PEPSI TOWER 2.0 DISPENSER

Installation Manual

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Revision: B

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.

This Product is warranted only as provided in Cornelius' Commercial Warranty applicable to this Product and is subject to all of the restrictions and limitations contained in the Commercial Warranty.

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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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TABLE OF CONTENTS

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

- 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.**

Publication Number: 621058522INS

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. Whenever the unit is removed from service and/or transported, the unit must be completely drained of product and rinsed out to remove residual product. When transporting the unit, make sure that the unit is carefully tied down or stored in such a manner that the unit will not move during shipment.

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 1,000 lbs. to insure adequate support for the unit. **Failure to comply could result in serious injury, death or equipment damage.**

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.

SYSTEM OVERVIEW

DESCRIPTION

The Pepsi Tower 2.0 dispenser is a microprocessor controlled unit that dispenses up to 8 or 12 different drinks from one dispenser. It provides automated drink dispensing along with an ADA compliant option for dispensing drinks

SPECIFICATIONS

Model name	Pepsi Tower 2.0
Total Unit Weight	97 lbs ((44 kg)
CO2 operating pressure	75 psig (0.52 MPa) max
Ambient Operating Temperature	65 to 95^{o} F (18 to 35^{o} C)
Maximum number of brands/flavors available	8 brands /4 flavors or 12 brands, 2 flavors
Electrical	120 V/1-phase/60 Hz 220 - 240 V/1-phase/50 Hz 15 A dedicated, protected circuit
Dimensions	33.83” Height x 11.07” Width x 19.82” Depth
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

Publication Number: 621058522INS

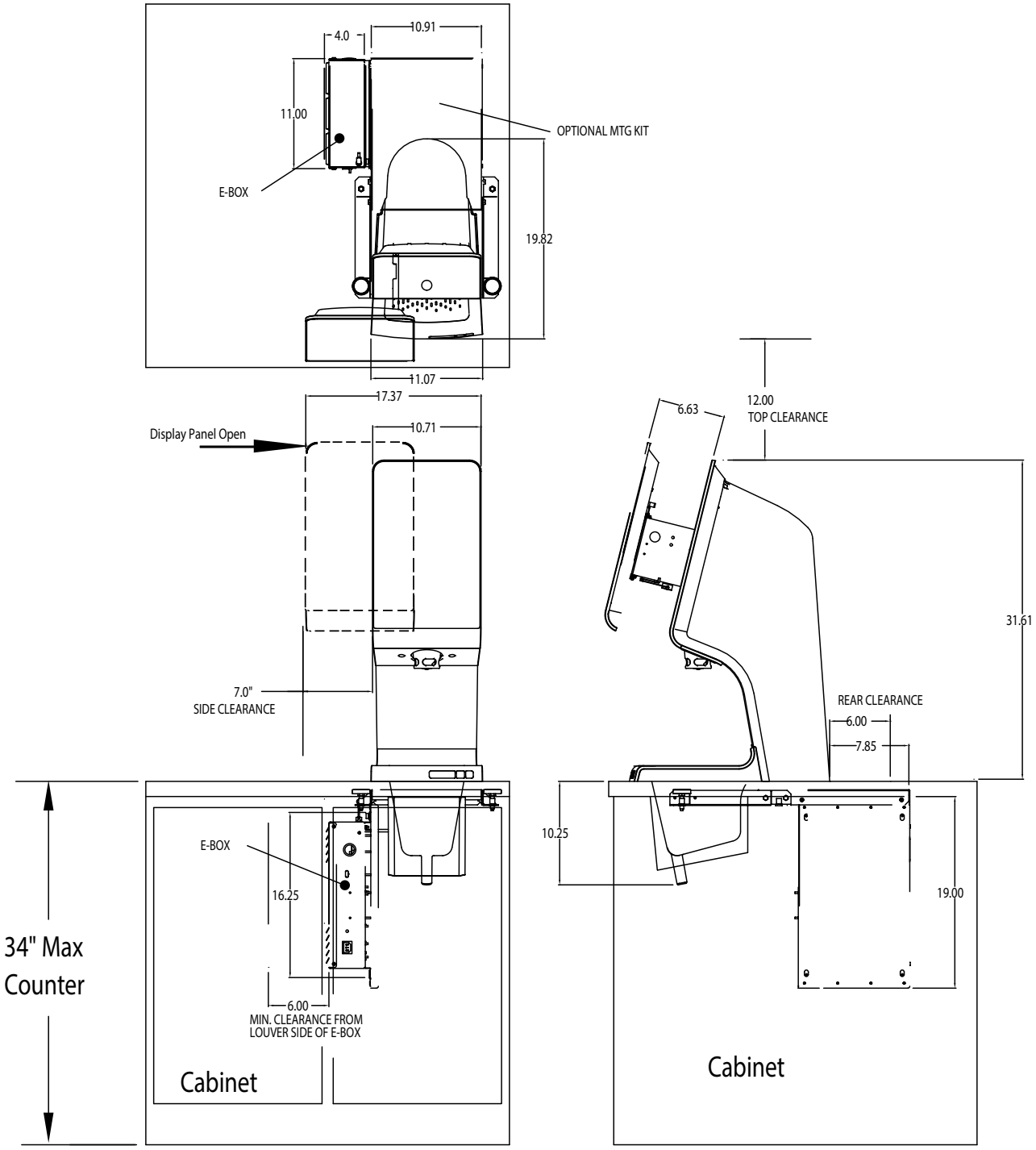


Figure 1 - Spire 2.0 Physical Dimensions

DELIVERY, INSPECTION & UNPACKING

WARNING	It is the responsibility of the installer to ensure that the water supply to the dispensing equipment is provided with protection back flow by an air gap as defined in ANSI A 112.1.2-1979; or an approved vacuum breaker or other such method as proved 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.

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.

CAUTION	Do not lay the unit on its FRONT or SIDES without packaging. This may cause DAMAGE to the display or cladding, consequently voiding the warranty.

Carton Contents

Quantity	Description
1	Tower 2.0
1	Multi-Voltage Power Supply
1	Drip Tray with ADA & Insulation & Cup Rest
1	Installation Manual and Operators Manual
1	Hardware Mounting Package
1	Drain hose

Publication Number: 621058522INS

SELECTING A LOCATION

The dispenser must be located near a permanent drain to route and connect the unit ice bin and drip tray drain hoses. All drains and connections to such drains must meet local plumbing codes.

The unit 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.**

Review all information here first, then perform the following steps to install the dispenser.

⚠ **WARNING**	The unit is very heavy and extreme care should be taken when moving or lifting the unit. Do not attempt to lift the unit manually. **Failure to comply could result in serious injury, death or damage to the equipment.**

⚠ **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.**

⚠ **WARNING**	This unit is designed for use with an IDC175 or IDC255 Ice only dispenser to chill the syrups, supply carbonation water and a recirculation system.

SITE AND INSTALLATION REQUIREMENTS

Before installation, validate the site is Pepsi Approved. This includes a cabinet capable of holding the load and no obstructions under the counter that would not allow the under-counter installation kit and E-BOX assembly to be installed properly. (Refer to Figure 2) The site may also contain walls and features in the cabinet that do not allow the python and recirculation system installation.

IMPORTANT: Before taking the unit off the pallet or when moving the unit, gather all electrical cables and tubing from under the unit and move them appropriately to protect them from damage.

The dispenser MUST be place in a horizontal, level position and product and supply lines must be flexible enough to permit shifting the position of the dispenser (when cleaning the area beneath the dispenser, etc...).

IMPORTANT: The dispenser is not designed for a wash down environment and must not be placed in an area where a water jet could be used.

Apply a continuous bead of NSF International (NSF) silicone sealant (Dow 732 or equal) approximately 1/4-inch around the outside of the unit. All excess sealant must be wiped away immediately.

Summary of Installation Requirements

Requirement	Description
Weight	Front and rear counter must be level and able to support 60 lbs. (Tower only)
Environment	Indoor installation only
Temperature	40° F to 90° F (4.4° C to 32.2° C) ambient temperature
Clearance	Top: 12” Rear: 6” Side: 7”
Water Supply	100 psi max; 40 psi min. at a volume of 125 gal. per hour.
Electrical	See nameplate on unit for requirements.

PEPSI TOWER 2.0 INSTALLATION TEMPLATE

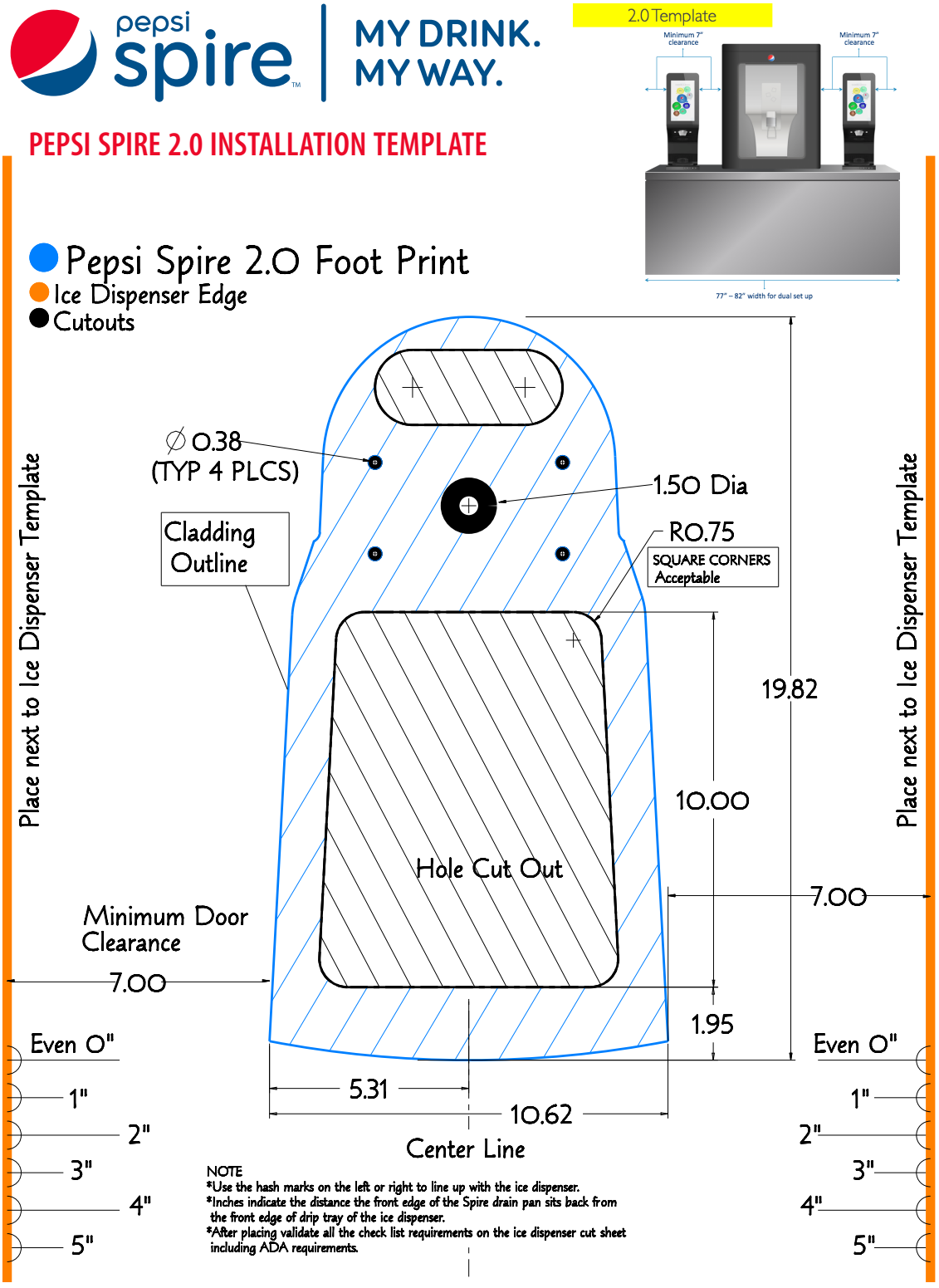


Figure 2 - Pepsi Spire 2.0 Foot Print Template

PEPSI TOWER 2.0 - INSTALLATION

Review all the content in this section first, before conducting installation activities.

NOTE: All installations require a technician to modify the counter during the installation process.

RECOMMENDED TOOLS & MATERIALS FOR INSTALLATION

Recommended tools and materials for installation include, but may not be limited to, the following:

Pencil, Scissors or knife, Hole punch, Jigsaw with material appropriate blades, Electric drill with drill bit, Hole saw (1-1/2”), socket wrenches, files, small grinder, and appropriate silicone adhesive.

NOTE: Tungsten blades and bits are recommended for stainless steel counter-top installation.

PREPARATIONS FOR COUNTER-TOP INSTALLATION

The following are preparation activities for wood or stone counter installation.

1. Become familiar with the following:
   - Physical Dimensions of the Unit. See "Figure 1" on page 8.
   - Selecting a Location. See “Selecting a Location” on page 10.
   - Template for Counter-top Installation: See "Figure 2" on page 11.
2. Using the template, place the counter edge and center line marked on the template to the front edge of the counter to establish the location of the unit on the counter top. Note that the template is marked with a 2”, 4” & 6” locations from the counter edge.
3. Using the template, drill and cut the holes into the counter-top.

   NOTE: For wood counters, holes can be drilled in the corners of any rectangular cut-out.

   NOTE: For stainless steel, stone or stone composite counter-tops, a square corner is acceptable.

   NOTE: De-burr all sharp edges with a file or grinder before placing the machine.

INSTALLATION: WOOD OR STONE COUNTER TOP

1. Prepare for Counter-top installation. See “Preparations for Counter-Top Installation” on page 12.
2. With the dispenser still in shipping container remove the splash panel and back cladding from unit.

   NOTE: To access the two top screws of the cladding, the touch screen should be opened.
3. Carefully place the tower base over the hole pattern prepared with the template for counter-top installation.

WARNING

The dispenser is top heavy. Use a second person to stabilize it when bolting it to the counter-top.

4. Route syrup tubes through the rectangular hole at the rear of the unit.
5. Route power and communication wires through the 1-1/2” diameter hole between the 4 mounting holes as shown on the template. See Figure 2.
4. From under the cabinet, mount the frame to the counter using bolts & washers.

   NOTE: Make sure the bolts are of appropriate length to accept the thickness of the counter top. Also, finger tighten the bolts first, then adjust the final alignment of the unit on the counter top before final tightening of the bolts to secure the unit to the counter top.

5. Attach the sink support. See Figure 3.

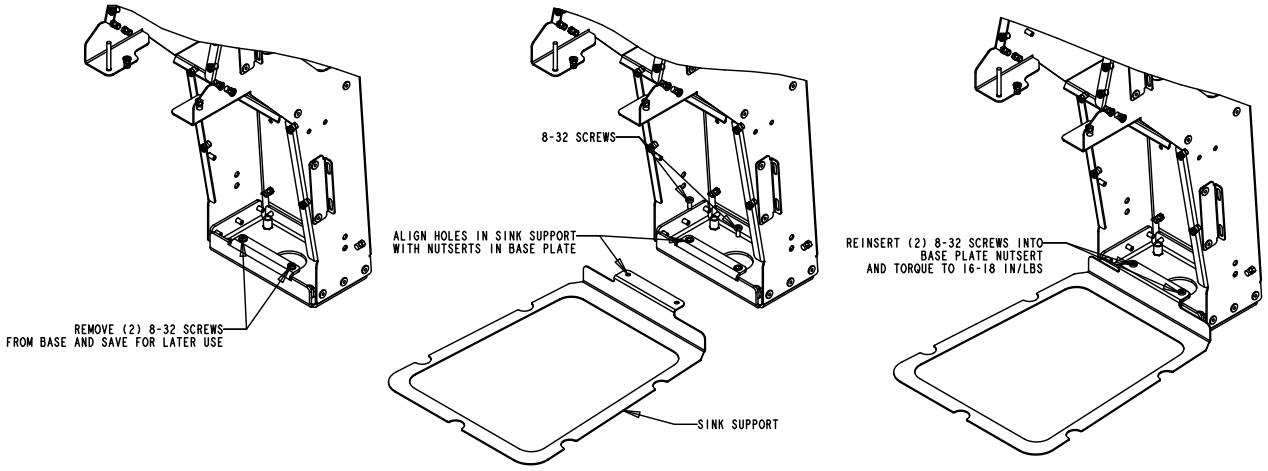


Figure 3

6. Next connect the low voltage connector and harness and Ethernet cable. Remove the tower E-Box Cover. First remove the splash panel which is held on with a magnet by pulling on the panel. Next loosen the two 8-32 screws that hold the lower cover plate.
7. Remove the Split Ring collar. See Figure 4.
8. Push the Low Voltage connector (CPC) through the hole and plug it into the mating connector inside the tower E-Box.
9. Push the Ethernet cable also through the hole and plug into the mating connector inside the tower E-Box as shown in Figure 4.

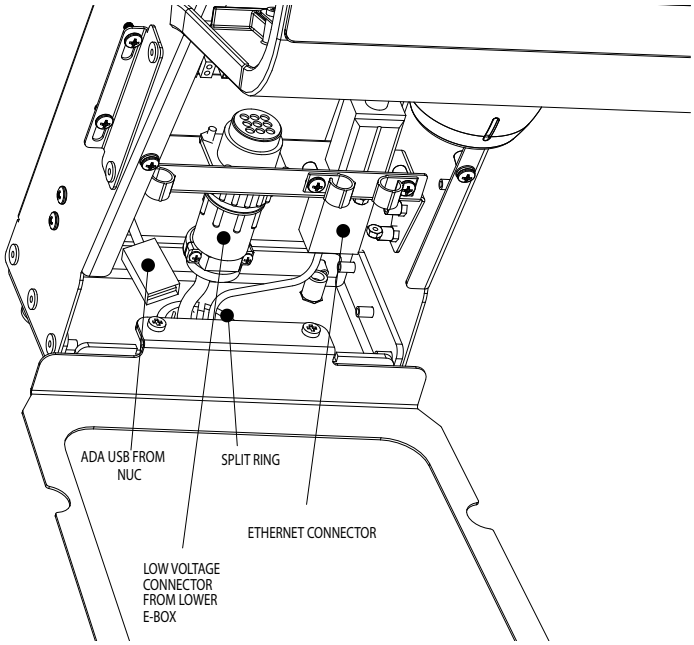


Figure 4

10. Push the drain tube from the condensation pan also through this hole.
11. Locate the USB cable (mini USB plug and located below the control board) that connects the ADA PCB to the tower computer.
12. Place the drip tray in the cut hole allowing to align with the drip tray bracket P/N 620057771. From under the counter place the foam insert over the drip tray and make sure it fits in the hole cut out .
13. Connect the tower USB cable from the NUC to the ADA USB cable from drip tray board, placing the cable in the rib slots in the drip tray.

Publication Number: 621058522INS

14. Replace rear cover and drip tray.
15. Place a bead of silicone around drip tray and back cover base to secure and seal to table. Secure drip tray insulation with the (2) screws from under the counter.
16. The E-Box has a flanges that should be used to mount to a surface.
17. Find a suitable wall or surface to mount the power supply mounting bracket (Use wood screws to mount if cabinet is wood). See "Figure 1" on page 8 for clearances.
18. Connect the Low Voltage cable (CPC) and Ethernet cable. If a modem is used the cover will need to be removed and a modem mounting kit installed.
19. Connect drain tube from the tower to drip tray and route tube to drain.

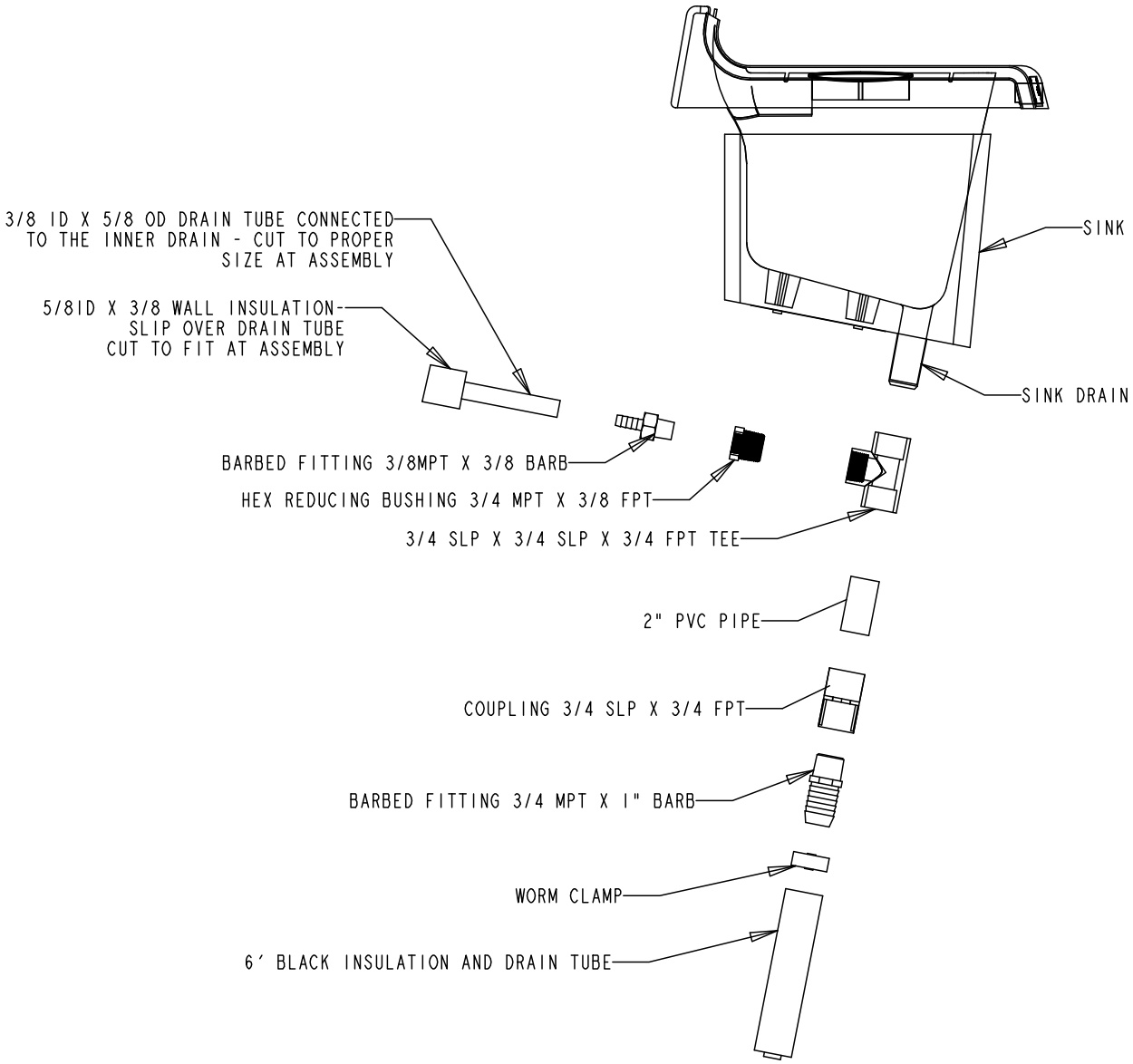


Figure 5

INSTALLATION: STAINLESS-STEEL COUNTER TOP

1. Prepare for counter-top installation. See “Preparations for Counter-Top Installation” on page 12.
2. With dispenser still in shipping container remove the splash panel and back cladding from unit.
   NOTE:To access the two top screws of the cladding, the touch screen should be opened.
3. Install the mounting brackets with Phillips flathead screws and locking nuts.
4. Attach the drip tray bracket P/N 620057771 with two (2) 1/4-20 bolts to stabilize the tower during installation and use the cardboard insert for additional stabilization if necessary.
5. Bolt the E-Box mounting plate to the left or right mounting bar depending on the appropriate location for the E-Box.

WARNING

The dispenser is top heavy. Use a second person to stabilize it when bolting it to the counter-top.

6. Carefully place the tower base over the hole pattern prepared with the template for counter-top installation.
7. Place the tower in position and bolt the lower tower mounting flanges to the under-counter mounting bars. (Use the holes that allow best fit and adjustment of the feet).
8. Adjust the three legs on each of the mounting bars to touch the bottom of the counter. This allows the tower to slide and allows the alignment of the drip tray and drip tray insulation to the hole in the counter.
9. Locate the USB cable that connects the ADA PCB to the tower computer. This can be found by removing the E-Box lower cover plate with the four (4) 8-32 screws. The plug looks like a mini USB plug and is located below the control board.
10. Connect the USB cable to the ADA board by placing the cable in the rib slots in the drip tray and reinstall the five (5) screws and lower drip tray base.
11. Place the drip tray in the hole, allowing it to align with the drip tray bracket P/N 620057771. From under the counter, place the foam insert over the drip tray and make sure it fits in the hole cut out.
12. Tighten the six (6) locating feet until the tower does not slide.

    NOTE:Over tightening the feet will deflect and possibly damage the mounting bars.

13. Place a bead of silicone such as Dow Corning RTV 731 or equivalent around the drip tray to secure it to the counter. Secure the drip tray insulation with the two (2) screws from under the counter.
14. Plug the 6-pin power cable connector, the computer power cord and the AC main power cord into the E-box and slide the E-Box onto the mounting rails. Secure with the two (2) thumb screws.

Publication Number: 621058522INS

INSTALLING WATER, CO2 AND SYRUP LINES

The unit must have a product supply connected to each inlet on the valve. Refer to the plumbing diagram for details of the hook-up.

Perform the procedure below to plumb the unit.

1. Locate the water and syrup input tubes.

   The lines are as follows depending on model:

   - 1-Carbonated recirculated water line
   - 1-Plain water line
   - 8-Syrup lines (8 or 10 chilled)
   - 4-Flavor lines (4 or 6 ambient)

   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.

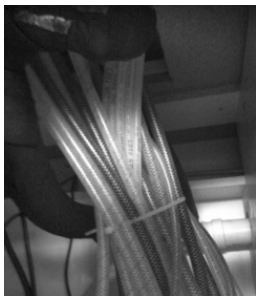


Figure 6

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 can be no more than 65 psi (0.45 MPa), etc.]. If necessary, add a 65 psi regulator to the soda water line. Water over pressure (higher than CO2) 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 CO2 operating pressure. [Example: Carbonator CO2 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.

   NOTE: The tower can be connected to either an IDC175 IDC 255 ice only unit (10 chilled syrups). Flavor lines are ambient and are not included in the python assembly or other recirculation system.

   NOTE: Once lines are connected they must be re-insulated. All lines must be wrapped with a minimum of 1" of insulation.

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 Spire unit using 3/8” (0.95 cm) food-grade tubing.

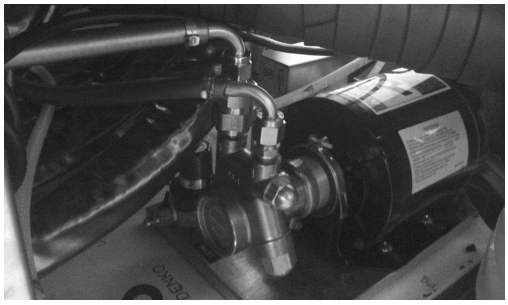


Figure 7

5. With the carbonator pump power switch in the OFF position, connect the power cord from the unit to the power junction box supplying power to the carbonator pump. Leave the power switch OFF.

Carbonated Water Recirculation System

The carbonated water is plumbed to the tower through a U-fitting and water flows through the tower, chilling the syrup lines and supplying carbonated water to the carbonated water valve. The line returns to the python. When a beverage is poured, the carbonation pump turns on and feeds carbonated water into the system.

Water Supply and CO_2 Regulator Setup

Perform the procedure below to plumb the unit.

1. Turn on the main water supply valve.

2. 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.

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

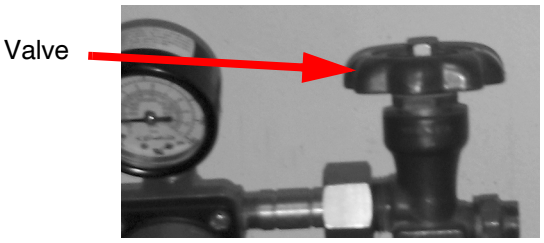


Figure 8

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

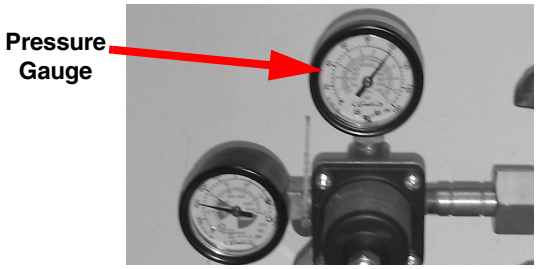


Figure 9

4. Plug the dispenser unit into an AC power source. This supplies power to the unit.

5. Supply power to the carbonator pump, then turn the carbonator pump power switch to the ON position and check for leaks in the system.

6. Adjust the CO2 regulator to achieve appropriate CO2 pressure settings.

   See “CO2 Regulator Adjustments” on page 17.

CO2 Regulator Adjustments

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 Valves - Basic Pressure	35 PSI (3.1 bar)

Publication Number: 621058522INS

Basic Dispenser Setup and Operation

Pepsi Tower 2.0 Power Up

1. Plug the power supply plug into a protected 15 amp circuit.
2. If the display does not come on, open the touch screen door by placing both hands on the display screen and pulling forward. See Figure 10, left.
3. With the door in the 90° position locate the **open-door locking mechanism** (see Figure 10, lower right) and pull the mechanism out to stabilize the opened door. Then, move the display panel to the left, away from the unit.
4. With the door open, on the inside of the unit, locate the **key switch** and turn it to the ON position. (See Figure 10, center). If the unit does not power-up, refer to "Troubleshooting" on page 42.

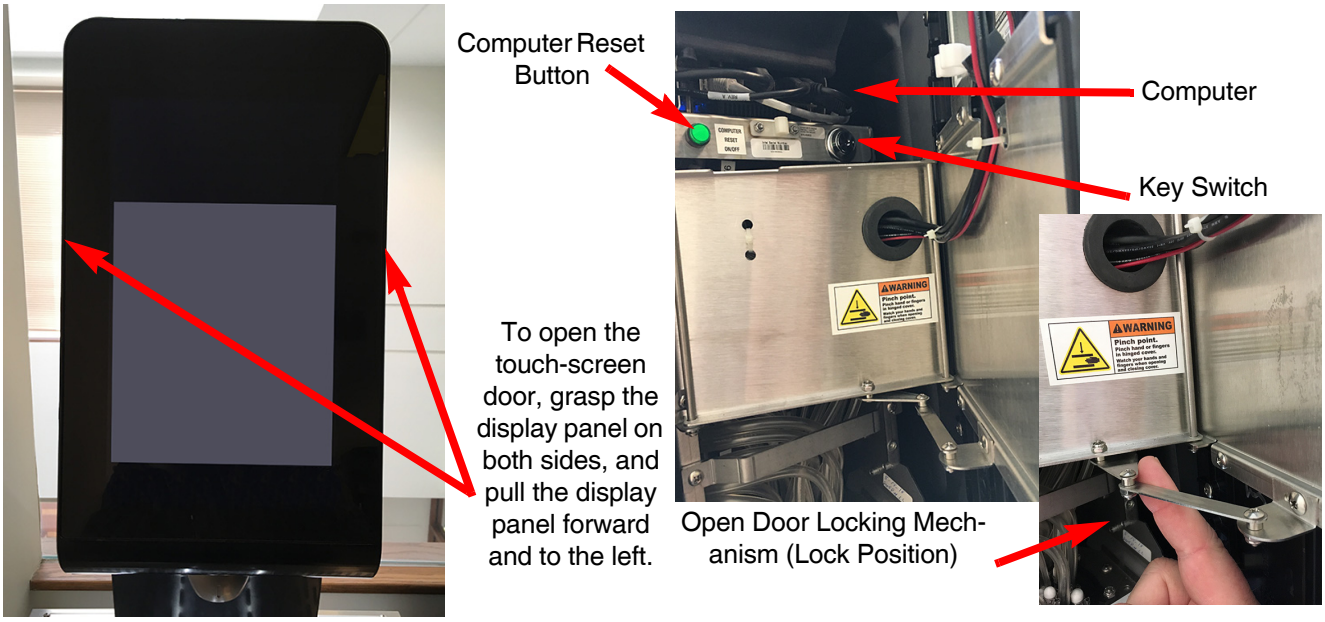


Figure 10.

5. After power-up, do one of the following based on what is shown on the touch-screen display panel:

   Initial Setup: if the display panel shows an **initial setup** screen, close the display door and go to "Service Mode - Initial Setup or Service Screen" on page 19.

   Customer User Interface: If the display shows the **customer user interface** screen, close the display door and go to "System Check" on page 18.

   If the display panel does not show an initial setup screen or a customer user interface screen, press the green **Computer Reset button** to reboot the computer. If this condition persists, refer to "Troubleshooting" on page 42.

System Check

After power-up (during installation before mapping or priming valves), if the display panel shows the **customer user interface** screen, you can perform a quick system check to validate that the touch screen, computer and valve board are communicating properly. To conduct a quick system check, perform the following steps:

1. Make sure water and syrup supply is turned off.
2. Press one of the valve icons on the screen and the screen will display a pour button.
3. Press the pour button and listen for a solenoid valve "click" to validate that the valve is operating. Repeat steps 2 & 3 for various valves.
4. If no click is heard, **press & hold the Computer Reset button** for 5 seconds to shut-down the computer. Then, wait 10 seconds, press the **Computer Reset** button again and restart the system check.
5. If a solenoid valve "click" is heard. When finished, see "Accessing Service Screens from the Customer User Interface" on page 21.

Service Mode - Initial Setup or Service Screen

When the unit is powered up properly, the display screen will show one of two screens depending upon whether or not Initial Setup was previously performed on the unit.

- **Initial Setup:** If initial configuration parameters need to be provided to the unit, **FIRST TIME SETUP** screens appear to prompt you through an initial setup process. If this is the case, see “Service Mode - Initial Setup” on page 19.
- **Service Screen:** If initial configuration parameters have previously been provided for the unit, the customer user interface screen appears upon power-up and access to service screens is possible from the customer user interface. See “Accessing Service Screens from the Customer User Interface” on page 21.

Service Mode - Initial Setup

The initial setup process establishes various configuration parameters for the unit. Review the following, and all steps in the process, before performing Initial Setup.

NOTE: Initial setup screens may vary slightly from unit to unit based on the software version installed.

Perform the following to conduct an **Initial Setup**:

Upon power-up, when configuration parameters need to be provided to the unit, a series of **FIRST TIME SETUP screens** appear to prompt you through Initial Setup.

1. From the **Machine Status** screen, press “**Continue**”

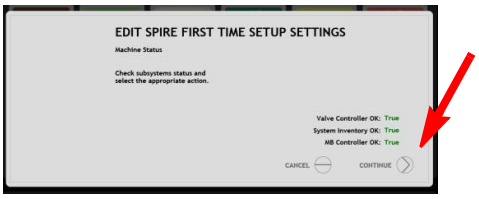


Figure 11

2. From the **Unit Type** screen, if the unit type is not already indicated, select the appropriate Unit type and press “Continue”.

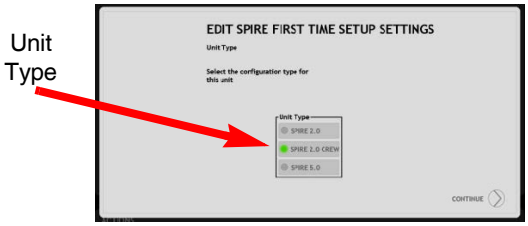


Figure 12

3. From the **Unit Location** screen, select the appropriate location and press “**Continue**”.

   Result: A **Registration Status** screen appears as the unit will attempt to register the modem on the network. See Figure 14.

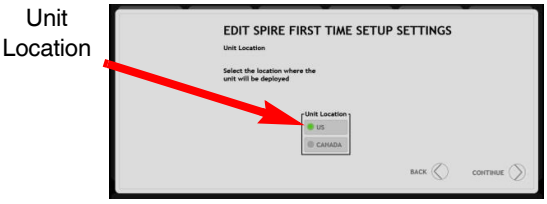
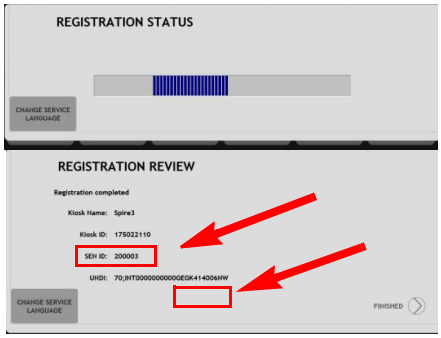
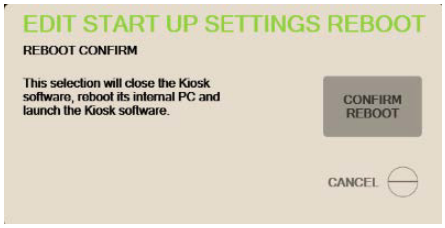


Figure 13

The unit will attempt to register the modem on the network and will display the NUC computer motherboard serial number represented by the last 10 digits of the UNDI#, the Kiosk ID #, 4. Record the serial number of the NUC computer motherboard and Kiosk ID #, the press “Finished”	 **Figure 14**
5. When finished with setup, the unit displays a Reboot button. Press the Reboot button.	 **Figure 15**
6. Press the Confirm Reboot button. The unit reboots.	 **Figure 16**

ACCESSING SERVICE SCREENS FROM THE CUSTOMER USER INTERFACE

From the customer user interface, the unit provides a method to access service mode, which provides service personnel access a set of service menu items used to setup and service the dispenser.

NOTE: If the display screen shows FIRST TIME SETUP screens, see "Service Mode - Initial Setup or Service Screen" on page 19.

From the Customer User Interface, perform the following steps to access the **Service Menu.**

1. Use the customer user interface screen on the display panel to access the **ENTER PIN** screen.

   Note: Figure 17 shows an example of the customer user interface screen, your screen may vary.

   To access the ENTER PIN screen, place your finger near the bottom of the touch-sensitive screen and **draw a letter "P" symbol (shown in read) twice, one after the other**.

   Result: The **ENTER PIN** screen appears as in Figure 18.

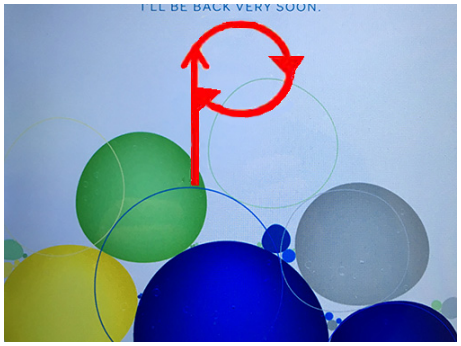


Figure 17 Display screen

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

   Result: The **Service Menu** screen appears as in Figure 19.

Figure 18 ENTER PIN screen

The **Service Menu** screen displays the following three menu item buttons as described below:

- **Service** button - use this button to enter **Service Mode**
- **Restart** button - use this button to restart the unit
- **Shutdown** button - use this button to shutdown the unit

3. Press the **Service** button to place the unit in **Service Mode**.

   Result: The unit enters service mode and displays **Initial Setup** screens or the **Service** screen.

   For information about the Service screen, see "Service Mode - Service Screen" on page 22.

Figure 19 Service Menu

Publication Number: 621058522INS

Service Mode - Service Screen

After Initial Setup, the **Service** button on the **Service Menu** will display the Service screen as described below and shown in Figure 20.

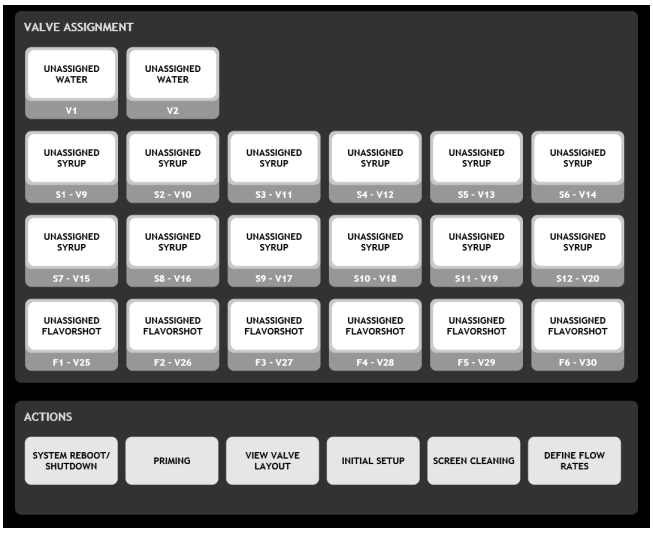


Figure 20 Service Screen Interface

The Service screen contains icons categorized in the three sections, described below. **Note that screens for your unit may be slightly different than screens shown in example figures provided here.**

The **Valve Assignment** section:

- **Unassigned Water**: Use to access service & setup for these water valves.
- **Unassigned Syrup**: Various icon buttons map valves in the unit to water, syrup, or flavor shot products. See “Mapping the Valves” on page 23.

The **Actions** section:

- **System Reboot/Shutdown**: Provides access to reboot or shutdown the system gracefully.
- **Priming**: Used to Prime up to five valves (manual or Brix).
- **View Valve Layout**: Used to show how assigned valves map to the actual hardware when observing a Spire unit.
- **Initial Setup**: Provides access to initial setup parameters. Only access during installation, changing a NUC or changing a modem.
- **Screen Cleaning**: Used to disable the touch-sensitive screen, for a 30 second interval, to allow for cleaning of the screen.
- **Defines Flow Rates**: Used to set flow rates for waters, syrups, and flavor shots.

MAPPING THE VALVES

Mapping the valves is the process where icons on the display screen are assigned to valves associated with plumbed lines 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.

Use steps in the following example to map display screen icons to the appropriate valves for a brand or product to be dispensed. Note that screens for your unit may be slightly different than screens shown in example.

1. Place the unit in **Service Mode** and access the **Service** screen. For details, see “Accessing Service Screens from the Customer User Interface” on page 21 and “Service Mode - Service Screen” on page 22.

   Result: The **Service** screen appears.

2. From the **Service** screen, in the Valve Assignment section, select the **UNASSIGNED CW-V1 valve**.

Figure 21

3. Tap the **High Carb** button.

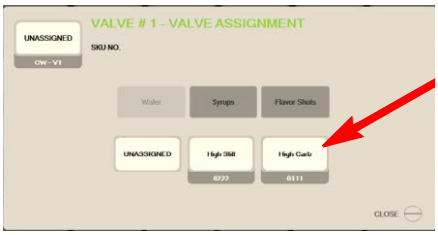


Figure 22

4. Tap the **Close** button.

Figure 23

5. Repeat Step 3 and Step 4 to and assign “PW-V2 to “High Still”.

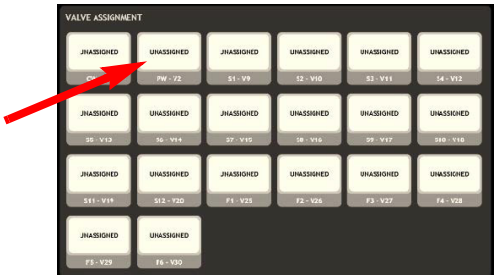


Figure 24

Publication Number: 621058522INS

6. Assign brands to S1 through S12 based upon plumbing. To start, press the S1 icon.

   Result: The Valve Assignment screen displays brand icons that can be assigned to the selected valve. See Figure 26.

Figure 25

7. Select a brand from the Valve Assignment screen.

   Result: The Current Assignment screen displays the brand to be assigned to the valve selected. See Figure 27.

   Note: You can use the UPC code on BIB to select the correct brand label when mapping valves to products.

   Note: Brand icons with a yellow rim denote a high yield syrup.

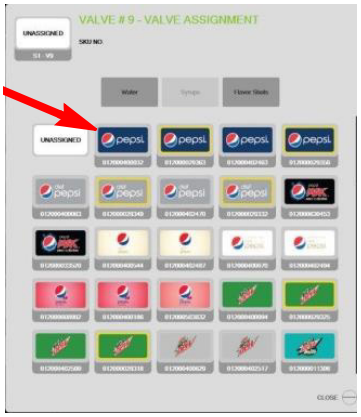


Figure 26

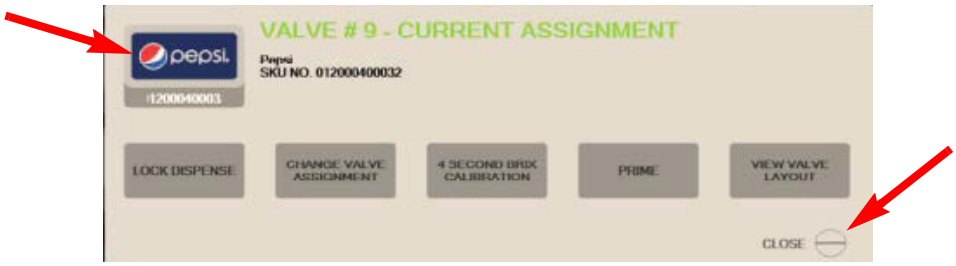


Figure 27

8. With the brand assigned to the valve (as shown in the **Current Assignment screen)**, press the **Close** button.

   Result: Brand is mapped to the valve as shown in Figure 28.

Figure 28

9. Repeat the valve mapping process (Step 6 through Step 8) for Flavor Shots (Figure 29).

   Result: See Figure 30.

Figure 29

Figure 30

10. If a brand mapped to a valve requires correction, select the valve icon as shown in Figure 31.

    Result: The Current Assignment screen displays the brand assigned to the valve.

    See Figure 32.

Figure 31

11. With the brand and valve shown in the Current Assignment screen, tap the “Change Valve Assignment” button.

    Result: The **Change Valve Assignment screen** displays. See Figure 33.

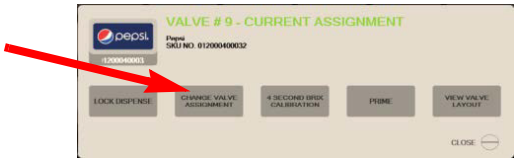


Figure 32

12. From the **Change Valve Assignment screen**, select one of the brands, then select the Close button in the bottom right corner of the screen.

    Result: See Figure 34.

    Note: If the brand does not show on the list, it may be mapped to another valve. If you perform a “Change Valve Assignment” on that valve and choose “Unassigned”, the brand will be available on list to be remapped.

Figure 33

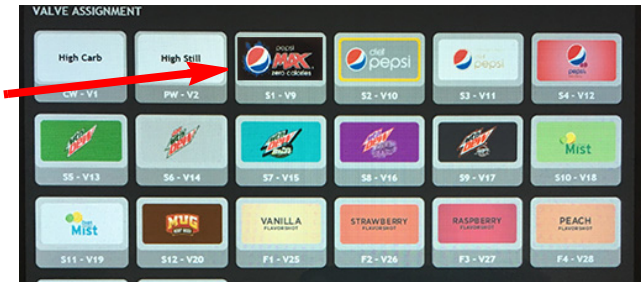


Figure 34

Publication Number: 621058522INS

Priming Lines

Priming a line can be done from each 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.

Use the following example for priming lines:

1. Place the unit in Service Mode and access the Service Screen.

   For details, see “Accessing Service Screens from the Customer User Interface” on page 21 and “Service Mode - Service Screen” on page 22.

2. From the Service Screen, touch the “PRIMING” button.

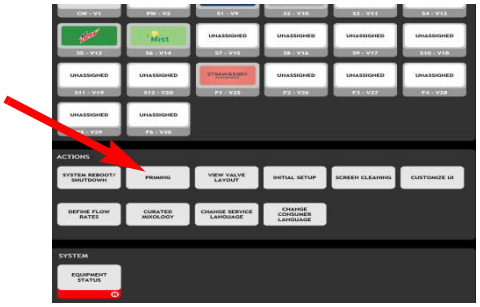


Figure 35

3. The Priming screen opens.

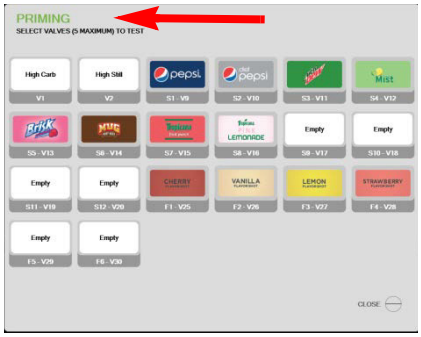


Figure 36

4. From the Priming screen, select up to 5 Flavors or Waters to be Primed.

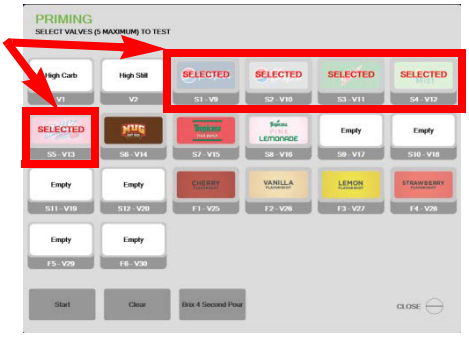


Figure 37

5. Touch “Start” to begin Priming until all air has been purged.

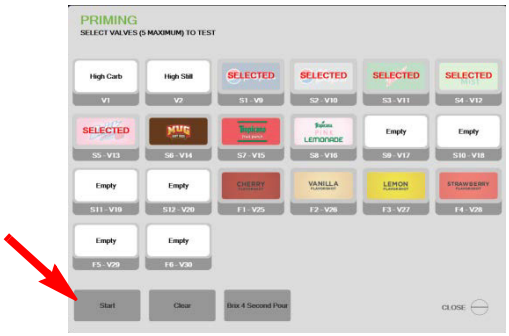


Figure 38

6. Touch “Stop” to end Priming once all air has been purged.

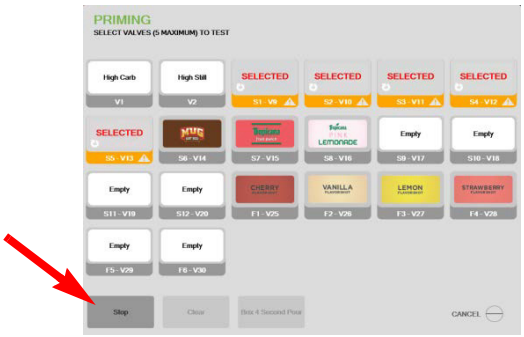


Figure 39

7. De-select the Flavors currently selected.

8. Continue with remaining Flavors and Flavor Shots until complete.

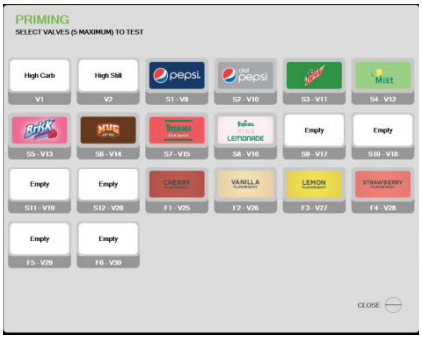


Figure 40

Publication Number: 621058522INS

ADJUSTING WATER TO SYRUP RATIO (BRIX)

The BRIX process adjusts the water to syrup ratio for a brand or flavor. Read all and steps before conducting the procedure.

- Lines must be purged prior to brixing.
- **Water and syrup must be cold before checking ratios.**
- During the brixing process, occasionally agitate ice in the bin to ensure that the cold plate is at temperature.
- 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.

Setting Brand/Flavor Ratios

Perform the following to set brand/flavor ratios:

1. Place the unit in Service Mode and access the Service Screen.

   For details, see “Accessing Service Screens from the Customer User Interface” on page 21 and “Service Mode - Service Screen” on page 22.

2. From the Service screen, select the most viscous Flavor first, such as Mountain Dew.

   Note: If you are unable to set this ratio with your set water flow, you will need to reduce water flow in order to continue. Set your remaining Flavors accordingly.

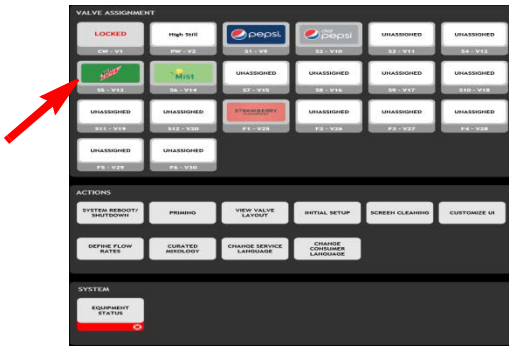


Figure 41

3. Select “4 Second Brix Calibration”.

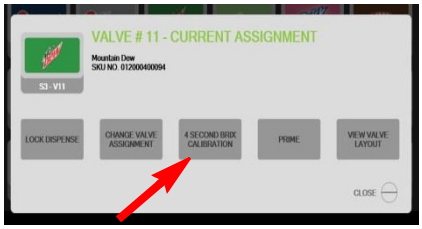


Figure 42

4. Place Brix cup under nozzle.

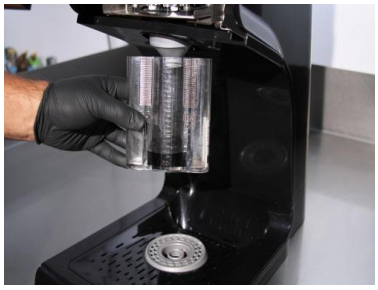


Figure 43

5. Select “Brix Dispense”.

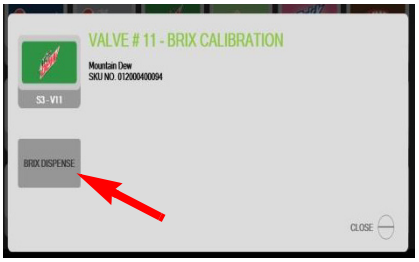


Figure 44

6. “Calibrating” will display over flavor icon while dispensing

Figure 45

7. Pour the product into a Brix cup.

Figure 46

8. Increase flow by turning clockwise, decrease flow by turning counterclockwise.

   Note the following while making adjustments:

   - To identify adjustment screws, use the View Valve Layout button in the Actions section of the Service Screen.
   - Turn the flow adjustment valve 1/4 of a turn at a time and recheck the flow. To increase the reading, turn the knob clockwise.
   - Test valves and make adjustments until a consistent ratio is delivered 3 consecutive times.
   - If necessary, see “Access to Lower Valves” on page 34.

Figure 47

9. Verify the pour amount in ounces. Check the BIB for ratio settings or use Graduated Cylinder for milliliters.

   Repeat all steps on remaining flavors until all have been set.

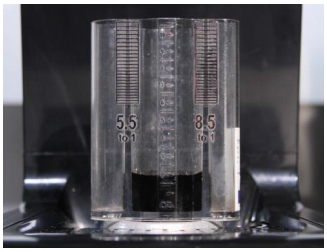


Figure 48

Publication Number: 621058522INS

Setting Carb and Still Water Ratios

Perform the following to set carb and still water ratios:

1. Place the unit in Service Mode and access the Service Screen.

   For details, see “Accessing Service Screens from the Customer User Interface” on page 21 and “Service Mode - Service Screen” on page 22.

2. From the Service screen, touch the “High Still” button.

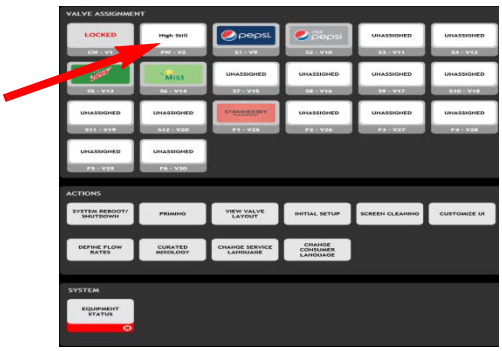


Figure 49

3. Select “4 Second Brix Calibration” and set the flow rate.

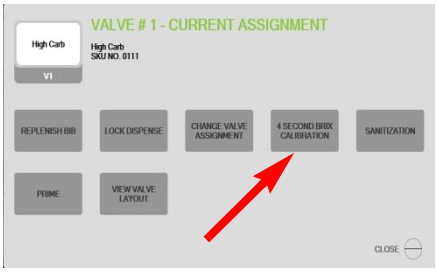


Figure 50

4. Place a Brix cup under nozzle.

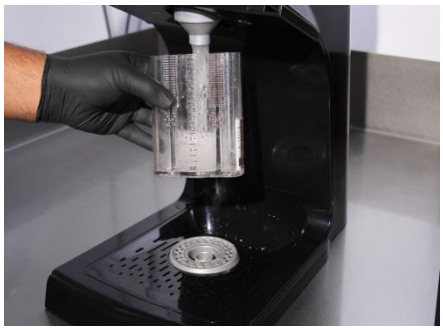


Figure 51

5. Select “Brix Dispense”

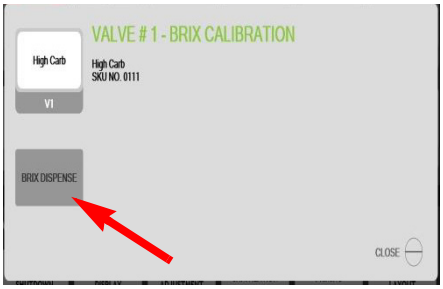


Figure 52

6. “Calibrating” will display over flavor logo while dispensing

Figure 53

7. Pour Product into Brix cup

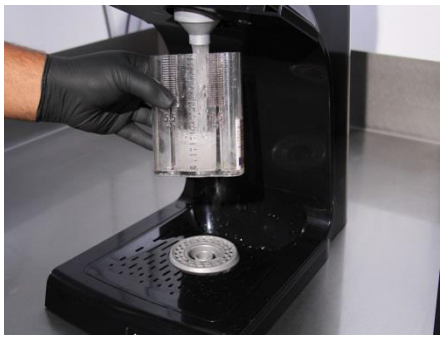


Figure 54

8. Increase flow by turning clockwise, decrease flow by turning counterclockwise

   Note the following while making adjustments:

   - To identify adjustment screws, use the View Valve Layout button in the Actions section of the Service Screen.
   - Turn the flow adjustment valve 1/4 of a turn at a time and recheck the flow. To increase the reading, turn the knob clockwise.
   - Test the valve and make adjustments until a consistent ratio is delivered three consecutive times.
   - If necessary, see “Access to Lower Valves” on page 34.

Increase -Clockwise

Decrease - Counter-Clockwise

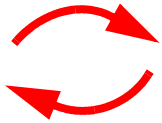


Figure 55

9. Verify pour amount in ounces.

   The setting should reflect 10 ounces of Carb-Still Water in 4 seconds.

   Repeat steps on Water until set.

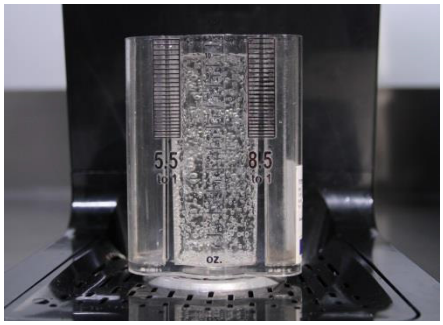


Figure 56

Setting Flavor Shot Ratios

Perform the following to set Flavor Shot Ratios:

1. Place the unit in Service Mode and access the Service Screen. See “Accessing Service Screens from the Customer User Interface” on page 21.

2. From the Service screen, touch the Flavor shot button to be adjusted.

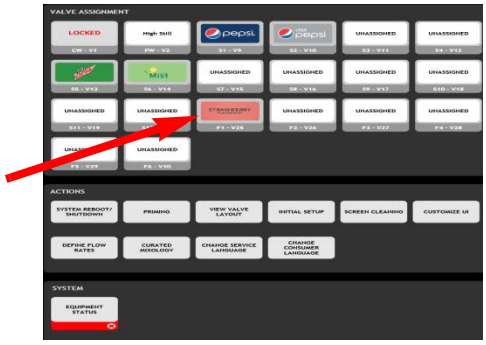


Figure 57

3. Select “4 Second Brix Calibration” and set flow rate.

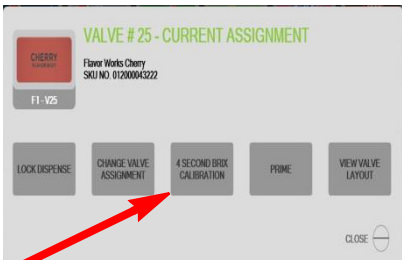


Figure 58

4. Place the Beaker under the nozzle.

Figure 59

5. Select “Brix Dispense”.

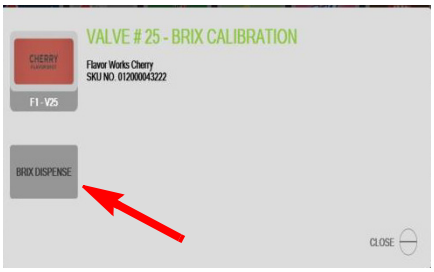


Figure 60

6. “Calibrating” will display over flavor logo while dispensing.

Figure 61

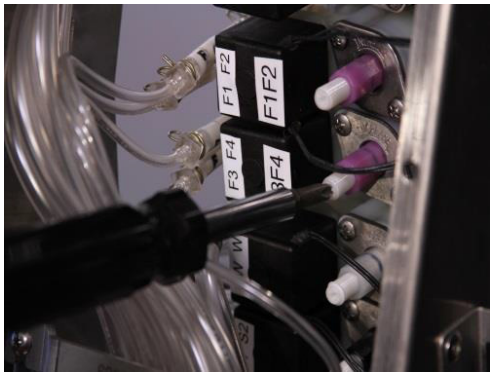
7. Pour Product into Graduated Measuring Cylinder.

Figure 62

8. Increase flow by turning clockwise, decrease flow by turning counterclockwise.

Note the following while making adjustments:

- To identify adjustment screws, use the View Valve Layout button in the Actions section of the Service Screen.
- Turn the flow adjustment valve 1/4 of a turn at a time and recheck the flow. To increase the reading, turn the knob clockwise.
- Test the valve and make adjustments until a consistent ratio is delivered three consecutive times.
- If necessary, see “Access to Lower Valves” on page 34.



Increase -Clockwise

Decrease - Counter-Clockwise

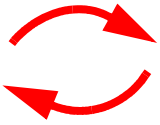


Figure 63

9. Verify pour amount in ounces.

   The setting should reflect 12ml of Syrup in 4 seconds.

   Repeat all steps on remaining flavor shots until all have been set.

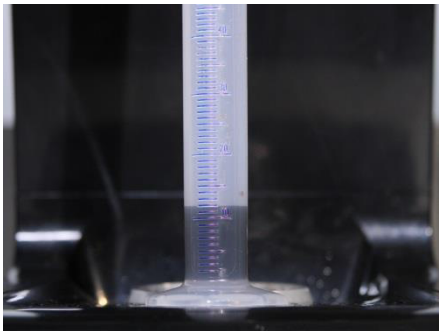


Figure 64

Access to Lower Valves

The lower portion of the syrup and water valves may be obstructed by the valve assembly. To access these lower valves, the nozzle can be removed to give better access. A 90° screw driver can also be used to access these valves.

To remove the valve assembly, perform the following procedure:

1. Loosen the screw holding the bracket, shown in Figure 65, and lift the bracket up out of the way.
2. Loosen the two (2) thumbscrews holding the valve assembly at the bottom of the compartment and remove them.
3. Lift the valve assembly and rotate it 90° so that the flow adjustment valves are accessible, as shown in Figure 66.
4. Brix the machine, as described in “Adjusting Water to Syrup Ratio (BRIX)” on page 28.
5. When brixing is complete, replace the valve and the bracket in their original positions.

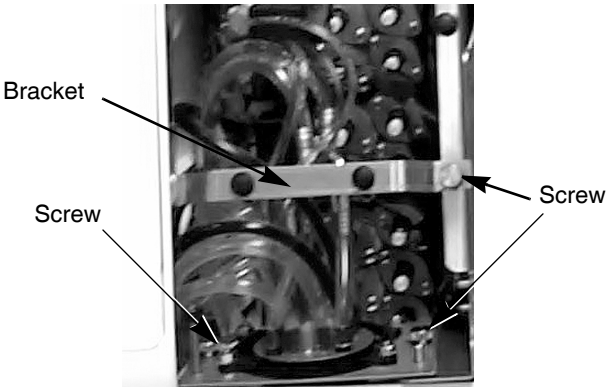


Figure 65.

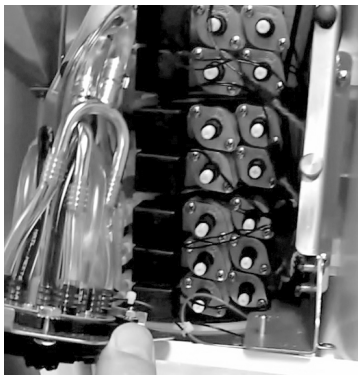


Figure 66.

CLEANING AND MAINTENANCE INSTRUCTIONS

Review and conduct the following cleaning and maintenance activities according to the guidelines in this manual.

⚠ **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 ice storage bin, top cover, agitator disc 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.

DAILY CLEANING ACTIVITIES

Perform the following daily cleaning activities on a daily basis during low traffic times.

1. Remove the Cup Rest from the Drip Tray and clean both with a warm soap solution and nylon bristle brush. Then, rinse them with clean water and allow to air dry.

Figure 67

2 Wipe down the and exterior of the unit with a warm soap solution. Then, rinse with clean water and dry with a clean, soft cloth.

⚠ **CAUTION**

Do not use glass cleaner or harsh chemicals on the touch screen.

3. Remove the valve nozzle components (nozzle housing and nozzle) from the unit. The nozzle housing and nozzle is shown in Figure 68 and Figure 69).

   To remove the valve nozzle housing, place your hand on the valve nozzle housing lever and turn the component clockwise (to the right) about a 1/4 turn, then pull it down.

   Note: The nozzle may be inside the nozzle housing when the housing is removed as in Figure 68. If so, separate the nozzle from the housing before cleaning as shown in Figure 69. If not, grasp the nozzle under the valve and pull it down from the unit.

   Result: Nozzle components are removed from under the multi-brand dispensing valve.

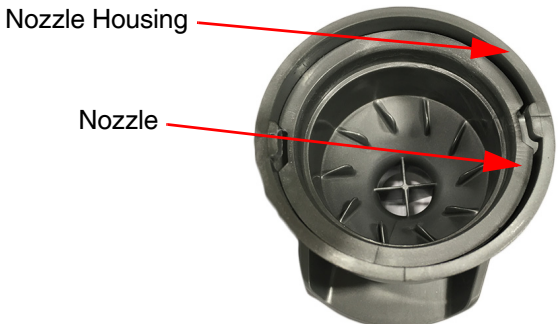


Figure 68 - Nozzle Housing with Nozzle, Multi-brand Valve

Figure 69 - Nozzle Housing (left) & Nozzle (right)

4. Next, remove the diffuser located under the multi-brand valve.

   To do this, with the nozzle housing removed, grasp the diffuser and pull it straight down, away from the nozzle base.

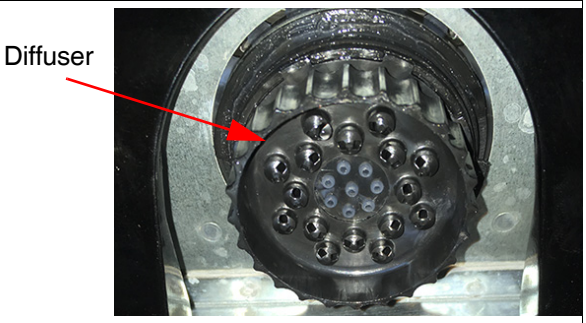


Figure 70

5. Clean the nozzle housing, nozzle and diffuser components using a warm soap solution and nylon bristle brush. See “Soap and Sanitizing Solutions” on page 36.

   After cleaning, let them air dry.

6. Pour warm soap solution down the drain to keep the drain clean and flowing smoothly.

7. Spray all the nozzle components (nozzle housings, nozzles, diffusers) inside and outside with approved sanitizing solution. See “Soap and Sanitizing Solutions” on page 36.

8. Re-install clean nozzle components for the multi-brand valve.

   To replace these components back into the unit, do the following:

   - First, make sure the **diffuser gasket** is seated properly and is in the correct position on top of the **diffuser** as shown in Figure 71. Then, push the diffuser on to the nozzle base so that the diffuser gasket is against the nozzle base. See Figure 70.
   - With the diffuser in place, place the multi-brand nozzle in the nozzle housing so that notches in nozzle line up with the tabs of the housing. See Figure 68 above.
   - Finally, place the nozzle housing (with the nozzle inside) over the nozzle base (as shown in Figure 70) and turn the housing approximately 1/4 turn (counter-clockwise) to secure the housing to the nozzle base.

   Result: Clean nozzle components for the multi-brand valve are re-installed.

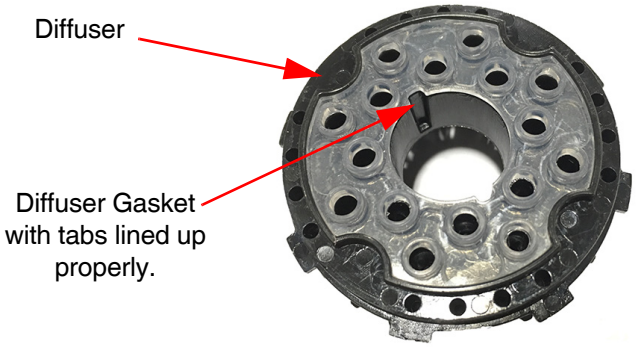


Figure 71

WEEKLY MAINTENANCE

In addition to daily cleaning check the following items weekly to maintain the unit in proper condition.

- Check the temperature, smell and taste of the product.
- Check the water pressure coming to the unit using the pressure gauges on the back room package.
- Check carbonation of the drinks.
- Check the level of the CO_2 cylinder in the back room supplying the unit.
- Check the date on all of the BIBs in the back room package to avoid using expired product.

MONTHLY CLEANING

The following cleaning activities are to be performed monthly.

- Conduct all daily and weekly cleaning and maintenance activities appropriately, as scheduled.
- Flush and sanitize all syrup lines, as well as all of the syrup connectors. See “Sanitizing syrup lines, BIB Systems (Monthly) - Product Tubing” on page 39.
- Clean the and sanitize the ice bin. See “Cleaning and Sanitizing Interior Surfaces (Monthly)” on page 20.

Sanitizing syrup lines, BIB Systems (Monthly) - Product Tubing

Sanitizing the syrup lines and BIB system should be done monthly.

⚠ **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.

Perform the following steps to sanitize the syrup lines for BIB systems:

1. Remove all the quick disconnects from all the BIB containers in the back room.

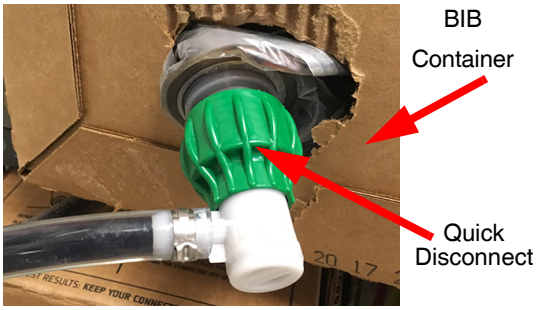


Figure 72

2. Fill a suitable pail or bucket with warm water and a soap solution.
3. Submerge all the disconnects in a warm soap solution and clean them using a nylon bristle brush.

   ⚠ **IMPORTANT** Do not use a wire brush.

4. Rinse them thoroughly with clean, potable water.
5. Using a large plastic pail, prepare approximately five (5) gallons of sanitizing solution. See “Soap and Sanitizing Solutions” on page 36.
6. Soak the BIB disconnects in the sanitizing solution for a minimum of fifteen (15) minutes.
7. Sanitized fittings must be attached to each BIB disconnect. If these fittings are not available, the fittings from empty BIB bags can be cut from the bags and used. These fittings open the disconnect so the sanitizing solution can be drawn through the disconnect.

Figure 73

8. Place all the BIB disconnects into the pail of sanitizing solution. Operate all the valves until the sanitizing solution is flowing from the valve. Allow sanitizer to remain in the lines for fifteen (15) minutes.

Publication Number: 621058522INS

Cleaning and Sanitizing Interior and Exterior Surfaces (Monthly)

CAUTION	While pouring liquid into the ice bin, do not exceed the rate of 1/2 gallon per minute. Pouring more liquid into the bin could result in an overflow situation that may result in personal injury or damage to the equipment.

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 36.
2	Use a nylon bristle brush or sponge, and clean 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.

YEARLY MAINTENANCE

- Have the water pump and check valve inspected and cleaned by a qualified service technician.
- Have the CO2 gas check valve inspected and cleaned by a qualified service technician.

REPLENISHING CO_2 SUPPLY (AS REQUIRED)

NOTE: When the indicator on the 1800-psi gage is in the shaded ("change CO_2 cylinder") portion of the dial, CO_2 cylinder is almost empty and should be changed.

⚠ **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**.

Perform the following steps to change the CO_2 cylinder:

1. Fully close (clockwise) the CO_2 cylinder valve.

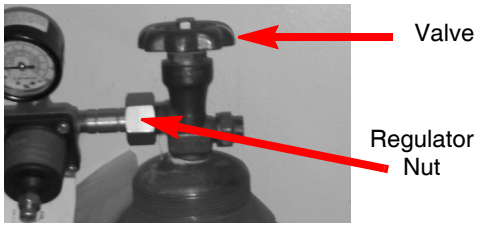


Figure 74

2. Slowly loosen the CO_2 regulator assembly coupling nut, allowing CO_2 pressure to escape.
3. Remove the regulator assembly from the empty CO_2 cylinder.
4. Unfasten the safety chain and remove the empty CO_2 cylinder.

⚠ **WARNING** To avoid personnel injury and/or property damage, always secure the CO_2 cylinder with a safety chain to prevent it from falling over. Should the valve become accidentally damaged or broken off, a CO_2 regulator can cause serious personnel injury or death could occur.

Figure 75

5. Position the full CO_2 cylinder in its proper location and secure it with a safety chain.
6. Make sure the gasket is inside the CO_2 regulator assembly coupling nut and is properly seated.

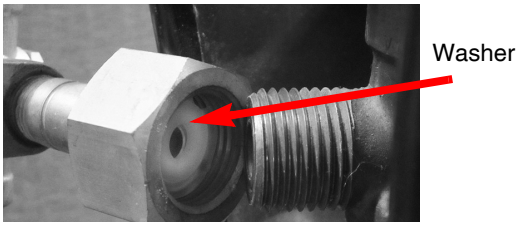


Figure 76

7. Install the regulator assembly on the CO_2 cylinder.
8. Open (counterclockwise) the CO_2 cylinder valve slightly to allow the lines to slowly fill with gas.
9. Open the valve fully to back-seat the valve to prevent gas leakage around the valve shaft).
10. Check all CO_2 connections for leaks and tighten any loose connections.

Publication Number: 621058522INS

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
	Inoperable agitator motor (shorted motor)	Replace gear motor
Beverage does not dispense	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.

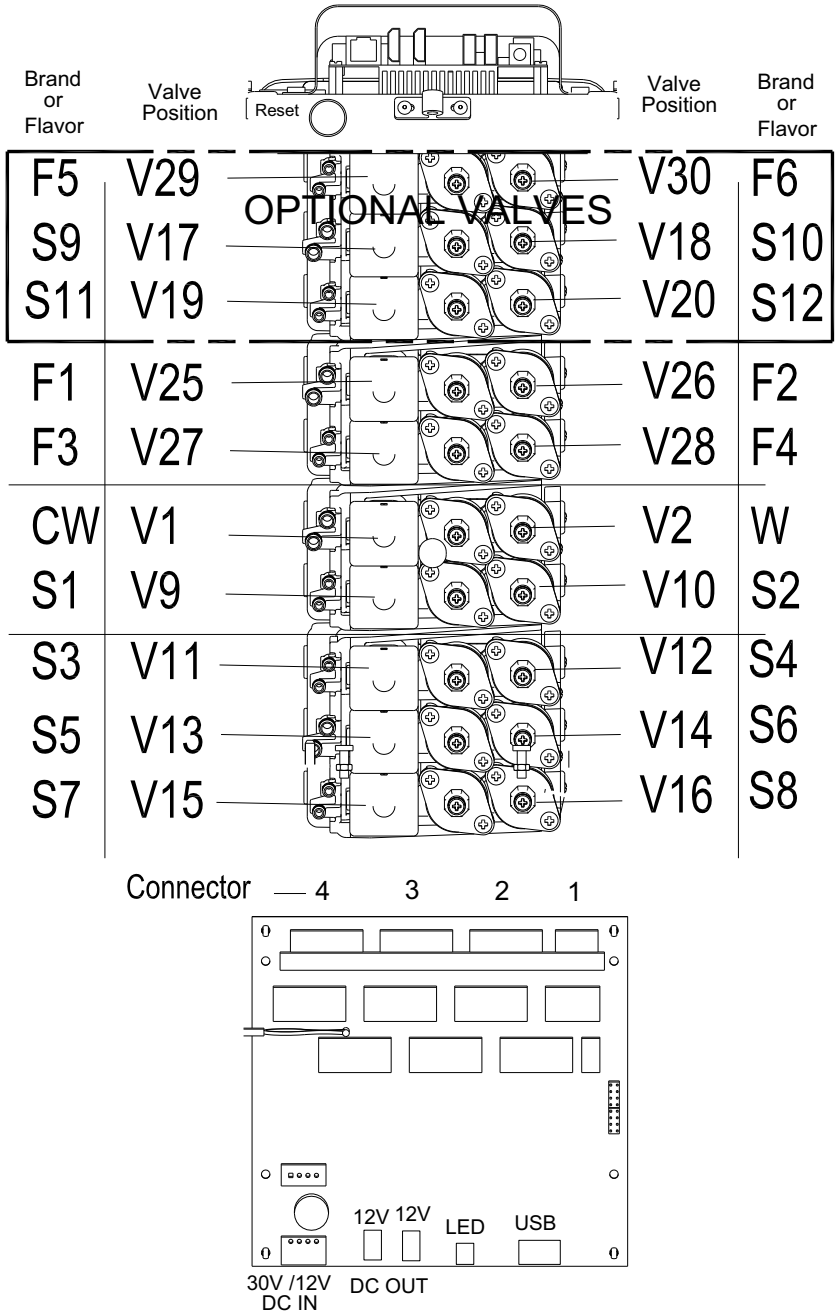
Low water pressure	Could be caused by excessively long runs (over 40 ft.) of 3/8” water supply line.	Increase line size to 1/2”
	Low water pressure	Add water pressure booster pump
	Plugged water filter.	Change water filter
	Water booster bladder has burst	Replace water booster tank/bladder
No Syrup or 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.
No power to the unit (blue light on the computer is not on)	A. E-Box not plugged in B. Key switch is OFF (some models). C. Repair connection to relay board.	A. Plug in the E-Box B. Turn Key switch ON (some models). C. Repair connection to relay board.
Display does not come on.	A. No Power. B. Loss of communication. C. Computer not booting up. D. Software locked up.	A. Check 19.8 V and 12 V power. B. Check USB and HDMI cable connections. C. Press reboot switch to cycle computer. D. Press reboot switch to cycle computer.
Valves do not activate.	A. Relay board not functioning. B. Loss of communication between computer and relay board or software locked up. C. Valve mapped wrong. D. Valve is defective.	A. Check USB and HDMI cable connections. B. Press reboot switch to cycle computer. Press reboot switch to cycle computer. C. Validate valve mapping. D. Check valve piston for clogging and check that back block shutoff is open.
Out of service message.	A. Relay board not functioning. B. Loss of communication between computer and relay board.	A. Check USB and HDMI cable connections. B. Press reboot switch to cycle computer.
Product down lights do not function.	A. Loss of power. B. Inoperable light.	A. Check power connection to relay board. B. Check wiring to LEDs and/or replace faulty light.
Beverages are not sweet enough.	A. Empty BIB container. B. Valve BRIX requires adjustment.	A. Replace BIB container. B. Adjust BRIX.
Beverages are too sweet.	A. Carbonation low. B. Valve BRIX requires adjustment.	A. Inspect and repair carbonation source. B. Adjust BRIX.
Beverages are low or not carbonated.	A. Recirculation system not functioning properly.	A. Inspect and repair recirculation system.
Beverages are not cold.	A. Recirculation system not functioning properly.	A. Inspect and repair recirculation system.

Publication Number: 621058522INS

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.

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

DIAGRAMS



Connector 1

Valve Position	Water	Color
V1	CW	Red
V2	W	White
x		
x		

Connector 2

Valve Position	Brand	Color
V9	S1	Red
V10	S2	White
V11	S3	Green
V12	S4	Blue
V13	S5	Yellow
V14	S6	Brown
V15	S7	Orange
V16	S8	Red/White

Connector 3

Valve Position	Flavor	Color
V17	S9	Red
V18	S10	White
V19	S11	Green
V20	S12	Blue
V21		
V22		
V23		
V24		

Connector 4

Valve Position	Brand	Color
V25	F1	Red
V26	F2	White
V27	F3	Green
V28	F4	Blue
V29	F5	Yellow
V30	F6	Brown
V31		
V32		

Figure 77 - Valve Mapping Reference Chart

Publication Number: 621058522INS

NOTE: Reference tower connections to ice dispenser recirculation system.

Below is an example of a single tower installation with IDC 255 ice only dispenser.

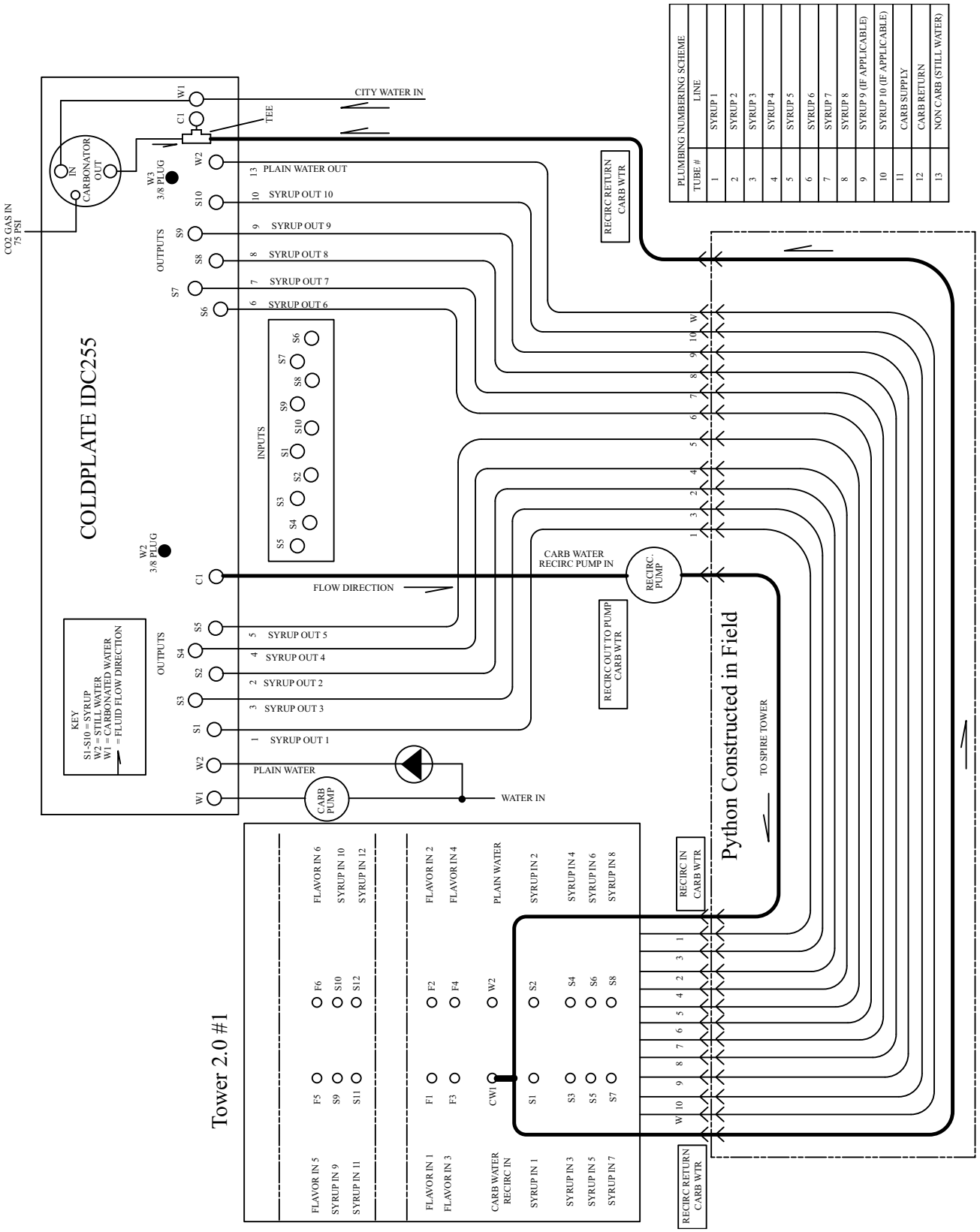


Figure 78 - Tower Connection Diagram (Single Tower Plumbing Interconnect)

Below is an example of a dual tower installation with IDC 255 ice only dispenser.

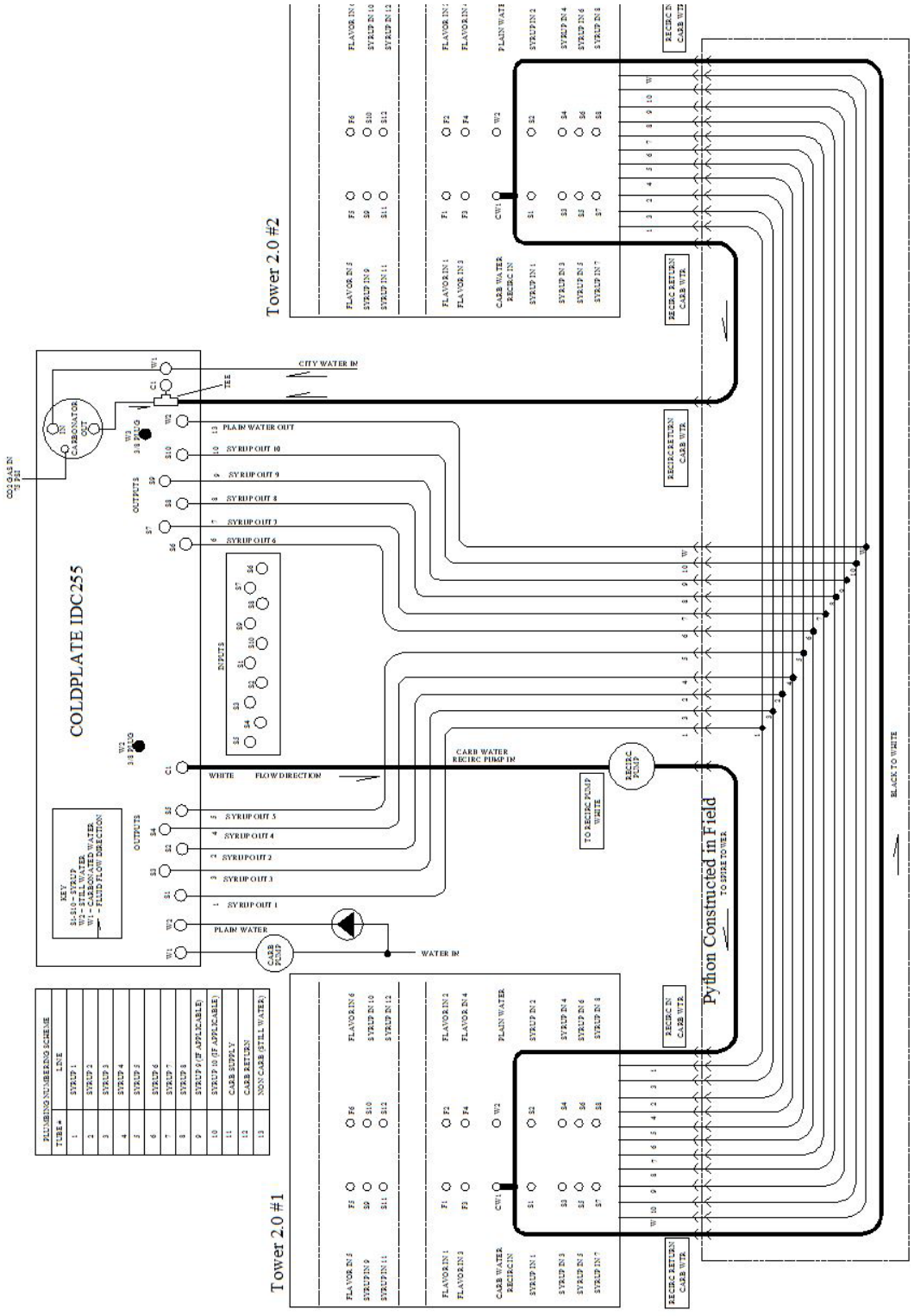


Figure 79 - Tower Connection Diagram (Dual Tower Plumbing Interconnect)

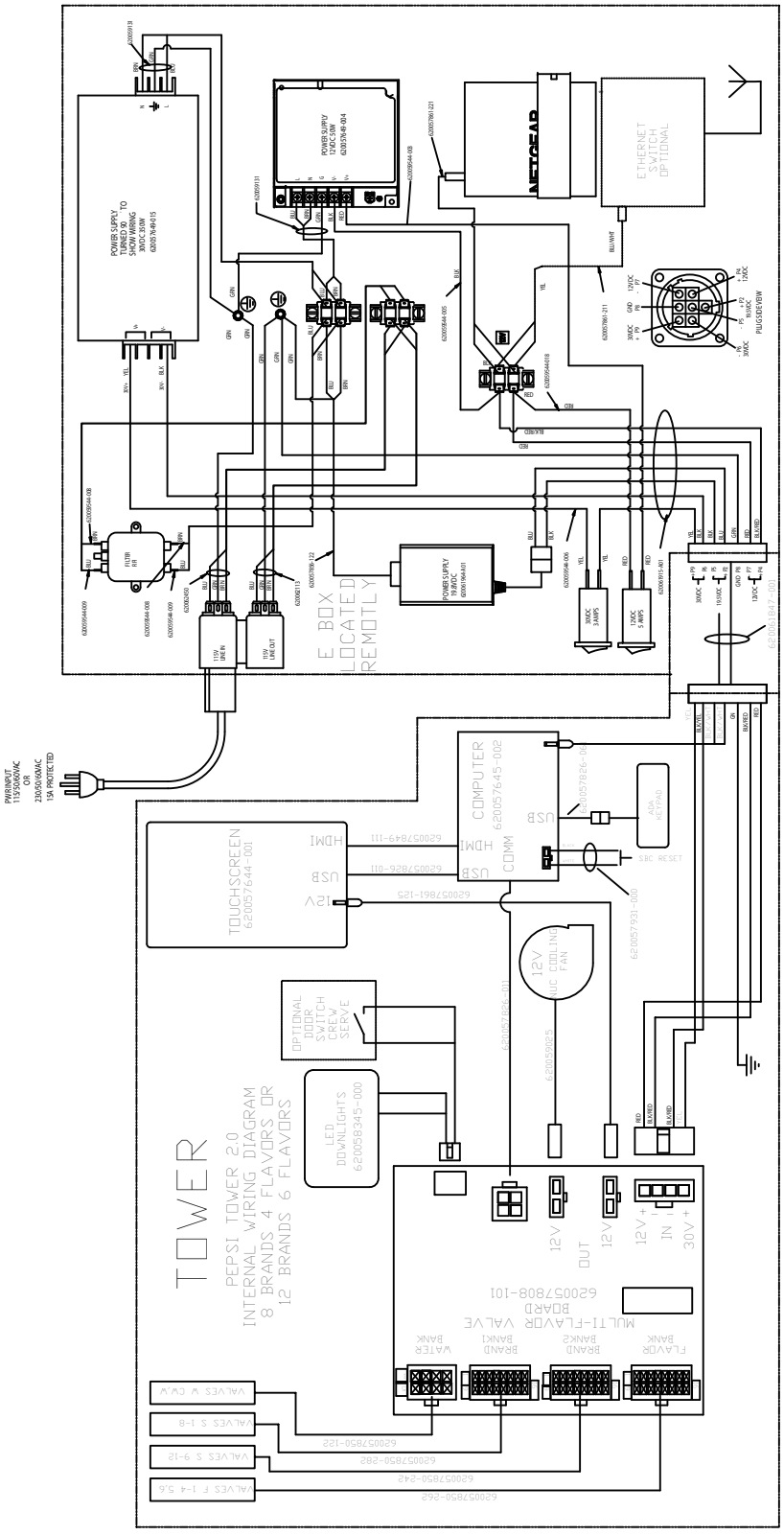


Figure 80 - 30VDC 350W Power Supply

Cornelius Inc.
www.cornelius.com