller with labels: 1-3 WASHERS, KEYPAD, SOFT KEYS #1-4 DEFINITION CHANGES DEPENDING ON SCREEN OFFERED]
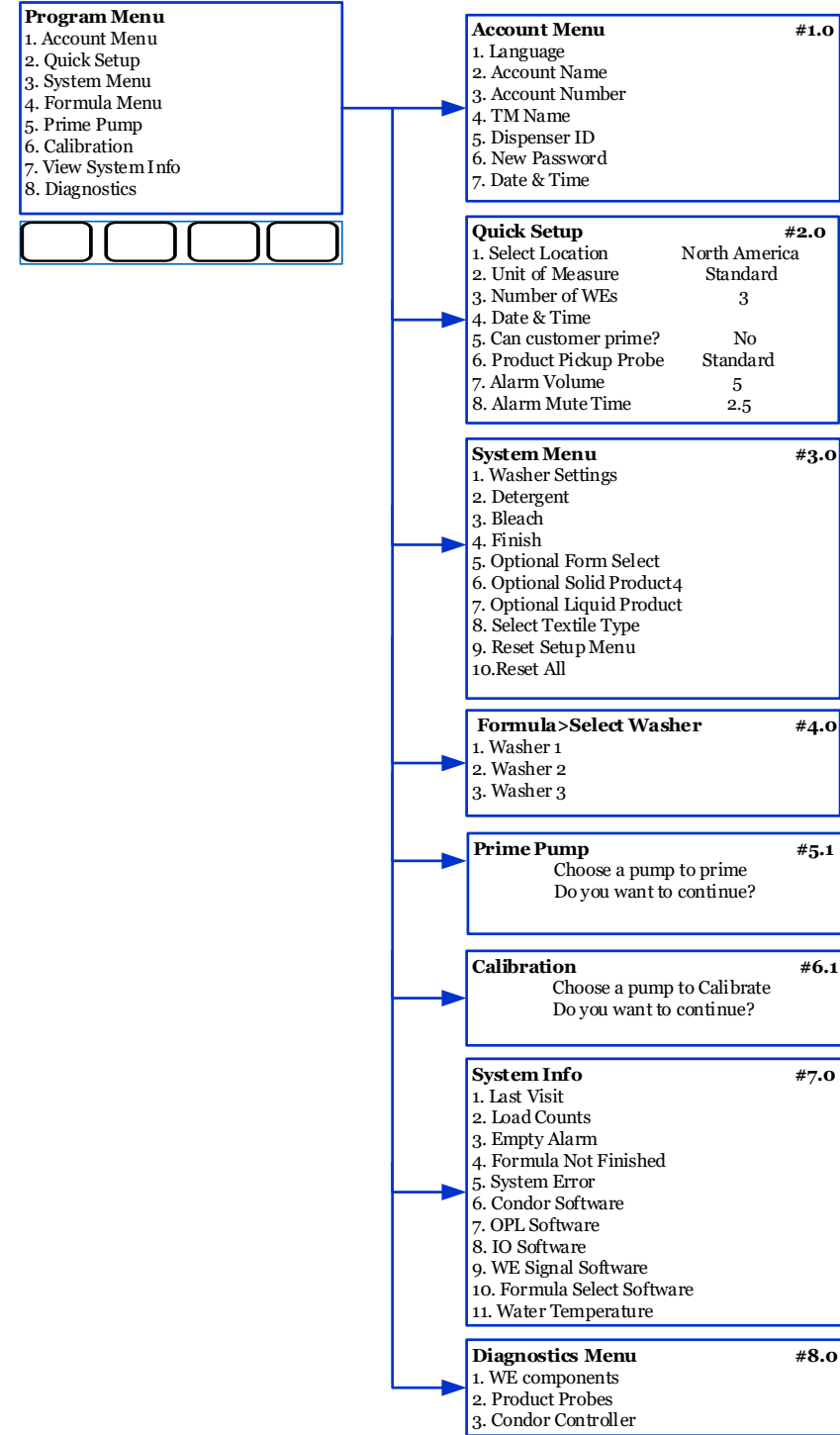
To enter the programming mode, press and hold the Center <Enter> key for 4+ seconds from the idle main screen. The controller should prompt the user for a password.
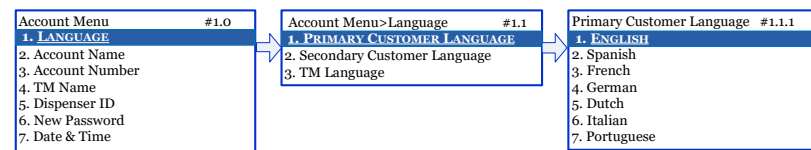
```
12:00:00 pm                01.01.2014
iWash Laundry

Program Menu
Please Enter Password      [key icon]
_ _ _ _
```

Enter the controller password by pressing <Up>/<Down>/<Left>/<Right>.

Once the password has been entered correctly, the Program Menu will appear

```
Program Menu
1. Account Menu
2. Quick Setup
3. System Menu
4. Formula Menu
5. Prime Pump
6. Calibration
7. View System Info
8. Diagnostics
```

```
Account Menu                    #1.0
1. Language
2. Account Name
3. Account Number
4. TM Name
5. Dispenser ID
6. New Password
7. Date & Time
```

```
Quick Setup                     #2.0
1. Select Location    North America
2. Unit of Measure        Standard
3. Number of WEs                 3
4. Date & Time
5. Can customer prime?          No
6. Product Pickup Probe   Standard
7. Alarm Volume                  5
8. Alarm Mute Time             2.5
```

```
System Menu                     #3.0
1. Washer Settings
2. Detergent
3. Bleach
4. Finish
5. Optional Form Select
6. Optional Solid Product    4
7. Optional Liquid Product
8. Select Textile Type
9. Reset Setup Menu
10.Reset All
```

```
Formula>Select Washer           #4.0
1. Washer 1
2. Washer 2
3. Washer 3
```

```
Prime Pump                      #5.1
       Choose a pump to prime
       Do you want to continue?
```

```
Calibration                     #6.1
       Choose a pump to Calibrate
       Do you want to continue?
```

```
System Info                     #7.0
1. Last Visit
2. Load Counts
3. Empty Alarm
4. Formula Not Finished
5. System Error
6. Condor Software
7. OPL Software
8. IO Software
9. WE Signal Software
10. Formula Select Software
11. Water Temperature
```

```
Diagnostics Menu                #8.0
1. WE components
2. Product Probes
3. Condor Controller
```
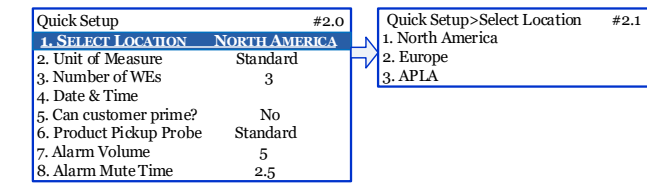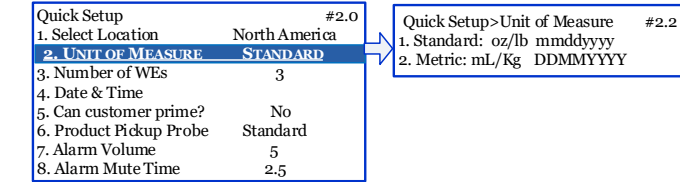
Quick Setup

Enter the **Account Menu**, and then select the **Language** submenu. Use <up> and <Down> arrow keys to setup the Primary Customer Language, Secondary Customer Language, and TM Language, and then press the <Save> soft key to save.

```
Account Menu             #1.0
1. LANGUAGE
2. Account Name
3. Account Number
4. TM Name
5. Dispenser ID
6. New Password
7. Date & Time
```

```
Account Menu>Language        #1.1
1. PRIMARY CUSTOMER LANGUAGE
2. Secondary Customer Language
3. TM Language
```

```
Primary Customer Language  #1.1.1
1. ENGLISH
2. Spanish
3. French
4. German
5. Dutch
6. Italian
7. Portuguese
```
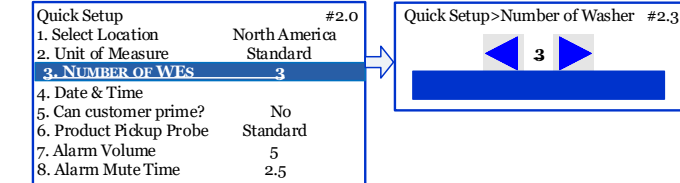

Enter the **Quick Setup** menu, and then select the **Select Location** submenu. Use <up> and <Down> arrow keys to select the location, and then press the <Save> soft key to save.
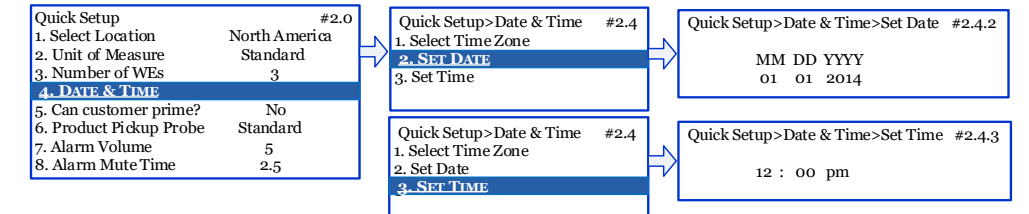
```
Quick Setup               #2.0
1. SELECT LOCATION  NORTH AMERICA
2. Unit of Measure        Standard
3. Number of WEs                 3
4. Date & Time
5. Can customer prime?          No
6. Product Pickup Probe   Standard
7. Alarm Volume                  5
8. Alarm Mute Time             2.5
```

```
Quick Setup>Select Location   #2.1
1. North America
2. Europe
3. APLA
```

From the **Quick Setup** menu, select the **Unit of Measure** submenu. Use <up> and <Down> arrow keys to select the unit, and then press the <Save> soft key to save.

```
Quick Setup               #2.0
1. Select Location    North America
2. UNIT OF MEASURE        STANDARD
3. Number of WEs                 3
4. Date & Time
5. Can customer prime?          No
6. Product Pickup Probe   Standard
7. Alarm Volume                  5
8. Alarm Mute Time             2.5
```

```
Quick Setup>Unit of Measure   #2.2
1. Standard: oz/lb  mmddyyyy
2. Metric: mL/Kg   DDMMYYYY
```
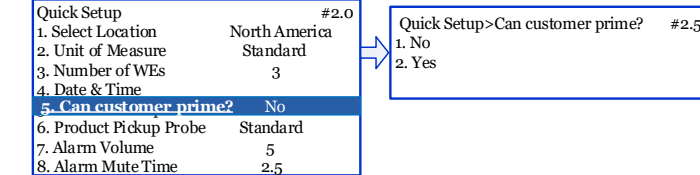
From the **Quick Setup** menu, select the **Number of Washers** submenu. Use <Left> and <Right> arrow keys to select the number of washers (1→3), and then press the <Save> soft key to save.

```
Quick Setup               #2.0
1. Select Location    North America
2. Unit of Measure        Standard
3. NUMBER OF WEs                 3
4. Date & Time
5. Can customer prime?          No
6. Product Pickup Probe   Standard
7. Alarm Volume                  5
8. Alarm Mute Time             2.5
```

```
Quick Setup>Number of Washer  #2.3
     ◄    3    ►
```
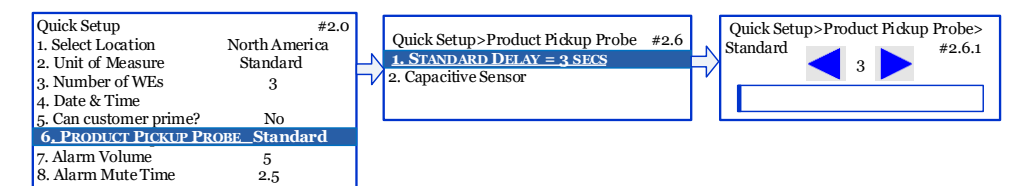
From the **Quick Setup** menu, select the **Date & Time** submenu. Use <UP>, <Down>, <Left> and <Right> arrow keys to set the date and time, and then press the <Save> soft key to save.

```
Quick Setup               #2.0
1. Select Location    North America
2. Unit of Measure        Standard
3. Number of WEs                 3
4. DATE & TIME
5. Can customer prime?          No
6. Product Pickup Probe   Standard
7. Alarm Volume                  5
8. Alarm Mute Time             2.5
```

```
Quick Setup>Date & Time       #2.4
1. Select Time Zone
2. SET DATE
3. Set Time
```

```
Quick Setup>Date & Time>Set Date #2.4.2
        MM  DD  YYYY
        01   01   2014
```

```
Quick Setup>Date & Time       #2.4
1. Select Time Zone
2. Set Date
3. SET TIME
```

```
Quick Setup>Date & Time>Set Time #2.4.3
        12 : 00  pm
```
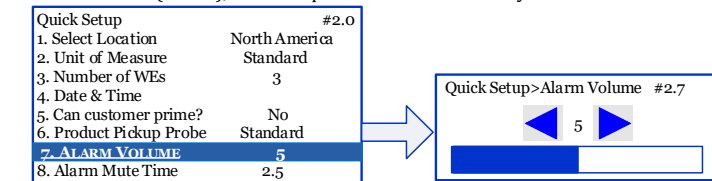
From the **Quick Setup** menu, select the **Can Customer Prime?** submenu. Use <UP> and < Down > arrow keys to select the option, and then press the <Save> soft key to save.

```
Quick Setup               #2.0
1. Select Location    North America
2. Unit of Measure        Standard
3. Number of WEs                 3
4. Date & Time
5. Can customer prime?          No
6. Product Pickup Probe   Standard
7. Alarm Volume                  5
8. Alarm Mute Time             2.5
```

```
Quick Setup>Can customer prime? #2.5
1. No
2. Yes
```

From the **Quick Setup** menu, select the **Product Pickup Probe** submenu. Use <UP>, <Down>, <Left> and <Right> arrow keys to set the standard delay (3→30), or the capacitive sensor option, and then press the <Save> soft key to save.

```
Quick Setup               #2.0
1. Select Location    North America
2. Unit of Measure        Standard
3. Number of WEs                 3
4. Date & Time
5. Can customer prime?          No
6. PRODUCT PICKUP PROBE   Standard
7. Alarm Volume                  5
8. Alarm Mute Time             2.5
```

```
Quick Setup>Product Pickup Probe #2.6
1. STANDARD DELAY = 3 SECS
2. Capacitive Sensor
```

```
Quick Setup>Product Pickup Probe>
Standard                   #2.6.1
       ◄    3    ►
```

From the **Quick Setup** menu, select the **Alarm Volume** submenu. Use <Left> and <Right> arrow keys to select the Alarm Volume (0→10), and then press the <Save> soft key to save.

```
Quick Setup               #2.0
1. Select Location    North America
2. Unit of Measure        Standard
3. Number of WEs                 3
4. Date & Time
5. Can customer prime?          No
6. Product Pickup Probe   Standard
7. ALARM VOLUME                  5
8. Alarm Mute Time             2.5
```

```
Quick Setup>Alarm Volume      #2.7
       ◄    5    ►
```

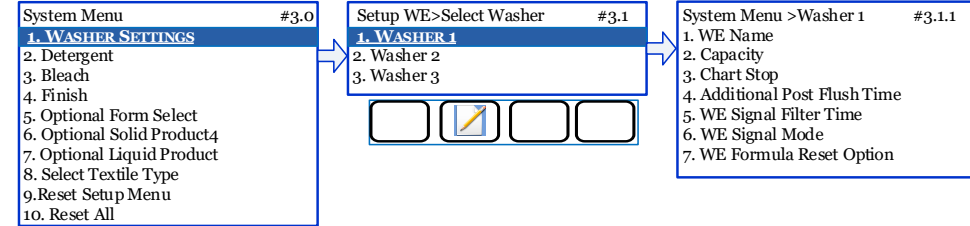From the **Quick Setup** menu, select the **Alarm Mute Time** submenu. Use <Left> and <Right> arrow keys to select the Alarm Mute Time (2.5→60) minutes, and then press the <Save> soft key to save.

Quick Setup	#2.0
1. Select Location	North America
2. Unit of Measure	Standard
3. Number of WEs	3
4. Date & Time	
5. Can customer prime?	No
6. Product Pickup Probe	Standard
7. Alarm Volume	5
8. ALARM MUTE TIME	**2.5**

Quick Setup>Alarm Mute Time #2.8
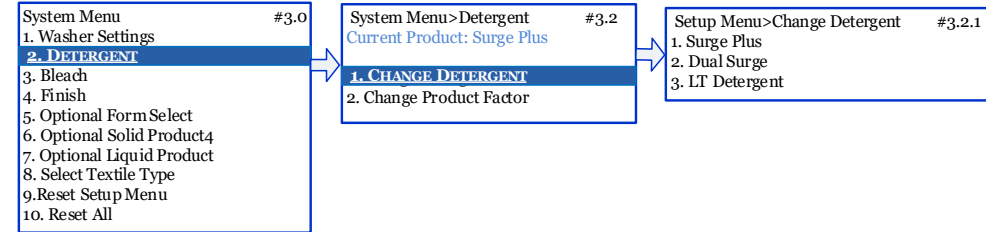◄ 2.5 ►
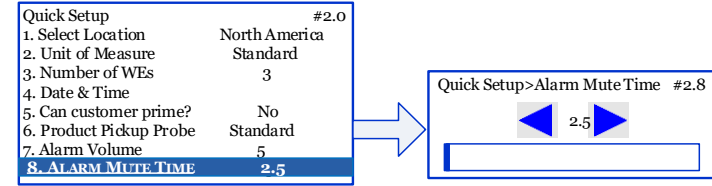
Washer Setup

Enter the **System Menu**, and then select **Washer Settings** submenu. Select washer1 and press <edit> soft key to update the washer settings. Use <Save> soft key to save the washer settings. Please refer to the Operation and Programming manual for more information about the Washer setup.

System Menu	#3.0
1. WASHER SETTINGS	
2. Detergent	
3. Bleach	
4. Finish	
5. Optional Form Select	
6. Optional Solid Product4	
7. Optional Liquid Product	
8. Select Textile Type	
9.Reset Setup Menu	
10. Reset All	

Setup WE>Select Washer	#3.1
1. WASHER 1	
2. Washer 2	
3. Washer 3	

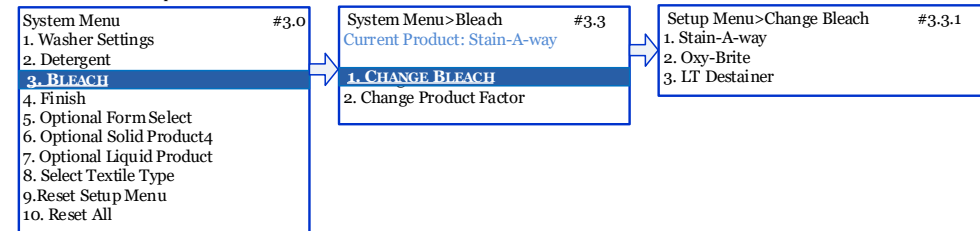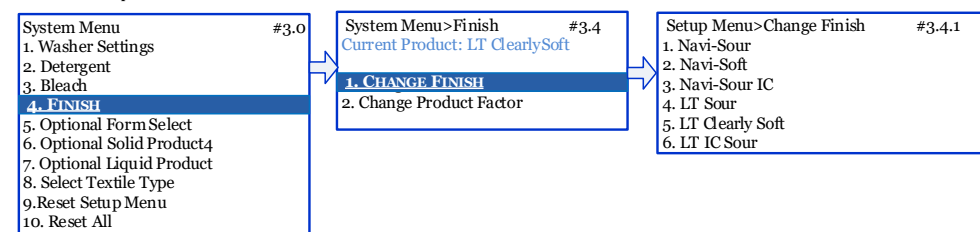| System Menu >Washer 1	#3.1.1
1. WE Name	
2. Capacity	
3. Chart Stop	
4. Additional Post Flush Time	
5. WE Signal Filter Time	
6. WE Signal Mode	
7. WE Formula Reset Option	

Solid Product Setup

Enter the **System Menu**, and then select **Detergent** submenu. Select the desired detergent product and press <Save> soft key to save the selected product.
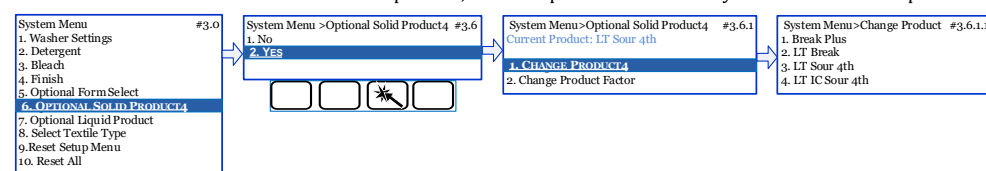
System Menu	#3.0
1. Washer Settings	
2. DETERGENT	
3. Bleach	
4. Finish	
5. Optional Form Select	
6. Optional Solid Product4	
7. Optional Liquid Product	
8. Select Textile Type	
9.Reset Setup Menu	
10. Reset All	

System Menu>Detergent	#3.2
Current Product: Surge Plus	
1. CHANGE DETERGENT	
2. Change Product Factor	

Setup Menu>Change Detergent	#3.2.1
1. Surge Plus	
2. Dual Surge	
3. LT Detergent	

From the **System Menu**, select **Bleach** submenu. Select the desired bleach product and press <Save> soft key to save the selected product.

System Menu	#3.0
1. Washer Settings	
2. Detergent	
3. BLEACH	
4. Finish	
5. Optional Form Select	
6. Optional Solid Product4	
7. Optional Liquid Product	
8. Select Textile Type	
9.Reset Setup Menu	
10. Reset All	

System Menu>Bleach	#3.3
Current Product: Stain-A-way	
1. CHANGE BLEACH	
2. Change Product Factor	

Setup Menu>Change Bleach	#3.3.1
1. Stain-A-way	
2. Oxy-Brite	
3. LT Destainer	

From the **System Menu**, select **Finish** submenu. Select the desired finish product and press <Save> soft key to save the selected product.

System Menu	#3.0
1. Washer Settings	
2. Detergent	
3. Bleach	
4. FINISH	
5. Optional Form Select	
6. Optional Solid Product4	
7. Optional Liquid Product	
8. Select Textile Type	
9.Reset Setup Menu	
10. Reset All	

System Menu>Finish	#3.4
Current Product: LT ClearlySoft	
1. CHANGE FINISH	
2. Change Product Factor	

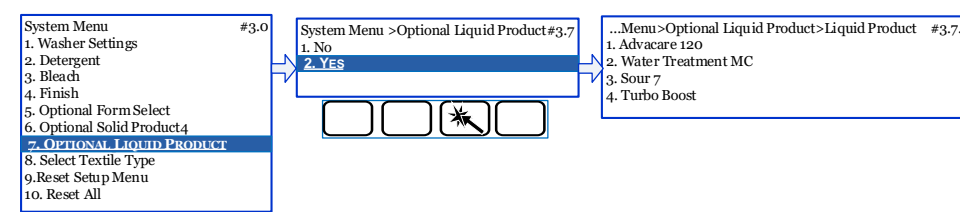| Setup Menu>Change Finish	#3.4.1
1. Navi-Sour	
2. Navi-Soft	
3. Navi-Sour IC	
4. LT Sour	
5. LT Clearly Soft	
6. LT IC Sour	

- If the optional forth product is installed in the system: Enter the **System Menu**, and then select **Optional Solid Product4** submenu. Select the desired forth product, and then press <Save> soft key to save the selected product.

System Menu	#3.0
1. Washer Settings	
2. Detergent	
3. Bleach	
4. Finish	
5. Optional Form Select	
6. OPTIONAL SOLID PRODUCT4	
7. Optional Liquid Product	
8. Select Textile Type	
9.Reset Setup Menu	
10. Reset All	

System Menu >Optional Solid Product4	#3.6
1. No	
2. YES	

System Menu>Optional Solid Product4	#3.6.1
Current Product: LT Sour 4th	
1. CHANGE PRODUCT4	
2. Change Product Factor	

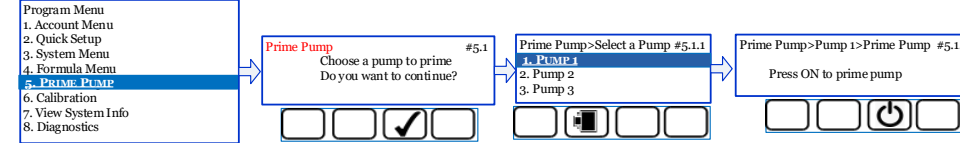| System Menu>Change Product	#3.6.1.1
1. Break Plus	
2. LT Break	
3. LT Sour 4th	
4. LT IC Sour 4th	

Liquid product Setup

- If the optional liquid product is installed in the system: Enter the **System Menu**, and then select **Optional Liquid Product** submenu. Select the desired liquid product, and then press <Save> soft key to save the selected product.

System Menu	#3.0
1. Washer Settings	
2. Detergent	
3. Bleach	
4. Finish	
5. Optional Form Select	
6. Optional Solid Product4	
7. OPTIONAL LIQUID PRODUCT	
8. Select Textile Type	
9.Reset Setup Menu	
10. Reset All	

System Menu >Optional Liquid Product	#3.7
1. No	
2. YES	

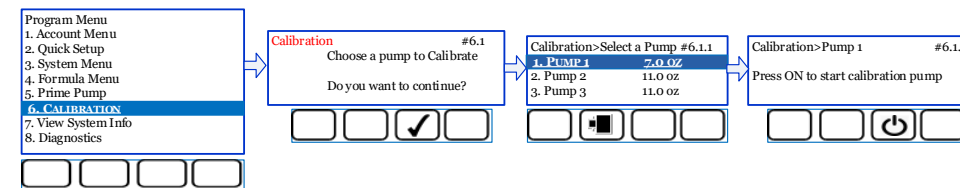| ...Menu>Optional Liquid Product>Liquid Product	#3.7.2
1. Advacare 120	
2. Water Treatment MC	
3. Sour 7	
4. Turbo Boost	

The liquid pumps then need to be primed to purge air from the product pickup tubes. To prime the pumps, enter the **Prime Pump** Menu, select <Yes> soft key, use <UP> and < Down > arrow keys to select the pump you want to prime and press the <Pump> soft key, and then press the <ON> soft key to start the process.

Program Menu	
1. Account Menu	
2. Quick Setup	
3. System Menu	
4. Formula Menu	
5. PRIME PUMP	
6. Calibration	
7. View System Info	
8. Diagnostics	

Prime Pump	#5.1
Choose a pump to prime	
Do you want to continue?	

Prime Pump>Select a Pump	#5.1.1
1. PUMP 1	
2. Pump 2	
3. Pump 3	

| Prime Pump>Pump 1>Prime Pump	#5.1.2
Press ON to prime pump	

Once the pump has been selected, the user can begin priming. Maximum prime time is 30 seconds. If product has not reached pump head after a 30 second prime, repeat procedure.

Calibration of the liquid pumps must be performed upon system installation and can also be performed periodically to verify the pump dosing is maintaining accuracy. To calibrate a liquid pump, enter the **Calibration** menu, select <Yes> soft key, use <UP> and <Down> arrow keys to select the pump you want to calibrate and press the <Pump> soft key, and then press the <ON> soft key to start the process.

Program Menu	
1. Account Menu	
2. Quick Setup	
3. System Menu	
4. Formula Menu	
5. Prime Pump	
6. CALIBRATION	
7. View System Info	
8. Diagnostics	

Calibration	#6.1
Choose a pump to Calibrate	
Do you want to continue?	

Calibration>Select a Pump	#6.1.1
1. PUMP 1	**7.0 OZ**
2. Pump 2	11.0 oz
3. Pump 3	11.0 oz

Calibration>Pump 1	#6.1.2
Press ON to start calibration pump	

Once activated, there will be a 5 second delay followed by the pump activating for 60 seconds. At the end of the 60 seconds, the controller will prompt the user to input the amount of product dispensed.

- If the liquid Out-of-Product (OOP) float sensor is installed, connect the sensor output to the I/O board inside the Pump Cabinet as shown in the below picture:
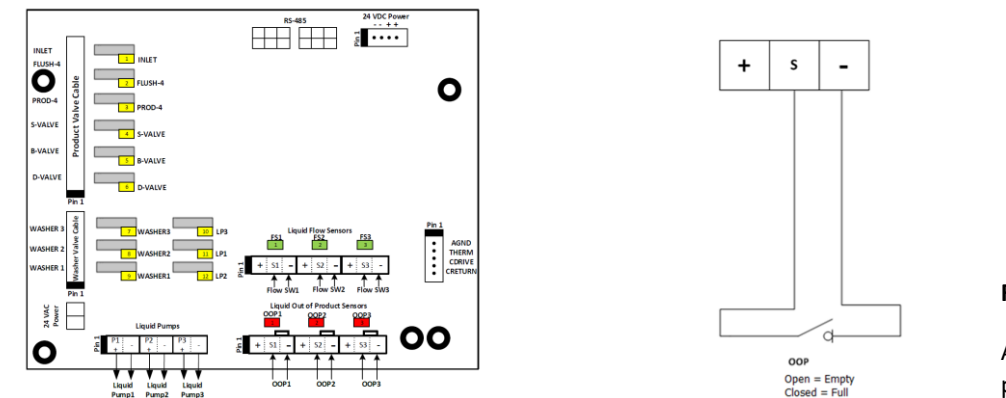
Wire Connections for the 4th liquid smart turbo 24VDC pumps. P1 are for Washer #1 machine. P2 are for Washer #2.

The '+' pins are reserved for the capacitive sensor (future use). Do not connect the '+' pins to float sensor
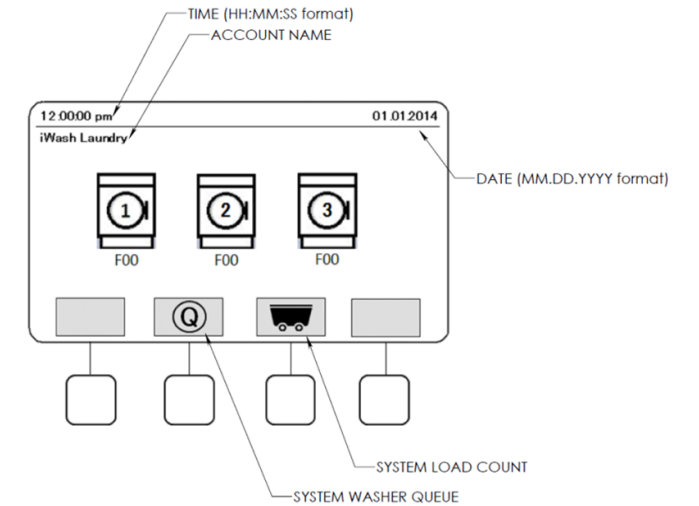
Currently the liquid product discharge tube should run separately to the laundry washer. In other words, install / route tubing from smart turbo pump to washer's chemical hopper.

If using only 1 float sensor (in 1 product pail) but it feeds all 3 washers, then the Out-Of-Product inputs must be connected in parallel, using jumper wires as shown in picture below:

Liquid Out of Product

+ S1 − + S2 − + S3 −

Jumper Configuration
for using only 1 float for
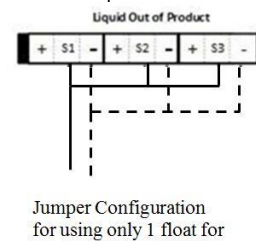
Customer Screen:

The following is the idle main screen for a 3-washer account:

TIME (HH:MM:SS format)
ACCOUNT NAME
DATE (MM.DD.YYYY format)
SYSTEM LOAD COUNT
SYSTEM WASHER QUEUE

Time, account name, and date are displayed, as well as the status of each of the 3 washers. In this case, all machines are idle (F00 no formula selected). Choosing soft key#2 (System Queue) will show all of the dispenser's chemical requests in the order that they will be dosed. Choosing soft key#3 (Load Counts) will list production load counts for all, or each, of the washers. Use the <Left> and <Right> arrows on the keypad to highlight/select any of the washers.

WASHER #1 HIGHLIGHTED
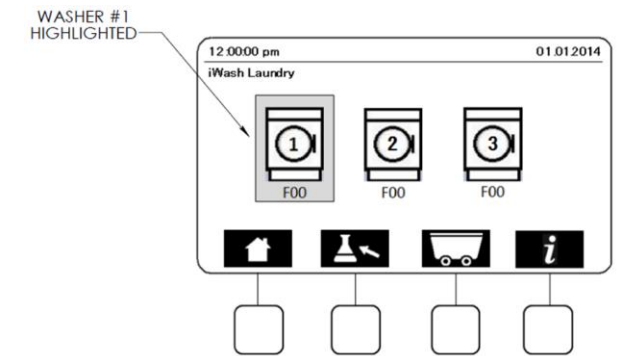
For example, Washer 1 is highlighted using the Left/Right arrow keys. Four soft keys are now made available:

SK #1: Home – navigates back to the main idle screen
SK #2: Select a Formula – prompts user to select a formula for Washer 1
SK #3: Load Counts – displays load counts for Washer 1
SK #4: Info – displays more information for Washer 1

Review System and Customer Daily Checklist

At the beginning of each day, it is highly recommended that account personnel verify proper system operation by performing the following checks:

✓ Check to ensure Condor Controller screen is on.

✓ Check Condor Controller screen for active alarms; clear alarms if necessary.

✓ Check system for any signs of chemical leaks/drippage.

✓ Check product level in product containers – if using optional 4th liquid product.

If any issues are encountered with these checks, contact your Ecolab Sales Representative.