SPIRE 6.0

INSTALLATION MANUAL

MODEL: SPIRE 6.0

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Notice

The products, technical information, and instructions contained in this manual are subject to change without notice. These instructions are not intended to cover all details or variations of the equipment, nor to provide for every possible contingency in the installation, operation or maintenance of this equipment. This manual assumes that the person(s) working on the equipment have been trained and are skilled in working with electrical, plumbing, pneumatic, and mechanical equipment. It is assumed that appropriate safety precautions are taken and that all local safety and construction requirements are being met, in addition to the information contained in this manual.

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Correct Disposal of this Product

RECYCLE

This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

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SAFETY INSTRUCTIONS

SAFETY OVERVIEW

- Read and follow **ALL SAFETY INSTRUCTIONS** in this manual and any warning/caution labels on the unit (decals, labels or laminated cards).
- Read and understand ALL applicable OSHA (Occupational Safety and Health Administration) safety regulations before operating this unit.

SAFETY ALERT SYMBOL

This is the safety alert symbol. When you see this in the manual or on the unit, be alert to the potential of personal injury or damage to the unit.

Types of Alerts

 **DANGER**	Indicates an immediate hazardous situation which if not avoided **WILL** result in serious injury, death or equipment damage.
 **WARNING**	Indicates a potentially hazardous situation which, if not avoided, **COULD** result in serious injury, death, or equipment damage.
 **CAUTION**	Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury or equipment damage.

SAFETY TIPS

- Carefully read and follow all safety messages in this manual and safety signs on the unit.
- Keep safety signs in good condition and replace missing or damaged items.
- Learn how to operate the unit and how to use the controls.
- **Do not** let anyone operate the unit without proper training. This appliance is **not** intended for use by very young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance.
- Keep your unit in proper working condition and do not allow unauthorized modifications to the unit.

QUALIFIED SERVICE PERSONNEL

 **WARNING**	Only trained and certified electrical, plumbing and refrigeration technicians should service this unit. **All wiring and plumbing must conform to National and Local Codes. Failure to comply could result in serious injury, death or equipment damage.**

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SAFETY PRECAUTIONS

This unit has been specifically designed to provide protection against personal injury. To ensure continued protection observe the following:

⚠ WARNING	Disconnect power to the unit before servicing, following all lock out/tag out procedures established by the user. Verify all the power is off to the unit before any work is performed. Failure to disconnect the power could result in serious injury, death or equipment damage.
⚠ CAUTION	Always be sure to keep area around the unit clean and free of clutter. Failure to keep this area clean may result in injury or equipment damage.

Shipping And Storage

⚠ CAUTION	Before shipping, storing, or relocating the unit, the unit must be sanitized and all sanitizing solution must be drained from the system. A freezing ambient environment will cause residual sanitizing solution or water remaining inside the unit to freeze resulting in damage to internal components.

CO_2 (Carbon Dioxide) Warning

⚠ DANGER	CO_2 displaces oxygen. Strict attention **MUST** be observed in the prevention of CO_2 gas leaks in the entire CO_2 and soft drink system. If a CO_2 gas leak is suspected, particularly in a small area, **IMMEDIATELY** ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentrations of CO_2 gas experience tremors which are followed rapidly by loss of consciousness and **DEATH.**

Mounting in or on a Counter

⚠ WARNING	While installing the unit in or on a counter top, the counter must be able to support a weight in excess of 340 lbs. to insure adequate support for the unit. **Failure to comply could result in serious injury, death or equipment damage.** **Note: Many units incorporate the use of additional equipment such as ice makers. When additional equipment is used you must check with the equipment manufacturer to determine the additional weight the counter will need to support to ensure a safe installation.**

Unit Location

⚠ CAUTION	• This unit is not designed for use in outdoor locations. • The appliance must be placed in a horizontal position. • The appliance is not suitable for installation in an area where a water jet would be used.

Machine Usage

⚠ CAUTION	• This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. • Children should be supervised to ensure that they do not play with the appliance.

SPIRE 6.0 SYSTEM OVERVIEW

SPIRE 6.0 DROP-IN DISPENSER: DESCRIPTION

The Spire 6.0 dispenser is a 23” drop-in beverage dispenser designed to support crew service and drive-through operations. This unit features one multi-brand dispensing valve capable of providing custom flavor-shot drink combinations and four single-brand dispensing valves for quick brand selection and dispensing. Dispensing valves on this unit are Optifill^{tm} valves with automatic shut-off control. See Figure 1 for a detailed view of the Spire 6.0 unit.

Figure 1

This drop-in unit can be installed on a counter as a counter-top unit or on a cabinet stand as a free-standing unit. This dispenser supplies beverages direct from syrup tanks with no additional cooling. See Figure 2 for the dimensions of the Spire 6.0 unit.

SPIRE 6.0: SPECIFICATIONS

Model Name	Spire 6.0
Model Number	Spire 6.0 (PBD 2323 DT)
Total unit weight (empty)	216 lbs (98 kg)
Ice storage	100 lbs (45.4 kg)
CO_2 operating pressure	75 psig (0.52 MPa) max Note: CO_2 pressure is regulated down to 75 psi by a supplied preset regulator.
Ambient operational temperature	65 to 75^{o} F (18 to 24^{o} C)
Maximum number of brands/flavors available	12 brands / 6 flavors / 4 waters
Electrical	Amps: 12 A dedicated, protected circuit Volts: 115 V, Hertz: 60 Hz, Phase: 1
Dimensions	See Figure 2- Spire 6.0 Physical Dimensions

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Noise Level	The unit emits acoustical noise with an A-weighted sound pressure level no greater than 75 dB, as measured in accordance with EN 60335-2-75

SPIRE 6.0: PHYSICAL DIMENSIONS

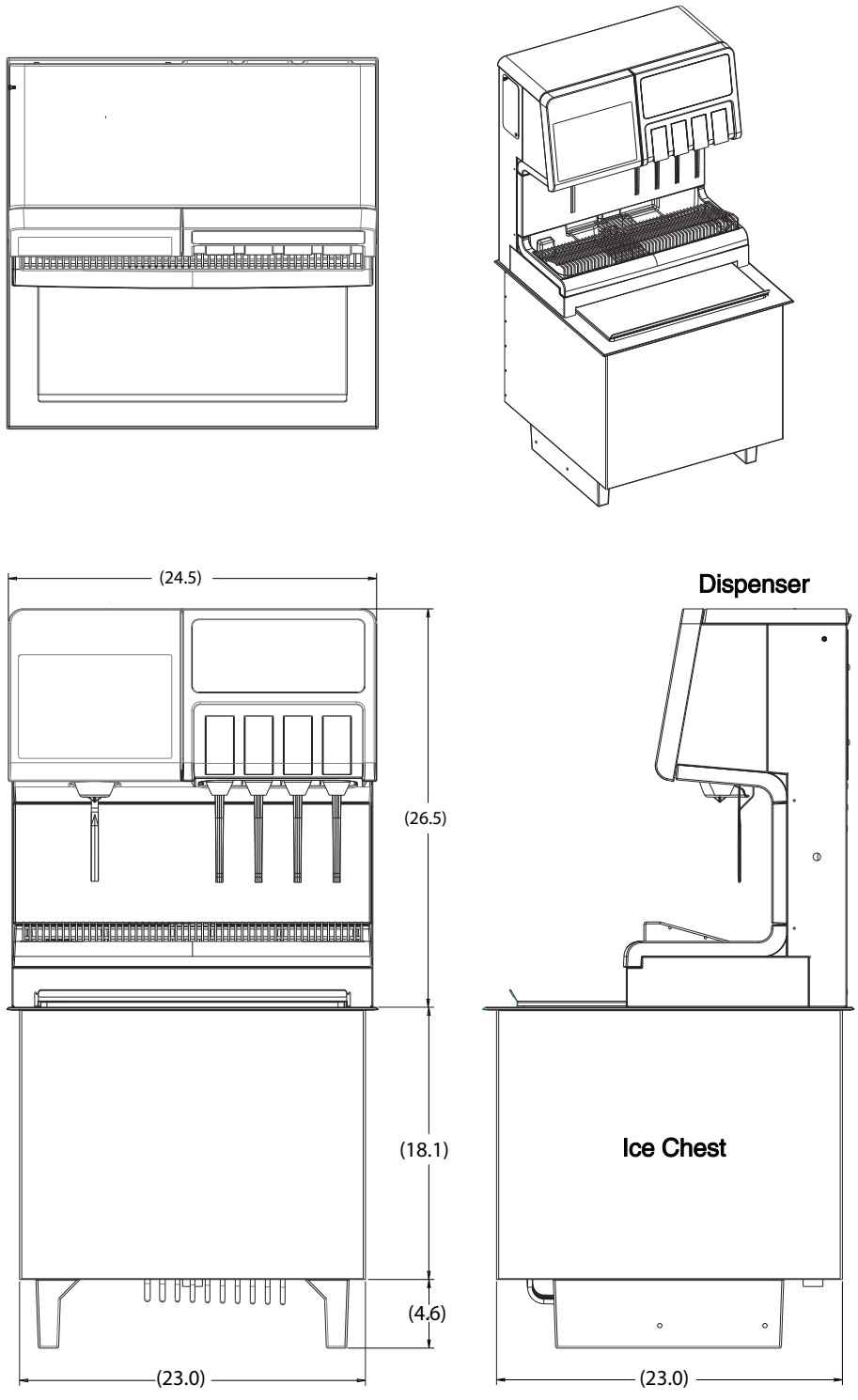

Figure 2 - Spire 6.0 Physical Dimensions

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UNPACKING & INSPECTION

DELIVERY AND INSPECTION

NOTE: Cornelius is not responsible for damaged freight. If damage is found, you must save all packaging material and contact the freight carrier. Failure to contact the carrier within 48 hours of receipt may void your claim.

Moving the Unit

The box containing the unit should be moved using a manual forklift.

Unpacking the Unit Carton

Note the following when unpacking the carton:

1. Check for damage, even if it appears minor. If the carton is damaged, write “exterior carton damage-concealed damage possible” on the consignee copy of the freight invoice and contact the freight company immediately.
2. Remove and inspect the motor assembly from the top compartment of the carton.
3. Inspect the unit and determine if there is any internal shipping damage. If yes, report immediately to the carrier.

INSTALLATION

After unpacking the unit and becoming familiar with its components (shown in Figure 1), review all the information in this manual first, before performing installation activities. The following is a summary of the installation process:

1. Select and prepare a location for the unit. See “Selecting and Preparing a Location” on page 6.
2. Connect supply and drain lines. See “Connecting the Unit” on page 9.
3. Fill the ice chest. See “Filling the Ice Chest” on page 14.
4. Establish electrical connections. See “Connecting the External Electrical Box” on page 15.
5. Conduct Initial Setup activities for the unit. See “Initial Setup” on page 16.

Note: For OptiFill[tm] valve programming and operation, see “Valve Programming and Operation” on page 39.

SELECTING AND PREPARING A LOCATION

Select an appropriate location for the unit.

⚠ CAUTION	**Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed and maintained according to federal, state and local laws.** The dispenser must be located near a permanent drain to route and connect unit ice bin and drip tray drain hoses. All drains and connections to such drains must meet local plumbing codes. Units with electrically operated valves must be located near a properly grounded electrical outlet. Circuit should be fused and no other electrical appliance should be connected to the circuit. **All electrical wiring must conform to national and local electrical codes.**
⚠ WARNING	It is the responsibility of the installer to ensure that the water supply to the dispensing equipment is provided with protection backflow by an air gap as defined in ANSI A112.1.2-1979; or an approved vacuum breaker or other such method as provided effective by test and must comply with all federal, state and local codes. **Failure to comply could result in serious injury, death or damage to the equipment.** Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed and maintained according to federal, State and Local laws. The unit is very heavy and extreme care should be taken when moving or lifting the unit. Failure to comply could result in serious injury, death or damage to the equipment.

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Drop-In Dispenser - Counter Installation Process

To install the unit on a counter, with supply lines underneath, the counter must be prepared by cutting an opening in the counter. Conduct the following activities to install the Spire 6.0 unit as a counter unit.

1. To install the dispenser to a level counter top (without legs), locate the desired position for the unit. Then, mark openings on the counter using the template provided with the unit and cut the appropriate openings into the counter. Remove all cut-out materials, then clean and dry the counter-top.
2. Seal the unit to the counter. To do this, use the sealing material supplied with the unit or apply a continuous, liberal bead of NSF International (NSF) silicone sealant (Dow 732 or equivalent) to the unit flange bottom surface. Then, immediately wipe away all excess sealant.

   NOTE: To comply with the National Sanitation Foundation (NSF) requirements, the unit must be sealed to the counter top.
3. Before the sealant sets, lower the unit into position. Then, apply additional sealant around the rim to ensure a complete seal.

   NOTE: Do not move the unit after positioning or the seal will be broken.
4. Remove any excess sealant.
5. Install the drain hose to the drain fitting at the bottom of the ice chest and route the drain hose to a permanent drain. See “Connecting the Drain” on page 14.

Free-Standing Dispenser - Installation Process

Conduct the following activities to install the Spire 6.0 unit as a free-standing unit.

1. Install the 6” legs to the dispenser cabinet if they are to be used.
2. Place the dispenser in the location selected.

   IMPORTANT: Be sure the dispenser is level to ensure that the bin drains properly.
3. Install the drain hose to the drain fitting at the bottom of the ice chest and route the drain hose to a permanent drain. See “Connecting the Drain” on page 14.

Cleaning Surfaces and Sanitizing the Lines

Before connecting product to the dispenser, review and perform the activities in this section.

WARNING

- Disconnect power to the unit before servicing. Follow all lock out/tag out procedures established by the user. Verify all power is off to the unit before performing any work. **Failure to comply could result in serious injury, death or damage to the equipment.**
- Do not use metal scrapers, sharp objects or abrasives on the interior or exterior surfaces as damage to the unit may result. Do not use solvents or other cleaning agents as they may attack the material resulting in damage to the unit.
- **Use the Soap solution and Sanitizing Solutions identified in this manual.**

Soap and Sanitizing Solutions

Use the following soap and sanitizing solutions when cleaning the Spire dispenser.

- **Soap Solution:** Use a mixture of mild detergent and warm (100° F) potable water.
- **Sanitizing Solution:** Use Stera Sheen Green Label: Dissolve 1 packet [2 oz (59.0ml)] of Stera Sheen Green Label into 2 gallons of tap water [75-95F (23.9-35C)] to achieve 100ppm of chlorine. Or, use Kay-5 Sanitizer/ Cleaner: Dissolve 1 packet [1 oz (29.6ml)] of Kay-5 Sanitizer/Cleaner into 2.5 gallons of tap water [75-95F (23.9-35C)] to achieve 100ppm of chlorine.

Cleaning and Sanitizing Interior and Exterior Surfaces

Perform the following to clean and sanitize all interior and exterior surfaces of the dispenser and ice chest.

1.	Prepare a warm soap solution. See “Soap and Sanitizing Solutions” on page 7.
2	Use a nylon bristle brush or sponge and clean the interior surfaces of the ice chest, making sure to cover all surfaces with soap solution.
3	Rinse the ice chest and all interior surfaces with clean potable water.
4	After cleaning the interior surfaces, use a warm soap solution to clean all exterior surfaces of the dispenser and ice chest. Then, rinse all cleaned surfaces with clean potable water.
	Note: For detailed cleaning and maintenance instructions, see the Spire 6.0 - Operator’s Manual (621058734OPR).

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CONNECTING THE UNIT

Connecting the unit involves gaining access to water, CO_2 and syrup lines. Review all the following information in this section before performing activities for connecting the unit.

REMOVING AND REPLACING ACCESS PANELS

The front panels must be removed before the nozzle panel, splash panel, and drain pan can be removed in order to gain access to the drain lines and carbonator relief valve.

Removing the Front Access Panel and Opening the Display Panel

Access to the single-brand valves and NUC is provided behind the front access panel and access to the multi-brand valve is provided behind the display panel. Perform the following to open the front access panel and display panel.

1. Locate the front access panel. See Figure 3.

   The access panel is at the top, on the right. This panel provides access to the four (4) single-brand dispensing valves and the NUC (Next Unit of Computing) device. Note that the back of this panel has two (2) hook brackets on either side of the panel which hook into slots in the frame of the unit. All front access panels on this unit use the same type of bracket.

   NOTE: <u>The front access panel must be removed first</u>, before you can move the swing-out display panel.

Figure 3

2. Remove the front access panel.

   To do this, hold the bottom of the access panel against the unit, slide the panel straight up, then pull it away from the unit.

   Result: The frame slots for the access panel and four (4) single-brand valves are revealed behind the front access panel. See Figure 4.

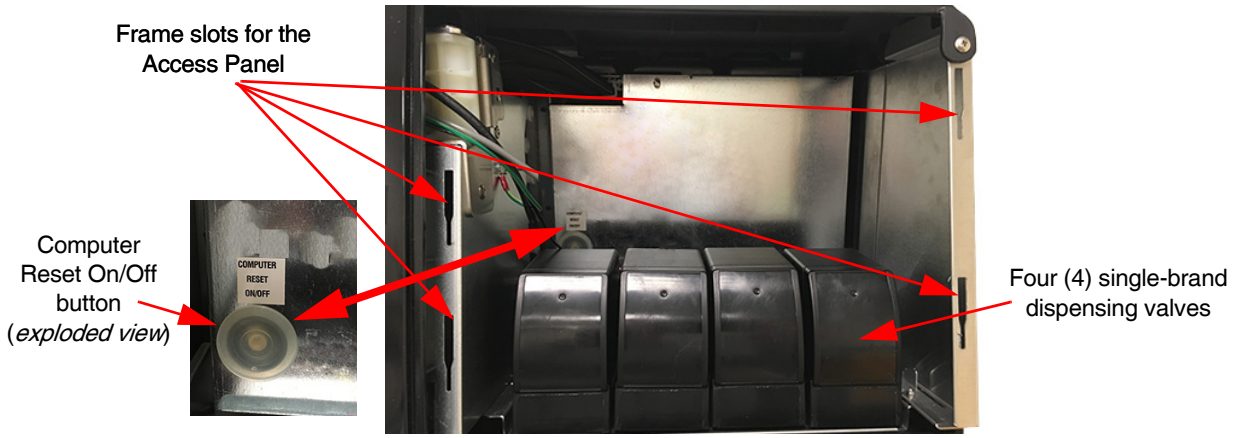

Figure 4

3. With the Access Panel removed, open the display panel.

   To do this, grasp the display panel at the top left and bottom right corners, then carefully pull to release the display panel from the retaining clamps.

   Note: The display panel is mounted on a **swing-arm** and is secured to the unit with a **retaining catch** on the frame and a **post** on the panel. Carefully handle the display panel and swing-arm to avoid damage to these components.

   Result: Access is provided to the components behind the display panel and front access panel.

   Note: A second retaining catch is located on the swing-arm to secure the display panel to the swing-arm when the panel is pulled away from the unit.

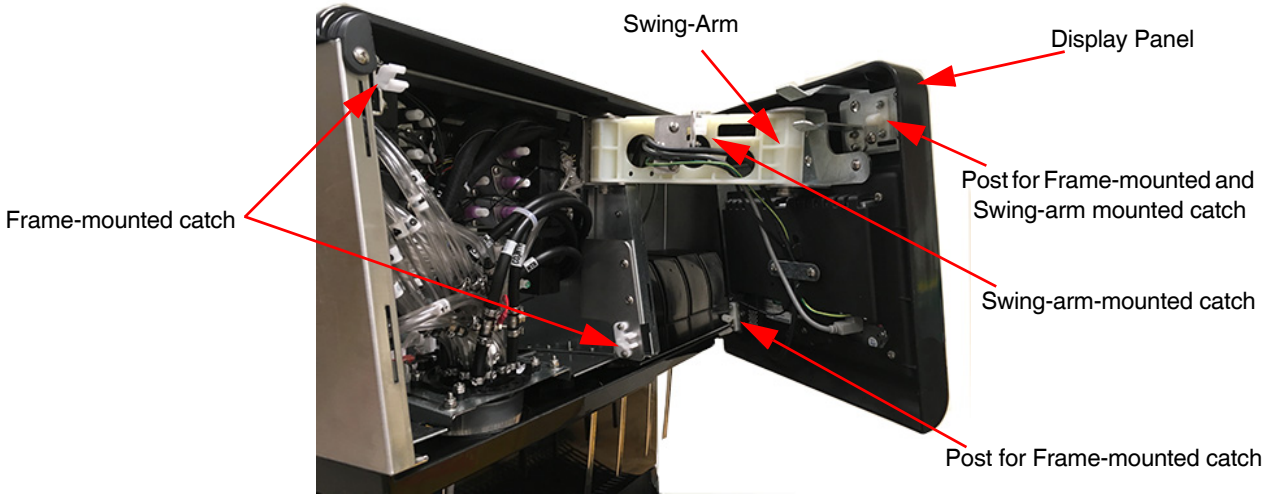

Figure 5

4. Re-attach the display panel.

   If the display panel is secured to the swing-arm-mounted catch, release the panel from the catch. Then, position the display panel so that the posts line-up with the frame-mounted catches. When in position, press firmly on the **bezel** of the display panel to secure it to the frame-mounted catches.

CAUTION

Do not press on the glass of the touch-screen display panel; use the bezel surrounding the touch screen.

5. Re-attach the front access panel.

   Note: The display panel must be secured to the frame before attaching the front access panel.

   Start by positioning the front access panel so the two (2) hook brackets on either side of the panel line-up with the slots in the frame. See Figure 3 and Figure 4. Then, insert the two (2) hook brackets on either side of the panel into the slots and push the panel down into place.

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Removing the Nozzle Panel, Splash Panel and Drain Pan

To access the drain and carbonator relief valve underneath the drain pan, the front access panel, display panel, nozzle panel, splash panel and drain pan need to be removed in the appropriate sequence.

Perform the following steps to remove the nozzle panel, splash panel and drain pan.

1. Remove the front access panel and open the display panel. To do this, see “Removing the Front Access Panel and Opening the Display Panel” on page 9.

   Result: The nozzle assembly behind the display panel is exposed and the nozzle panel is ready for removal.

2. Remove the Nozzle Panel. See Figure 6.

   To do this, slide the nozzle panel toward the front of the unit so that the hooks release from the slots in the frame. Then, tilt the front of the nozzle panel down toward the drain pan and lower the panel down past the valve levers.

   Result: The Splash Panel is ready for removal.

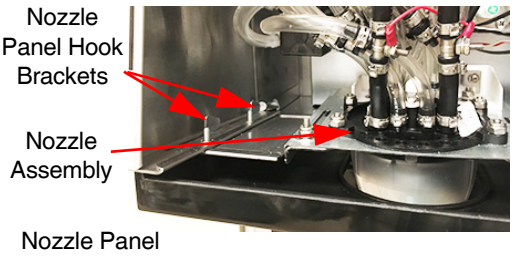

Figure 6

3. Remove Splash Panel. See Figure 7.

   The splash panel has hook brackets that hang into slots in the frame. To remove the splash panel, slide the splash panel up toward the valve nozzles to unhook the brackets from the frame, then lift the panel away from the unit.

   Result: The Cup Rest and Drain Pan are ready for removal.

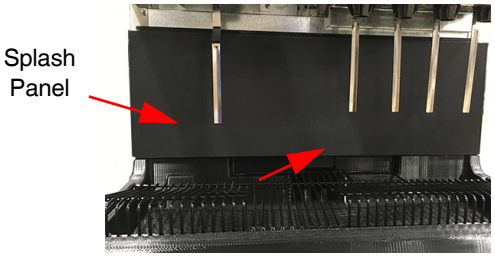

Figure 7

4. Remove the Cup Rest and Drain Pan as shown in Figure 8.

   To do this, remove the cup rest if it is in place over the drain pan. Then, lift the back of the drain pan up so that the drain tube on the drain pan is removed from the drain, then lift the drain pan away from the unit.

   NOTE: The bottom of the drain pan has a drain tube that must be lifted up past the unit drain in order to remove the drain pan. See Figure 9.

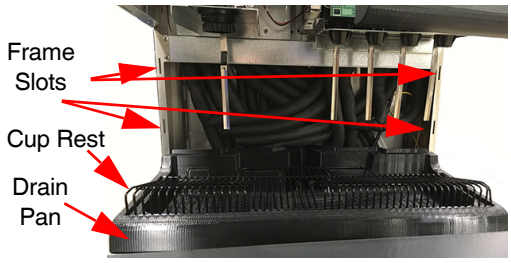

Figure 8

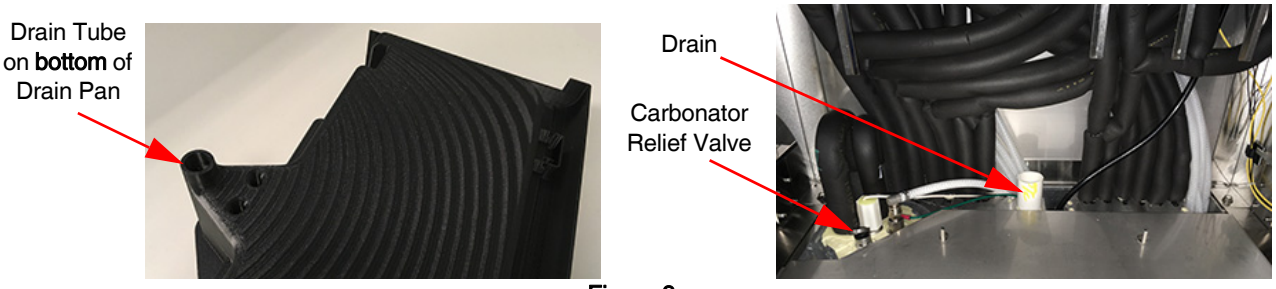

Figure 9

Replacing the Drain Pan, Nozzle Panel and Splash Panel

Replacing the drain pan, splash panel or nozzle panel should be after installation is complete. Perform the following activities to replace the drain pan, splash panel and nozzle panel, in the following sequence as indicated.

1. Replace the drain pan. Refer to Figure 9 and Figure 8.

   Lift up the drain pan so that the drain tube on bottom of the drain pan can be inserted into the drain, then lower the drain pan into place.

2. Replace the splash panel. Refer to Figure 7.

   With the drain pan in place, align the four (4) hook brackets on the back of the splash panel with the four (4) slots in the frame, then lower the splash panel into place.

3. Replace the nozzle panel. Refer to Figure 6.

   Note: The front access panel must be removed and the display panel must be opened before replacing the nozzle panel. See “Removing the Front Access Panel and Opening the Display Panel” on page 9.

   With the drain pan and splash panel in place, move the nozzle panel under the valve levers, then lift the panel up and place the four (4) hook brackets into the frame slots provided for this panel.

4. Replace the Cup Rest over the drain pan. Refer to Figure 8.

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CONNECTING WATER, CO_2 AND SYRUP LINES

Once the unit is located in its final position, the unit must be plumbed by connecting the supply lines (water, CO2 and syrup lines) to the unit.

NOTE: When connecting lines to the dispenser, refer to the connections marked with a label adjacent to the connections or refer to the plumbing diagram for the unit; see "Diagrams" on page 42. Also, leak-check all connections.

Perform the following procedure to plumb the unit:

1. Locate the water and syrup input tubes. The lines are marked as follows:
   - CW1: To Carb Tank - Carb Water Pre-Chill
   - CW2: From Carb Tank - Carb Water, Post-Chill
   - PW or P: Plain water
   - Syrup Lines: S1 through S12
   - Flavor Shot Lines: F1 through F6

   Note: If lines are to be cut, mark the line numbers above the cut with a marker. Make sure that syrup lines and flavor lines are not mixed.

CAUTION

- Do not install water pressure regulator on the plain water inlet between the back room package and the unit.
- Check the minimum flow rate and the maximum pressure of the plain water inlet supply line. Minimum flow rate must be at least 125 Gal/Hr (0.47 cubic m/hr). If flow rate is less than 125 Gal/Hr (0.47 cubic m/hr), starving of the carbonator water pump can cause the carbonator water pump to overheat and be damaged.
- The maximum water pressure to the carbonator pump can be no more than 65 psi (0.45 MPa). If necessary, add a 65 psi regulator to the plain water line supplying the carbonator pump. Water over pressure (higher than CO_2) can cause carbonator flooding, malfunction, and leakage through the carbonator relief valve. Do not add a regulator to the still water supply.
- Incoming plain water inlet supply line pressure to the pump MUST remain a minimum of 10 psi (0.07 MPa) BELOW the carbonated CO_2 operating pressure. [Example: Carbonator CO_2 operating pressure is 75 psi (0.52 MPa).

IMPORTANT

- Make sure the unit is not plugged into the AC power source.
- If water exceeds maximum pressure specifications, a water pressure regulator kit must be installed in the plain water inlet supply line.

2. Connect the beverage system product line tubes to the python coming from the back room package, depending on the unit being installed.
3. **Turn the carbonator pump power switch to the OFF position.** The power switch for the carbonator pump is usually located on an electrical junction box as part of the carbonator pump deck assembly.
4. Connect the inlet water line to the carbonator pump and connect the outlet port on the carbonator pump to the unit using 3/8" (0.95 cm) food-grade tubing.

Connecting the Drain

The ice chest on the Spire 6.0 unit (Model PBD 2323 DT) has a solid PVC tube that runs up from under the back of the ice chest to the dispensers drain pan. A drain hose must be connected to the PVC drain tube under the ice chest and routed to the drain.

Note: Route the drain hose to an open drain with the end of the hose above the “flood” level of the drain. Use the tubing, fittings, clamps, and insulation provided with the dispenser to install the drain. The completed drain line must pitch continuously downward and contain no “traps” or improper drainage will result.

IMPORTANT: Make sure the drain hose is fully insulated to prevent condensation. Connect the drain hose tube to the PVC drain tube using any clamp or device provided with the unit or with an appropriate a hose clamp. DO NOT over-tighten the clamp.

NOTE: Ice should be on the cold plate for a minimum of 30 minutes prior to setting brix, so plan accordingly after the drain is installed.

Filling the Ice Chest

After the supply lines and drain line is installed and after the ice chest has been properly cleaned and sanitized (see “Cleaning and Sanitizing Interior and Exterior Surfaces” on page 8), it is recommended that the ice chest be filled with ice to ensure that the cold plate is chilled for a minimum of 30 minutes before brixing is performed.

NOTE: Fill the ice chest with 32°F ice. Do not use ice taken directly from a freezer.

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Connecting the External Electrical Box

The Spire 6.0 unit (Model PBD 2323 DT) employs an external electrical box (E-box) to supply appropriate power to the dispenser and its components. Mount the E-box (see Figure 10) in a convenient location under the counter. Make sure the location of the E-box is close enough so all power cords reach the dispenser without strain.

Refer to the wiring diagram in Figure 11 and perform the following activities to setup the external E-box.

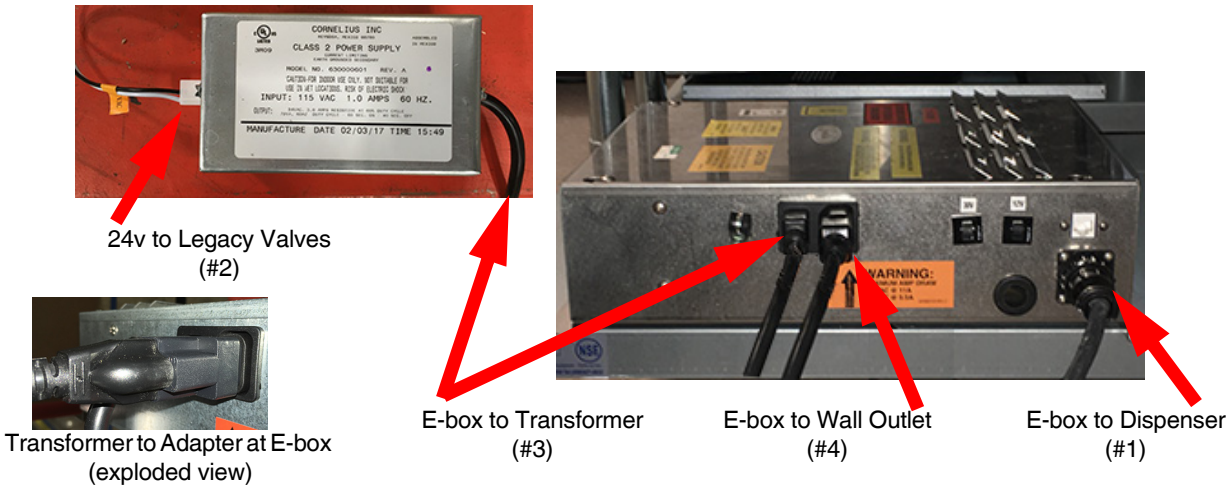

Figure 10

1. Connect DC power cord from the dispenser into the DC power input port (CPC) on the E-box. See #1.
2. Connect the AC power cord from the dispenser to the Transformer unit on the pump deck. See #2.
3. Connect the AC power cord from the Transformer unit to the AC Out port on the E-box. See #3.
4. Connect the female end of the E-box AC power cord to the AC input port on the E-box, then plug the male end of this power cord into the wall outlet. See #4.

   Result: When AC power is supplied to the Spire 6.0 dispenser, the display panel will show a "*No Signal / Input HDMI*" dialog box. NOTE: To display the User Interface screen on Spire 6.0 display panel, see "Power Up the Spire 6.0 Unit" on page 17.

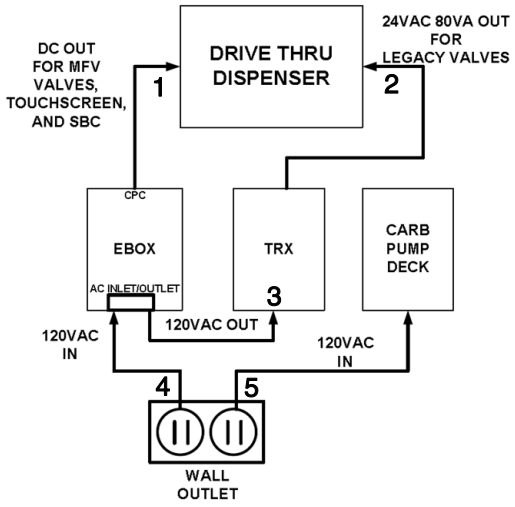

Figure 11

5. With the **carbonator pump power switch in the OFF position**, connect the power cord from the carbonator pump to an AC power source. See #5.

INITIAL SETUP

After selecting and preparing a location for the unit and installing the water,CO_2, syrup and drain lines, initial setup activities can be conducted for the following:

- Setup water supply and CO_2 regulator settings
- Powering up the dispenser, performing additional setup activities and adjusting water-to-syrup ratios.

Review all information in this section first, before performing initial setup activities.

⚠ CAUTION	• Before connecting the CO2 regulator assembly to a CO2 cylinder, turn the regulator adjusting screw to the left (counterclockwise) until all tension is relieved from the adjusting screw spring. • Never operate the carbonator pump with the water inlet supply line shutoff (valve closed). “Dry running” the water pump will burn out the pump. A pump damaged in this manner is not covered by warranty.

WATER SUPPLY AND CO2 REGULATOR SETUP

To perform the activities in his section, the drain must be installed. See “Connecting the Drain” on page 14.

CO_2 Regulator Adjustment

Syrup and Flavor Pump	CO2 Pressure Settings
Sugar Syrup Valves - Basic Pressure	65-75 PSI (5.17 bar) (depending on syrup viscosity)
Diet Syrup Valves - Basic Pressure	45 PSI (3.1 bar)
Flavor Shot Valves - Basic Pressure	35 PSI (3.1 bar)

Perform the following steps to setup the water supply and the CO2 supplied to the unit.

1. If necessary, remove the drain pan.

   To do this, see “Removing and Replacing Access Panels” on page 9 and “Removing the Nozzle Panel, Splash Panel and Drain Pan” on page 11.

2. Turn on the main water supply valve to flood the unit.

3. To displace air from the carbonator tank, open the carbonator tank relief valve until water flows into the drain.

   On the Spire 6.0 unit, the **carbonator tank relief valve** is located to the left of the drain tube under the drain pan. Pull on the valve ring to open the valve. See Figure 12.

   Once water flows into the drain, and air in the tank is displaced, push the relief valve closed.

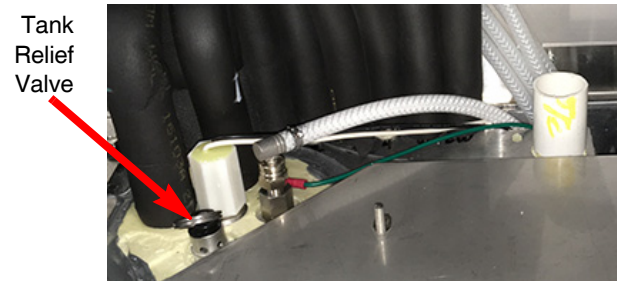

Figure 12

4. Locate the CO2 supply and turn (counterclockwise) the CO2 cylinder valve slightly-open to allow the lines to **slowly fill with CO2 gas**, then gradually turn the valve open to fully to back-seat the valve. See Figure 13.

   Note: Back-seating the valve prevents leakage around the valve shaft). **The carbonator CO2 regulator is fixed at a normal 75 psi.**

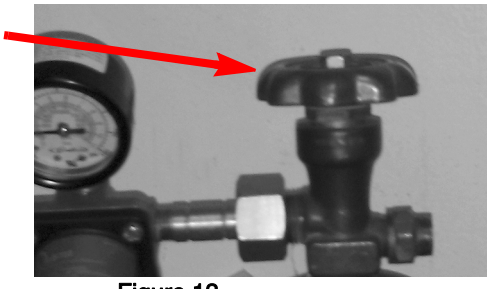

Figure 13

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5. Verify that the pressure gauge on the cylinder reads over 110 PSI.

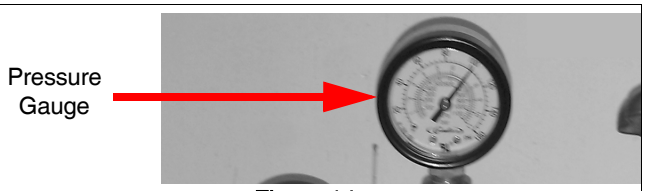

Figure 14

6. Once power is supplied to the carbonator pump, turn the **carbonator pump power switch** to the **ON** position and check for leaks in the system.
7. Next, replace the drain pan. To do this, see “Removing and Replacing Access Panels” on page 9 and “Replacing the Drain Pan, Nozzle Panel and Splash Panel” on page 12.

Power Up the Spire 6.0 Unit

Perform the following to power-up the unit.

1. Make sure the dispenser is plugged into an AC power source. This supplies power to the unit. For details, see “Connecting the External Electrical Box” on page 15.

   NOTE: When AC power is supplied to the unit, power is supplied to the NUC (Next Unit of Computing) computer used to power-up the dispenser.

   Note: The small NUC computer is located behind the **Computer Housing** toward the back of the unit behind the Access Panel. (See “Removing and Replacing Access Panels” on page 9). The NUC computer provides the user interface to the display panel and stores configuration parameters to support dispenser operating features and functions.
2. Power-up the NUC computer.

   To do this, press the Computer Reset On/Off button. See Figure 15.

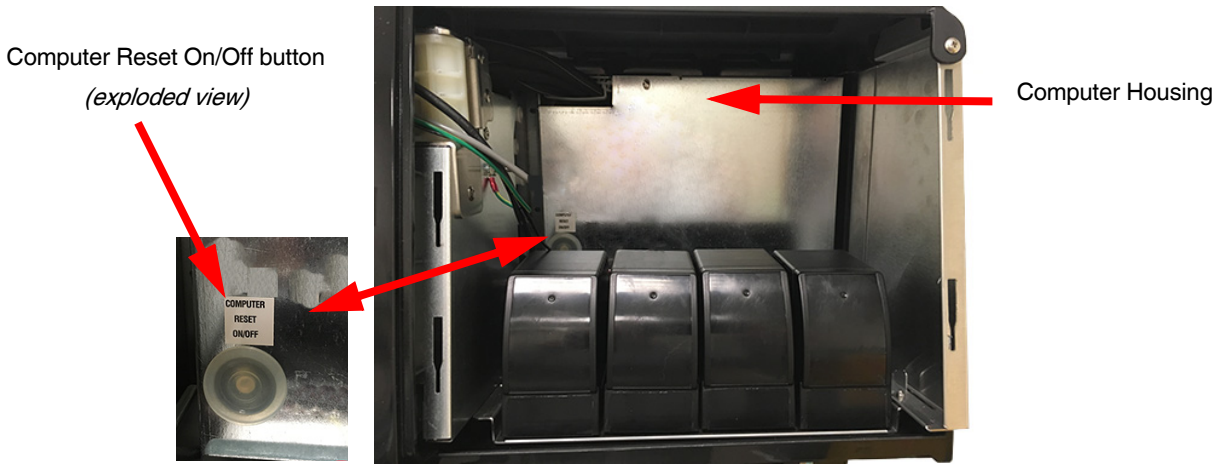

Figure 15

3. Enter Service Mode and perform the first time initial setup procedure.

   To do this, you need to access the Service Menu, see “Service Menu” on page 19, then perform initial setup procedures, see “First Time Setup” on page 20.

   IMPORTANT: Once the unit is powered ON, the First Time Setup procedure must be completed within 15 minutes.

ACCESSING SERVICE MENU

The unit provides a service menu providing access to a set of menu items used for setting-up the dispenser.

Perform the following steps to access the **Service Menu**.

1. On the Consumer User Interface screen, place your finger at the bottom of the screen, then, using your finger, draw two consecutive (invisible) letter “P” symbols on the screen.

   Note: See the red letter P symbols drawn on the screen in Figure 16 as an example.

   Result: The **ENTER PIN** screen appears as shown in **Figure 17**.

To access the ENTER PIN screen, use your finger to draw two consecutive “invisible” letter P symbols on the touch-screen user interface.

Note: Make sure the symbols are drawn quickly, one right after the other.

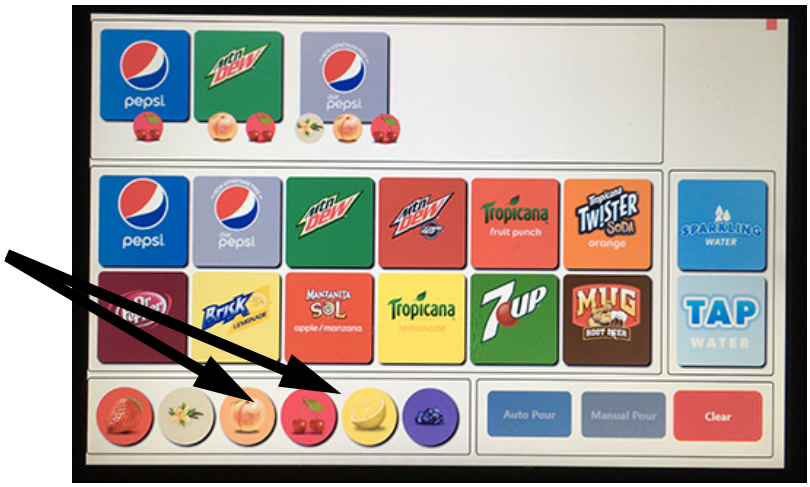

Figure 16

Figure 17

2. From the **ENTER PIN** screen, enter the appropriate PIN code to access the Service Menu.

   Result: The **Service Menu** screen appears. See “Service Menu” on page 19.

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SERVICE MENU

The Service Menu contains icons categorized in the three sections as shown in Figure 18.

Figure 18

The Service Menu shows various valve assignments where plumbed lines matching a product to be dispensed have been established by the valve mapping process. If all valve assignment icons on the service menu screen indicate “unassigned”, complete the Initial setup process (see “First Time Setup” on page 20) then proceed with mapping the valves (see “Mapping the Valves” on page 22).

The following is a descriptive summary of the Service Menu sections.

Valve Assignment section:

- **High Carb, High Still, Low Carb**, **Low Still**: Used to access service and setup for these valves.
- **Brand and Unassigned**: Various icon buttons map valves in the unit to water, syrup, or flavor shot products. See “Mapping the Valves” on page 22.

Actions section:

- **Initial Setup**: Provides access to initial setup parameters.
- **System Reboot/Shutdown**: Provides access to reboot and system shutdown functions.
- **Priming**: Used to Prime up to five valves simultaneously.
- **View Valve Layout**: Shows the current valve assignments for the unit.
- **Screen Cleaning**: Disables the touch-sensitive screen for 30 seconds to allow for cleaning.
- **Define Flow Rates**: Used to set flow rates for waters, syrups, and flavor shots.
- **Change Service Language**: Used to select the language shown on the Service user interface.
- **Change Consumer Language**: Used to select the language on the Consumer User Interface.
- **Configure Top Combination**: Used to pre-configure brand and flavor shot combinations that will be available for quick access from the top of the consumer user interface display.
- **Configure Legacy Valves**: Used to select beverage icons for the top of the display screen.
- **Configure Selection Timeout**: Used to increase or decrease the amount of time before a selection is cleared from the screen when no further screen activity is detected.
- **Dashboard**: Provides access to system-level service functions.
- **Exit to Consumer UI**: Returns the display screen to the consumer user interface.

System section:

- **Equipment Status**: Reports on the status of the system, valve controller and touch controller.

First Time Setup

The first time setup procedure establishes various configuration parameters for the unit. Review all the steps in the procedure, then perform the following activities to complete first time setup.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.

2. From the **Service Menu**, press the **Initial Setup** button.

   Result: The Spire First Time Setup screen displays the **Language Selection** buttons as in Figure 19.

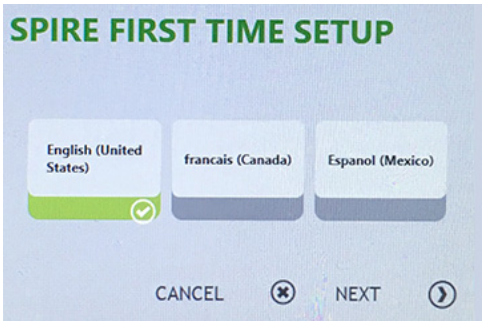

Figure 19

3. Select the appropriate language, then press “Next”.

   Result: The Spire First Time Setup screen displays the various **Product Configuration Type** buttons. See Figure 20.

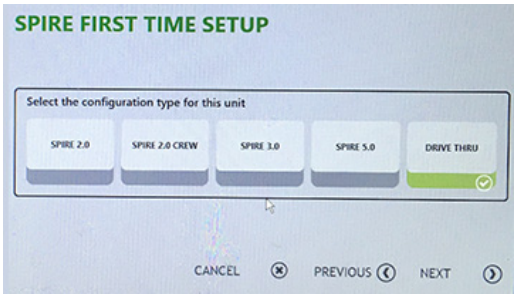

Figure 20

4. Select the “Drive Thru” button, then press “Next”.

   Result: The Spire First Time Setup screen displays the **Subsystem Status** screen. See Figure 21.

   Note: If all subsystem status buttons are green with a check-mark, go to step 5.

   Otherwise, see “Troubleshooting” on page 45.

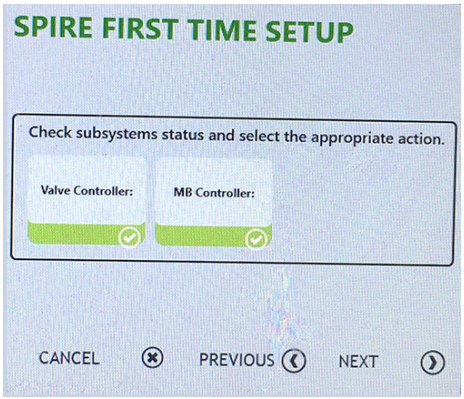

Figure 21

5. When all subsystem status buttons are green with a check-mark, press “Next”. See Figure 22.

   Result: The Spire First Time Setup screen displays the **Location** selection buttons.

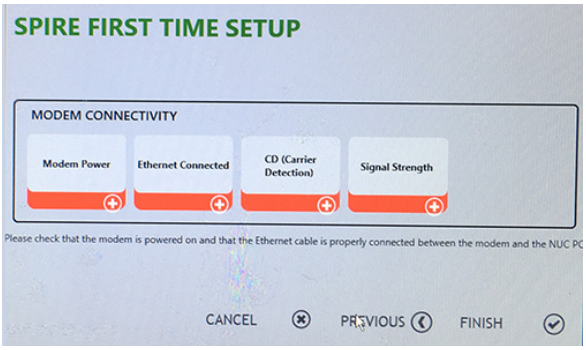

Figure 22

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6. Select the location where the unit will be deployed, then press the “Next” button.

   Result: The **Spire First Time Setup** screen displays the **Modem Connectivity** screen. See Figure 23.

   Note: If all connectivity buttons are red with a plus-sign, go to step 7.

   Otherwise, see “Troubleshooting” on page 45.

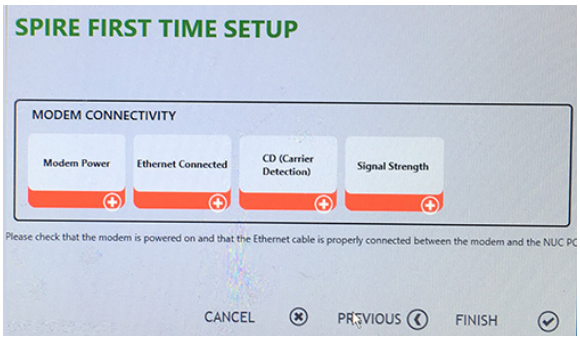

Figure 23

7. When all Modem Connectivity buttons are red with a plus-sign, press the “Finish” button.

   Result: The **initial dispenser setup is complete** and the **Service Menu** screen displays.

8. Return to the Consumer User Interface or continue with other installation or service functions.

   To Return to the Consumer User Interface, select the “Exit to Consumer UI” button from the Actions section of the Service Menu.

   To continue with installation or other service functions once first time dispenser setup is complete, go to “Mapping the Valves” on page 22.

MAPPING THE VALVES

Mapping the valves is the process where icons in the Valve Assignment section of the Service Menu are assigned to (or mapped to) valves associated with a plumbed line matching a brand or product to be dispensed.

To simplify the mapping process, make sure each plumbed line is labeled appropriately to represent the brand or product for each valve.

Perform the activities in the following example to map display screen icons to appropriate valves for a product to be dispensed. Note that screens on your unit differ slightly than screens shown in examples provided here.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.

   Result: The **Service** screen appears.

Figure 24

2. In the Valve Assignment section of the Service screen, select the **UNASSIGNED CW-R-V1** icon.

   Result: A **Valve Assignment** screen appears.

3. From the Valve Assignment screen, select **High Carb**.

   Result: The **Valve Assignment** screen shows **High Carb** assigned to the **CW-R-V1** icon.

4. Close the **Valve Assignment** screen showing High Carb **ASSIGNED to the CW-R-V1** icon.

   Result: **High Carb** is now assigned to the **CW-R-V1** in the Valve Assignment section of the Service screen as shown in Figure 25.

5. Repeat steps 2 through 4 to assign (map) the following valves:
   - Map High Still to PW-R-V2
   - Map Low Carb to CW-L-V3
   - Map Low Still to PW-L-V4

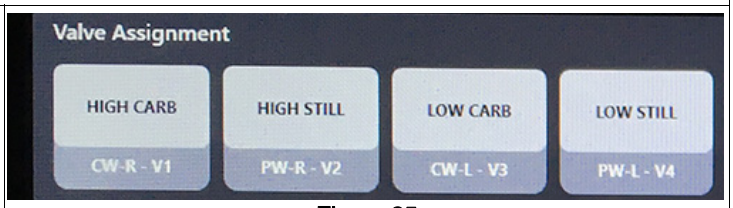

Figure 25

6. Assign other Unassigned icons, as necessary, to valves associated with a product to be dispensed.

   The following shows a mapping scheme for assigning brand or product icons to valves:
   - **CW & PW** - Map these icons to **High Carb, High Still, Low Carb, Low Still** valves.
   - **S# through S##** - Map these icons to **Brands** for valves associated with plumbed lines matching a brand or product to be dispensed.
   - **Map F# through F##** - Map these icons to **Flavor Shots**, for valves associated the plumbed lines matching a flavor shot to be dispensed.

   To do this, follow the same basic process shown above.

   Result: The Valve Assignment section of the service menus screen will look similar to Figure 26

   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section of the Service Menu.

Figure 26

CURRENT VALVE ASSIGNMENTS

After valve mapping, it may be necessary to change or perform various functions for the current valve assignment. The following is a descriptive summary of the functions available from the Current Assignments screen:

- **Change Valve Assignment:** Used to re-assign valve and product mappings. See “Change Valve Assignment” on page 23
- **4 Second BRIX Calibration:** Used to conduct a 4 second BRIX on the current valve selected. See “4 Second BRIX Calibration” on page 25.
- **Priming:** Used to conduct the priming function on the current valve selected. See “Priming Lines” on page 27.
- **View Valve Layout**: Show current valve assignments. See “View Valve Layout” on page 29.

Change Valve Assignment

After establishing valve assignments to map brand icons to valves, changes can be made to map a brand icons to different valves associated with a different brand or product to be dispensed.

Perform the following activities, using the following example, to change a valve assignment.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, identify one of the valve assignment buttons to change.

   Result: The **Current Valve Assignment** screen displays.

   Note: In this example, the S1-V9 icon (red box) is selected.

Figure 27

3. From the **Service Menu**, select one of the valve assignment buttons.

   To do this press, for example, the S1-V9 icon.

   Result: The **Current Valve Assignment** screen displays.

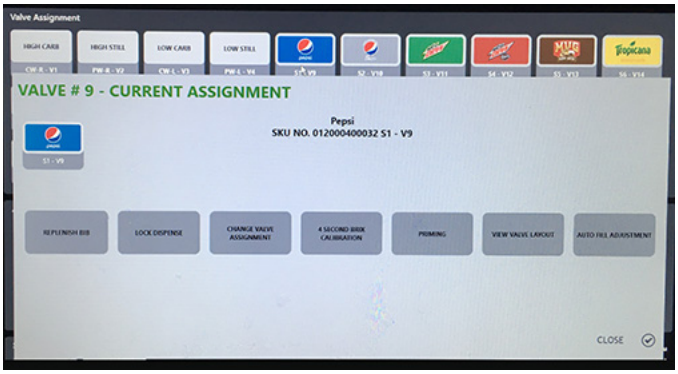

Figure 28

4. From the **Current Valve Assignment** screen, select the **Change Valve Assignment** button.
   Result: The Valve Assignment screen is displayed.

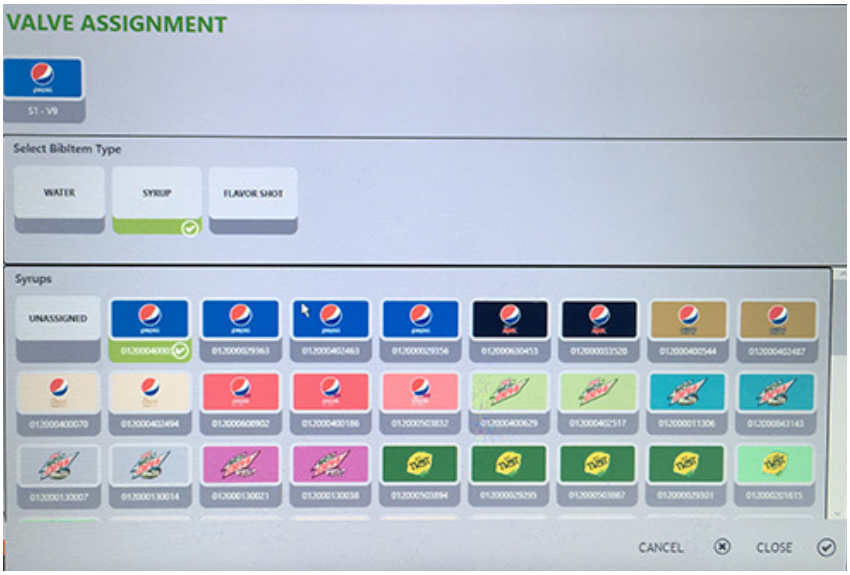

Figure 29

5. To re-assign the valve, start in the **Select BIB Type section** and select an item type (Water, Syrup or Flavor Shot).
   Then, select a different item from either the Syrup, Water or Flavor Shot section.
   Note: Scroll down using the scroll bar on the right side of the screen to identify and select an appropriate product for the valve assignment in other sections.
   Result: The valve assignment icon at the top of the screen shows the re-assigned product for the selected valve.

6. Close the Valve Assignment screen.
   To do this, press the “Close” button in the bottom right corner of the screen.
   Result: The Service Menu screen displays.
   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section of the Service Menu.

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4 Second BRIX Calibration

The BRIX process adjusts water-to-syrup ratios for a product. Read the following and review all steps before conducting this procedure.

- Lines must be purged prior to brixing.
- Water and syrup must be cold before checking ratios.
- Start the brixing ratio adjustment process with the most viscous Flavor first.
- Screens for your unit may be slightly different than screens shown in example figures provided here.

Also see “Adjust Water-To-Syrup Ratio - Single-Flavor Valves” on page 38.

Perform the following activities, using the following example, to adjust water-to-syrup ratios.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, select one of the valves assignment buttons.
   Result: The **Current Valve Assignment** screen for the selected valve displays.
3. From the **Current Valve Assignment** screen, select the **4 Second BRIX Calibration** button.
   Result: The Brix Calibration screen is displayed. See Figure 30.

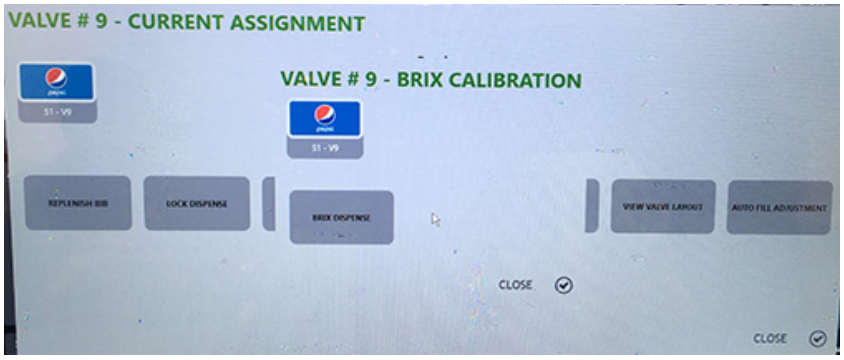

Figure 30

4. Place a BRIX cup under the dispensing valve, then to start the BRIX calibration process, select the BRIX dispense button.
   Result: The BRIX process starts. Flow rates should be set according to the following:

Set flow rates according to the following:	
High Carb & High Still Valves	Flow Rate: 7 oz (210 ml) / sec
Low Carb & Low Still Valves	Flow Rate: 3 oz (90 ml) / sec
Syrup Valves	Flow Rate: 2 oz (60 ml) / sec (5:1 ratio)
Flavor Shot Valves	Flow Rate: 0.4 oz (12 ml) / sec

5. During the 4 Second **Brix** Calibration process, you may need to adjust the flow of the valve selected. See Figure 31.

   To adjust the flow of a valve, do the following:

   To **increase** the flow of a valve, turn the valve **clockwise** (1/4 turn at a time).

   To **decrease** the flow of a valve, turn the valve **counterclockwise** (1/4 turn at a time).

   Test the valve flow rate and make adjustments until a consistent ratio is delivered three consecutive times.

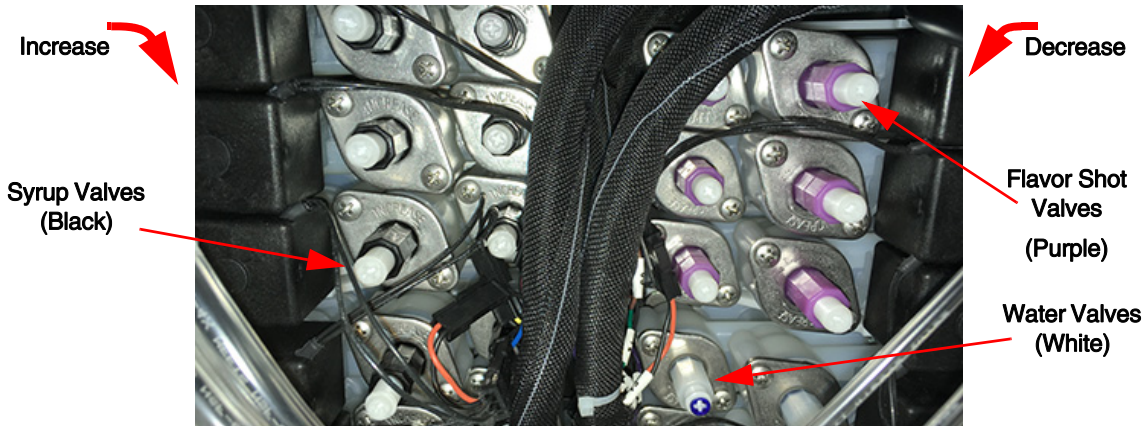

Figure 31

6. To complete the process, select the “Close” button in the bottom right corner of the screen.

   Result: The Service Menu screen displays.

   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section.

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Priming Lines

Priming a line can be done individually or up to five (5) lines can be purged simultaneously. Read the all the information and activity steps before priming the lines:

To prime an individual line, see “Priming Individual Lines” on page 27.

To prime multiple lines simultaneously, see “Priming Multiple Lines” on page 28.

Priming Individual Lines

Priming an individual line can be done from the Current (valve) Assignment screen. Read the following tips and all steps before priming the lines:

- When using the Priming function button from a Current Valve Assignment screen for CW valves, let priming run until carb water is observed. This may take several cycles of the carb pump.
- When using the Priming function button from a Current Valve Assignment screen for PW valves, let priming run until a steady stream of plain water is observed and all air has been removed.
- Screens for your unit may be slightly different than screens shown in example figures provided here.

Perform the following activities to prime an individual line.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, select one of the valves assignment icons.
   Result: The **Current Valve Assignment** screen for the selected valve displays.
3. From the **Current Valve Assignment** screen, select the **Priming** button.
   Result: The Prime Valve screen is displayed for the selected valve with two options. See Figure 32.
   Start Prime Dispense button: Use this button to start and stop the prime dispense manually.
   Start Timed Prime button: Use this button to start the priming function that will automatically stop.

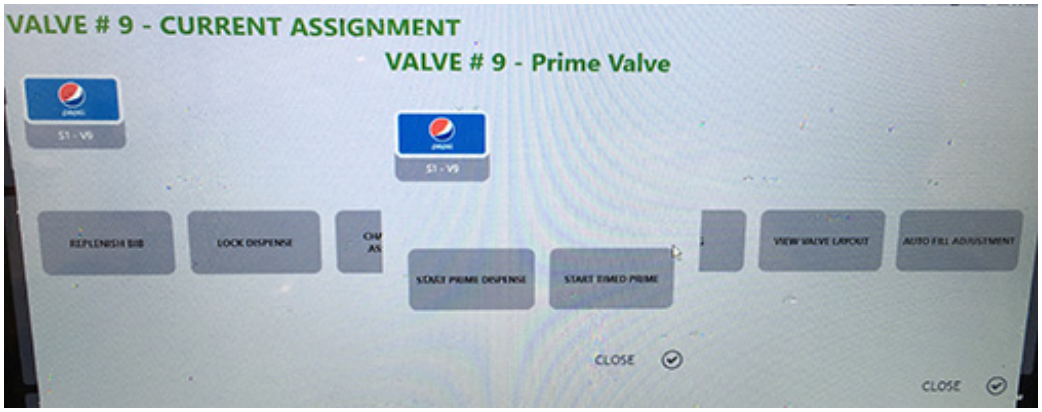

Figure 32

4. Use one of the Prime buttons to start and stop the priming function.
   Note: Make sure the correct product is being dispensed.
   Result: The prime function for the selected valve is complete.
5. Close the Prime Valve screen.
   To do this, press “Close” directly under the Prime buttons.
   Result: The Current Assignment screen is displayed.
6. Close the Current Assignment screen and return to the Service Menu.
   To do this, press the “Close” button.
   Result: The Service Menu screen displays.
   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section.

Priming Multiple Lines

Up to 5 selected lines can be primed simultaneously using the Priming button from the Actions section on the Service Menu screen.

Perform the following activities to prime up to 5 selected lines.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18
2. From the **Service Menu**, in the **Actions** section, select the **Priming** button.
   Result: The **Priming** screen displays to allow for up to 5 selected lines to be primed simultaneously.
   See Figure 33.

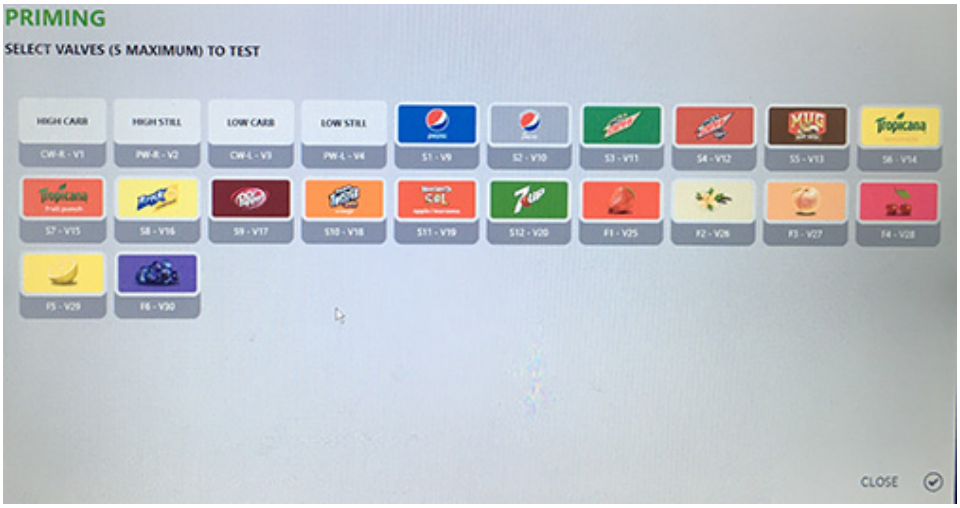

Figure 33

3. From the **Priming** screen, select up to 5 lines to be primed.
   To do this, press any combination of valve icons on the screen.

View Valve Layout

To support service operations, the unit can provide a view of the valve layout and assignments. Note that screens for your unit may differ slightly than screens shown in examples provided here.

Perform the following steps to view the valve layout and assignments from the Current Valve Assignments screen.

Note: The **Valve Layout & Assignments** screen can also be accessed using the **View Valve Layout** button from the **Actions** section of the **Service Menu**.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, select one of the valves assignment buttons.
   Result: The **Current Valve Assignment** screen for the selected valve displays. See Figure 34.
3. From the **Current Valve Assignment** screen, select the **View Valve Layout** button.
   Result: The **Valve Layout & Assignments** screen is displayed.

Figure 34

4. Close the **Valve Layout & Assignments** screen.
   To do this, press the “Close” button.
   Result: The Service Menu screen displays.
   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section.

System Reboot/Shutdown

The unit can be re-booted or shut down completely using the System Reboot/Shutdown button in the Actions section of the Service Menu.

Perform the following steps to reboot or shutdown the unit.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, select the **System Reboot/Shutdown** button.
   Result: The **Kiosk Power Down and Exit** screen displays. See Figure 35.
3. From the **Kiosk Power Down and Exit** screen, select one of the following option buttons:
   Reboot: Reboots the system.
   Shutdown: Shuts down the system.
   Exit to Windows: Returns to the Customer User Interface screen.

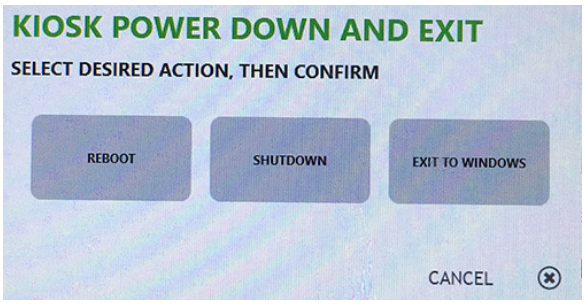

Figure 35

4. To cancel this operation, select “Cancel” in the bottom right corner of the screen.
   Result: The Service Menu screen displays.
   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section.

Screen Cleaning

The touch-sensitive display screen on the unit can be put into a screen cleaning mode which deactivates the touch-sensitive nature of the display to allow cleaning of the screen.

Perform the following steps to put the display screen into screen cleaning mode.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, select the **Screen Cleaning** button.
   Result: The **Screen Cleaning** screen displays and a timer counts-down the time remaining to clean the screen.
   See Figure 36.

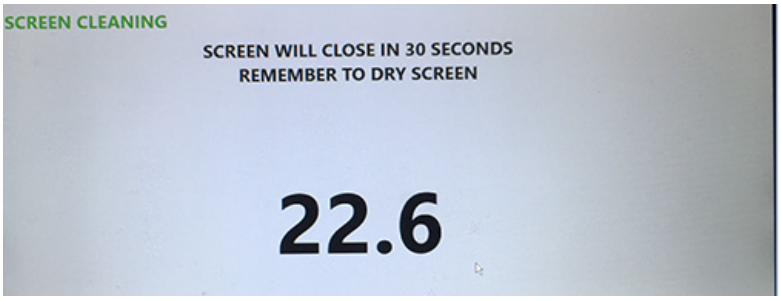

Figure 36

3. With the timer running, clean the screen.
   Note: When the 30 second timer expires, the Service Menu screen will re-appear.

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DEFINE FLOW RATES

Flow rates can be defined using the Define Flow Rates button in the Actions section of the Service Menu screen.

Perform the following steps define flow rates for the unit.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, select the **Define Flow Rates** button.
   Result: The **Define Flow Rates** screen displays. See Figure 37.

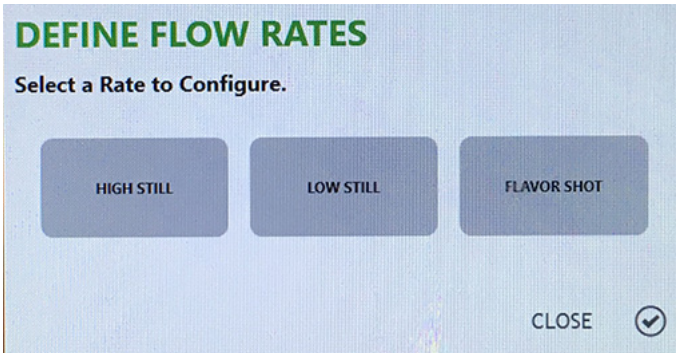

Figure 37

3. From the Define Flow Rates screen, select one of the option buttons.
   Result: The Enter milliliters poured during BRIX 4 second dispense screen displays. See Figure 37.

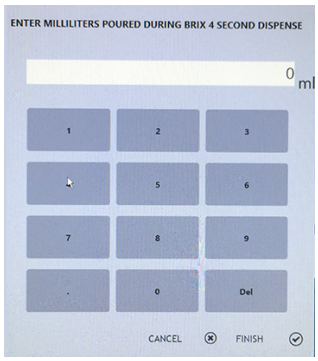

Figure 38

4. Enter the flow rates for the option selected. “4 Second BRIX Calibration” on page 25 for flow rates.
   When finished, select “Finish”.
   Result: The Service Menu screen displays.
   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section of the Service Menu screen.

CHANGE SERVICE LANGUAGE

The service language used on the Spire 6.0 unit can be selected or changed.

Perform the following steps to select or change the service language on the unit.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, select the **Change Service Language** button.
   Result: The **Change Service Language** screen displays.

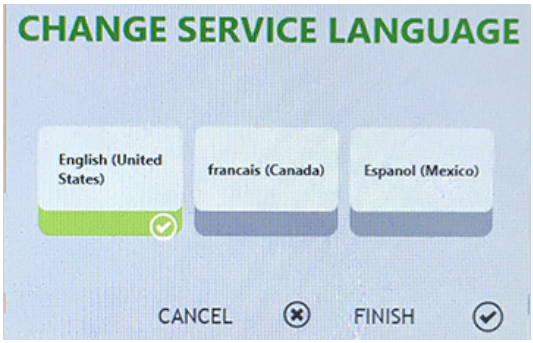

Figure 39

3. Select a Service Language, then close the **Change Service Language** screen.
   To do this, touch-select one of the service language options, then select “Finish”.
   Result: The Service Menu screen displays.
   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section of the Service Menu screen.

CHANGE CUSTOMER LANGUAGE

A customer language used on the Spire 6.0 unit can be selected or changed.

Perform the following steps to select or change the customer language on the unit.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, select the **Change Customer Language** button.
   Result: The **Change Customer Language** screen displays.

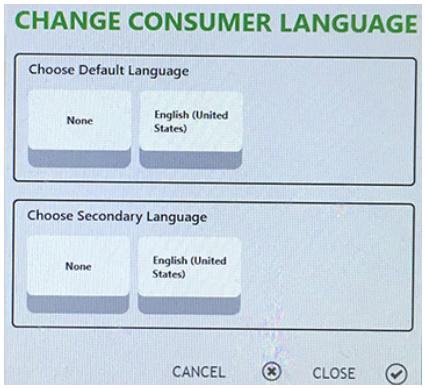

Figure 40

3. Select a Customer Language, then close the **Change Customer Language** screen.
   To do this, touch-select a default and secondary customer language option, then select “Close”.
   Result: The Service Menu screen displays.
   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section of the Service Menu screen.

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CONFIGURE TOP COMBINATION

The top of the Spire 6.0 touch-screen interface (Top Combination area) can display six (6) preset drink combination icons. Each brand icon can be assigned up to three (3) flavor shots to establish preset drink combinations for quick selection from the touch-screen user interface.

Perform the following steps to establish Preset Drink Combination icons in the Top Combination area of the interface.

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.

2. From the **Service Menu**, select the **Configure Top Combination** button.

   Result: The **Configure Top Combination** screen displays with blank buttons at the top of the screen. See Figure 41.

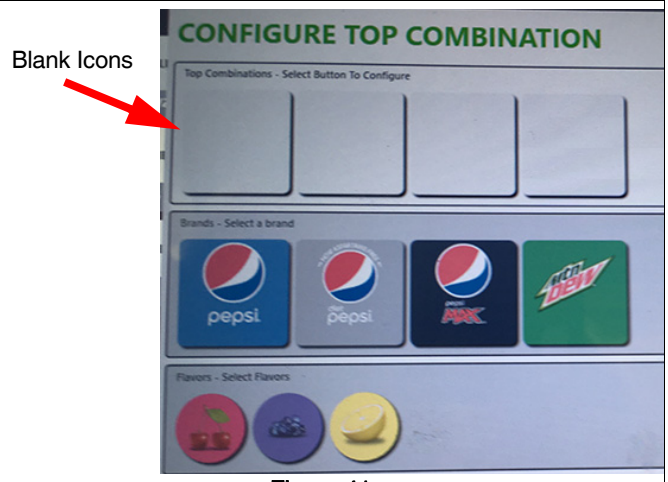

Figure 41

3. **Select a blank button** in the Top Configuration row.

   To do this, touch-select a button in the “**Top Combination - Select Button to Configure**” section (top) of the screen.

   Result: A check-mark appears on the blank icon button indicating that it is ready to be assigned a brand icon.

   See Figure 42.

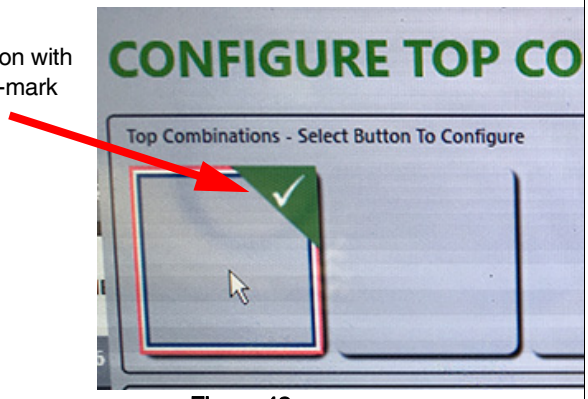

Figure 42

4. **Assign a brand** to the selected icon button being configured.

   To do this, with a icon button selected, touch-select a brand button in the “**Brands - Select a brand**” section of the screen.

   Result: The selected brand is assigned to the button in the “**Select Button to Configure**” section of the screen.

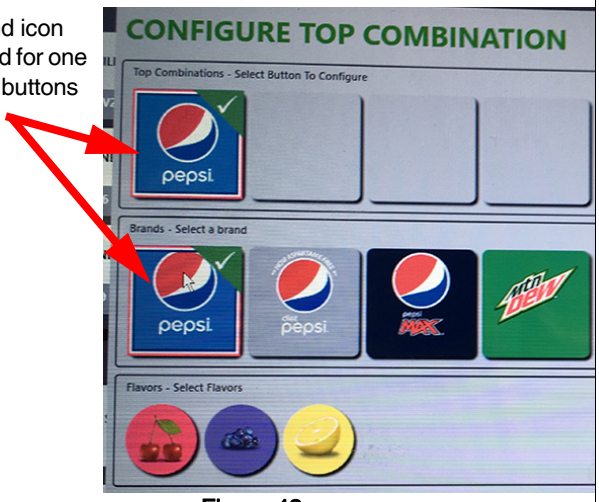

Figure 43

5. **Assign a flavor shot** to be the selected icon button being configured.

   To do this, touch-select a flavor shot icon button in the "**Flavors - Select Flavors**" section of the screen.

   Result: The "**Top Combination - Select Button to Configure**" section of the screen is updated to show a drink combination (brand & flavor shot) assigned to the selected button to be displayed on the interface as a preset drink combination.

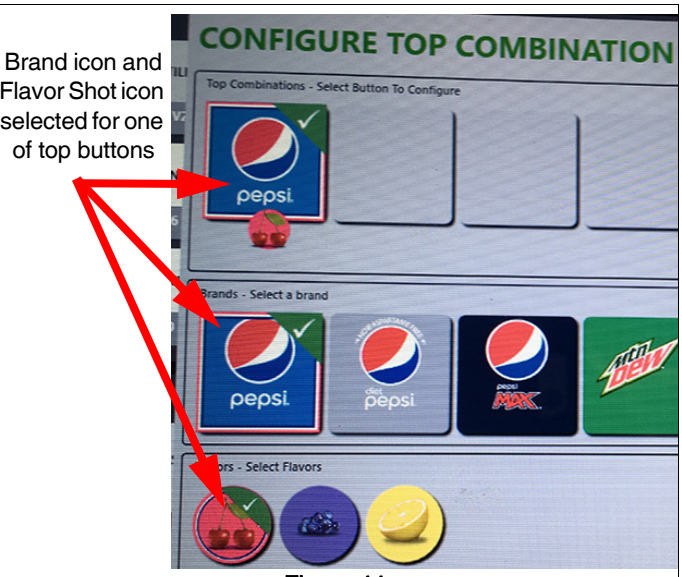

Figure 44

6. **Assign additional flavor shots** to be dispensed with the brand & flavor shot combination configured for the button.

   To do this, repeat step 5.

   Note: Up to 3 flavor shots can be assigned to a brand & flavor shot combination.

   Result: A Drink Combination icon is shown in the "**Top Combination - Select Button to Configure**" section of the screen.

   Note: These icons will appear on the consumer interface after configuration.

   When finished assigning flavor shots to the button being configured, proceed to step 7.

Figure 45

7. Repeat steps 3 through 6 to configure each of the remaining buttons that will appear at the top of the user interface (up to six (6) buttons).

   Figure 46 shows another example where three (3) buttons are configured as preset drink combinations.

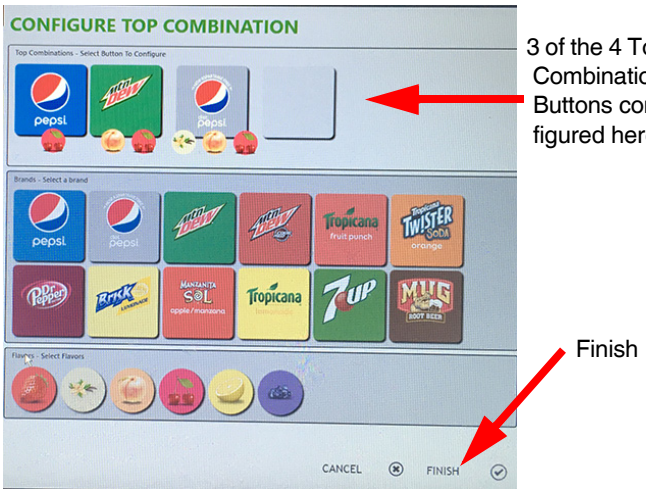

Figure 46

8. When finished configuring the buttons, select "**Finish**" in the lower-right corner of the screen.

   Result: The **Service Menu** screen displays.

   Note: To return to the Consumer User Interface, select the "**Exit to Consumer UI**" button in the Actions section of the Service Menu screen.

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CONFIGURE LEGACY VALVES

The Spire 6.0 unit has one (1) Multi-Brand/Multi-Flavor dispensing valve and four (4) Single-Brand (Legacy) dispensing valves. The Configure Legacy Valves screen is used to identify a brand or product associated with each of the four (4) Single-Brand (Legacy) dispensing valves. Once configured, these interface buttons will appear at the top of the touch-sensitive user interface.

Perform the following steps to identify the brand or product for the interface buttons that will appear at the top of the touch-sensitive user interface associated with the single-brand (legacy) dispensing valves.

1. Access the **Service Menu** screen.See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, select the **Configure Legacy Valves** button.
   Result: The **Configure Legacy Valves** screen displays. See Figure 47.

Figure 47

3. Select a button to be configured to dispense a selected brand from one of the single-brand (Legacy) dispensing valves.
   To do this, touch-select a button from the “Select Button to Configure” section of the screen.
   Result: A check-mark appears on the button.
4. Select a brand to assign to the button to be configured.
   To do this, with a button selected in the “**Select Button to Configure**” section of the screen, touch-select a brand button in the “**Brands - Select a brand**” section of the screen.
   Result: The selected brand is assigned a button in the “**Select Button to Configure**” section of the screen.
5. Repeat steps 3 and 4 to Configure Legacy Valves to dispense a specific brand or product for each button on the interface.
6. When each button is assigned a brand or product, select “**Finish**” at the bottom-right corner of the screen.
   Result: The **Service Menu** screen displays.
   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section of the Service Menu screen.

CONFIGURE SELECTION TIMEOUT

The Configure Selection Timeout button in the Actions section of the Service Menu is used to increase or decrease the amount of time before a selection is cleared from the screen when no further screen activity is detected.

Perform the following steps to configure selection timeout for the unit.

1. Access the **Service Menu** screen. See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, select the **Configure Selection Timeout** button.
   Result: The **Configure Clear Selection Timeout** screen displays. See Figure 48.

Figure 48

3. Increase or decrease the amount of time before a selection is cleared from the screen when no further screen activity is detected.
   To do this, press (select) one of the buttons to configure the selection timeout parameter displayed in the “Time Out” icon.
   Result: The Time Out icon displays the time out parameter established.
   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section of the Service Menu screen.
4. Exit from the **Configure Clear Selection Timeout** screen,
   To do this, press (select) Finish” in the lower-right corner of the screen.
   Result: The **Service Menu** screen displays.
   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section of the Service Menu screen.

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EQUIPMENT STATUS

An Equipment Status screen can be displayed from the System section of the Service Menu.

Perform the following steps to access the Equipment Status screen

1. Access the Service Menu screen. See “Accessing Service Menu” on page 18.
2. From the **Service Menu**, select the **Equipment Status** button.
   Result: The **Equipment Status** screen displays. See Figure 49.

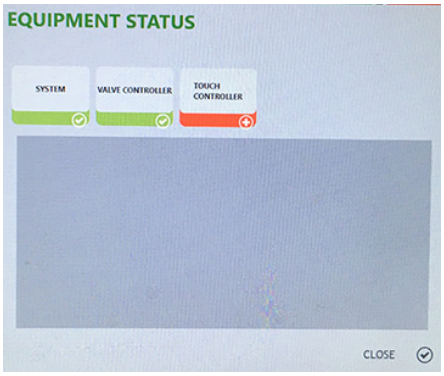

Figure 49

3. Review the equipment status screen. When finished, select “Close”.
   Result: The Service Menu screen displays.
   Note: To return to the Customer User Interface, select the “Exit to Consumer UI” button in the Actions section of the Service Menu screen.

ADJUST WATER-TO-SYRUP RATIO - SINGLE-FLAVOR VALVES

Perform the following steps to adjust the water-to-syrup ratio.

1. Remove valve cover and install syrup separator over the diffuser and through the nozzle.
2. Hold cup under valve and dispense beverage for a specific time (i.e. 2 seconds).

   NOTE: Water and syrup must be cold before checking ratios.

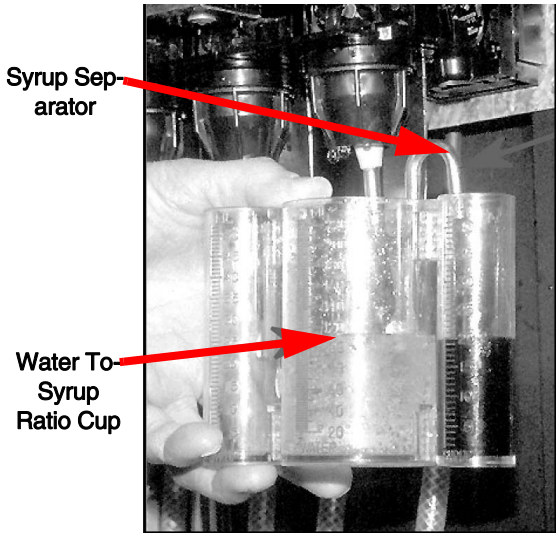

Figure 50

3. Adjust carbonated water flow to the desired rate (such as 90 to 110 ml (3 to 3.75 oz.) per second).
4. Turn the flow adjuster 1/4 of a turn at a time and recheck the flow. To increase reading turn clockwise.
5. Set syrup flow adjuster to get the desired ratio.
6. Test the valve and adjust until a consistent ratio is delivered three consecutive times.
7. Repeat procedure for other valves.

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VALVE PROGRAMMING AND OPERATION

This unit employs Optifill[tm] valves. The Optifill[tm] module on these valves can be programmed to enable or disable automatic top-off and shut-off control operation.

OPTIFILL™ VALVE - NORMAL DISPENSING OPERATION

With the Optifill[tm] automatic top-off and shut-off control feature enabled, once a cup is pressed and maintained against the valve lever, the valve is activated and a drink will dispense an **initial pour**.

As long as the cup is maintained against the valve lever, once liquid (or foam) touches the level from the initial pour, dispensing will stop temporarily (**top-off delay time**). With the cup maintained against the valve lever, a **top-off pour** will commence to complete an appropriate dispense level.

If a cup is moved away from the valve lever after the initial pour, a top-off pour will not occur.

Note: **The factory default for the top-off delay time is 4.0 seconds**. For the top-off pour to operate, the cup must stay in place against the lever.

OPTIFILL™ VALVE MODULE - PROGRAMMING OVERVIEW

An Optifill[tm] module is placed in program mode to establish settings associated with the “top-off” function. When in program mode, an indicator light will flash while programming is in progress. In program mode you can set the time interval for the top-off delay or you can disable the top-off function.

You may set the top-off delay many times before leaving the program mode, but when you complete programming the top-off delay time, the light will stop flashing. Only the last value entered while in program mode will be saved after you exit program mode. Program mode also includes a “built-in timed dispense function” to help set the flow regulators.

IDENTIFICATION AND LOCATION OF OPTIFILL™ LED AND SWITCHES

The front cover of an Optifill dispensing valve must be removed to access the Optifill module. Each module has an LED light, a Set Switch (button) and Program Switch (button) used to program the module.

The LED light is on the bottom left, the Set Switch button is the rectangular button in the middle, and the Program Switch button is a round button located to the right. See Figure 51.

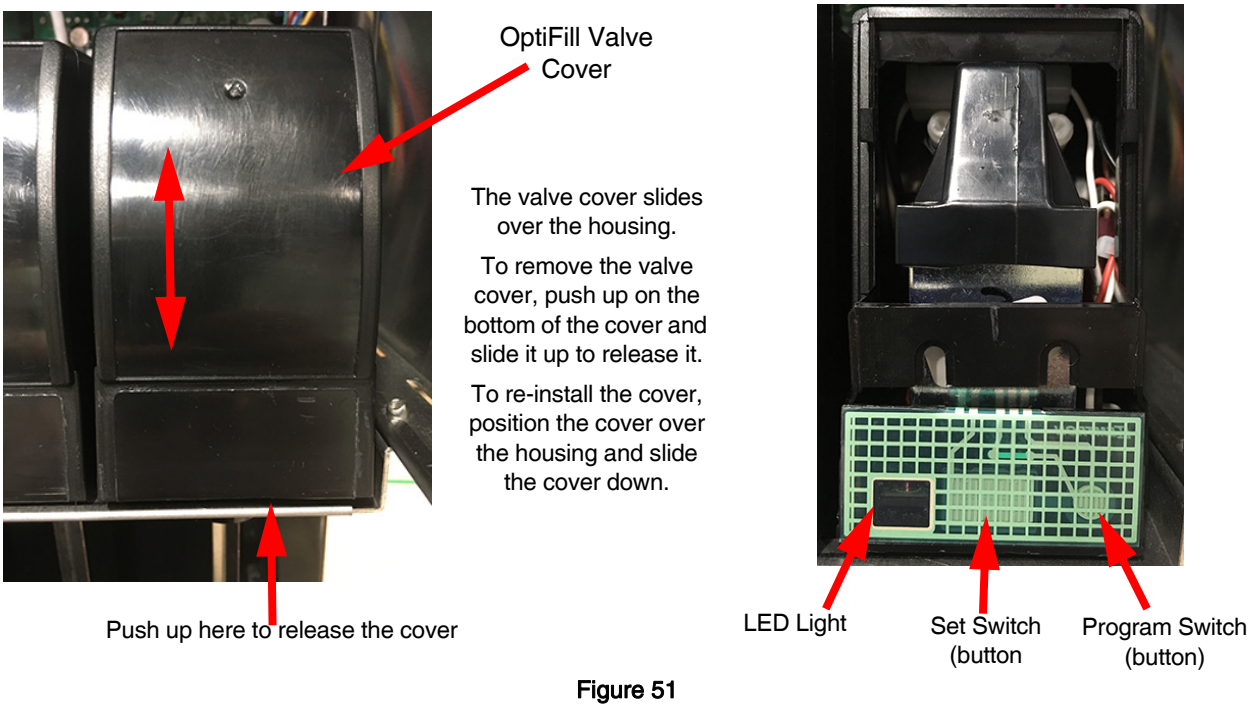

Figure 51

OPTIFILL™ VALVE MODULE - PROGRAMMING INSTRUCTIONS

To program an Optifill[tm] module, you must be able to enable and disable the modules program mode. Read all steps in this section before performing any one of these activities.

Optifill™Module - Enable or Disable Program Mode

- To Enable Program mode, press and hold the Program Switch button for 3 seconds until the LED (light) turns on.
- To Disable Program Mode, press and hold the Program Switch button for 3 seconds until the LED (light) turns off.

Optifill™ Module - Program the Top-Off Delay Time

Perform the following steps to program the top-off delay setting for an Optifill module.

1. Enable Program Mode.

   To do this: **Press and hold the Program Switch button for 3 seconds.**

   Result: The LED (light) turns on.

2. Establish the **Initial Pour.**

   To do this: **Place cup against the lever causing the valve to begin dispensing.**

   IMPORTANT: The cup must remain pressed against the valve lever.

   Result: Valve dispensing will begin, then automatically stop when the liquid (or foam) touches the lever (over the lip of the cup) to establish the **Initial Pour.**

   Note: The LED (light) will flash during the Initial Pour.

3. Establish the **Top-Off Pour.**

   To do this: **Wait for liquid (or foam) in the cup to recede from the Initial Pour**...

   ... then, **press & release the Set Switch button.**

   Result: Valve dispensing will begin again, then automatically stop when the liquid (or foam) touches the lever to establish the **Top-Off Pour**. At this point, the **Top-Off Delay Time** is programmed into the Optifill module and the LED (light) will stop flashing (be on steady).

   Note: The **Top-Off Delay Time** is the time between the end of the Initial Pour and the time it took for the liquid (or foam) in the cup to recede from the Initial Pour (that is, when the **Set Switch button** was pressed to establish the Top-Off Pour).

4. Disable Program Mode.

   To do this: **Press and hold the Program Switch button for 3 seconds.**

   Result: The LED (light) turns off.

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Optifill™ Module - Cancel the Top Off Delay Time

Perform the following steps to program the top-off delay setting for an Optifill™ module.

1. Enable Program Mode.
   To do this: **Press and hold the Program Switch button for 3 seconds.**
   Result: The LED (light) turns on.
2. Establish the **Initial Pour.**
   To do this: **Place cup against the lever causing the valve to begin dispensing.**
   Result: Valve dispensing will begin, then automatically stop when the liquid (or foam) touches the lever (over the lip of the cup).
3. Cancel the **Top-Off Delay Timer.**
   To do this: **Remove the cup from against the lever.**
   Result: The Top-Off Pour is inhibited and the **Top-Off Delay Time** programmed into the Optifill module is "zeroed-out".
4. Disable Program Mode.
   To do this: **Press and hold the Program Switch button for 3 seconds.**
   Result: The LED (light) turns off.

Optifill™ Module - Built In Flow Rate Timer Operation

The OptiFill™ module provides a timed dispense function that is included to set the valve flow rate.
Perform the following steps to set the valve flow rate.

1. Enable Program Mode.
   To do this: **Press the Program Switch button for 3 seconds.**
   Result: The LED (light) turns on.
2. Hold a graduated cup under valve nozzle without touching the lever, then press the **Set Switch button**.
   Result: The valve will dispense for 2.0 seconds.
   Note: The dispensed liquid measured in ounces divided by 2 equal oz/sec dispensed rate.
   If you are not satisfied with the flow rate, adjust the flow rate (water), then retest the flow rate as described in this step.
3. Disable Program Mode.
   To do this, press the **Program Switch** button for 3 seconds.
   Result: The LED (light) turns off.

DIAGRAMS

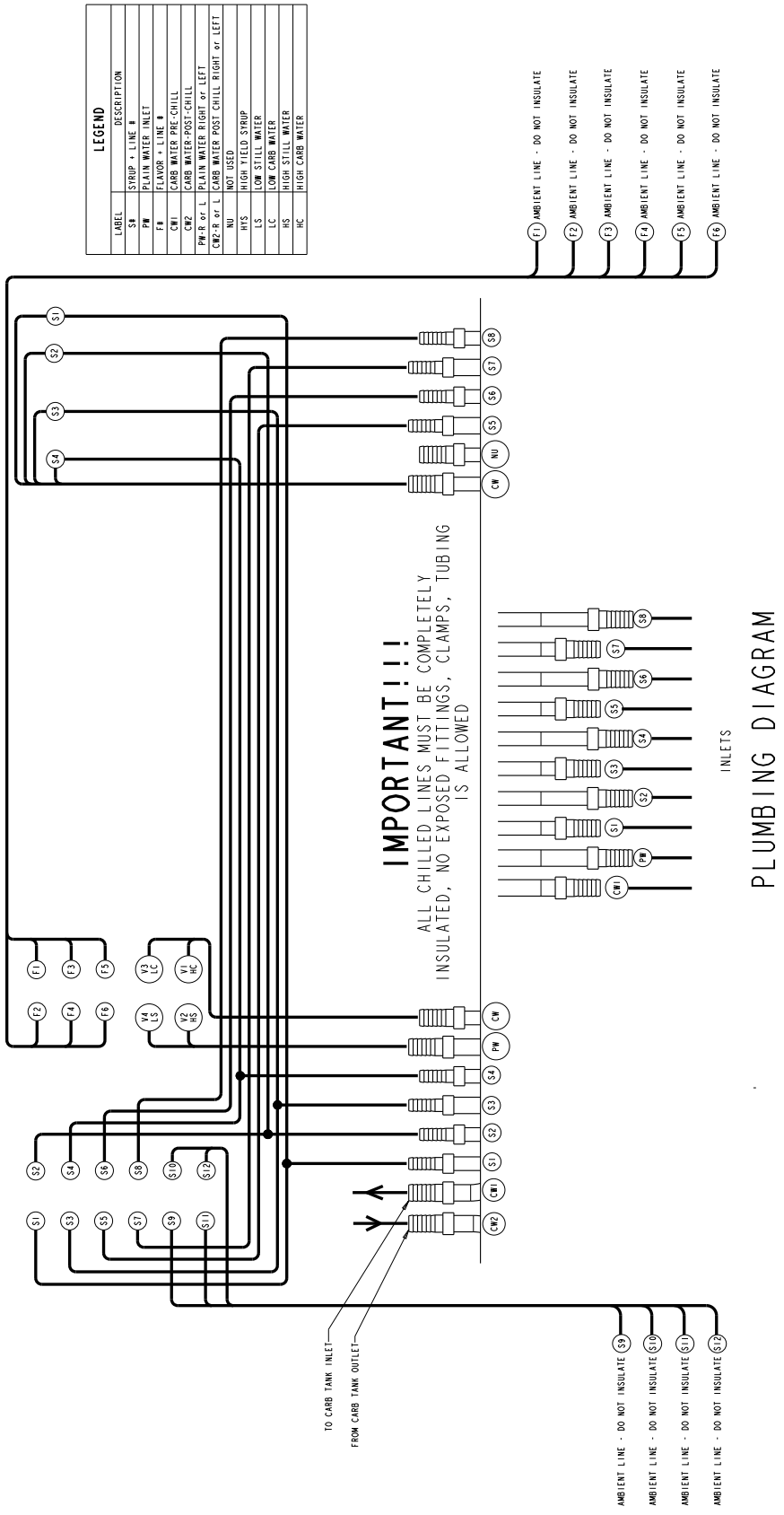

Figure 52 - Spire 6.0 Plumbing Diagram

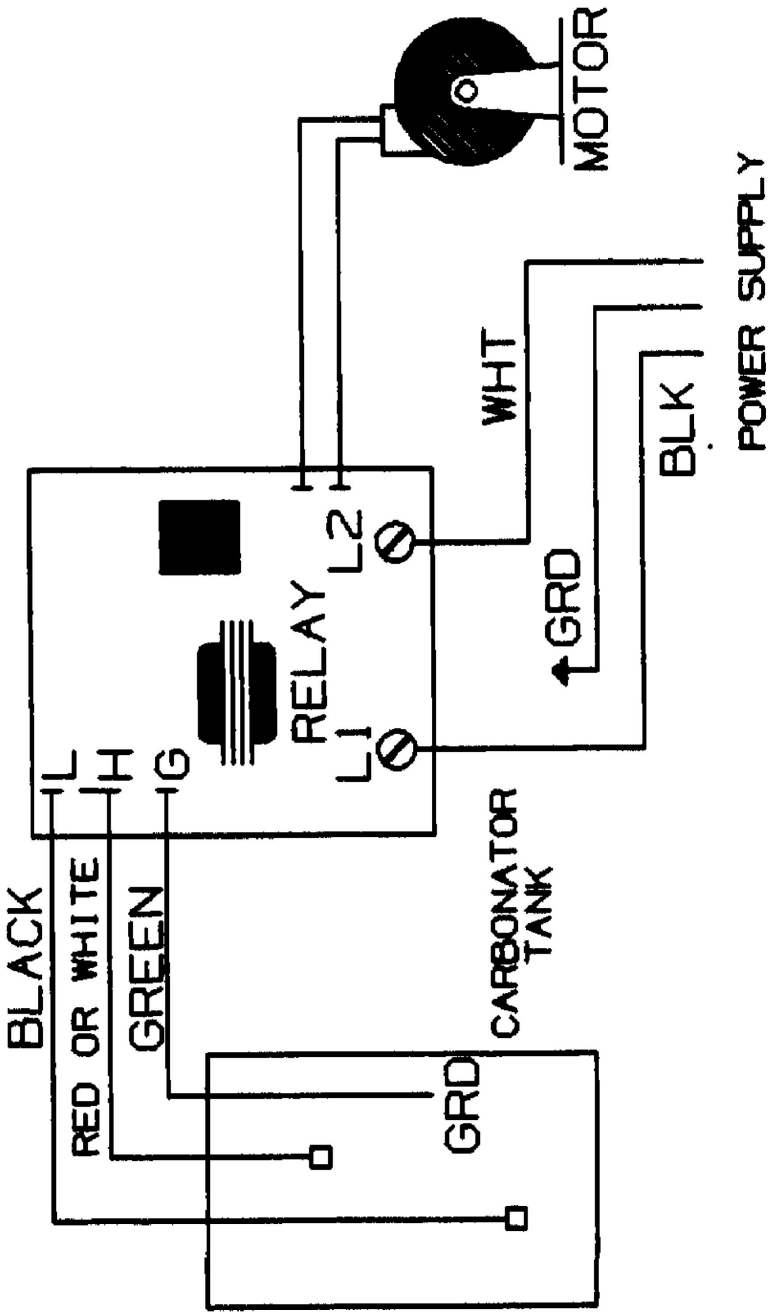

Figure 53 - Spire 6.0 Carbonator Wiring Diagram

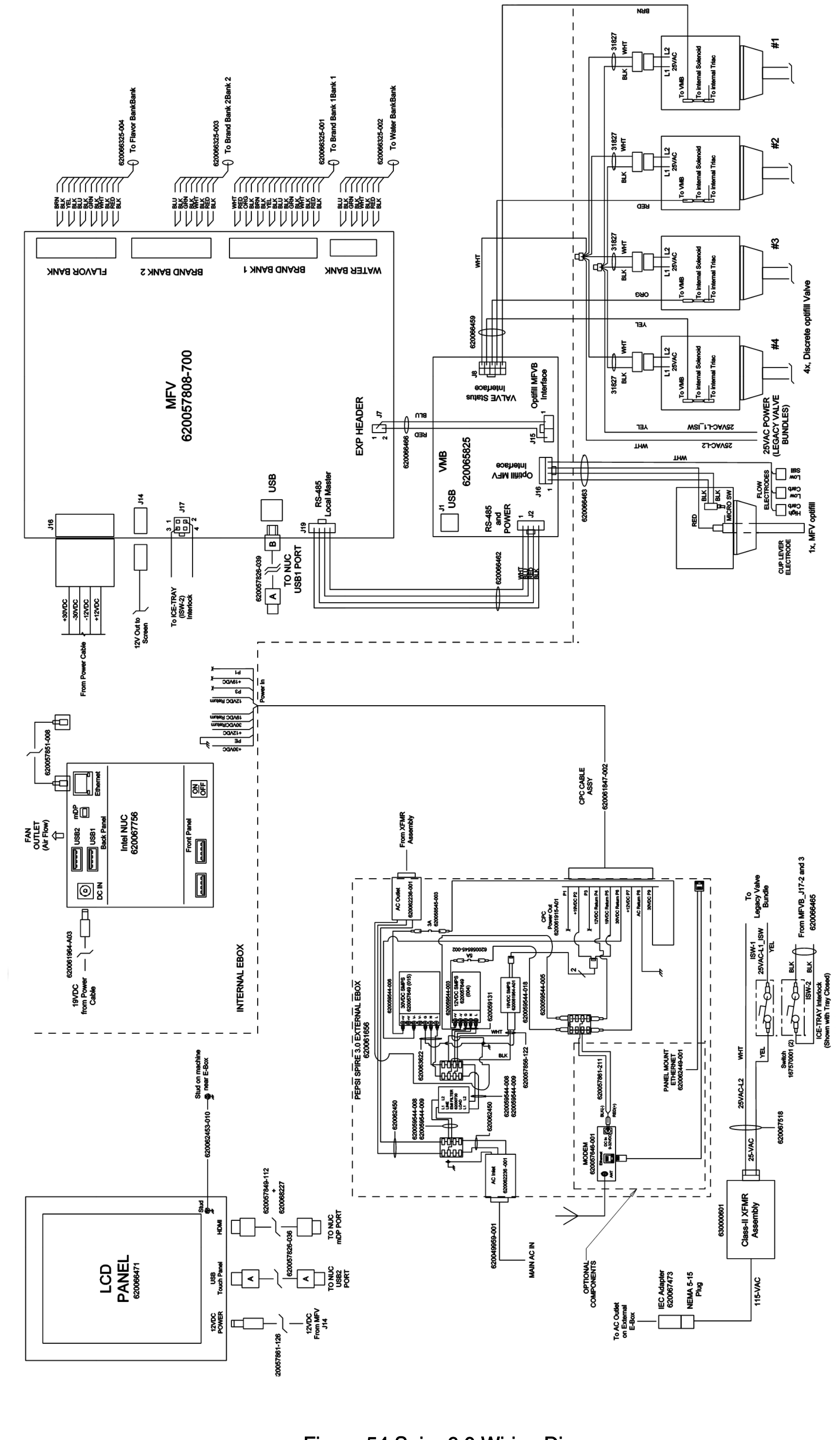

Figure 54 Spire 6.0 Wiring Diagram

TROUBLESHOOTING

NOTE:Refer to the electrical and flow diagrams located inside of the E-Box cover for troubleshooting.

⚠ CAUTION:
Only qualified personnel should service internal components or electrical wiring.

⚠ WARNING:
If repairs are to be made to a product system, remove quick disconnects from the applicable product tank, then relieve the system pressure before proceeding. If repairs are to be made to the CO_2 system, stop dispensing, shut off the CO_2 supply, then relieve the system pressure before proceeding. If repairs are to be made to the refrigeration system, make sure electrical power is disconnected from the unit.

Should your unit fail to operate properly, check that there is power to the unit and that the bin contains ice. If the unit does not dispense, check the following chart under the appropriate symptoms to aid in locating the defect.

Dispenser Troubleshooting		
Symptom	**Cause**	**Remedy**
Blown fuse or circuit breaker	Short circuit in electrical wiring	Repair Wiring
Slushy ice or water in bin	Blocked drains in cold plate	Remove access covers in cold plate cover & inspect/clean drains
	Poor ice quality due to water quality or ice maker problems	Correct water quality or repair ice maker
Beverage does not dispense	Beverage key switch in “OFF” position.	Beverage key switch is in “ON” position. **NOTE: The key switch, located on the right side of the dispenser tower, is used to disable right hand (‘Legacy’) beverage valves from dispensing. This feature is useful such as for preventing unwanted dispensing during off-hours or when cleaning the unit.**
	No 30V DC to valves	Restore 30V DC to valves
	No CO_2 pressure	Restore CO_2 pressure
Beverage is too sweet	Valve BRIX requires adjustment	Adjust valve brix
	Carbonator is not operating	Repair carbonator
	No CO_2 in carbonator	Restore CO_2 pressure in carbonator
	City water pressure supply low or inconsistent	Booster pump must be used if dynamic water pressure drops below 40 psig.
Unit will not dispense carbonated drinks. Dispenses syrup only.	CO_2 pressure in carbonator tank is too high.	Check CO_2 pressure regulator setting. 75 psig recommended. Relieve pressure from carbonator tank.
	Water valve will not open	Check electrical connection to water valve. Check resistance of coil (should be 9 ohms). Check for voltage at coil when brand button is depressed.

Unit will not dispense carbonated drinks. Spurts CO_2 and syrup only.	Carbonator tank is empty, because tank was emptied while power was applied to unit. 5 minute time-out of carbonator pump/motor occurred, and carbonator pump is locked off.	Unplug the unit and reconnect the unit. Main control board will reset, ice agitation will occur, and carbonator tank will refill to normal level.
	Note that this can occur while the water filter system is serviced or water supply is shutoff. If drinks are drawn from the dispenser while water pressure is shutoff, the carbonator pump starts and runs continuously, then shuts off on the 5 minute timeout.	1) low water pressure switch deactivates carbonator pump, 2) after 5 minutes reset and retry carbonator pump. If water supply is restored, the 5 minute timeout will not occur. Repeat reset a second time, but on a third time, then lockout carbonator pump, which will generate a service call.
Carbonated drinks are flat (low on carbonation)	CO_2 is out	Replace CO_2
	Carbonator tank is 100% filled because the city water pressure exceeds the carbonator tank CO_2 pressure regulator setting.	CO_2 setting for the carbonator tank is 75 psig, max water pressure is 60 psig. If necessary, install a water pressure regulating valve.
Low water pressure	Could be caused by excessively long runs (over 40 ft.) of 3/8” water supply line.	Increase line size to 1/2”
	Low water pressure	Add water pressure booster pump
	Plugged water filter.	Change water filter
	Water booster bladder has burst	Replace water booster tank/bladder
No Syrup or Watered down drink dispensed	Syrup supply is empty	Replace BIB
	BIB pump not working	Replace BIB pump
	No CO_2 or compressed air supply to BIB pump, or not enough pressure	Check CO_2 pressure regulator setting. 65 psig recommended. Replace CO_2 tank or fix compressor.

Carbonator Troubleshooting

Symptom	Cause	Remedy
Carbonator pump does not start to fill tank	Power cord for the carbonator pump motor is not connected.	Carbonator pump is powered off the main control board inside the electrical box of the unit. Check that the umbilical cord is connected from the unit to the pump motor terminal box.
Power cord is connected but carbonator pump does not run.	Carbonator pump motor is disabled.	Check the enable/disable switch on the carbonator pump terminal box and enable it, if necessary.
	Probes were dry, unit was powered up, water was not turned on, and carbonator did not fill.	This results in a 5 minute timeout. Unplugging the unit and plugging it in will reset the unit and start the carbonator pump.
	Water service was interrupted for more than 5 minutes.	Unplugging the unit and plugging it in will reset the unit and start the carbonator pump.
Carbonator pump is short cycling with every drink drawn	Lower liquid level probe reads “dry” while upper probe reads “wet”	Check color of leads going to probes. Black should go to bottom probe and white to top probe. Reverse if incorrect.
Carbonator tank overfills, overflows through relief valve, and pump shuts off after 5 minutes.	Poor electrical connections between carbonator tank and main control board	Check connections at carbonator tank and at connector J4 on the main control board.
	Broken wires between carbonator tank and main control board	Replace wire harness
	Defective liquid level probe	Replace liquid level probe

Contact your local syrup or beverage equipment distributor for additional information and troubleshooting of beverage system.

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