



## Operation Manual

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# TABLE OF CONTENTS

## ABOUT THIS MANUAL

This booklet is an integral and essential part of the product. Please carefully read the guidelines and warnings contained herein as they are intended to provide the user with essential information for the continued safe use and maintenance of the product. In addition, it provides **GUIDANCE ONLY** to the user on the correct services and site location of the unit.

***The installation and relocation, if necessary, of this product must be carried out by qualified personnel with up-to-date safety and hygiene knowledge and practical experience, in accordance with current regulations.***

<b>IMPORTANT SAFETY INSTRUCTIONS.....</b>	<b>3-4</b>
Intended Use.....	3
Power Warning.....	3
CO <sub>2</sub> Warning.....	3
Water Notice.....	3
Automatic Agitation.....	4
<b>PRE-INSTALLATION.....</b>	<b>4-5</b>
Specifications & Features.....	4
General Systems Overview.....	5
Pre-Installation Checklist.....	5
<b>INSTALLATION.....</b>	<b>6-13</b>
Unpacking the Dispenser.....	6
Selecting/Preparing a Counter Location.....	6
Installing an Icemaker.....	7
Dispenser Installation.....	7-9
Installing CO <sub>2</sub> Supply.....	9
Dispenser Setup.....	10-12
Adding New Brand/Flavor Module.....	12
<b>CALIBRATION &amp; MAINTENANCE.....</b>	<b>13-17</b>
Calibrating Plain/Carbonated Water Modules.....	13-14
Calibrating Brand Syrup Modules.....	15
Calibrating Ambient Flavor Modules.....	16
Beverage Portion Control.....	17
<b>FEATURES OF THE TWIN POUR DISPENSER.....</b>	<b>18-22</b>
System Settings.....	18
Time & Delay Features.....	18

## BEFORE GETTING STARTED

Each unit is tested under operating conditions and is thoroughly inspected before shipment. At the time of shipment, the carrier accepts responsibility for the unit. Upon receiving the unit, carefully inspect the carton for visible damage. If damage exists, have the carrier note the damage on the freight bill and file a claim with carrier. Responsibility for damage to the dispenser lies with the carrier.

Sold-Out Feature.....	19
Lancer Link.....	20
Update Software.....	21
Update Brands/Flavors.....	21-22
<b>CLEANING AND SANITIZING.....</b>	<b>22-25</b>
General Information.....	22
Cleaning and Sanitizing Solutions.....	22
Scheduled Maintenance/Cleaning.....	23
Cleaning and Sanitizing Nozzles.....	23
Cleaning and Sanitizing Ice Bin, Auger, and Ice Chute.....	24-25
Cleaning and Sanitizing Syrup Lines - Bag in Box.....	25
<b>MAINTENANCE.....</b>	<b>26-29</b>
Ice Chute Replacement.....	26-27
Drink Lever Replacement.....	28
Monitor Replacement.....	28-29
<b>TROUBLESHOOTING.....</b>	<b>30-33</b>
<b>ILLUSTRATIONS AND PART LISTINGS.....</b>	<b>34-40</b>
Main Unit Assembly.....	34
Electrical Assembly.....	35-36
Ice Dispensing System.....	37
Plumbing Diagram.....	38
Wiring Diagram.....	38-40
DIP Switch Legend.....	40

## READ ALL SAFETY INSTRUCTIONS BEFORE USING THIS UNIT.

This manual contains important safety information and all applicable safety precautions must be observed. To reduce the risk of fire, electric shock, damage to the equipment or personal injury when using this unit all instructions/warnings on the product being used must be followed:

### **⚠ WARNING**

Text following the Warning signal indicates a hazardous situation, which if not avoided, will result in death or serious injury. Be sure to read all Warning statements before proceeding with the installation.

### **⚠ CAUTION**

Text following the Caution signal indicates a hazardous situation, which if not avoided, could result in death or serious injury. Be sure to read the Caution statements before proceeding with the installation.

### **⚠ ATTENTION**

Text following the Attention signal addresses a situation that if not followed could potentially damage the equipment. Be sure to read the Attention statements before proceeding.

### **NOTE**

Text following the Note signal provides you with information that may help you more effectively perform the installation procedures within this manual. Disregarding information will not cause damage or injury, however it may limit the performance of the dispenser.

# IMPORTANT SAFETY INSTRUCTIONS

## Intended Use

- The dispenser is for indoor use only
- This appliance is intended to be used in commercial applications such as restaurants or similar.
- This appliance should not be used by children or infirm persons without supervision.
- 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.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Cleaning and user maintenance shall not be performed by children without supervision.
- This unit is not a toy and children should be advised not to play with the appliance.
- The min/max ambient operating temperature for the dispenser is 40°F to 105°F (4°C to 41°C).
- Do not operate unit below minimum ambient operation conditions.
- Should freezing occur, cease operation of the unit and contact authorized service technician.
- The maximum tilt for safe operation is 5°.
- This appliance must be installed and serviced by a professional.

## Carbon Dioxide (CO<sub>2</sub>)

- **WARNING:** Carbon Dioxide (CO<sub>2</sub>) is a colorless, noncombustible gas with a light pungent odor. High percentages of CO<sub>2</sub> may displace oxygen in the blood.
- **WARNING:** Prolonged exposure to CO<sub>2</sub> can be harmful. Personnel exposed to high concentrations of CO<sub>2</sub> gas will experience tremors which are followed by a loss of consciousness and suffocation.
- **WARNING:** If a CO<sub>2</sub> gas leak is suspected, immediately ventilate the contaminated area before attempting to repair the leak.
- **WARNING:** Strict attention must be observed in the prevention of CO<sub>2</sub> gas leaks in the entire CO<sub>2</sub> and soft drink system.

## Power

- Follow all local electrical codes when making connections.
- Check the dispenser name plate label, located behind the splash plate, for the correct electrical requirements of unit. **DO NOT** plug into a wall electrical outlet unless the current shown on the serial number plate agrees with local current available.
- Each dispenser must have a separate electrical circuit.
- **DO NOT** use extension cords with this unit.
- **DO NOT** 'gang' together with other electrical devices on the same outlet.
- **WARNING:** Always disconnect electrical power to the unit to prevent personal injury before attempting any internal maintenance.
- The resettable breaker switch should not be used as a substitute for unplugging the dispenser from the power source to service the unit.
- Only qualified personnel should service internal components of electrical control housing.
- **WARNING:** Make sure that all water lines are tight and units are dry before making any electrical connections
- If this dispenser is installed in an area that is susceptible to ±10% variation of the nominal line voltage, consider installing a surge protector or similar protection device.

## Water Notice

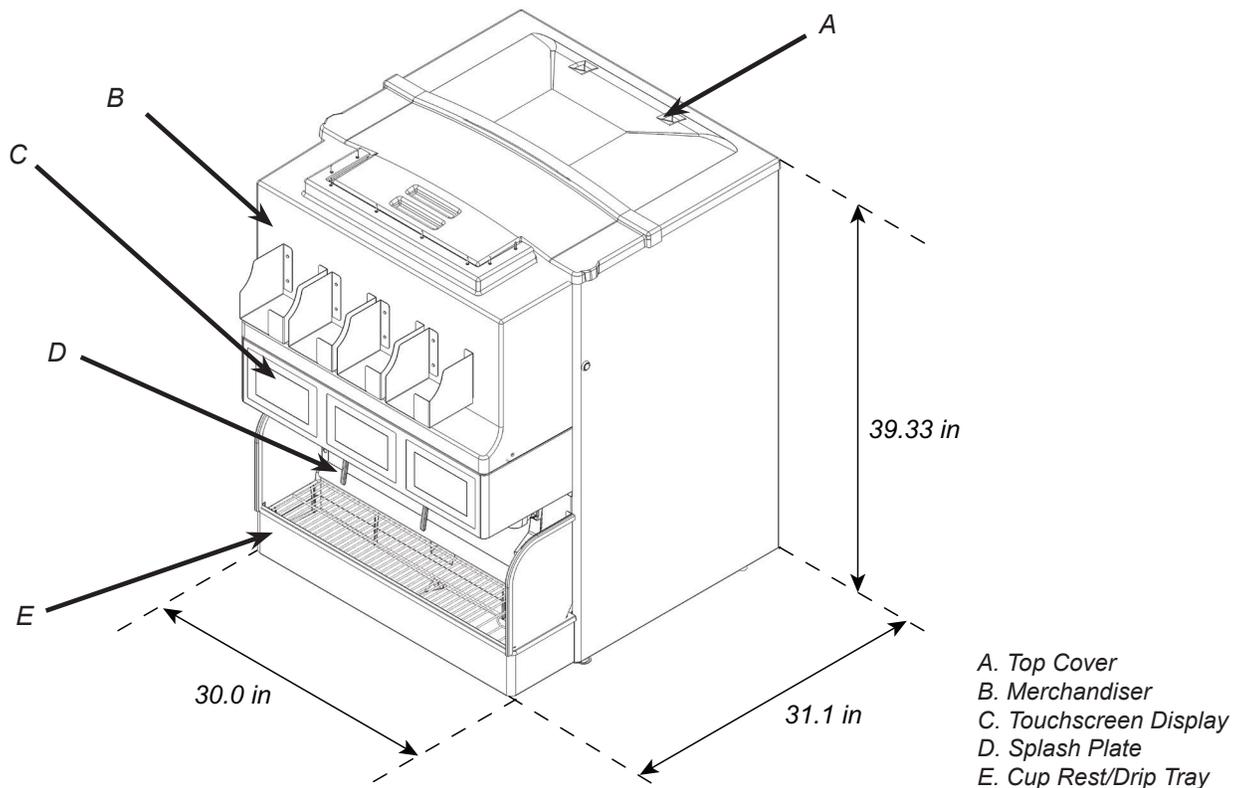
- Provide an adequate, potable water supply. Water pipe connections and fixtures directly connected to a potable water supply must be sized, installed, and maintained according to federal, state, and local codes.
- The water supply line must be at least a 3/8 inches (9.525 mm) pipe with a minimum of 75 psi (0.516 MPa) line pressure, but not exceeding a maximum of 125 psi (0.862 MPa). Water pressure exceeding 125 psi (0.862 MPa) must be reduced to 125 psi (0.862 MPa).
- Use a filter in the water line to avoid equipment damage and beverage off-taste. Check the water filter periodically, as required by local conditions.
- **CAUTION:** The water supply must be protected by means of an air gap, a back flow prevention device (located upstream of the CO<sub>2</sub> injection system) or another approved method to comply with NSF standards. A leaking inlet water check valve will allow carbonated water to flow back through the pump when it is shut off and contaminate the water supply.
- **CAUTION:** Ensure the back flow prevention device complies with ASSE and local standards. It is the responsibility of the installer to ensure compliance.

## **⚠ Automatic Agitation**

- Units are equipped with an automatic agitation system and will activate unexpectedly.
- **CAUTION:** Do not place hands or foreign objects in the ice bin tank. Unplug the dispenser during servicing, cleaning, and sanitizing.
- **CAUTION:** To avoid personal injury, do not attempt to lift the dispenser without assistance. For heavier dispensers, use a mechanical lift.

# PRE-INSTALLATION

## Specifications & Features



### **DIMENSIONS**

*Width:* 30.00 inches (762 mm)  
*Depth:* 31.1 inches (790 mm)  
*Height:* 39.33 inches (999 mm)

### **WEIGHT**

*Shipping:* 290 lbs (132 kg)  
*Operating (w/ Ice):* 570 lbs (259 kg)  
*Ice Capacity:* 280 lbs (127 kg)

### **ELECTRICAL**

*115 VAC / 60 Hz / 5.0 Amps*

### **PLAIN WATER SUPPLY**

*Min Flowing Pressure:* 75 psi (0.516 MPa)

### **CARBONATED WATER SUPPLY**

*Min Flowing Pressure:* 25 psi (0.172 MPa)  
*Max Static Pressure:* 50 psi (0.345 MPa)

### **CARBON DIOXIDE (CO<sub>2</sub>) SUPPLY**

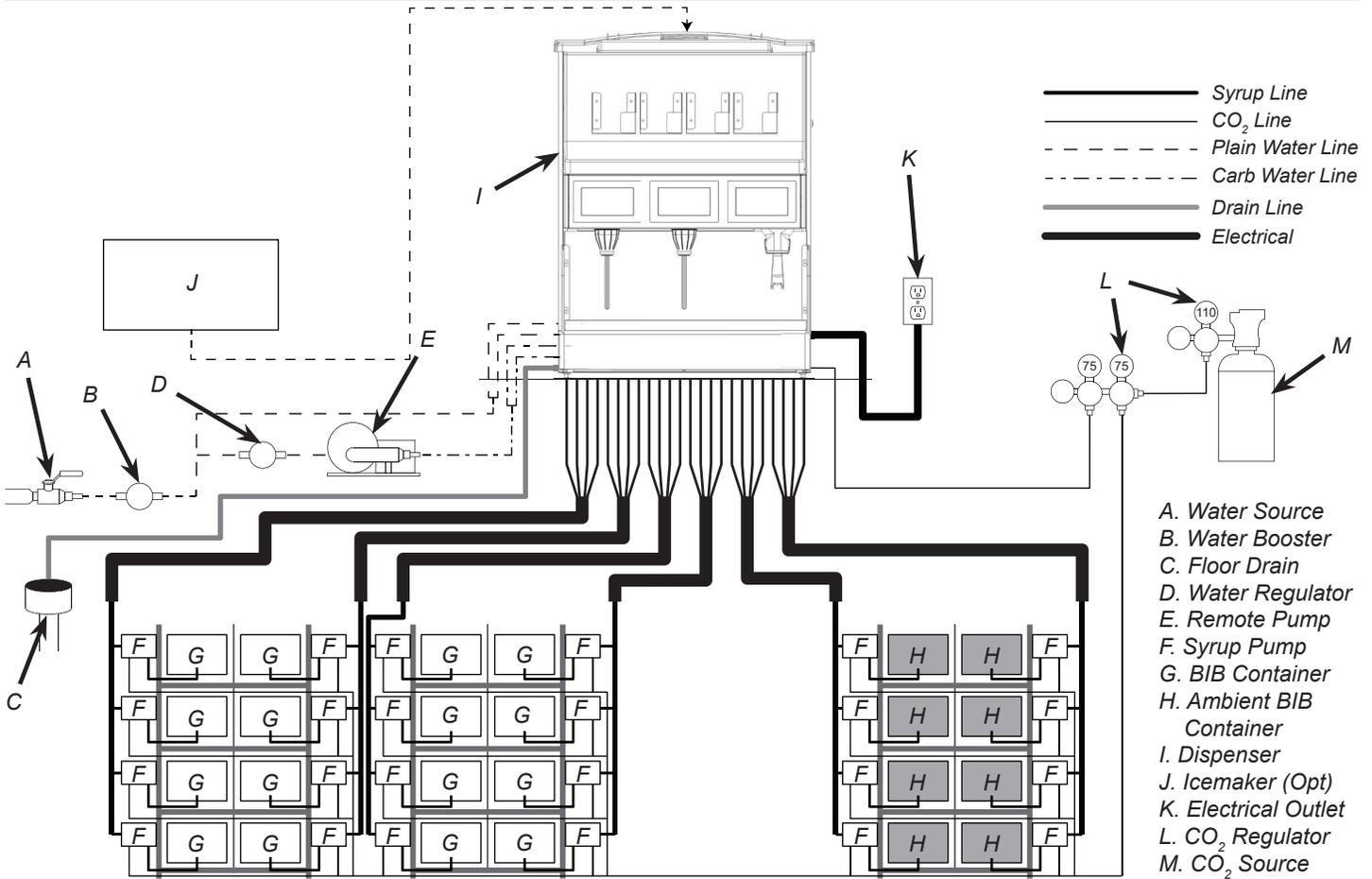
*Min Pressure:* 70 psi (0.483 MPa)  
*Max Pressure:* 80 psi (0.552 MPa)

### **FITTINGS**

*Carbonator Inlets:* 3/8 inch barb  
*Plain Water Inlets:* 3/8 inch barb  
*Brand Syrup Inlets:* 3/8 inch barb  
*Ambient Flavor Inlets:* 3/8 inch barb  
*CO<sub>2</sub> Inlet:* 3/8 inch barb

**This unit emits a sound pressure level below 70 dB**

# General System Overview



## Pre-Installation Checklist

### TOOLS REQUIRED:

- Oetiker Pliers
- Tubing Cutters
- Wrench
- Slotted Screwdriver
- Phillips Screwdriver
- Drill

### BIB SYSTEM:

- BIB Rack
- BIB Syrup Boxes
- BIB Regulator Set
- BIB Connectors

### POST MIX ACCESSORIES:

- High Pressure CO<sub>2</sub> Regulator
- Low Pressure CO<sub>2</sub> Regulator Manifold
- CO<sub>2</sub> Supply
- Chain for CO<sub>2</sub> Tank
- Beverage Dispenser
- Beverage Tubing
- Oetiker Clamp Fittings
- Water Booster (Lancer PN: 82-3401 or MC-163172)
- Water Regulator (supplied with unit)

### CONSIDER THE FOLLOWING BEFORE INSTALLATION:

- Location of Water Supply Lines
- Location of Drain
- Location of Electrical Outlet
- Location of Heating and Air Conditioning Ducts
- Do you have enough space to install the dispenser?
- Is counter-top level?
- Can the counter-top support the weight of the dispenser? (Include the weight of an ice machine plus weight of ice, if necessary)
- Is dispenser located away from direct sunlight or overhead lighting?

# INSTALLATION

## Read This Manual

This manual was developed by Lancer Worldwide as a reference guide for the owner/operator and installer of this dispenser. Please read this manual before installation and operation of this dispenser. Please see page 30 for troubleshooting or service assistance. If the service cannot be corrected please call your Service Agent or Lancer Customer Service. Always have your model and serial number available when you call.

## Unpacking the Dispenser

1. Set shipping carton upright on the floor then cut package banding straps and remove.
2. Open top of carton and remove interior packaging.
3. Lift carton up and off of the unit.
4. Remove plywood shipping base from unit by moving unit so that one side is off the counter top or table allowing access to screws on the bottom of the plywood shipping base.
5. Remove accessory kit and loose parts from ice compartment.
6. Clean ice chute using cleaning instructions on page 24.

### NOTE

If unit is to be transported, it is advisable to leave the unit secured to the plywood shipping base.

### NOTE

Inspect unit for concealed damage. If evident, notify delivering carrier and file a claim against the same.

## Selecting/Preparing a Counter Location

### NOTE

The dispenser should only be installed in a location where it can be overseen by trained personnel

1. Select a level, well ventilated location that is in close proximity to a properly grounded electrical outlet, within five (5) feet (1.5 m) of a drain, a water supply that meets the requirements shown in the Specifications section found on pages 4, and away from direct sunlight or overhead lighting.
2. Sufficient clearance must be provided, if an ice maker is not installed, to allow filling ice compartment from a five gallon bucket (a minimum of 16 inches is recommended).
3. The selected location should be able to support the weight of the dispenser, ice and possibly an icemaker being installed after counter cut out is made. Total weight (with icemaker) for this unit could exceed 800 pounds (363.6kg).
5. Select a location for the remote pump deck, syrup pumps, CO<sub>2</sub> tank, syrup containers, and water filter (recommended). Please see General System Overview on page 5 for reference.
6. Cut out required opening for the water, syrup, and CO<sub>2</sub> lines in the designated dispenser location.

### Leveling the Dispenser:

In order to facilitate proper dispenser drainage, ensure that the dispenser is level, front to back and side to side. Place a level on the top of the rear edge of the dispenser. The bubble must settle between the level lines. Repeat this procedure for the remaining three sides. Level unit if necessary. For optimum performance place the unit at a 0° tilt. The maximum tilt is 5°.

### NOTE

Lancer does **NOT** recommend the use of shaved or flake ice in the dispenser.

4. Unit may be installed directly on counter-top or on legs. If installed directly on the counter, unit must be sealed to the counter-top with an FDA approved sealant. If an icemaker is to be mounted on top of dispenser, do not install dispenser on legs.

### NOTE

NSF listed units must be sealed to the counter.

### NOTE

To assure that beverage service is accessible to all customers, Lancer recommends that counter height and equipment selection be planned carefully. The 2010 ADA Standards for Accessible Design states that the maximum reach height from the floor should be no more than 48" if touch point is less than 10" from the front of the counter, or a maximum of 46" if the touch point is more than 10" and less than 27" from the front of the counter. For more information about the customer's legal requirements for the accessibility of installed equipment, refer to 2010 ADA Standards for Accessible Design - <http://www.ada.gov>.

# Installing an Icemaker (if necessary)

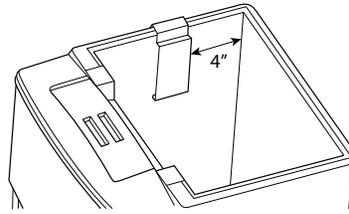
## ⚠ ATTENTION

When installing an icemaker on the dispenser, use a bin thermostat to control the ice level (see below). This will prevent damage to the dispensing mechanism. The bracket for mounting a thermostat is located in the ice bin. During the automatic agitation cycle and while dispensing ice, ensure there is adequate space between the top of the ice level and the bottom of the icemaker so the ice can move without obstruction. Contact your icemaker manufacturer for information on a suitable bin thermostat.

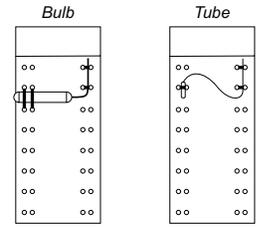
1. Install the icemaker per manufacturer specifications. Points of consideration include drainage, ventilation, and drop zones.
2. An adapter plate is required when installing an icemaker. Contact your Sales Representative or Lancer Customer Service for more information.
3. A bin thermostat is required in order to control the level of ice in the dispenser (Refer to ATTENTION). Contact your icemaker manufacturer to obtain the correct bin thermostat.

4. Bin thermostat should be a minimum of 2" below the top edge of the dispenser. The preferred location of the bin thermostat is on the right side wall.

Attach Bin Stat Bracket As Shown



Recommended Bin Stat Attachment



## ⚠ ATTENTION

Failure to use an ice bin thermostat will not only void your IBD's warranty but will result in the inability to control the level of ice in the ice bin which can cause damage to your dispenser.

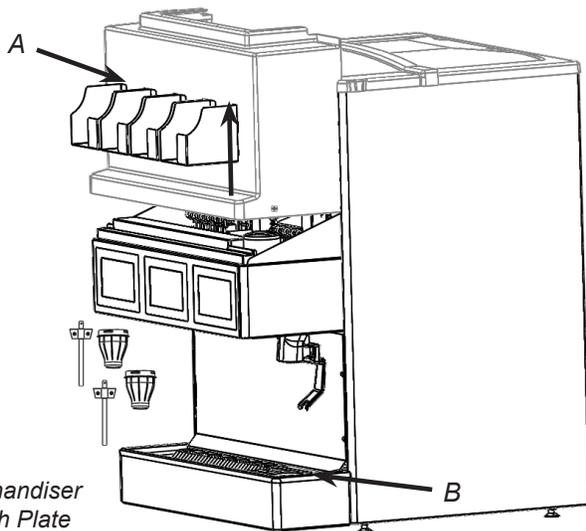
5. Ensure the icemaker is installed properly to allow for removal of the Merchandiser.
6. Ensure manual fill is accessible.
7. Clean and maintain icemaker per manufacturer's instructions.

# Dispenser Installation

## NOTE

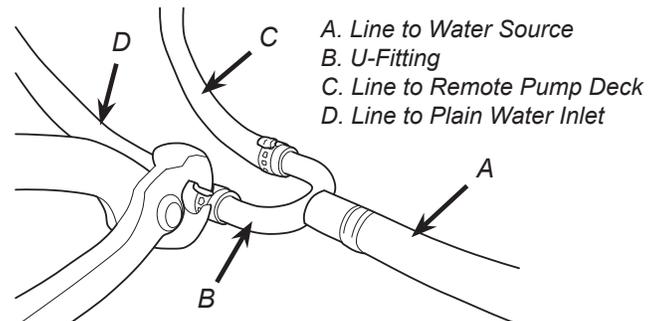
The installation, and relocation if necessary, must be carried out by qualified personnel with up-to-date knowledge and practical experience, in accordance with current regulations.

1. Remove the two (2) Phillips screws, lift the merchandiser straight up to detach from the top of the ice bin and remove from the unit.



A. Merchandiser  
B. Splash Plate

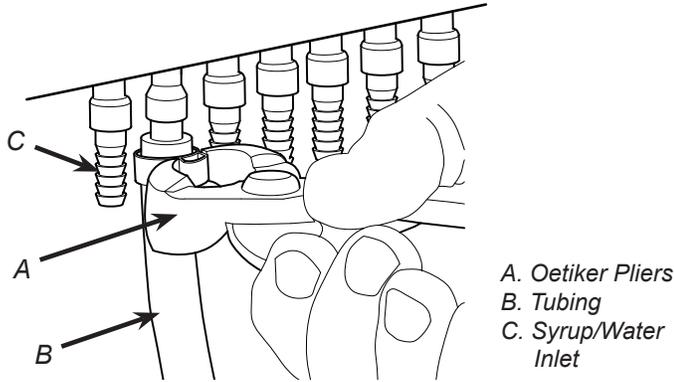
2. To remove the splash plate, first remove ice chute lever, nozzles, and drip tray. Then remove splash plate.
3. Route appropriate tubing from the water source to the water inlet at the remote pump deck.
4. If necessary, install water booster (Lancer PN MC-163172) between water supply and the remote pump deck.
5. Using tubing cutters, cut the water line and install U-fitting then route appropriate tubing from the U-fitting to the plain water inlet at the unit.



A. Line to Water Source  
B. U-Fitting  
C. Line to Remote Pump Deck  
D. Line to Plain Water Inlet

6. Route appropriate tubing from the remote pump deck outlet to the carbonated water inlet at unit.

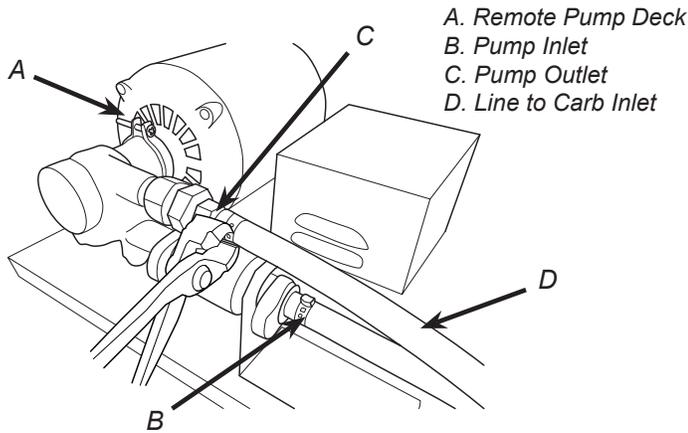
- Route appropriate tubing from the syrup pump location to the syrup inlets and connect tubing to all syrup inlets.



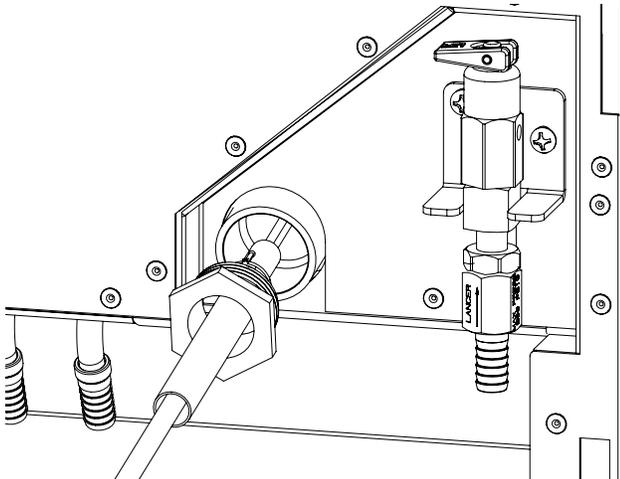
**NOTE**

See Plumbing Diagrams on the front of the unit or on page 34 for reference.

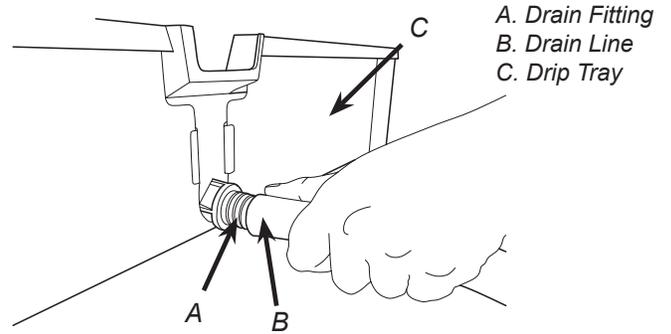
- Route appropriate tubing from the remote pump deck outlet to the carbonated water inlet at unit.



- Install a shut-off valve in the water line feeding the remote pump deck as well as the water line feeding the plain water inlet.
- Route appropriate tubing from the CO2 source location to the CO2 inlet on the unit and connect tubing to inlet.



- Route drain hose from designated open type drain to fitting on Drip Tray and connect hose to fitting. (if applicable)



**CAUTION**

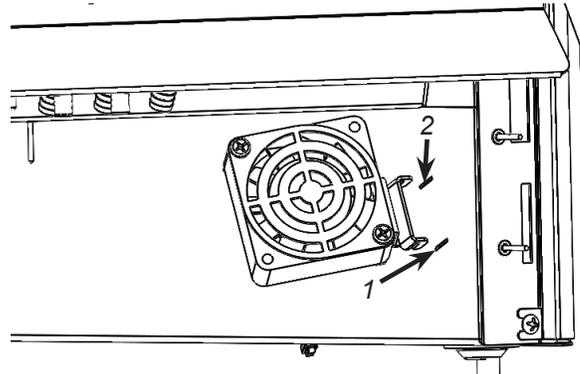
Drain line must be insulated with a closed cell insulation. Insulation must cover the entire length of the drain hose, including fittings. The drain should be installed in such a manner that water does not collect in sags or other low points, as condensation will form.

**ATTENTION**

Pouring hot water into drain may cause the Drain Tube to collapse. Allow only luke warm or cold water to enter Drain Tube. Pouring coffee tea and similar substances into drain may cause the Drain Tube to become clogged with coffee or tea grounds, or other solid particles.

**Condensation Fan Installation**

- Install condensation fan on the underside of the unit by (1) pushing fan bracket into slots in the right wall, then (2) sliding down to engage.



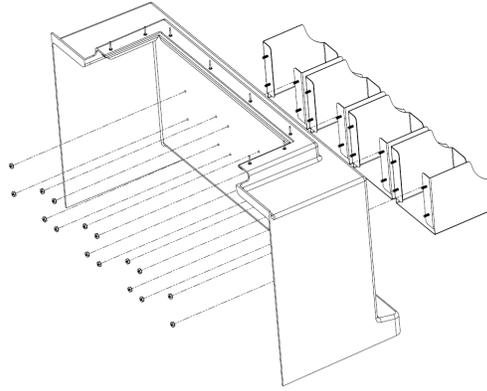
- Connect the unit's red and black power harness to fan connector.
- Reattach Drip Tray and Cup Rest to unit.

**NOTE**

When installing the drip tray, make sure the cold plate drain hoses are lined up to the opening in the drip tray. Make sure the end of the hose rests at least a half of an inch over the edge of the opening to ensure proper drainage of the cold plate.

## Cup Lid Holder Installation

1. Attach provided cup lid holders to front of merchandiser by inserting into predrilled holes and securing with provided nuts.
2. Reattach merchandiser to unit.

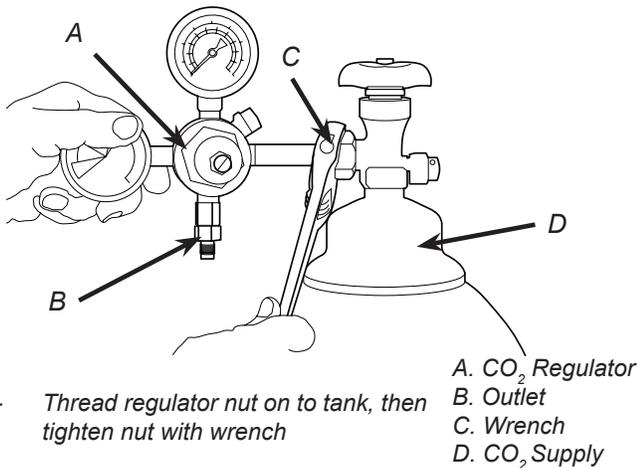


## Installing CO<sub>2</sub> Supply

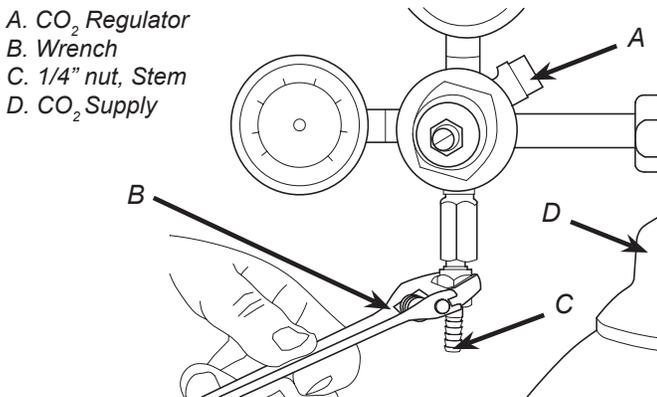
1. Connect high pressure CO<sub>2</sub> regulator assembly to CO<sub>2</sub> cylinder or bulk system.

### ⚠ ATTENTION

Before installing regulator, ensure that a seal (washer or o-ring) is present in regulator attachment nut.

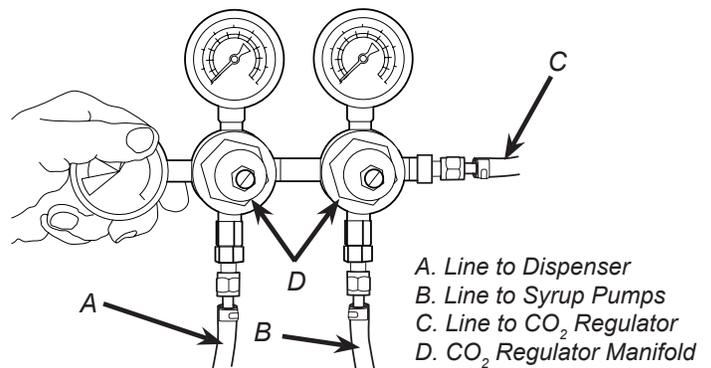


2. Connect a 1/4" nut, 3/8" stem and seal to CO<sub>2</sub> regulator outlet.



3. Route appropriate tubing from the low pressure CO<sub>2</sub> regulator manifold location to the 1/4" nut, 3/8" stem on the high pressure CO<sub>2</sub> regulator attached to source and connect tubing.
4. Connect tubing routed from the CO<sub>2</sub> inlet at the unit to one of the low pressure CO<sub>2</sub> regulator manifold outlets.

5. Connect tubing routed from the tee at the syrup pumps to the second low pressure regulator.



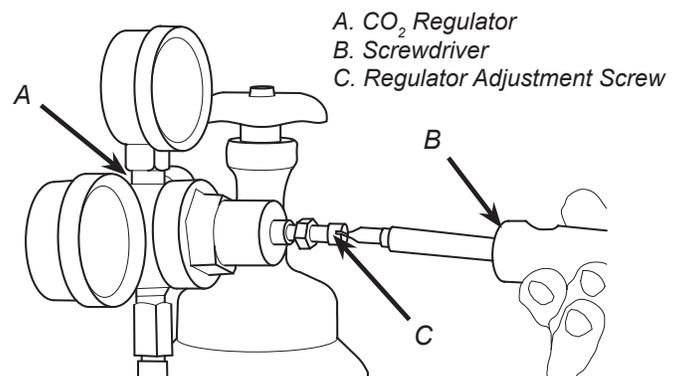
### ⚠ ATTENTION

A dedicated CO<sub>2</sub> regulator is required to supply the CO<sub>2</sub> inlet at the unit as well as to all syrup pumps.

6. Using a wrench, loosen lock nut on the regulator adjustment screw of the high pressure CO<sub>2</sub> regulator connected to the source, then using a screwdriver back out lock nut screw all the way.

### ⚠ WARNING

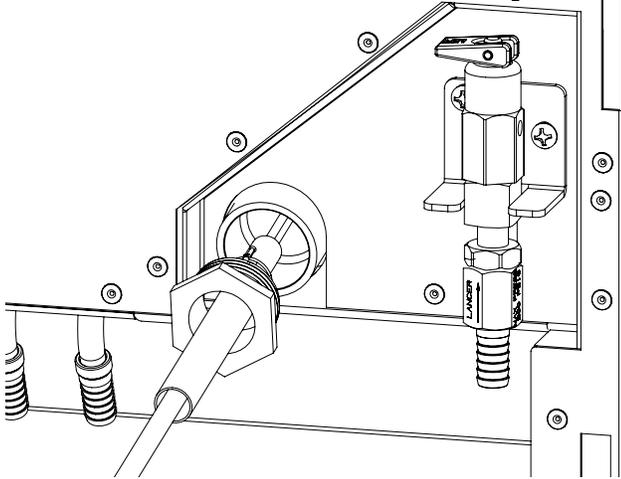
DO NOT TURN ON CO<sub>2</sub> SUPPLY AT THIS TIME



7. Repeat Step 6 for both low pressure CO<sub>2</sub> regulators on the regulator manifold routed to the unit and the syrup pumps.

# Dispenser Setup

1. Turn on water source.
2. Open the pressure relief valve located on the front of the unit, by flipping up on the valve cap lever. Hold open until water flows from the relief valve then close (flip down) the relief valve.

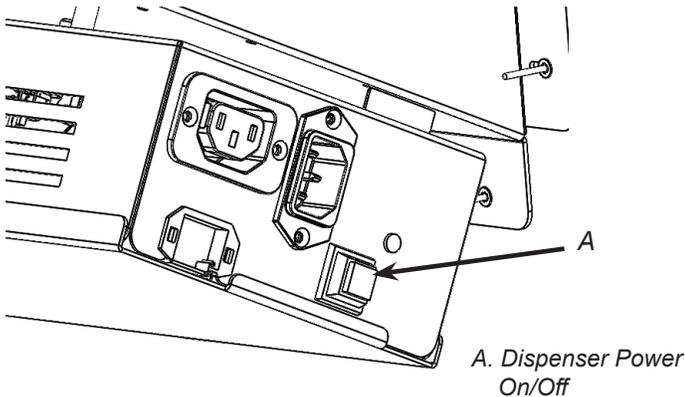


3. Verify all Bag-In-Box contains syrup and check all connections for leaks.
4. Place enough ice in the ice bin to fill approximately 1/2 of the bin before plugging in the unit.
5. Connect unit power cord to grounded electrical outlet.

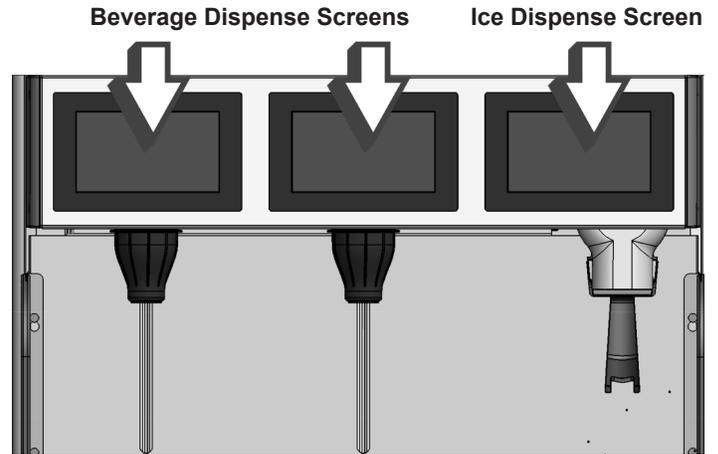
## **⚠ WARNING**

The dispenser must be properly electrically grounded to avoid serious injury or fatal electrical shock. The power cord has a three-prong grounded plug. If a three-hole grounded electrical outlet is not available, use an approved method to ground the unit. Follow all local electrical codes when making connections. Each dispenser must have a separate electrical circuit. Do not use extension cords. Do not connect multiple electrical devices on the same outlet.

6. Turn on the power to the dispenser by pressing the on/off toggle button on the right side of the unit electrical box.



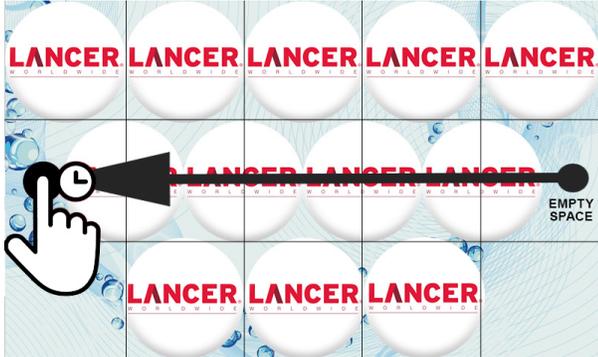
7. Test the ice dispense feature by ensuring that the ice auger runs when ice lever is pressed.
8. If necessary, turn on the left and right screen by pressing the screen on/off toggle buttons on the left side of the unit electrical box.
9. Once the screens have booted up, the service menu for drink setup must be accessed from one of the *Beverage Dispense Screens*.



**NOTE**

The menu slide gesture cannot start on a button and must start and end on the same icon row. Note the grid lines showing the row boundaries. This gesture is easiest when done on a row with four(4) icons or less.

10. Access the **Service Menu** by following the next two steps.
11. Starting on empty space, slide your finger along the screen from the right side to the left side, then hold your finger to the screen for a minimum of four (4) seconds(see image below).



12. After you have held your finger for a minimum of four (4) seconds, tap all four corners of the screen in any order.



13. A keypad will appear for 10 seconds, enter the designated pin number to access the service menu.
14. For technician access to service menu, repeat steps 11 - 13 and enter the technician's pin number (**4433**).

**NOTE**

The technician's access to the service menu allows access to the following menus: **System, Lighting, Sold Out, Time & Delays, Valve Configurations, Maintenance, Data Management, Component Versions, Test Solenoids**

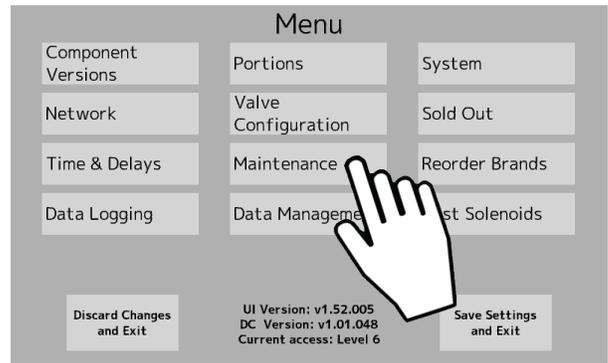
15. For manager's access to the service menu, repeat steps 11 - 13 and enter the manager's pin number (**6655**).

**NOTE**

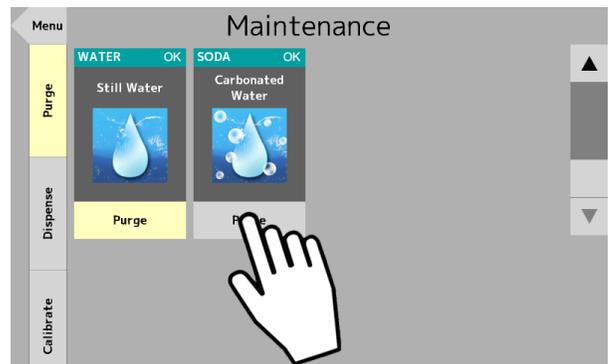
The manager's access to the service menu allows access the **Sold Out** screen, and the **Time & Delays** screen.

16. For access to only the Sold Out Menu, repeat steps 11 - 13 and enter the Sold Out pin (**963**).

17. From the service menu tap the *Maintenance* button.



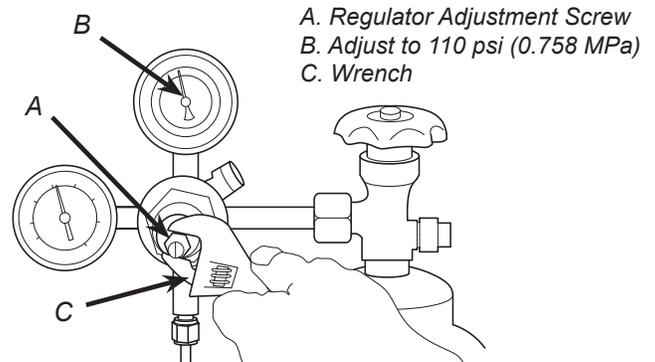
18. If necessary tap the *Purge* tab on the far left side of the screen.
19. Tap the Scroll bar down button to view water modules and tap the *Purge* buttons for both the plain water and the carbonated water modules.



**NOTE**

Once the purge is activated, it will continue to dispense product until it is deactivated. To deactivate the purge, simply tap the *Purge* button again. Up to four modules can be purged at one time. Once four modules are selected, all other modules are grayed out and cannot be selected.

20. Once a steady flow of water is achieved, tap the *Purge* button again to deactivate the modules.
21. Repeat steps 11 - 20 for the second screen.
22. Make sure the pump deck is turned OFF before turning on CO<sub>2</sub>.
23. Turn on CO<sub>2</sub> at the source then, using a screwdriver, adjust the high pressure regulator at the source to 110 psi (0.758 MPa) then tighten locknut with wrench.



- Adjust both of the low pressure regulators on the regulator manifold to 75 psi (0.517 MPa) then tighten locknut with wrench.
- Activate each soda module on both screens until gas-out.
- Plug in the remote carbonator pump deck, if not already done so, and turn the switch to the ON position.
- Activate each soda module on both screens until the carbonator pump comes on. Release the button, allow carbonator to fill and stop. Repeat this process until a steady flow of carbonated water is achieved.

**NOTE**

The pump deck has a 3 minute timeout feature. If the timeout occurs, turn the deck OFF then ON by flipping the switch on the control box.

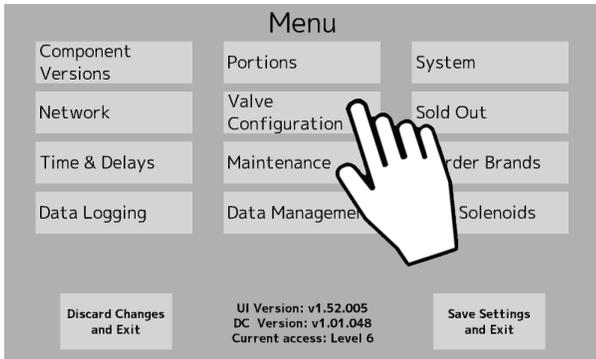
**NOTE**

To check for CO<sub>2</sub> leaks, close the valve on the CO<sub>2</sub> cylinder and observe if the pressure to the system drops with the cylinder valve closed for five minutes. Open the cylinder valve after check.

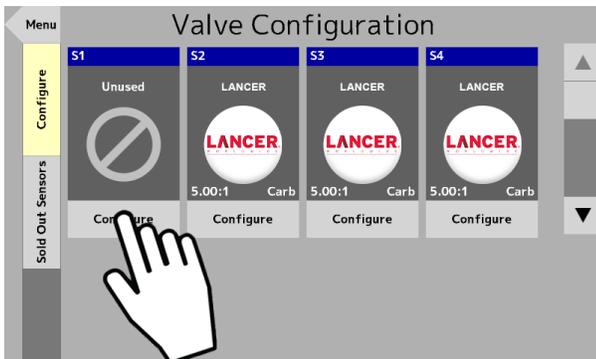
- Activate each valve to purge air from the syrup lines.

**Adding New Brand/Flavor Modules**

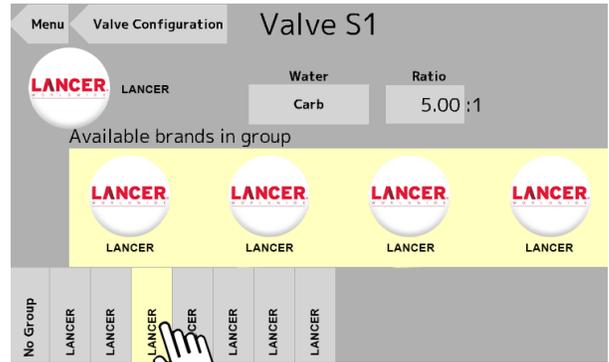
- In order to use a brand or flavor module, the module must first be configured.
- From the Service menu, tap the *Valve Configuration* button.



- From the Valve Configuration menu, tap the *Configure* tab on the far left side of the screen.
- Tap the *Configure* button under any brand or flavor module to open its Configuration Page.



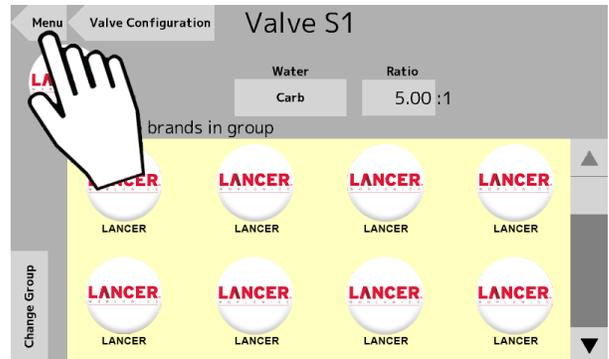
- Select a brand group by tapping the 'Change Group' tab and then selecting a brand group. The list of available brands will change to reflect what's in the group you selected, and you can use the scrollbar to view the entire list. Tapping on a brand icon will select it for the valve being configured.



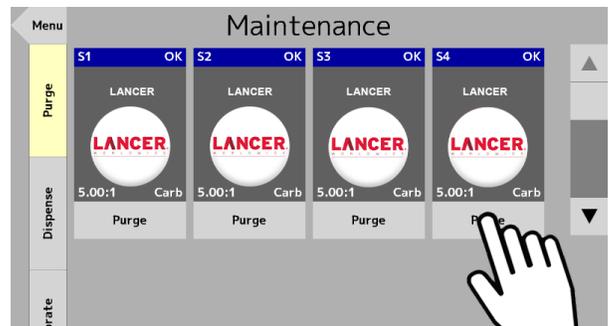
**NOTE**

Each brand has a default water type and ratio already set when they are selected. The water type and ratio can be adjusted if necessary. Adjust the ratio by tapping the number and entering the new value on the keypad.

- Once a brand/flavor has been selected for a corresponding module, tap the *Valve Configuration* button to return to the Valve Configuration Screen.
- Repeat Steps 4 and 5 for any of the other brand or flavor modules.
- Tap the Menu button to return to the Service menu.



- From the Service Menu, tap the Maintenance button.
- Tap the Purge tab on the far left side of the screen.
- Purge any new brand or flavor module until there is a steady flow of syrup. (See previous page)

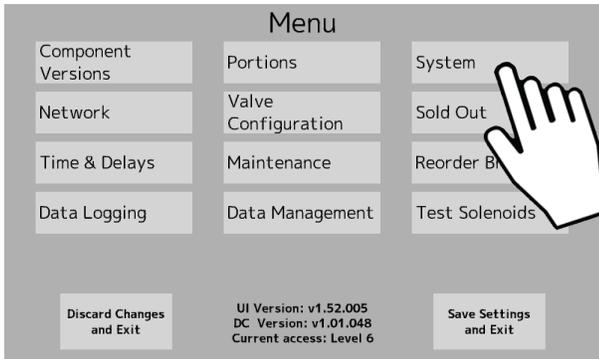


- Tap the Menu button to return to the Service Menu.
- Repeat steps 1 - 12 for the second screen.

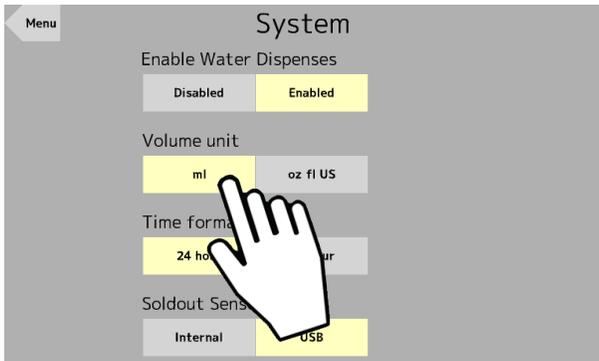
# CALIBRATION & MAINTENANCE

## Calibrating Plain/Carbonated Water Modules

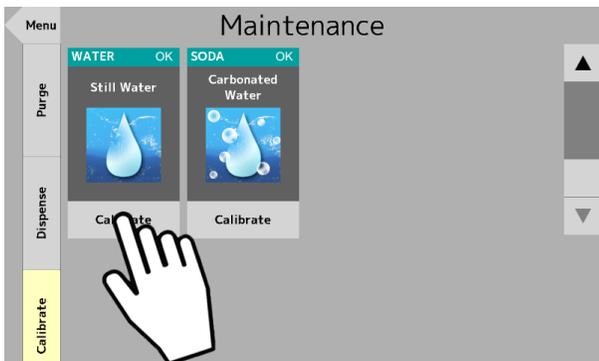
1. Access the Service menu and tap the *System* button.



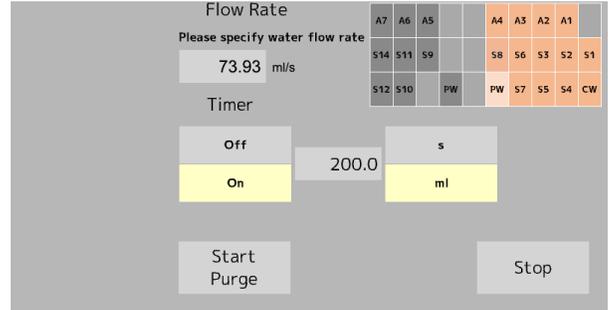
2. From the System menu, tap the *ml* button below the "Volume Unit" heading.



3. Tap the Menu button to return to the Service menu.
4. From the Service menu, tap the *Maintenance* button.
5. Tap the *Calibrate* tab on the far left side of the screen and tap the *Calibrate* button for the plain water module.



6. Using the keypad, enter a water flow rate value of 73.93 ml/sec. (This is roughly 2.5 fl oz/sec, which is normal for 3.0 fl oz/sec finished drink )
7. Set the Timer to the ON position and select milliliters (ml) as the desired unit of measurement.

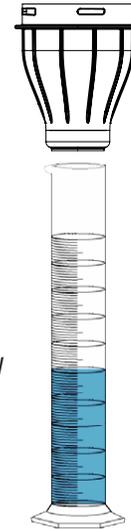


8. Using the keypad, enter 200 ml to be dispensed. The provided graduated cylinder or ratio cup will be used to calibrate the plain water module.

### NOTE

The larger the volume dispensed, the more accurate the results.

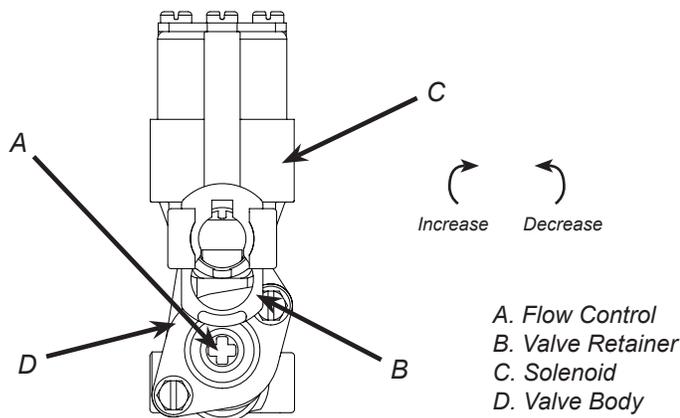
9. With a graduated cylinder or ratio cup placed in a position below the nozzle, tap the *Start Purge* button. The unit will dispense the volume designated in the previous step.



Fill to 200 ml

Graduated Cylinder

- Examine the dispensed volume in the graduated cylinder. If the dispensed volume does not match the value entered on the screen in step 8, use a screwdriver to adjust the plain water flow control.



- See Plumbing Diagram on front of machine or page 34 for reference.
- Repeat steps 9 and 10 until the designated volume is achieved.
- Repeat steps 7 - 11 for the carbonated water module.
- Repeat steps 1 - 13 for the second screen.

## Calibrating Brand Syrup Modules - Using a Graduated Cylinder

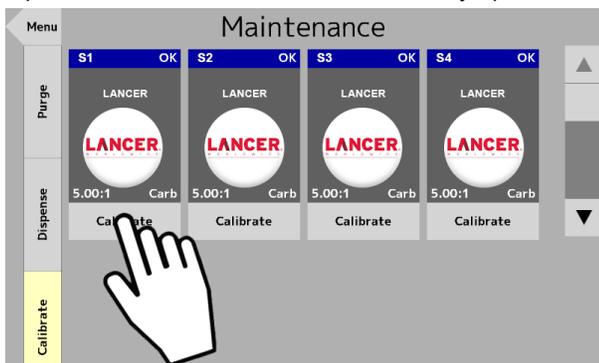
### NOTE

Ensure there is ice on the cold plate and the lines are cold before attempting to set the flow rates on the valves. The drink temperature should be no higher than 40°F (4.4°C) when flow rates are set.

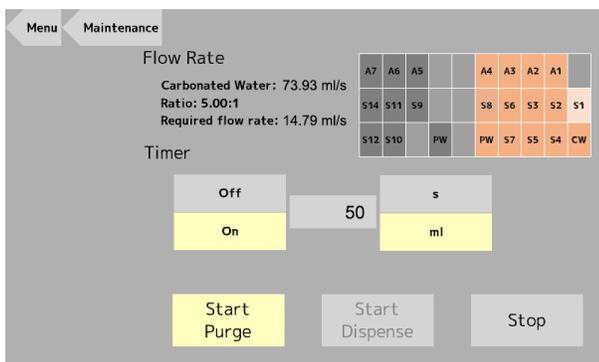
### NOTE

The water flow rate was set to 73.93 ml/sec, which makes the final syrup flow rate 14.79 ml/s. The finished drink flow rate dispensed will be 88.72 ml/s.

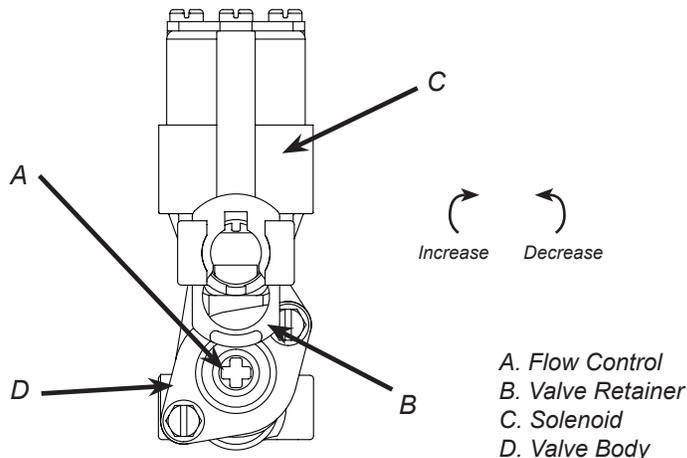
- From the Service menu, tap the *Maintenance* button.
- Tap the *Calibrate* tab on the far left side of the screen and tap the *Calibrate* button for the first brand syrup module.



- Set the Timer to the ON position and select milliliters (ml) as the desired unit of measurement.
- Using the keypad, enter in an amount of 50 ml as the preset dispensing amount.



- With the graduated cylinder placed in a position below the nozzle, tap the *Start Purge* button. The unit will dispense the designated syrup amount.
- Examine the dispensed volume in the graduated cylinder. If the dispensed volume does not match the value of 50 ml (or correct value on screen), use a screwdriver to adjust the brand syrup flow control. (See Plumbing Diagram on page 34 for reference).



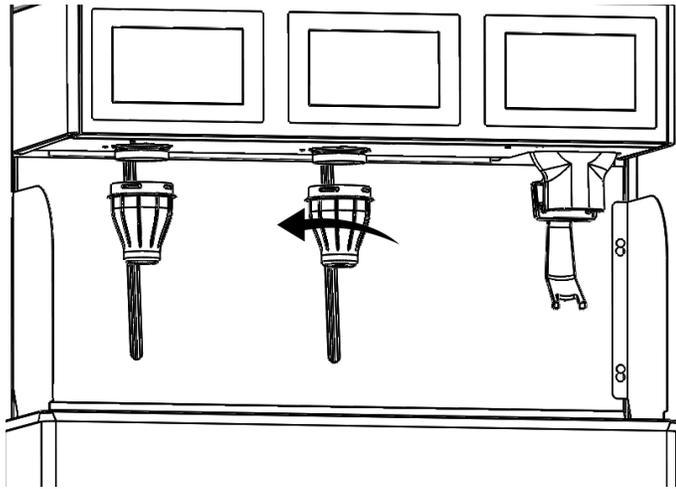
- Repeat steps 5 and 6 until the designated volume of 50 ml is achieved.
- Repeat steps 2 - 6 for the remaining brand syrup modules.
- Repeat steps 1 - 6 for the second screen.

# Calibrating Brand Syrup Modules - Using a Syrup Separator

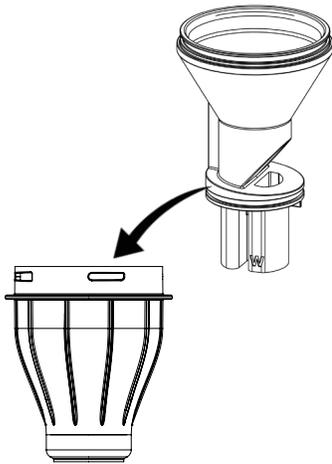
**NOTE**

A syrup separator is included with every machine for use with a *Ratio Cup* to set the brand module flow rates. A *Ratio Cup* is not included with the machine.

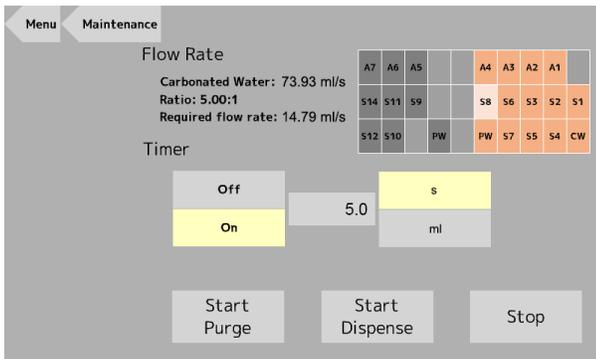
1. Remove the outer nozzle by twisting counterclockwise and pulling downward.



2. Insert syrup separator into outer nozzle.



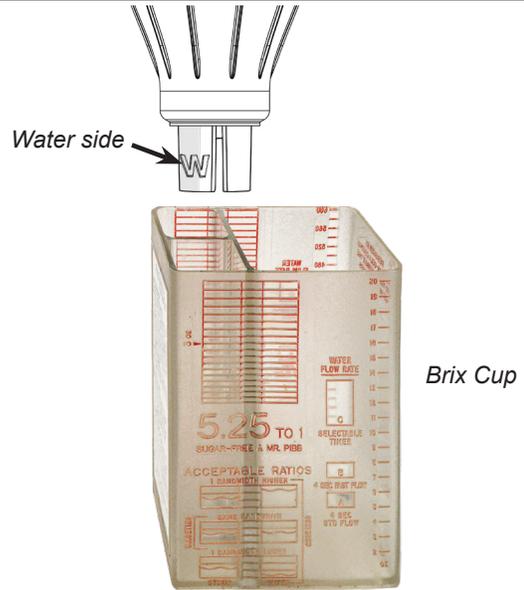
3. Reattach outer nozzle by pushing up and twisting clockwise until snug.
4. Enter the brand calibration screen from the previous section (steps 1-2).
5. Set the Timer to the ON position and select seconds (s) as the desired unit of measurement.



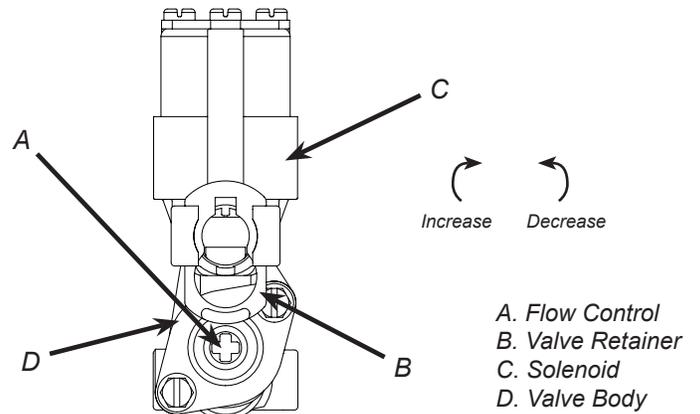
6. Using the keypad, enter the amount of seconds instructed by the ratio cup as the preset dispensing time.
7. Hold the ratio cup under the separator and turn it for the best visibility, then push the "Start Dispense" button.

**NOTE**

Ensure the "W" section is in the water section of the ratio cup.



8. Examine the dispensed volume in the brix cup. If the dispensed volumes are not level as instructed by the ratio cup, use a screwdriver to adjust the syrup flow control. (See Plumbing Diagram on page 34 for reference).



9. Repeat steps 4 - 8 for the remaining syrup modules.
10. Repeat steps 1 - 8 for the second screen.

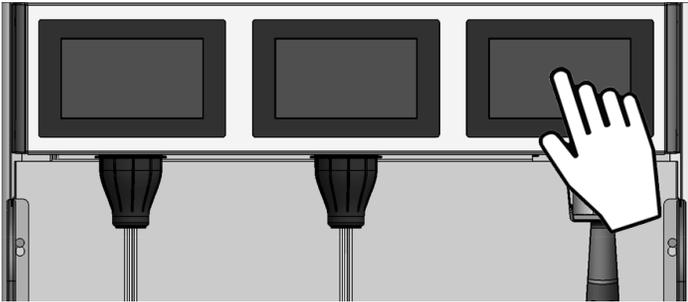
# Portion Control Programming

**NOTE**

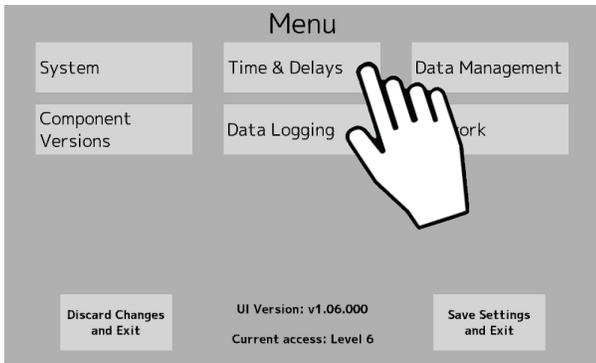
Ice must be calibrated before drink portion control. Ice Dispense times can only be changed from the Ice Dispense Screen Service Menu.

## Ice Dispense Time

1. From the Ice Dispense Screen(Right Screen) enter the Service Menu by using the gesture outlined on page 12.



2. From the Service Menu, tap the *Time & Delays* button.



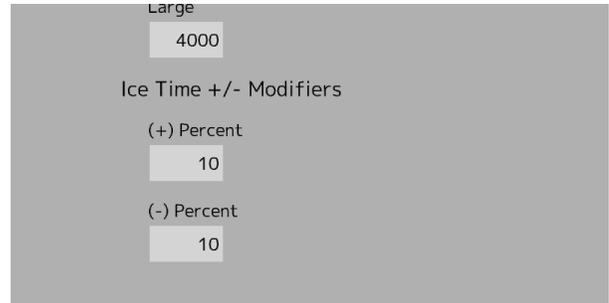
3. Increase or Decrease each cup size dispense time by selecting then entering the dispense time in milliseconds.



**NOTE**

The test buttons will dispense ice.

4. Test Ice dispense amount by pressing the *Test* button. Ice modifiers can be tested with *Test(+)* and *Test(-)* buttons.
5. Select and adjust the Ice Time Modifiers to increase or decrease every ice dispense time by percentage points.



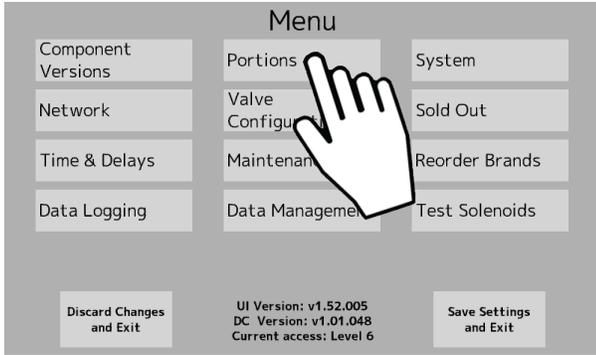
**NOTE**

These modifiers allow more or less ice to be dispensed by selecting the “+” or “-” button on the Ice Dispense Screen.

6. Tap the *Menu* button to return to the Service Menu.
7. Tap *Save Settings and Exit* button to keep settings.

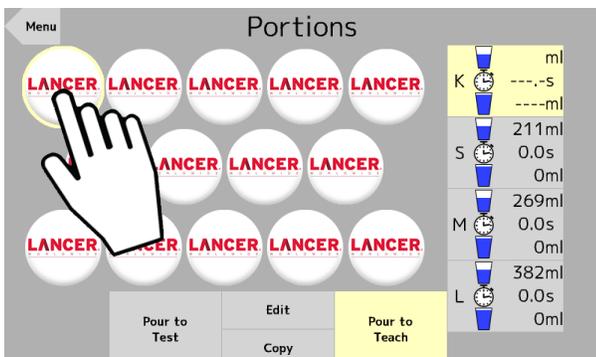
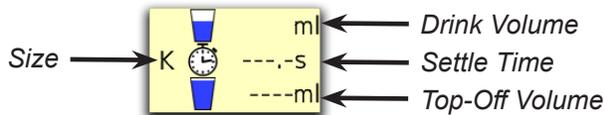
# Beverage Portion Control

1. From the service menu, tap the *Portions* button.



## Teach

1. From the Portions menu, select brand and size to be set.
2. Select *Pour to Teach*, then pour a drink to record values for Drink Volume, Settle Time, Top-Off Volume.

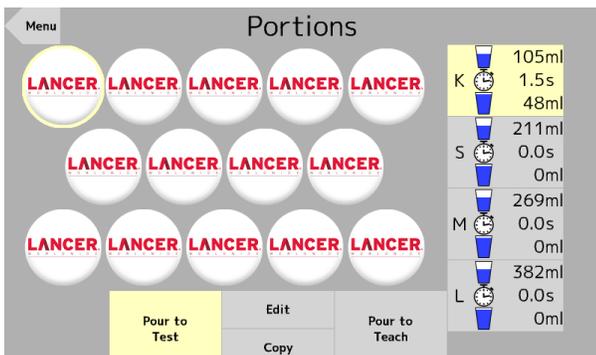


### NOTE

The *Pour to Teach* button will dispense product.

## Test

1. From the Portions menu, select *Pour to Test* to pour a drink of the selected brand, cup size and values.

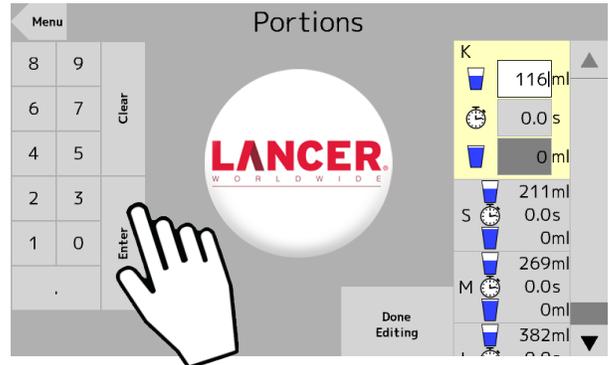


### NOTE

The *Pour to Test* button will dispense product.

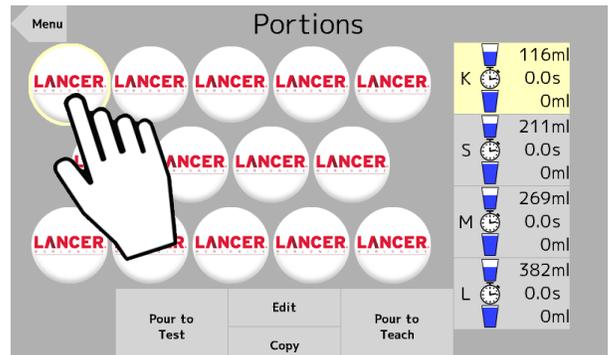
## Edit

1. From the Portions menu, select *Edit* to modify selected brand values.
2. Tap fields to select, then use keypad to manually enter values.

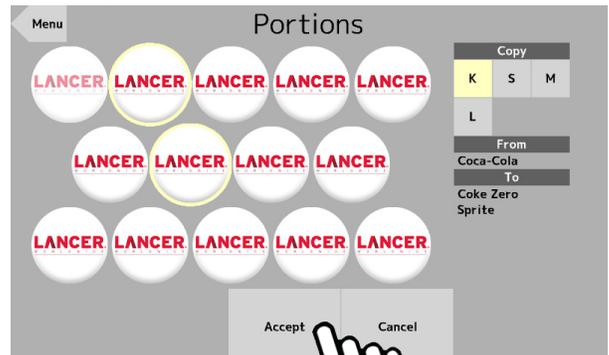


## Copy

1. From the Portions menu, select which brand to copy values from.



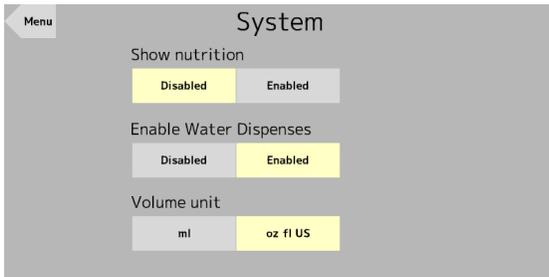
2. Select *Copy* to enter copy mode.
3. Select which brands to copy values to.
4. Select which cup sizes to copy values to.
5. Tap *Accept* to set values to selected brands and sizes.



# FEATURES OF THE DRIVE THRU SOLUTION DISPENSER

## System Settings

1. From the Service menu, tap the *System* button.

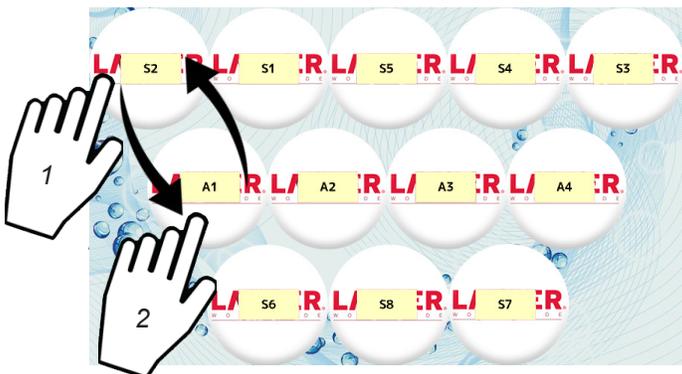


2. Tap the *Enabled* button, below the “Enable Water Dispenses” heading, to have the ability to pour plain/ carbonated water from the main screen.



## Reorder Brand Buttons

1. From the Service Menu, tap the *Reorder Brands* button.
2. Reorder Brand buttons by tapping one brand then tapping another. This will swap the button positions on the screen.
3. Tap the *Menu* button to return to the Service Menu.
4. Tap *Save Settings and Exit* button to keep settings.



## Time & Delay Features

1. From the Service Menu, tap the *Time & Delays* button to access the Time & Delays Menu.
2. Enable or Disable any of the three (3) time & delay functions by tapping underneath their designated function names: *Brand Timeout*, *Screen Saver*, and *Sleep*.

### NOTE

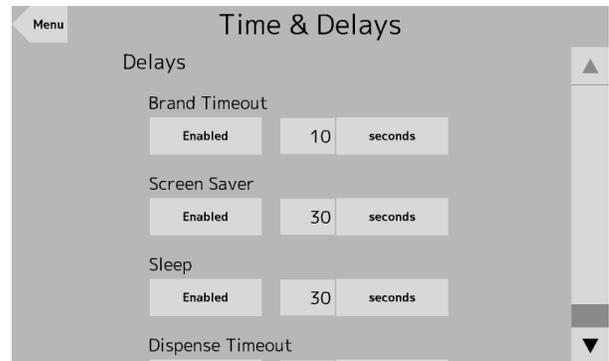
**Brand Timeout** - the amount of time for a selected brand on the Pour Screen to be deselected after inactivity

**Screen Saver** - the amount of time for the screen saver to be initiated after inactivity

**Sleep** - the amount of time for the unit to enter Sleep Mode after inactivity.

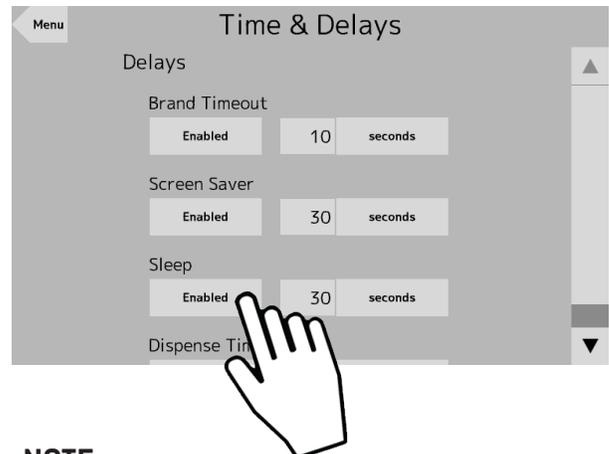
**Dispense Timeout** - the amount of time a valve will pour before automatic shutoff.

3. Adjust the *Frequency* and *Units of Time* by selecting their corresponding fields.



## Screen Sleep

1. To prevent the dispense screen from sleeping, tap the field below “Sleep” and change to “Disabled”.

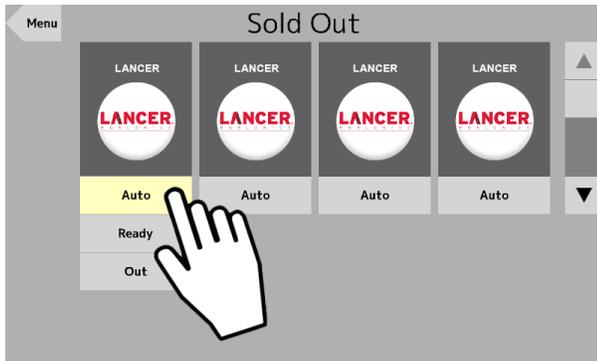


### NOTE

To ensure interface features function correctly, set unit to correct local time.

## Sold Out Features

1. From the Service Menu, tap the *Sold Out* button.
2. Manually adjust specific brands to read *Ready*, *Out*, or *Auto*



### NOTE

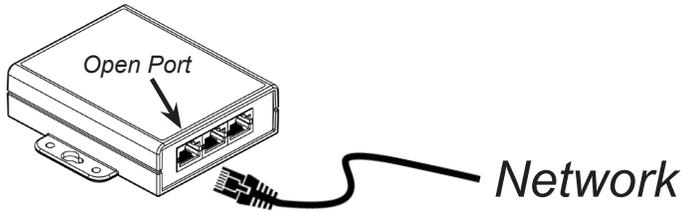
**Ready** - signifies there is available product and the valve will dispense when activated

**Out** - signifies there is no available product or there is a problem with the specified brand and will dispense when activated.

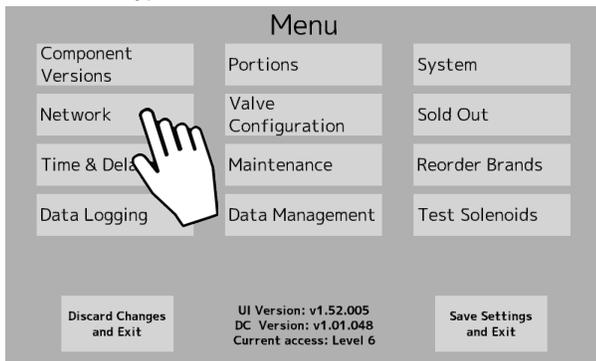
**Auto** - signifies that the configured Sold Out Sensor controls whether the brand can be dispensed. This feature requires an optional sold out sensor kit, does not come standard, and is available for up to ten (16) brands at one time. The following is a set of instructions on how to set up this feature. If no sold out sensor is assigned then the Auto feature acts the same as the Ready feature.

## Lancer Link Setup

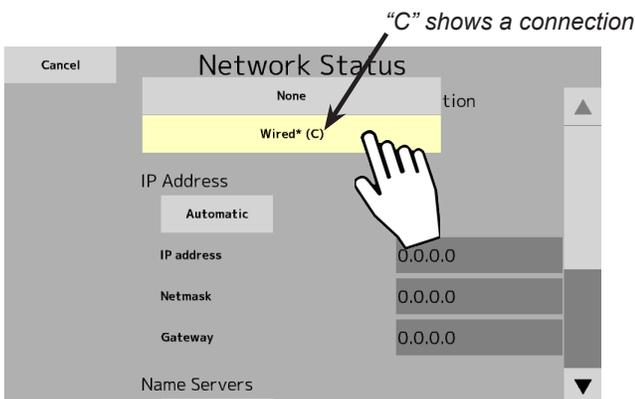
1. Plug an Ethernet cable from wall or router to any open port on the Network Switch, located at the upper left corner on the front of the unit. .



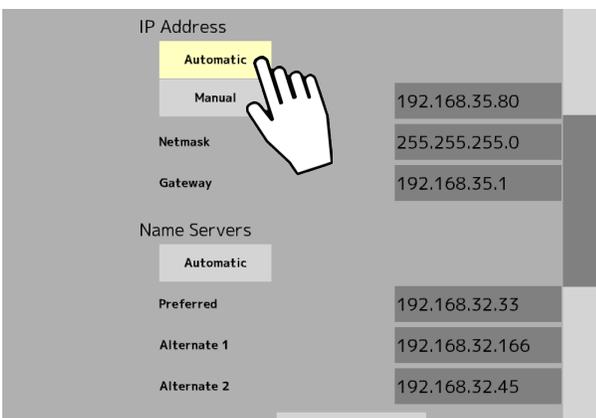
2. From the service menu, select Network Status to change connection type.



3. From the Network Status menu, change connection type to "Wired" to enable server connection.



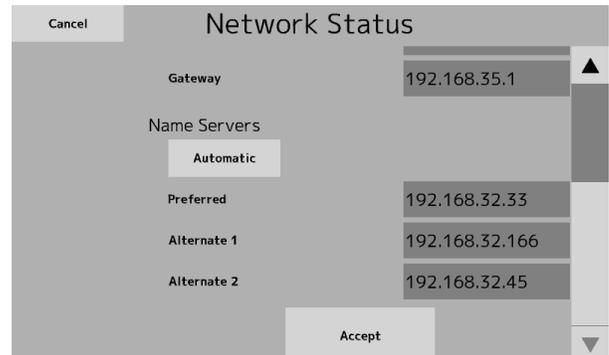
4. Ensure "Automatic" is selected for both "IP Address" and "Name Servers" configurations.



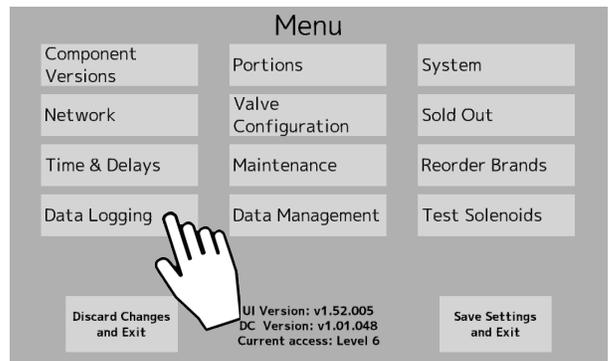
### NOTE

It may take up to 10 minutes for a network connection to be established.

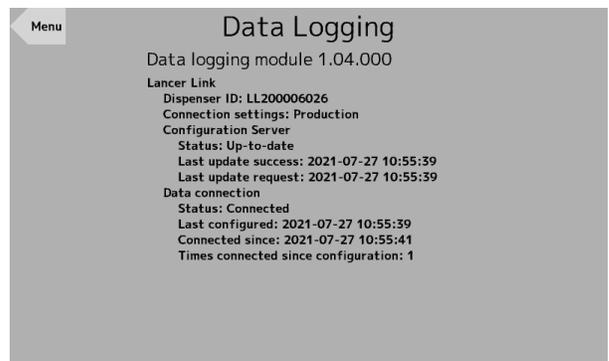
5. Once a connection is made, and fields are populated, scroll down and press "Accept" to confirm and save changes.



6. Return to the Service Menu and press the Data Logging button.



7. From the Data Logging screen, locate the "Dispenser ID", then call Lancer Worldwide Customer Service 1-800-729-1500, to register your account.



8. Save settings and exit service menu.
9. Use "Dispenser ID" to activate unit on the Lancer Link website: <https://prod-lancercorp-portal-app-cu.azurewebsites.net/>

### NOTE

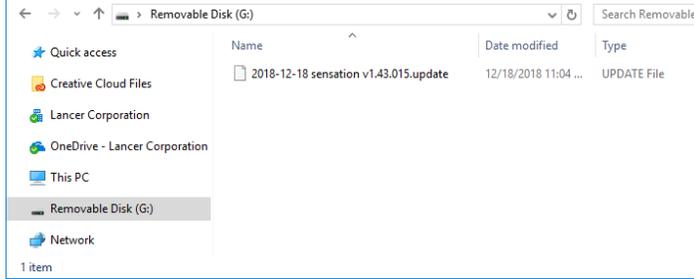
Refer to Lancer Link User Guide (PN: 28-3067) for instructions on web based setup.



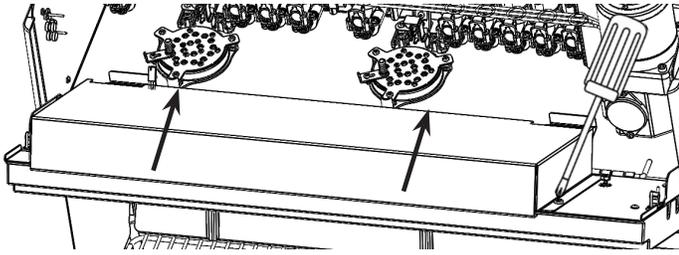
[www.lancerworldwide.com/tools/instruction-sheets/](http://www.lancerworldwide.com/tools/instruction-sheets/)

## Update Software

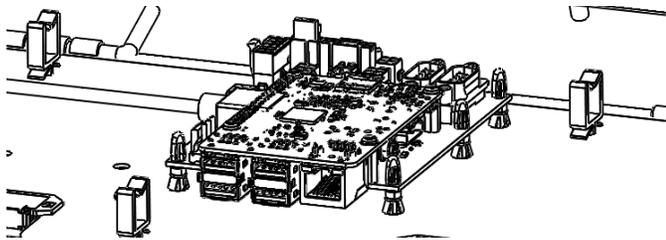
1. Load the *.update* file on to any USB formatted to “FAT32” as shown in the image below.



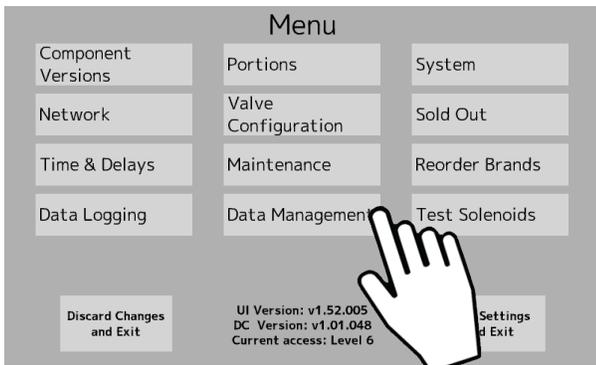
2. Unscrew and remove metal shield covering PCB.



3. Plug the USB into open port on the side of the PCB controller box.



4. Access the Service menu on the left side screen and tap the *Data Management* button.



5. In the “Update from USB” section, tap the *Software* button.



6. Verify that the correct update is displayed on the screen then tap *Start Update*.

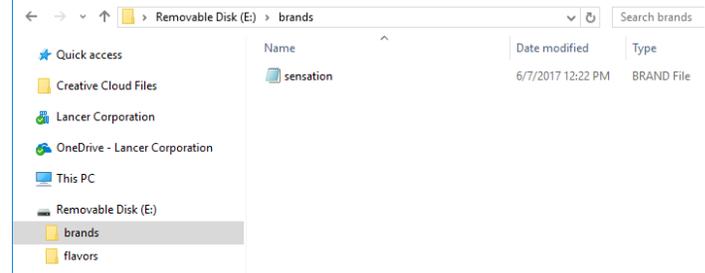
### NOTE

The screen will automatically conduct a power cycle once the update is complete. Wait at least ten (10) seconds before accessing the Service Menu once the power cycle is complete.

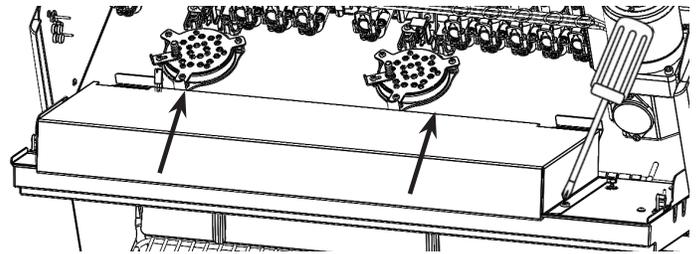
7. Repeat Steps 2 - 6 for the right side PCB and screen.

## Update Brands/Flavors

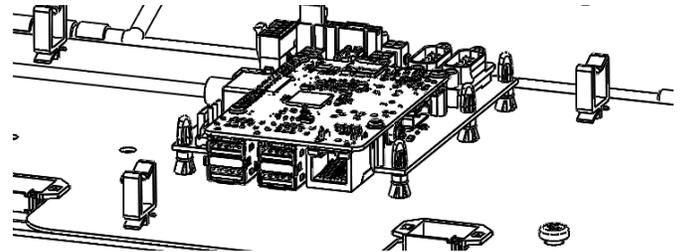
1. Create a USB drive with the updated *.brand* file in a folder named “brands” as shown in the image below.



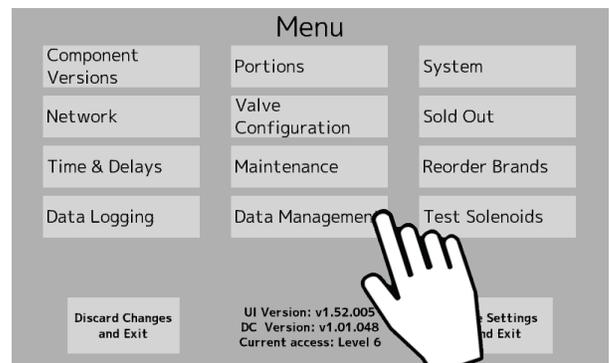
2. Unscrew and remove metal shield covering PCB.



3. Plug the USB into open port on the side of the PCB controller box.



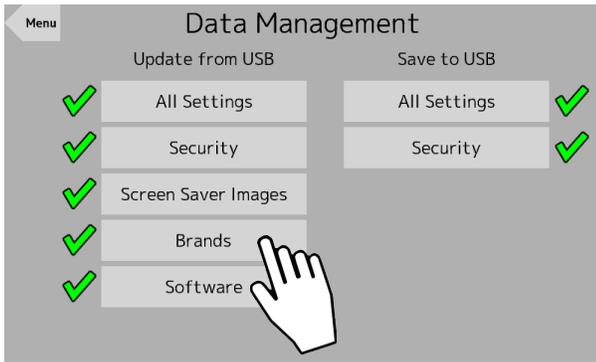
4. Access the Service menu on the left side screen and tap the *Data Management* button.



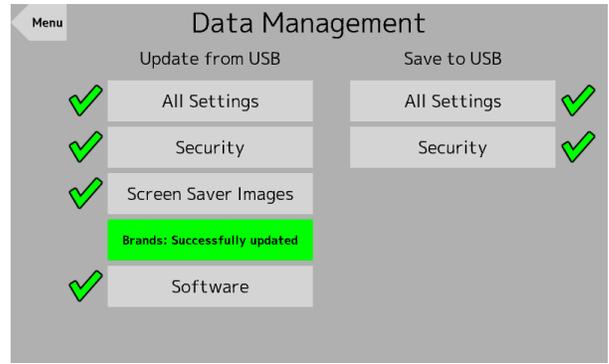
5. In the “Update from USB” section, tap the *Brands* button.

**NOTE**

There will be a check mark next to the Brands button if the USB drive has the brand files in the correct place.



6. Once the Brands button turns green then the updated brands will be available.



7. Repeat Steps 2 - 6 for the right side PCB and screen.

**NOTE**

To upload new flavors to the DTS, create the *flavor.brand* file and put into a folder named “flavors”, then repeat steps 2-6.

## CLEANING AND SANITIZING

### GENERAL INFORMATION

The operator of the equipment must provide continuous maintenance as required by this manual and/or state and local health department guidelines to ensure proper operation and sanitation requirements are maintained.

The cleaning procedures provided herein pertain to the Lancer equipment identified by this manual. If other equipment is being cleaned, follow the guidelines established by the manufacturer for that equipment.

Cleaning should be accomplished only by trained personnel. Sanitary gloves are to be used during cleaning operations. Applicable safety precautions must be observed. Instruction warnings on the product being used must be followed.

### ⚠ ATTENTION

- Use sanitary gloves when cleaning the unit and observe all applicable safety precautions.
- **DO NOT** use a water jet to clean or sanitize the unit.
- **DO NOT** disconnect water lines when cleaning and sanitizing syrup lines, to avoid contamination.
- **DO NOT** use strong bleaches or detergents; These can discolor and corrode various materials.
- **DO NOT** use metal scrapers, sharp objects, steel wool, scouring pads, abrasives, or solvents on the dispenser.
- **DO NOT** use hot water above 140° F (60° C). This can damage the dispenser.
- **DO NOT** spill sanitizing solution on any circuit boards. Insure all sanitizing solution is removed from the system.

### Cleaning Solution

Mix a mild, non-abrasive detergent (e.g. Sodium Laureth Sulfate, dish soap) with clean, potable water at a temperature of 90°F to 110°F (32°C to 43°C). The mixture ratio is one ounce of cleaner to two gallons of water. Prepare a minimum of five gallons of cleaning solution. Do not use abrasive cleaners or solvents because they can cause permanent damage to the unit. Ensure rinsing is thorough, using clean, potable water at a temperature of 90°F to 110°F. Extended lengths of product lines may require additional cleaning solution.

### Sanitizing Solution

Prepare the sanitizing solution in accordance with the manufacturer’s written recommendations and safety guidelines. The type and concentration of sanitizing agent recommended in the instructions by the manufacturer shall comply with 40 CFR §180.940. The solution must provide 200 parts per million (PPM) chlorine (e.g. Sodium Hypochlorite or bleach) and a minimum of five gallons of sanitizing solution should be prepared.

## Nozzle Sanitizing Solution

Prepare a chlorine solution (less than pH 7.0) containing 50 PPM chlorine with clean, potable water at a temperature of 90 – 110°F. Any sanitizing solution may be used as long as it is prepared according to manufacturer’s recommendations and safety guidelines, and provides 50 PPM chlorine.

## Integrity of Plastic Finish

Remove any plastic film. While caring for your unit, please note that there may be some cleaners that may compromise the integrity of the powder coated finish. The recommended method for cleaning the powder coated surface is to use warm water and a mild soap such as Windex, Dawn, 409, etc. Certain chemical cleaners such as Acetone, Mineral Spirits, or Lacquer thinners could cause aesthetic damage. Thoroughly rinse with water after cleaning the surface.

### Other Supplies Needed:

1. Clean cloth towels
2. Bucket
3. Extra nozzle
4. Sanitary gloves
5. Small brush (PN 22-0017)

## Scheduled Maintenance/Cleaning

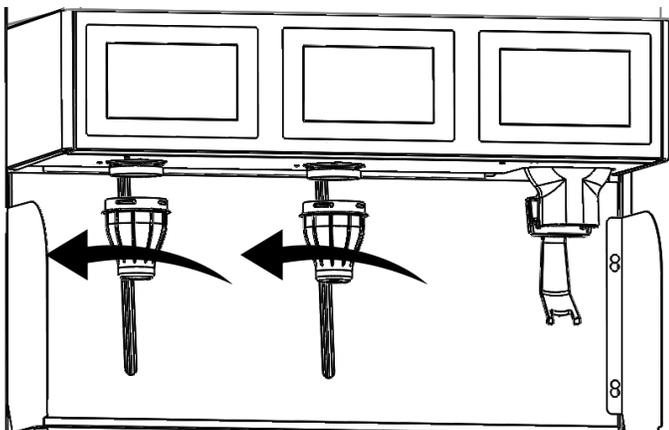
<b>As Needed</b>	<ul style="list-style-type: none"> <li>• Keep exterior surfaces of unit clean using a clean, damp cloth.</li> </ul>
<b>Daily</b>	<ul style="list-style-type: none"> <li>• With a clean cloth and cleaning solution, wipe off all of the unit’s exterior surfaces. <b>DO NOT SPRAY CLEANING PRODUCT DIRECTLY ON SCREEN. SPRAY SOFT CLOTH THEN WIPE SCREEN.</b></li> <li>• Clean exterior of dispensing valves and ice chute.</li> <li>• Remove cup rest then clean the drip tray and cup rest. Replace cup rest when finished.</li> <li>• Wipe clean all splash areas using a damp cloth soaked in cleaning solution.</li> <li>• Clean beverage nozzles as specified by the section “Cleaning and Sanitizing Nozzles” below.</li> </ul>
<b>Monthly</b>	<ul style="list-style-type: none"> <li>• Clean the ice bin, auger, and ice chute assembly as specified by the section “Cleaning and Sanitizing Ice Bin, Auger, and Ice Chute” on page 24.</li> </ul>
<b>Every Six Months</b>	<ul style="list-style-type: none"> <li>• Clean the syrup lines as specified by the section “Cleaning and Sanitizing Syrup Lines - Bag in Box” on page 25.</li> <li>• Pull out unit (if applicable) and clean behind and underneath. Check for any loose components or noises.</li> </ul>

## Cleaning & Sanitizing Nozzles

1. Prepare the nozzle sanitizing solution as described above.
2. Remove the outer nozzle by twisting clockwise and pulling downward.

### ⚠ ATTENTION

**DO NOT attempt to activate any valves while the outer nozzle is removed.**



3. Using the nozzle brush provided in the installation kit and the cleaning solution described on page 22, clean the outer nozzle of any residual syrup.
4. Rinse the outer nozzle with clean, potable water then soak in the nozzle sanitizing solution prepared in step 1.
5. While the outer nozzle is in the sanitizing solution, using the nozzle brush, dip the brush in the nozzle sanitizing solution and thoroughly brush the bottom of the inner nozzle body.
6. Rinse the brush in warm 90° – 110°F (32.2° – 43.3°C), clean potable water and brush the bottom of the inner nozzle body once more **WITHOUT** the sanitizing solution.
7. After the outer nozzle has soaked for fifteen (15) minutes, rinse in warm 90° – 110°F (32.2° – 43.3°C), clean potable water for a minimum of twenty (20) seconds ensuring all surfaces of the nozzle have been thoroughly rinsed.
8. Allow outer nozzle to air dry (to expedite drying, forced convection is recommended).
9. Reinstall the outer nozzle to the unit.
10. Repeat Steps 2 - 9 for the second nozzle.
11. Wipe down push levers with solution.

## Cleaning & Sanitizing Ice Bin, Auger, and Ice Chute

### NOTE

It is recommended to perform this procedure monthly, or more often if desired. Use the cleaning solution described on page 22. An alternate solution of one parts water to one part vinegar may be used to remove water spots and calcium deposits.

### NOTE

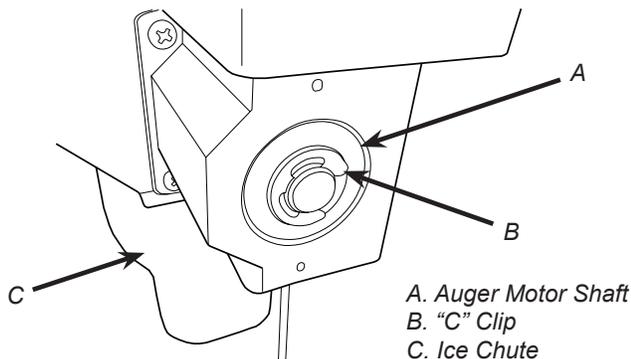
Refer to the Automatic Agitation Warning on page 4 of this manual.

1. Disconnect power to the dispenser
2. Remove the Merchandiser and Top Cover.
3. Remove Ice Chute Lever, then remove Splash Plate Assembly by lifting it up and out from the dispenser face.

### NOTE

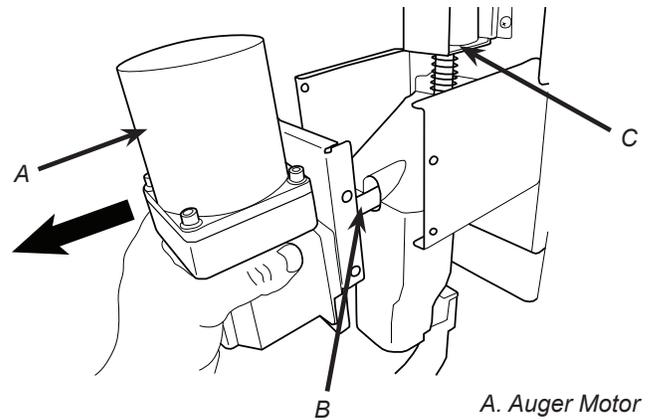
Always remove the ice chute lever before removing the splash plate.

4. Remove or melt out any remaining ice from the ice bin.
5. Use a screwdriver to remove the Auger Motor shaft cover.
6. Remove the "C" clip from the Auger Motor Shaft.

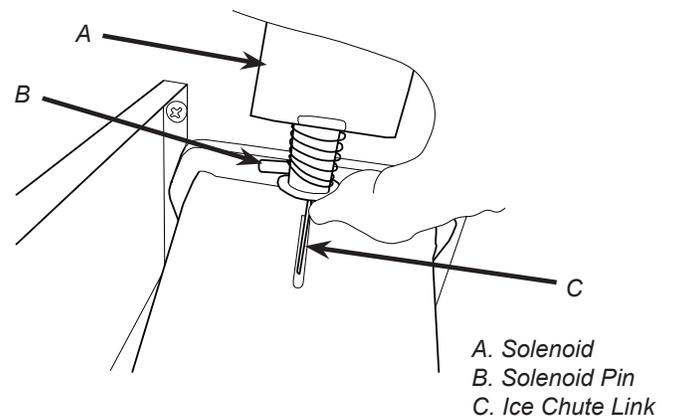


7. Disconnect the Auger Motor wire harness from junction box.
8. Remove the four (4) nuts from the bottom nozzle plate, then remove.
9. Remove the four (4) screws from the bracket holding the Auger Motor, and LED light bracket.

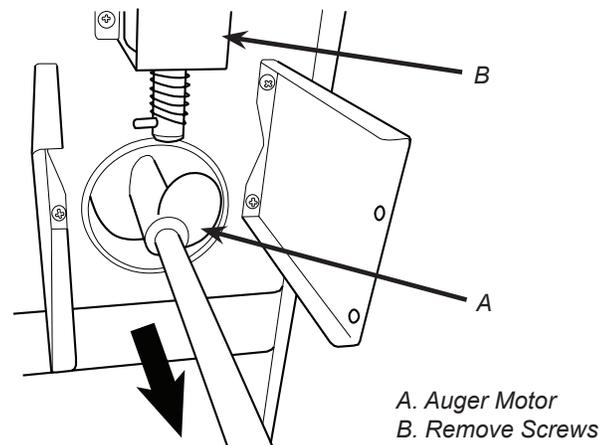
10. Slide the Motor and Mounting Plate Assembly off of the Auger Shaft.



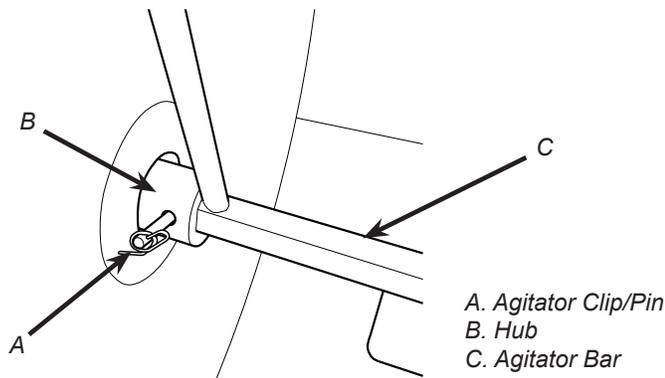
11. Remove the Auger Motor Shaft Key and set aside.
12. Remove the second clip from the Auger Shaft.
13. Disconnect the Ice Chute wire harness from the junction box.
14. Disconnect the solenoid from Ice Chute link by pushing pin through shaft until link is free. (Pin shown in out position)



15. Remove the Ice Chute Assembly by removing four (4) screws that secure to unit and set aside.
16. Remove Auger by pulling straight out from unit and set aside.



17. Remove Agitator Clip and Pin from Agitator bar in Ice Bin.



18. Remove the Agitator bar and Hub from the Ice Bin.
19. Using the Cleaning Solution (page 22) and a clean cloth or soft brush, clean the Ice Chute Assembly, Ice Shroud, Auger, all sides of the Ice Bin, and surface of the aluminum casting.
20. Using the Cleaning Solution and the sponge brush provided, clean all interior surfaces of the ice chute and the ice chute feed through.
21. Using hot water, thoroughly rinse away the cleaning solution.
22. Wearing sanitary gloves, use a clean cloth or towel and the Sanitizing Solution (page 22) to wash all surfaces of removable parts, sides of the Ice Bin, and surface of the aluminum casting.
23. Using the Sanitizing Solution and the sponge brush provided, clean all interior surfaces of the ice chute and the ice chute feed through.
24. Wearing sanitary gloves, reassemble all removable parts. Ensure agitator clip is locked.
25. Fill unit with ice and replace Top Cover.
26. Reconnect dispenser to power source.

## Cleaning & Sanitizing Syrup Lines - Bag in Box

1. Disconnect syrup lines from BIB's
2. Place syrup lines, with BIB connectors and any adapters, in a bucket of warm water.
3. Activate each valve to fill the lines with warm water and flush out syrup remaining in the lines.
4. Prepare Cleaning Solution described on previous page 22.

5. Place syrup lines, with BIB connectors and any adapters, into cleaning solution.
6. Activate each valve until lines are filled with cleaning solution then let stand for ten (10) minutes.
7. Flush out cleaning solution from the syrup lines using clean, warm water.
8. Prepare Sanitizing Solution described on page 22.
9. Place syrup lines into sanitizing solution and activate each valve to fill with sanitizer. Let sit for ten (10) minutes.
10. Reconnect syrup lines to BIB's and draw drinks to flush solution from the dispenser.
11. Taste the drink to verify that there is no off-taste. If off-taste is found, flush syrup system again.

### **⚠ CAUTION**

**Following sanitation, rinse with end-use product until there is no aftertaste. Do not use a fresh water rinse. This is a NSF requirement. Residual sanitizing solution left in the system creates a health hazard.**

## Dispenser Disposal

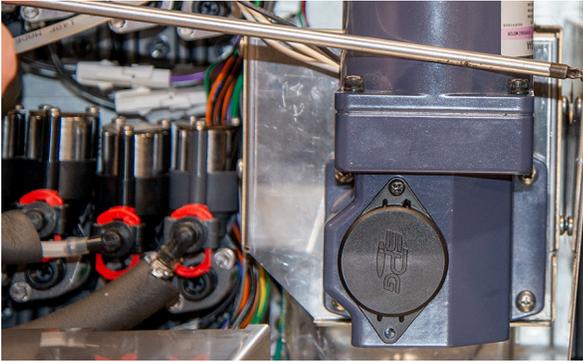


To prevent possible harm to the environment from improper disposal, recycle the unit by locating an authorized recycler or contact the retailer where the product was purchased. Comply with local regulations regarding disposal of the refrigerant and insulation.

# MAINTENANCE

## Ice Chute Replacement

1. Unplug dispenser.
2. Pull Merchandiser off.
3. Pull panel knobs to pull down front panel.
4. Remove right plastic side panels using Phillips screwdriver.



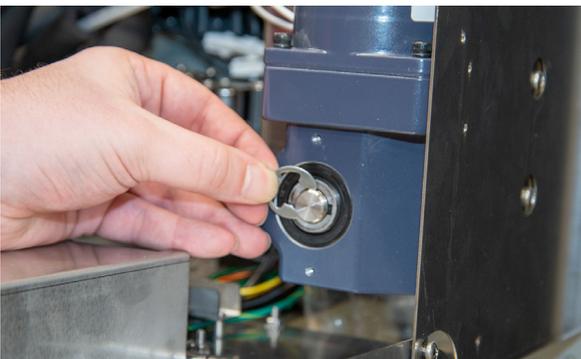
5. Disconnect motor harness connector.



6. Remove motor cover by removing two (2) Phillips screws.



7. Remove E-clip from motor.



8. Remove the four (4) Phillip screws to remove motor.



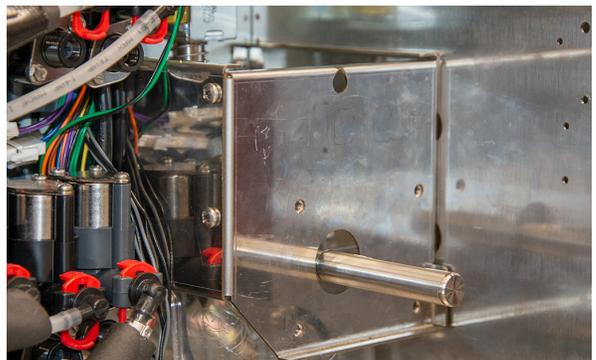
9. Remove drive pin for auger.



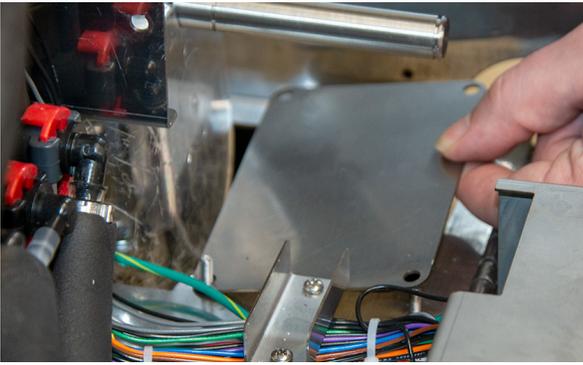
10. Remove E-clamp from auger rod.



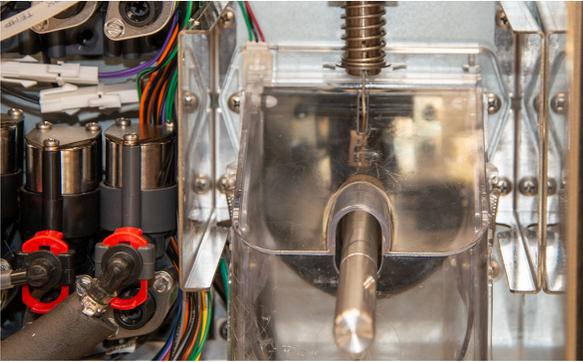
11. Remove four (4) screws to remove front bracket panel.



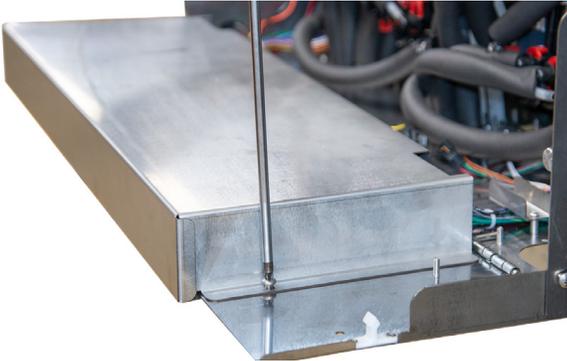
12. Remove four (4) nuts to remove bottom panel.



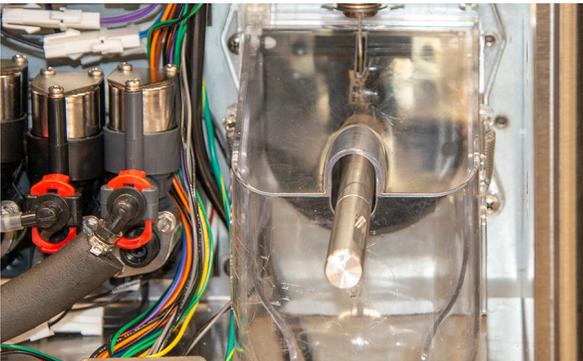
13. Remove four (4) Phillips screws to remove side panels.



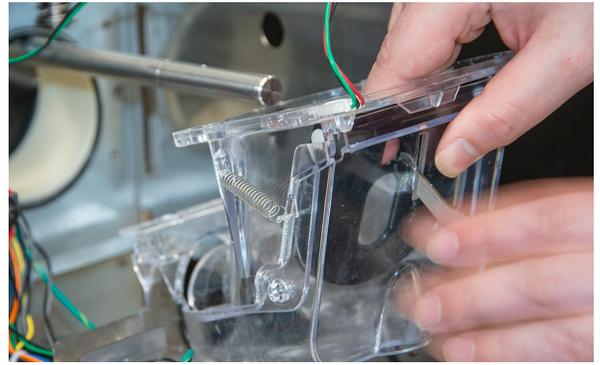
14. Remove two (2) screws to remove electronics cover.



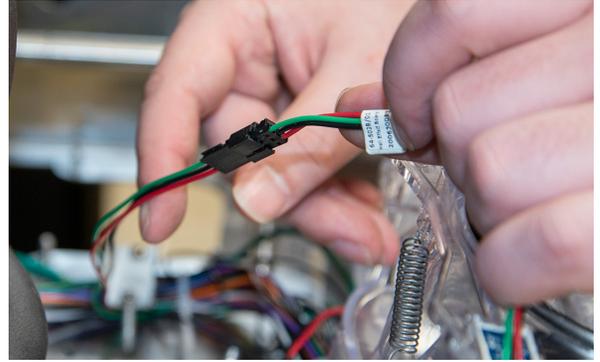
15. Remove four (4) screws to remove Ice Chute.



16. Slide Ice Chute off auger to remove.



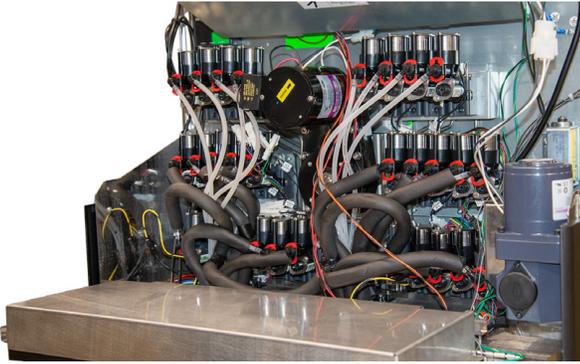
17. Disconnect Ice Chute harness.



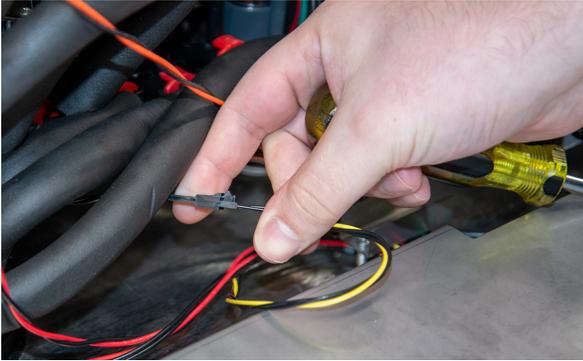
18. Perform instructions in reverse to install new Ice Chute.

## Drink Lever Replacement

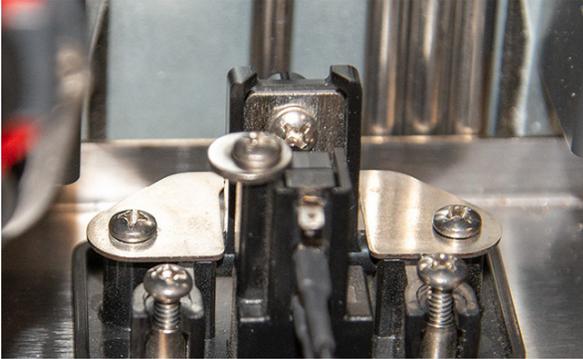
1. Unplug dispenser.
2. Pull Merchandiser off.
3. Pull panel knobs to pull down front panel.



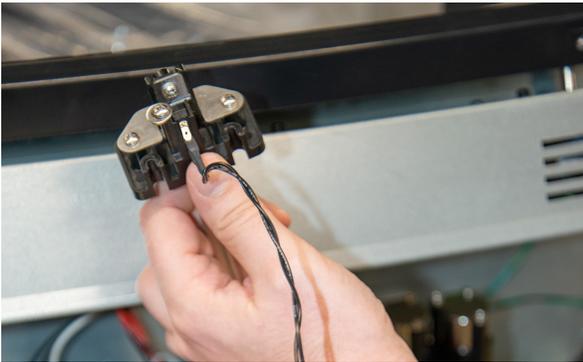
4. Disconnect Lever harness quick release.



5. Loosen the two (2) front lever assembly screws to release.



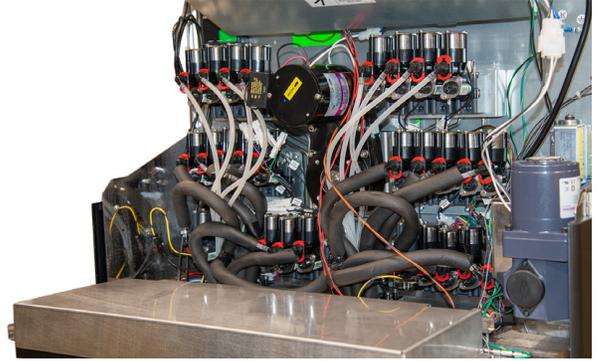
6. Push up by lever to remove Lever assembly.



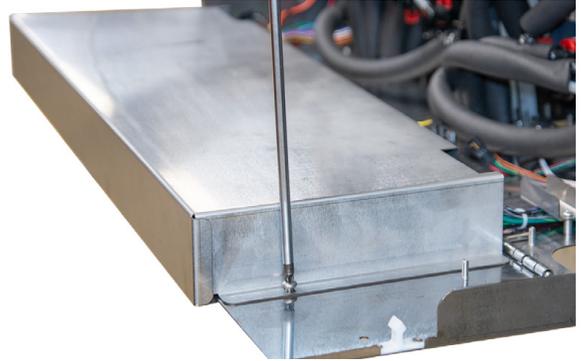
7. Perform instructions in reverse to install new lever.

## Monitor Replacement

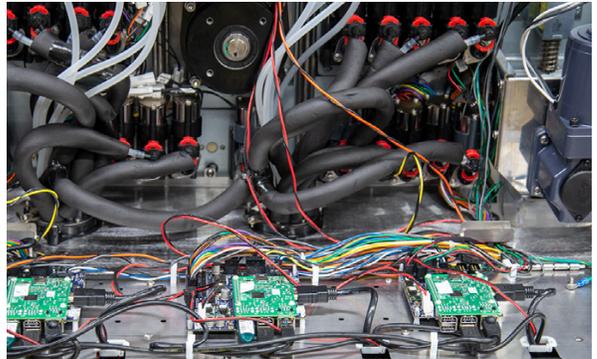
1. Unplug dispenser.
2. Pull Merchandiser off.
3. Pull panel knobs to pull down front panel.



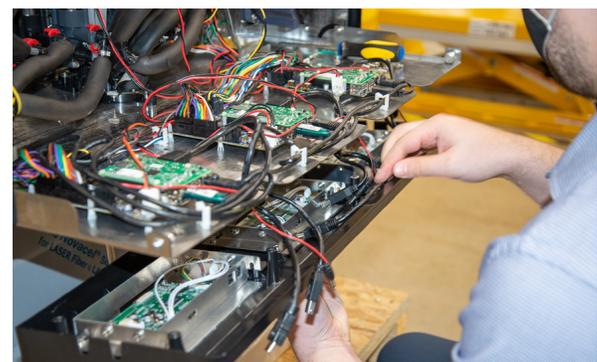
4. Remove two (2) screws to remove electronics cover.



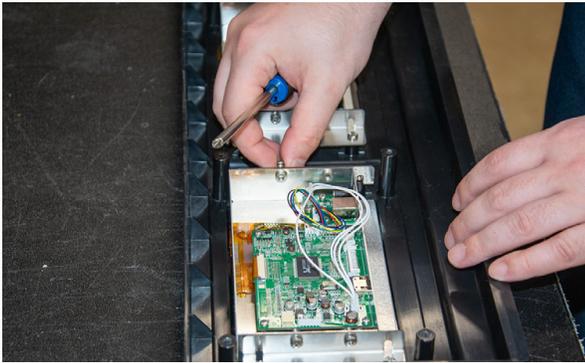
5. Remove the eight (8) Phillips screws to detach front panel.



6. Hold front panel as you disconnect HDMI, USB, AC cables.



7. Remove the four (4) screws from panel bracket.



8. Press monitor corners to break adhesive.



9. Perform instructions in reverse to install new monitor.

# TROUBLESHOOTING

## Valve, Syrup/Flavor Line Troubleshooting

TROUBLE	CAUSE	REMEDY
No product when switch is activated.	<ol style="list-style-type: none"> <li>1. No power to dispenser.</li> <li>2. Malfunctioning power supply.</li> <li>3. Malfunctioning PCB board.</li> <li>4. Keyswitch is off or keyswitch harness is disconnected.</li> <li>5. Malfunctioning LFCV valve module.</li> <li>6. Lever was not engaged to activate.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check internal breaker and incoming power.</li> <li>2. Check voltage to power supply. Check fuses.</li> <li>3. Replace PCB board.</li> <li>4. Turn keyswitch on and/or reconnect keyswitch harness.</li> <li>5. Replace module.</li> <li>6. Ensure lever is activated when selecting pour.</li> </ol>
Water in ice bin.	<ol style="list-style-type: none"> <li>1. Coldplate drain is obstructed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clear ice bin drain boots accordingly.</li> </ol>
Miscellaneous leakage.	<ol style="list-style-type: none"> <li>1. Gap between parts.</li> <li>2. Damaged or improperly installed o-rings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten appropriate retaining screws.</li> <li>2. Replace or adjust appropriate o-rings.</li> </ol>
Insufficient soda flow (carbonated drinks).	<ol style="list-style-type: none"> <li>1. Insufficient CO<sub>2</sub> supply pressure.</li> <li>2. Shutoff on mounting block is not fully open.</li> <li>3. Foreign debris in soda flow control.</li> </ol>	<ol style="list-style-type: none"> <li>1. Verify incoming CO<sub>2</sub> pressure is between 70 psi (0.483 MPa) and 80 psi (0.552 MPa)</li> <li>2. Open shutoff fully.</li> <li>3. Remove soda flow control from valve and clean out any foreign material to ensure smooth spool movement.</li> </ol>
Insufficient water flow (plain water drinks).	<ol style="list-style-type: none"> <li>1. Insufficient incoming supply pressure.</li> <li>2. Shutoff on mounting block not fully open.</li> <li>3. Foreign debris in water flow control.</li> <li>4. Water filtration problem.</li> </ol>	<ol style="list-style-type: none"> <li>1. Verify incoming supply water pressure to plain water inlet is a minimum of 25 psi (0.172 MPa) and a maximum of 50 psi (0.344 MPa).</li> <li>2. Open shutoff fully.</li> <li>3. Remove water flow control from valve and clean out any foreign material to ensure smooth spool movement.</li> <li>4. Service water system as required.</li> </ol>
Erratic ratio.	<ol style="list-style-type: none"> <li>1. Incoming water and/or syrup supply not at minimum flowing pressure.</li> <li>2. Foreign debris in water and/or syrup flow control.</li> <li>3. CO<sub>2</sub> regulator malfunction.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check pressure and adjust.</li> <li>2. Remove flow control from suspected valve and clean out any foreign material to ensure smooth spool movement.</li> <li>3. Repair or replace CO<sub>2</sub> regulator.</li> </ol>

TROUBLE	CAUSE	REMEDY
Insufficient syrup flow.	<ol style="list-style-type: none"> <li>1. Insufficient CO<sub>2</sub> pressure to BIB pumps.</li> <li>2. Shutoff on mounting block not fully open.</li> <li>3. Foreign debris in syrup flow control.</li> <li>4. Defective BIB pump.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust CO<sub>2</sub> pressure to BIB pumps to 80 psi (0.552 MPa) (min. 70 psi (0.483 MPa)). Do not exceed manufacturer's recommendations.</li> <li>2. Open shutoff fully.</li> <li>3. Remove syrup flow control from valve and clean out any foreign material to ensure smooth spool movement.</li> <li>4. Replace pump.</li> </ol>
Valve will not shut off.	<ol style="list-style-type: none"> <li>5. Solenoid plunger sticking.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace solenoid coil.</li> </ol>
Water continually leaking at connections.	<ol style="list-style-type: none"> <li>1. Loose water connections.</li> <li>2. Flare seal washer leaks.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten water connections.</li> <li>2. Replace flare seal washer.</li> </ol>
Water only dispensed, no syrup. Or syrup only dispensed, no water.	<ol style="list-style-type: none"> <li>1. Syrup BIB empty.</li> <li>2. Water or syrup shutoff on mounting block not fully open.</li> <li>3. Improper or inadequate water or syrup supply.</li> <li>4. CO<sub>2</sub> pressure to syrup pump too low.</li> <li>5. Stalled or inoperative BIB pump.</li> <li>6. Kinked line.</li> <li>7. CO<sub>2</sub> regulator malfunction.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace syrup BIB as required.</li> <li>2. Open shutoff completely.</li> <li>3. Remove valve from mounting block &amp; open shut-offs slightly. Check water &amp; syrup supply. If no supply, check unit for other problems. Ensure BIB connection is engaged.</li> <li>4. Check the CO<sub>2</sub> pressure to the pump to ensure it is between 70-80 psi (0.483-0.552 MPa).</li> <li>5. Check CO<sub>2</sub> pressure and/or replace pump.</li> <li>6. Remove kink or replace line.</li> <li>7. Repair or replace CO<sub>2</sub> regulator as required.</li> </ol>
Syrup only dispensed. No water, but CO <sub>2</sub> gas dispensed with syrup.	<ol style="list-style-type: none"> <li>1. Improper water flow to dispenser.</li> <li>2. Carbonator pump motor has timed out.</li> <li>3. Liquid level probe not connected properly to PCB.</li> <li>4. Defective PCB assembly.</li> <li>5. Defective liquid level probe.</li> <li>6. Weak or defective carbonator pump.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check for water flow to dispenser.</li> <li>2. Reset by turning the unit OFF, then ON by using the circuit breaker on the power supply or momentarily unplugging unit.</li> <li>3. Check connections of liquid level probe to PCB assembly.</li> <li>4. Replace PCB assembly.</li> <li>5. Replace liquid level probe.</li> <li>6. Replace pump.</li> </ol>

TROUBLE	CAUSE	REMEDY
Excessive foaming.	<ol style="list-style-type: none"> <li>1. No ice in bin.</li> <li>2. Incoming water or syrup temperature too high.</li> <li>3. CO<sub>2</sub> pressure too high.</li> <li>4. Water flow rate too high.</li> <li>5. Nozzle and diffuser not clean.</li> <li>6. Air in BIB lines.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill bin with ice and allow coldplate to re-stabilize.</li> <li>2. Correct prior to dispenser.</li> <li>3. Adjust CO<sub>2</sub> pressure downward, but not less than 25 psi (0.172 MPa).</li> <li>4. Re-adjust and reset ratio.</li> <li>5. Remove and clean.</li> <li>6. Bleed air from BIB lines.</li> </ol>
Low or no carbonation.	<ol style="list-style-type: none"> <li>1. Low or no CO<sub>2</sub>.</li> <li>2. Low water pressure.</li> <li>3. Worn or defective carbonator pump.</li> <li>4. Backflow preventer not allowing water to flow.</li> <li>5. Probe malfunctioning.</li> <li>6. PCB malfunctioning.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check CO<sub>2</sub> supply. Adjust CO<sub>2</sub> pressure to 70 psi (0.483 MPa).</li> <li>2. Need water booster kit.</li> <li>3. Replace carbonator pump.</li> <li>4. Replace backflow preventer, noting the flow direction arrow from pump to coldplate.</li> <li>5. Replace probe.</li> <li>6. Replace PCB.</li> </ol>

## Ice Bin/Ice Chute/Carbonator Pump Troubleshooting

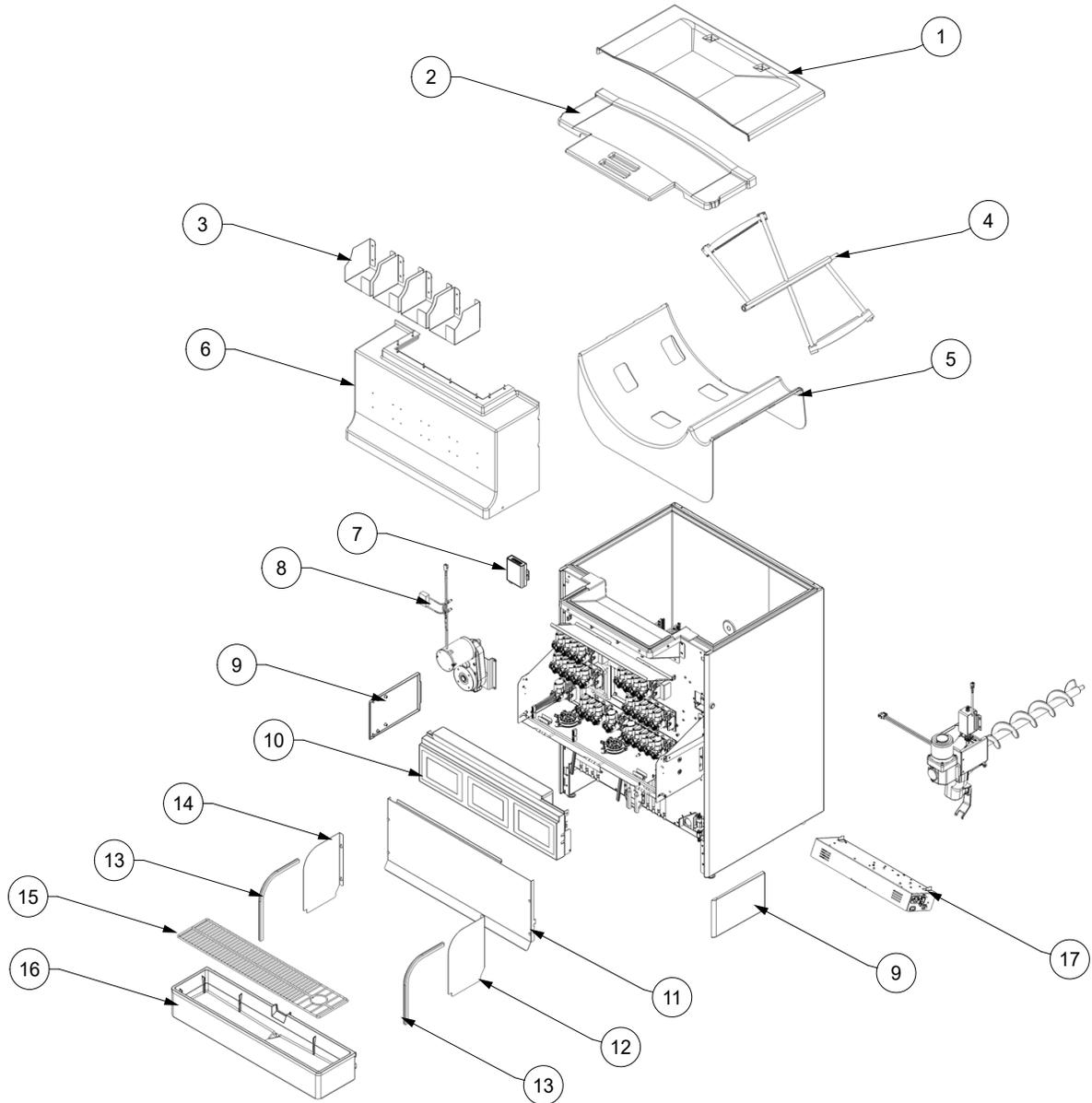
TROUBLE	CAUSE	REMEDY
Push ice chute; no response.	<ol style="list-style-type: none"> <li>1. Dispenser not connected to power source.</li> <li>2. Wiring harness not plugged in.</li> <li>3. PC board defective.</li> <li>4. Malfunctioning power supply.</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect dispenser to power source.</li> <li>2. Plug in wiring harness.</li> <li>3. Replace PC board.</li> <li>4. Check voltage to power supply. Check fuses.</li> </ol>
Push chute, ice door opens but motor does not run.	<ol style="list-style-type: none"> <li>1. Wiring harness not plugged in.</li> <li>2. PC board defective.</li> <li>3. Motor defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Plug in wiring harness.</li> <li>2. Replace PC board.</li> <li>3. Replace motor.</li> </ol>
Push chute, motor runs but ice door does not open.	<ol style="list-style-type: none"> <li>1. Solenoid not connected to PC board.</li> <li>2. Solenoid defective.</li> <li>3. PC board defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect solenoid to PC board.</li> <li>2. Replace solenoid.</li> <li>3. Replace PC board.</li> </ol>
Push chute, ice door opens, motor runs, but ice does not dispense, or ice is of poor quality.	<ol style="list-style-type: none"> <li>1. Dispenser is out of ice.</li> <li>2. Agitator pin is missing or damaged.</li> <li>3. Poor ice quality.</li> <li>4. Key not installed on agitation shaft.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill dispenser with ice.</li> <li>2. Replace agitator pin.</li> <li>3. Service ice machine.</li> <li>4. Install key on agitation shaft.</li> </ol>
Noisy/cavitating carbonator pump.	<ol style="list-style-type: none"> <li>1. Insufficient incoming water supply pressure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Verify incoming supply water pressure to carbonator pump is min. of 25 psi (0.172 MPa), max. of 50 psi (0.345 MPa).</li> </ol>

## Remote Syrup Pump Troubleshooting

TROUBLE	CAUSE	REMEDY
BIB pump does not operate when dispensing valve is opened.	<ol style="list-style-type: none"> <li>1. Out of CO<sub>2</sub>, CO<sub>2</sub> not turned on, or low CO<sub>2</sub> pressure.</li> <li>2. Out of syrup.</li> <li>3. BIB connector not tight.</li> <li>4. Kinks in syrup or gas lines.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace CO<sub>2</sub> supply, turn on CO<sub>2</sub> supply, or adjust CO<sub>2</sub> pressure to 70-80 psi (0.483-0.552 MPa).</li> <li>2. Replace syrup supply.</li> <li>3. Fasten connector tightly.</li> <li>4. Straighten or replace lines.</li> </ol>
BIB pump operating, but no flow.	<ol style="list-style-type: none"> <li>1. Leak in syrup inlet or outlet line.</li> <li>2. Defective BIB pump.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace line.</li> <li>2. Replace BIB pump.</li> </ol>
BIB pump continues to operate when bag is empty.	<ol style="list-style-type: none"> <li>1. Leak in suction line.</li> <li>2. Leaking o-ring on pump inlet fitting.</li> <li>3. Defective syrup BIB pump.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check BIB connector, if still leaking then replace line.</li> <li>2. Replace o-ring</li> <li>3. Replace defective pump.</li> </ol>
BIB pump fails to restart after bag replacement.	<ol style="list-style-type: none"> <li>1. BIB connector not on tightly.</li> <li>2. BIB connector is stopped up.</li> <li>3. Kinks in syrup line.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten BIB connector.</li> <li>2. Clean out or replace BIB connector.</li> <li>3. Straighten or replace line.</li> </ol>
BIB pump fails to stop when dispensing valve is closed.	<ol style="list-style-type: none"> <li>1. Leak in discharge line or fittings.</li> <li>2. Empty BIB.</li> <li>3. Air leak on inlet line or bag connector.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair or replace discharge line.</li> <li>2. Replace BIB.</li> <li>3. Repair or replace.</li> </ol>

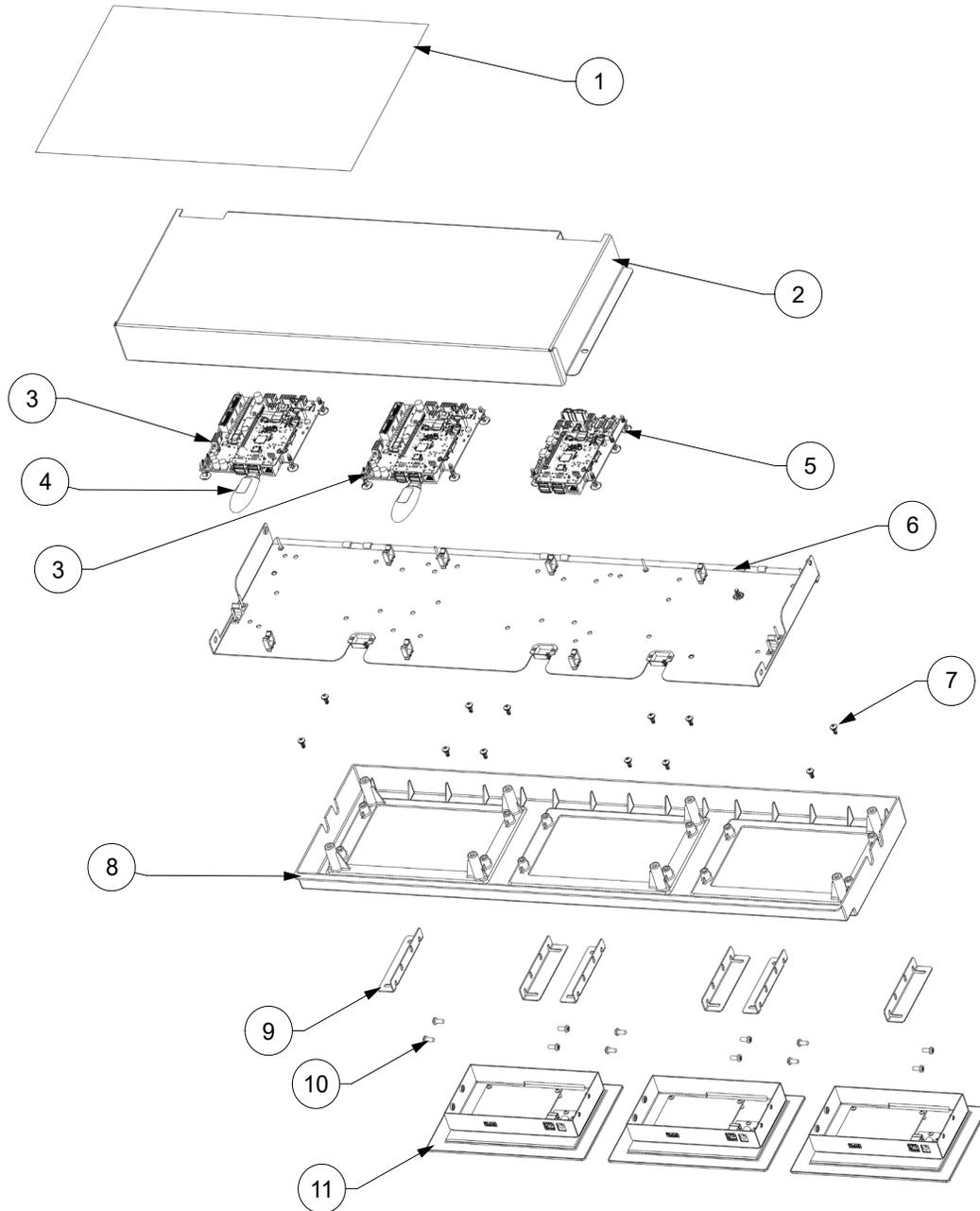
# ILLUSTRATIONS AND PART LISTINGS

## Main Unit Assembly



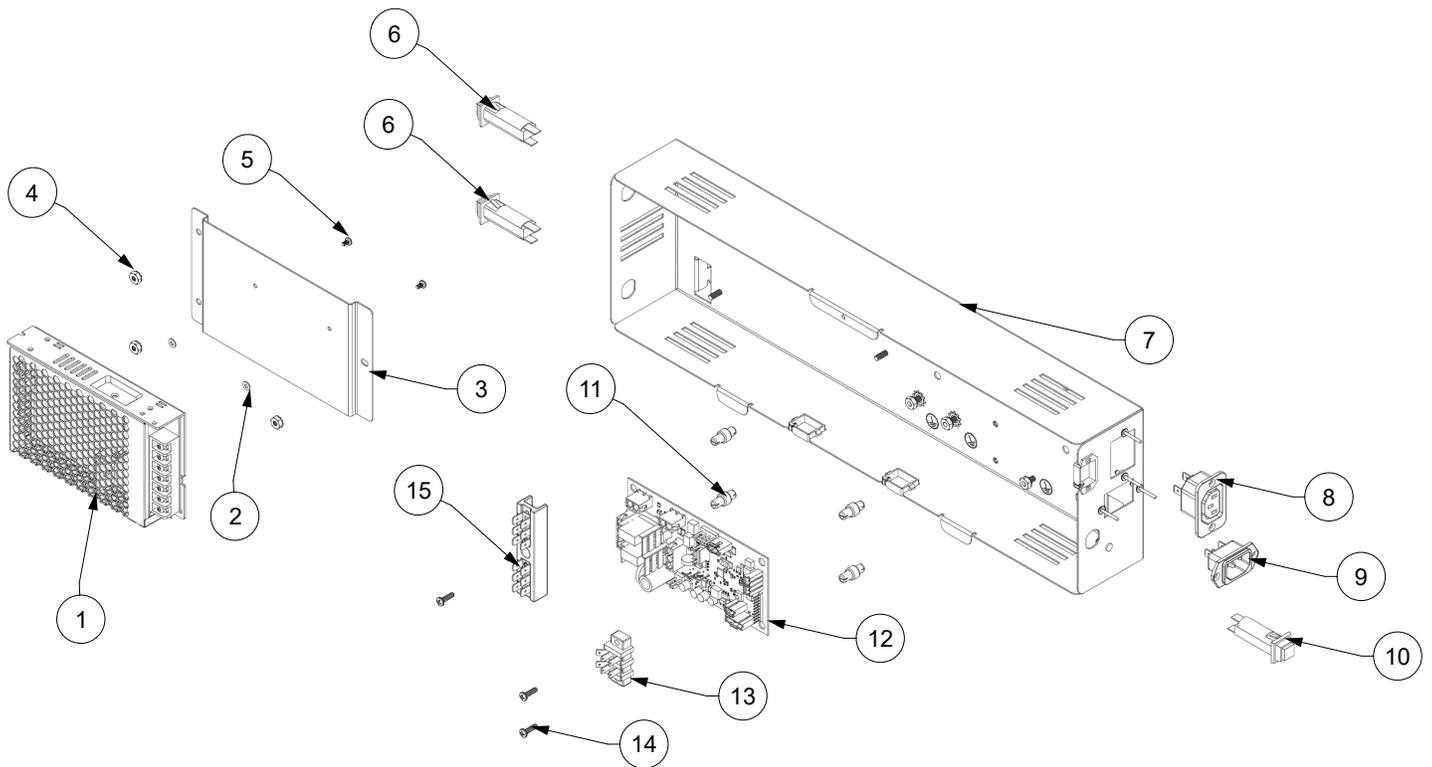
<u>Item</u>	<u>Part No.</u>	<u>Description</u>			
01	05-4199	LID,BACK,30",DTS	09	05-4208	PANEL,SIDE,UI BEZEL,DTS
02	05-4200	LID,FRONT,30",DTS	10	82-6502	SWITCH PLATE ASSY,DTS
03	30-16621	LID, HOLDER,3.8IN-4.7IN LIDS	11	30-16530	SPLASH PLATE,30,DTS
04	82-4363	AGITATOR ASSY,P-ICE	12	30-10088	SPLASH GUARD,RIGHT,FS30
05	05-2845	INSERT,BIN,THERMORFORM,P-ICE	13	15-0200	EDGE GUARD,VINYL,SPL PL,IC
06	05-4221	MERCHANDISER,LIDS,30",DTS	14	30-10089	SPLASH GUARD,LEFT,FS30
07	52-4128	NETWORK SWITCH,ETHERNET	15	23-2066	CUP REST,30,FREE FLOW
08	91-0198	MOTOR,AC	16	82-4374	DRIP TRAY ASSY

# Electrical Assembly



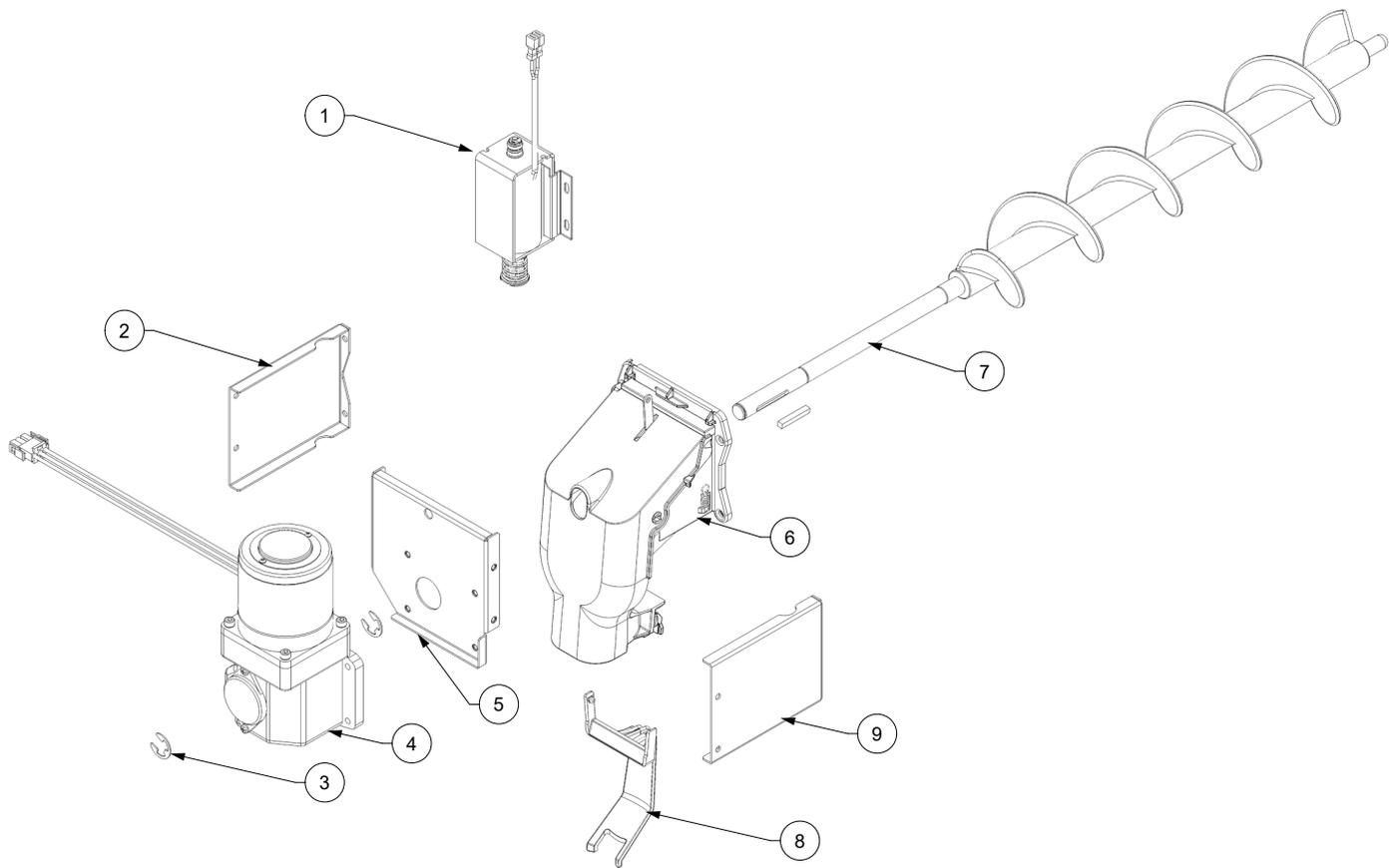
<u>Item</u>	<u>Part No.</u>	<u>Description</u>
01	06-4138	LABEL,SCREEN WIRING,WARNING
02	30-16526	SHIELD,SWITCH PLATE
03	52-4200	PCB CONTROLLER
04	82-6490	KEY,LANCER LINK,USB
05	52-4206	PCB, ICE CONTROLLER ASSY
06	51-7234	SWITCH PLATE,30,ASSY
07	04-0269	SCR,8-16X.375,PHD,PH/SL,PLT
08	05-4212	HOUSING,LCDX3,30
09	30-16535	BRACKET,DISPLAY
10	04-0406	SCR,8-32x.375,PH,PH,MS,SS,PL
11	82-6044	DISPLAY,7IN TOUCH,HDMI

# Electrical Assembly



<u>Item</u>	<u>Part No.</u>	<u>Description</u>
01	52-4038	POWER SUPPLY,AC TO DC,24V
02	04-1716	WASHER,FLAT,M3
03	30-16543	POWER SUPPLY BRACKET,DTS
04	04-0297	NUT,HEX,8-32,KEPS,SS
05	04-1490	SCR,M3 X 5,PH,MS,SS
06	12-0419	BREAKER,CIRCUIT,ETA 3.5A
07	30-16527	CONTROL BOX,MAIN,DTS
08	12-1004	POWER INLET PANEL MNT
09	12-0418	POWER INLET 15A/250VAC
10	12-0504	BREAKER,CIRCUIT,ETA,7.0A
11	13-0047	STDF .250
12	64-5037	PCB ASSY,ICE CNTRL BD
13	12-0541	TERMINAL BLOCK,4-8POS
14	04-0394	SCR,6-32X.500,PH,PH,MS,SS,PL
15	12-0562	TERMINAL BLOCK 6-12 POSITION

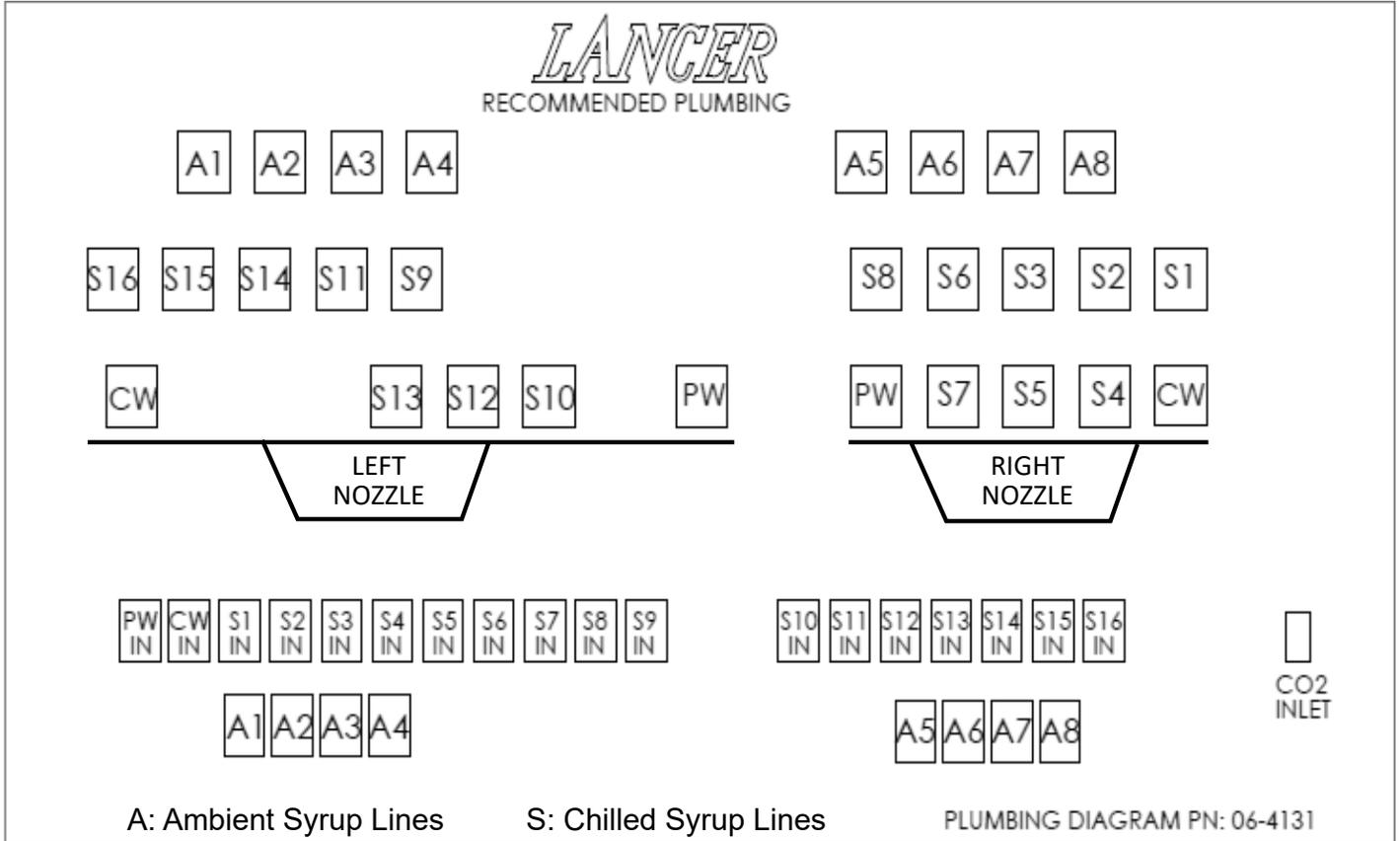
# Ice Dispensing System



<u>Item</u>	<u>Part No.</u>	<u>Description</u>
01	82-4415	SOLENOID ASSY,IBD,NO LINK
02	30-11043	MOTOR,SUPPORT,AUGER
03	03-0111	RETAINING RING (5133-62)
04	91-4008	MOTOR,GEARHEAD ASSY,AUGER
05	30-11044	MOTOR,MNT PLATE,AUGER
06	82-4450	ICE CHUTE ASSEMBLY,SENSATION
07	82-4315	AUGER,PL OVERMOLD,PELLET ICE
08	05-0999	LEVER,CHUTE,IBD
09	30-11043	MOTOR,SUPPORT,AUGER
-	03-0429	AUGER KEY

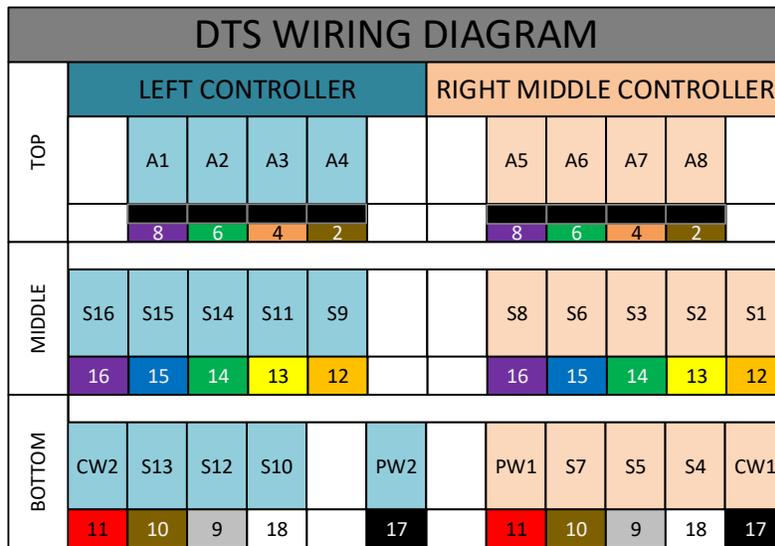
# PLUMBING DIAGRAM

## Drive Thru Solution Unit Plumbing Diagram



# WIRING DIAGRAMS

## Drive Thru Solution Unit Wiring Diagram



14 valves each side  
 4 ambient  
 8 syrups  
 1 plain water  
 1 carb water

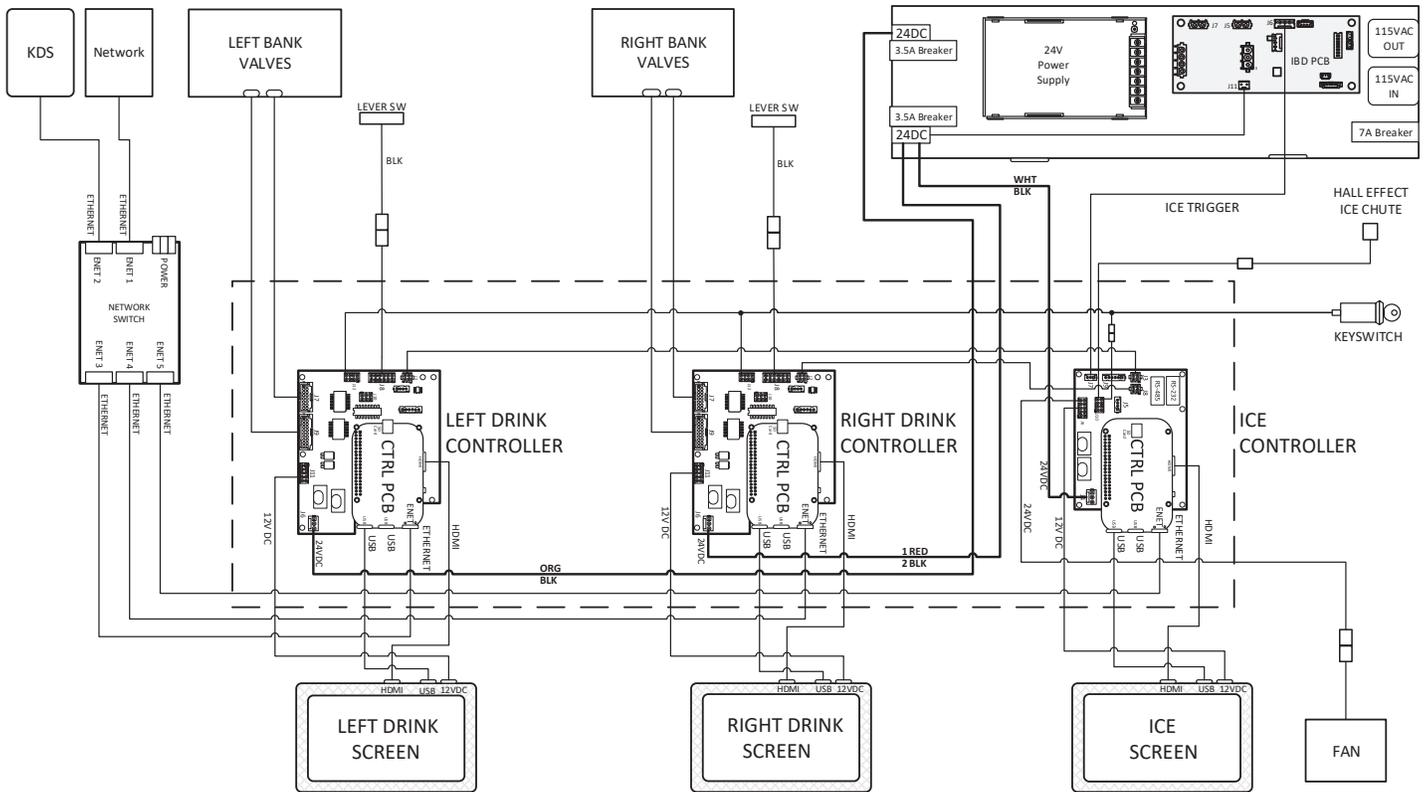
BLK							
VIO	GRN	ORG	BRN	BLK	BLK	BLK	BLK
8	7	6	5	4	3	2	1
A1	A2	A3	A4				

PUR	BLU	GRN	ORG	ORG	RED	BRN	GRY	WHT	BLK
16	15	14	13	12	11	10	9	18	17
S16	S15	S14	S11	S9	CW2	S13	S12	S10	PW2

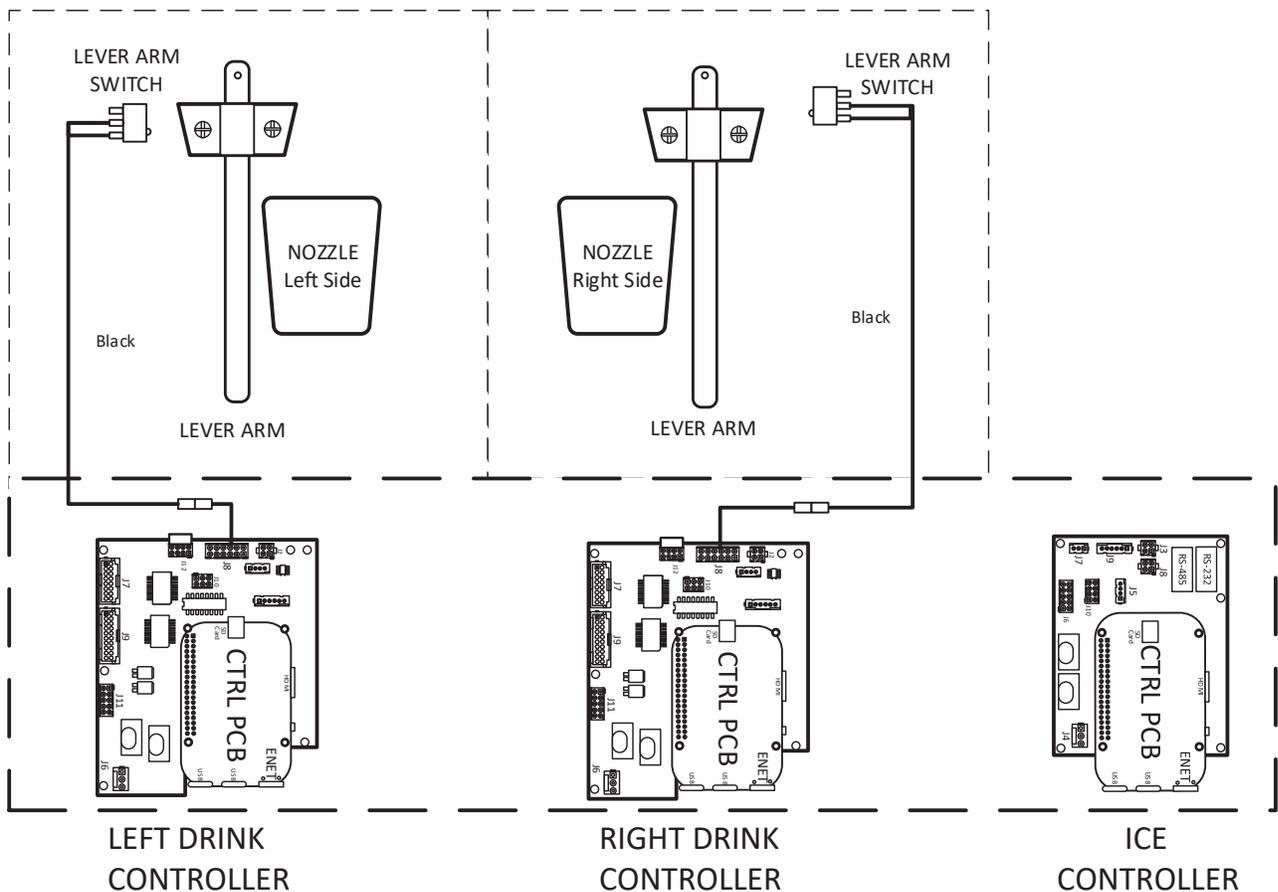
BLK							
VIO	GRN	ORG	BRN	BLK	BLK	BLK	BLK
8	7	6	5	4	3	2	1
A5	A6	A7	A8				

PUR	BLU	GRN	ORG	ORG	RED	BRN	GRY	WHT	BLK
16	15	14	13	12	11	10	9	18	17
S8	S6	S3	S2	S1	PW1	S7	S5	S4	CW1

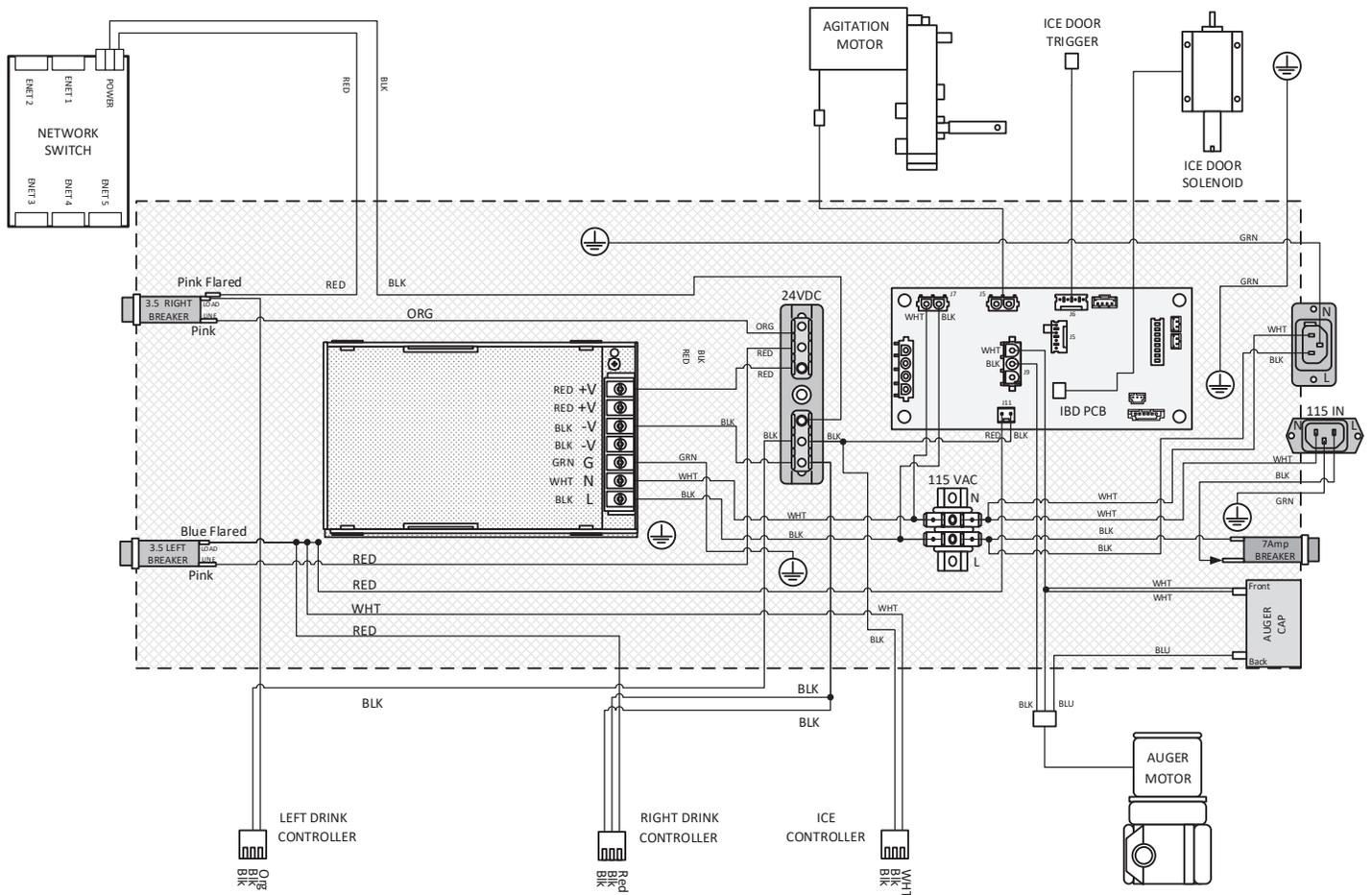
## Unit Wiring Diagram - 115 Volt



## Portion Control Wiring Diagram - 115 Volt



# Power Supply Wiring Diagram - 115 Volt



## DIP Switch Legend

SW1

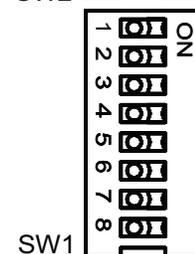
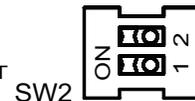
SWITCH #		AUTO AGITATE OFF TIME
3	4	
*OFF	OFF	NO AUTO AGITATION
OFF	ON	20 MINUTES
ON	OFF	40 MINUTES
ON	ON	60 MINUTES

SWITCH #		AGITATOR ON TIME
5	6	
OFF	OFF	11 SECONDS
OFF	ON	9 SECONDS
*ON	OFF	7 SECONDS
ON	ON	5 SECONDS

SWITCH #		AUGER RUN TIME
7	8	
OFF	OFF	6 SEC DISPENSED
OFF	ON	9 SEC DISPENSED
*ON	OFF	12 SEC DISPENSED
ON	ON	15 SEC DISPENSED

SW2 SWITCH 1: MUST BE ON FOR MODEL 4900  
 SW2 SWITCH 2: POSITION DOES NOT MATTER

SW1 SWITCH 1: NOT USED FOR MODEL 4900  
 SW1 SWITCH 2: NOT USED FOR MODEL 4900



LANCER PN: 06-3289/01

\*= DENOTES DEFAULT

SW1

# **LANCER**

W O R L D W I D E

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