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# ABS 2.0

## Service Manual



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**Revision:** 3

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

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### **Contact Information:**

To inquire about current revisions of this and other documentation or for assistance with any Cornelius product contact:

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This document contains the original instructions for the unit described.

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# SAFETY INSTRUCTIONS

## READ AND FOLLOW ALL 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.

### Recognition

Recognize Safety Alerts
 <p>This is the safety alert symbol. When you see it in this manual or on the unit, be alert to the potential of personal injury or damage to the unit.</p>

## DIFFERENT TYPES OF ALERTS



### **DANGER:**

Indicates an immediate hazardous situation which if not avoided **WILL** result in serious injury, death or equipment damage.



### **WARNING:**

Indicates a potentially hazardous situation which, if not avoided, **COULD** result in serious injury, death, or equipment damage.



### **CAUTION:**

Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury or equipment damage.

## SAFETY TIPS

- Carefully read and follow all safety messages in this manual and safety signs on the unit.
- Keep safety signs in good condition and replace missing or damaged items.
- Learn how to operate the unit and how to use the controls properly.
- **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.**

## 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 of the power is off to the unit before any work is performed.

**Failure to disconnect the power could result in serious injury, death or equipment Damage.**



### **CAUTION:**

Always be sure to keep area around the unit clean and free of clutter. Failure to keep this area clean may result in injury or equipment damage.

## SHIPPING AND STORAGE



### **CAUTION:**

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

# GENERAL INFORMATION

## SYSTEM OVERVIEW

The Automated Beverage System ABS 2.0 is an upgraded version of ABS. The ABS 2.0 is designed for drive-through area installation or other restricted area that is accessible to authorized personnel only. When a beverage is ordered from the P.O.S. register, the ABS 2.0 automatically drops a cup, fills it with ice and dispenses the correct amount and type of any syrup-based beverage. The finished drink is then moved by the conveyor to the pick-up station and the drink description is displayed on the touchscreen.

Operation of the ABS 2.0 is restricted to employees and service personnel that have been trained and certified in the proper operation, service and maintenance of the equipment.

## SPECIFICATION

Table 1.

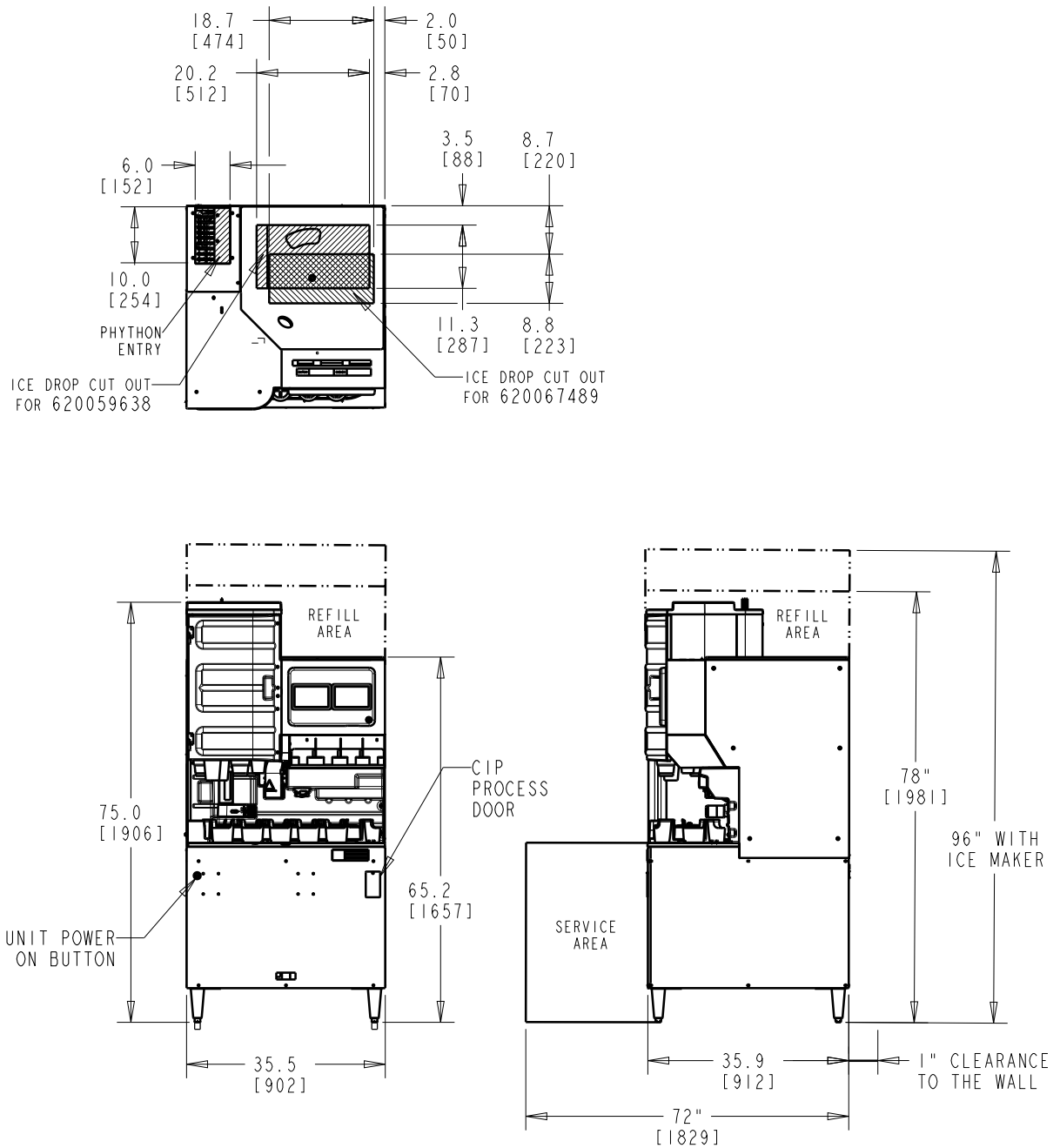
<b>Unit Dimensions</b>	<b>Length</b>	<b>35.9 inch</b>
	<b>Width</b>	<b>35.5 inch</b>
	<b>Height</b>	<b>75.0 inch</b>
<b>Unit weight</b>	<b>Dry weight</b>	<b>TBD</b>
	<b>Operational weight (With ice, water, etc.)</b>	<b>TBD</b>
<b>Cooling method</b>	<b>Method of product cooling</b>	<b>Cold plate &amp; on board chiller for condition “C”</b>
<b>Ice storage capacity</b>	<b>W/o bin extender</b>	<b>135 lbs</b>
<b>Electrical</b>	<b>Line voltage</b>	<b>120 ± 10% VAC, 60 Hz, 1 Phase</b>
	<b>Current</b>	<b>15 amps</b>
	<b>Connection method</b>	<b>115/60Hz (North America): TBD 230/50Hz (Rest of World): TBD</b>
<b>Water</b>	<b>Supply pressure</b>	<b>80 psi Static</b>
	<b>Supply method</b>	<b>1/2 inch ID tube (Python)</b>
<b>Syrup</b>	<b>Supply pressure</b>	<b>65 psi Static</b>
	<b>Supply method</b>	<b>3/8 inch ID tube (Python)</b>
<b>Air/and CO<sub>2</sub></b>	<b>Supply pressure</b>	<b>CO<sub>2</sub>: 80 +/- 10% psi, Compressed Air: 65psi ±10psi</b>
	<b>Supply method</b>	<b>3/8 inch ID tube</b>
<b>Clearance Requirement</b>	<b>Top</b>	<b>No ice Maker: 75 inch + 12 inch refill area =87 inch With ice Maker: 98.5 inch</b>
	<b>Back</b>	<b>2 inch clearance to wall (min)</b>

## FEATURES

Table 2. Product features

<b>Mounting type (leg/caster)</b>	<b>4 legs mounted</b>
<b>UI interface type and size</b>	<b>Two 7" touch screen display</b>
<b>Number of flavors</b>	<b>8 brands</b>
<b>Cup storage</b>	<b>6 cup dispenser</b>
<b>Lid Storage</b>	<b>8 lid compartment</b>
<b>Ice dispensing</b>	<b>1 portion controlled ice dispenser</b>
<b>Product dispensing</b>	<b>Cornelius Multi Flavor Valve</b>
<b>Automatic cleaning</b>	<b>Wand type cleaning nozzle</b>
<b>No of finished drinks</b>	<b>6</b>
<b>Others</b>	<ul style="list-style-type: none"> <li>• Protective door for Turret</li> <li>• Ice maker adapter panel (compatible with ice makers as per coke-mcd approved)</li> </ul>

# UNIT DRAWING



**Figure 1.**

## E-BOX CONFIGURATION

**WARNING:**

Disconnect power to the unit before accessing the E-box.

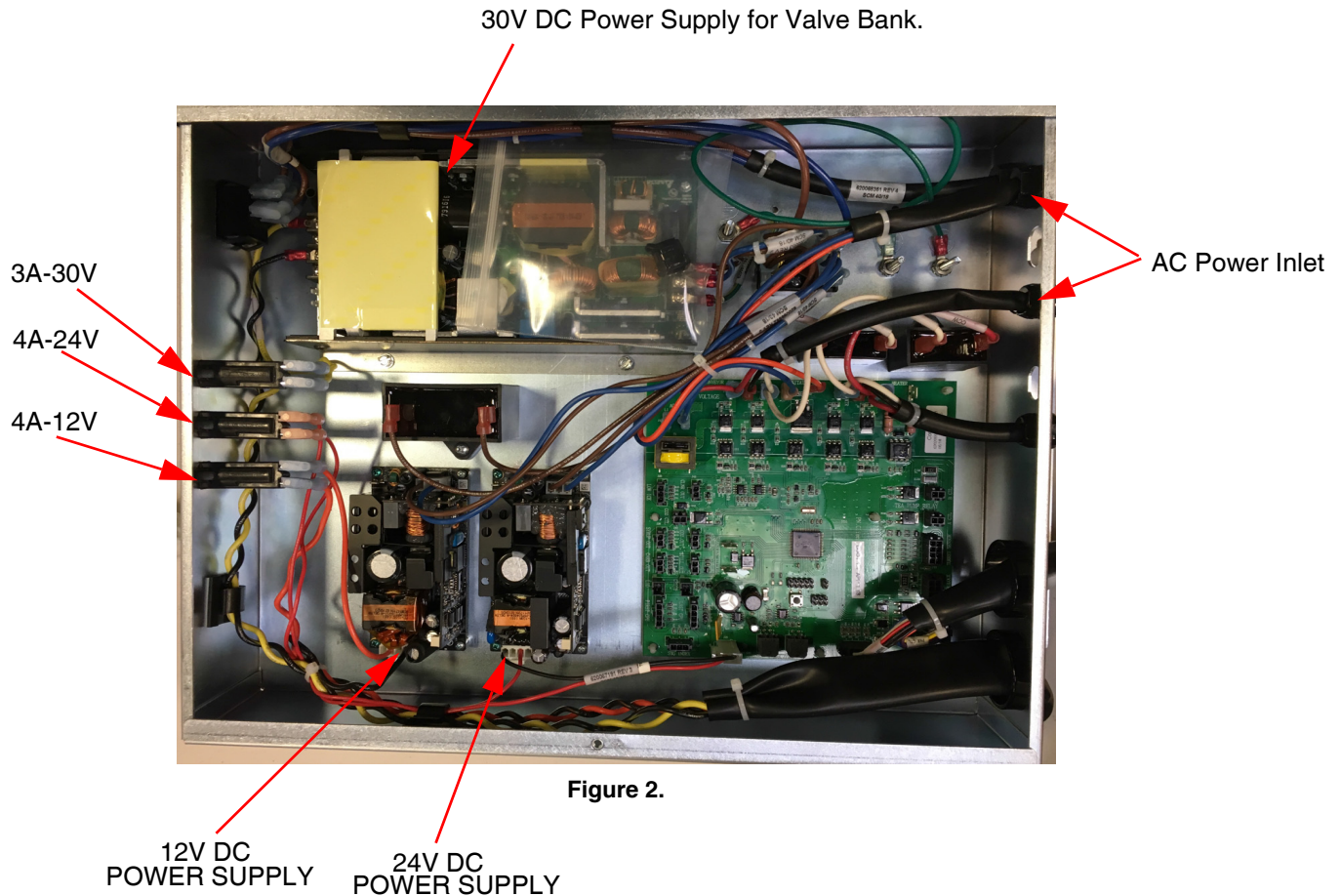


Figure 2.

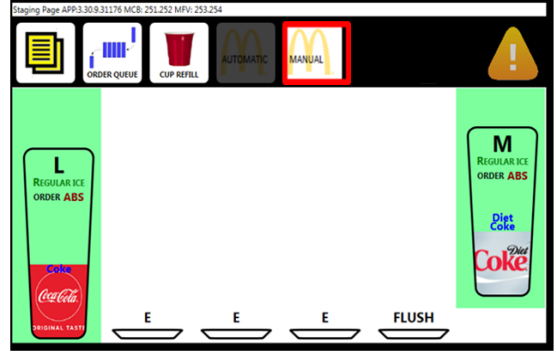
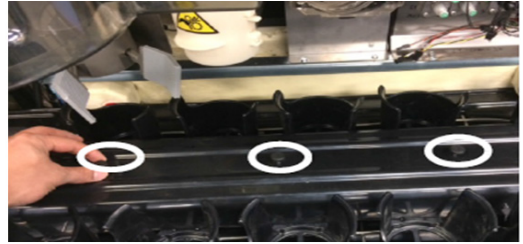


1. Valve bank MFV board.
2. 12V DC/ 24V DC power supply.
  - A. 12V DC - for screen.
  - B. 24V DC - Power for all sensor.
3. 30V DC Power supply for Valve bank.
4. 115V AC - Turret, Agitator and conveyor motors.
5. Circuit breakers as follows.
  - C. 4A - 12V DC.
  - D. 4A - 24V DC.
  - E. 3A - 30V DC.
6. AC Power Inlet.



# CONVEYOR ASSEMBLY / SPLASH PANEL REMOVAL


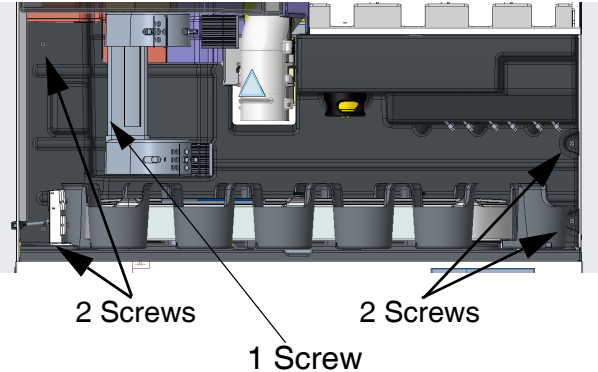
## CONVEYOR ASSEMBLY REMOVAL

Table 3.

Step	Action	
1	Select manual button from start screen as shown Figure 3.	 <p>Figure 3.</p>
2	Remove conveyor belt cover by removing the 3 thumb screw.	 <p>Figure 4.</p>
3	Remove conveyor belt assembly <b>NOTE: Note the motor drive locator on bottom left side.</b>	 <p>Figure 5.</p>
4	Remove the SS cup rest. <b>NOTE: Note cup locator spring position.</b>	 <p>Figure 6.</p>

## SPLASH PANEL REMOVAL

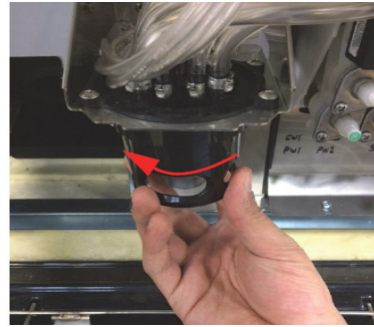



Table 4.

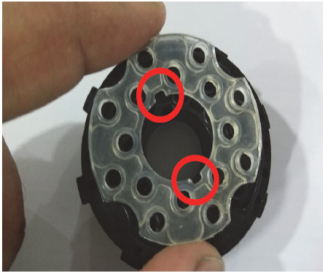
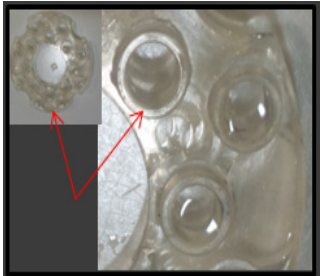



Step	Action	
1	<p>Open turret door (optional remove turret assembly) and remove the five screws holding the splash panel, as shown in Figure 7 and pull the panel forward and down to remove it.</p> <p><b>NOTE: 5<sup>th</sup> screw is behind Cup lifter / grabber</b></p>	 <p>Figure 7.</p>
2	<p>A. Loosen the two screws from the left top &amp; bottom corners and two screws from right bottom corners of the splash panel, Figure 8.</p> <p>B. Shut off CO<sub>2</sub> at unit access point. This is to allow access to the screw behind the Lifter/Grabber assembly.</p>	 <p>Figure 8.</p>
3	Gently pull the splash panel forward from the bottom and move the lifter/grabber up to fully remove.	
4	Replace the splash panels onto the unit.	


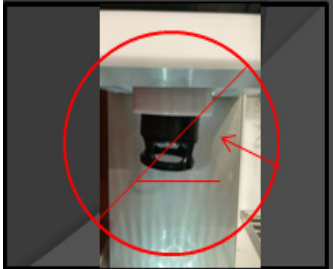
# NOZZLE DIFFUSER REMOVAL

**NOTE:** Diffuser cleaning or sanitizing is recommended twice weekly.

Table 5.

Step	Action	
1	Turn nozzle clockwise (left), Than pull down, the diffuser will stay in position (it is keyed only, fits one way).	 <p><b>Figure 9.</b></p>
2	Pull diffuser down. Clean with warm soapy water then sanitize and reinstall.  <b>NOTE: Do not soak for more than 2 minute. Seal may warp</b>	 <p><b>Figure 10.</b></p>
3	Remove Seal from Diffuser by inserting thumb into center and pulling against the 2 surfaces to pull the seal away from the diffuser.	 <p><b>Figure 11.</b></p>
4	Clean Seal, Diffuser and Nozzle by carefully hand washing in sink with sanitizer. Use brush to gently clean any crevices. Rinse Seal, Diffuser and Nozzle in sanitizer.	 <p><b>Figure 12.</b></p>





Step	Action	
5	Line up the locating notches on inner circle of both the Seal and Diffuser. Push the Silicone Seal into the Diffuser until it sits flat.	 <p data-bbox="1032 556 1146 583"><b>Figure 13.</b></p>
6	This side up – you should be able to feel the raised edges of the seal holes when you re-insert into nozzle.	 <p data-bbox="1032 907 1146 934"><b>Figure 14.</b></p>
7	With the Seal side up, align the notches in the Diffuser with the ribs on Nozzle Base. Push the Diffuser up into Nozzle Base.	 <p data-bbox="1032 1228 1146 1255"><b>Figure 15.</b></p>
8	The Diffuser will stay in place if correctly installed.	 <p data-bbox="1032 1575 1146 1602"><b>Figure 16.</b></p>
9	While pushing upwards, rotate the Nozzle towards the back of the unit.(CCW).	 <p data-bbox="1032 1925 1146 1953"><b>Figure 17.</b></p>

Step	Action	
10	The Nozzle should <b>NOT</b> sit on an angle. It should sit even with the unit	 <p data-bbox="1128 548 1247 575">Figure 18.</p>
11	If the Nozzle is installed on an angle, it is <b>Incorrectly</b> installed. An incorrectly installed nozzle will have decreased performance (dripping, excess carryover, etc).	 <p data-bbox="1128 890 1247 917">Figure 19.</p>

# MULTI-FLAVOR VALVE CONFIGURATION

**⚠ WARNING:**  
Disconnect power to the unit before accessing the MFV valve.

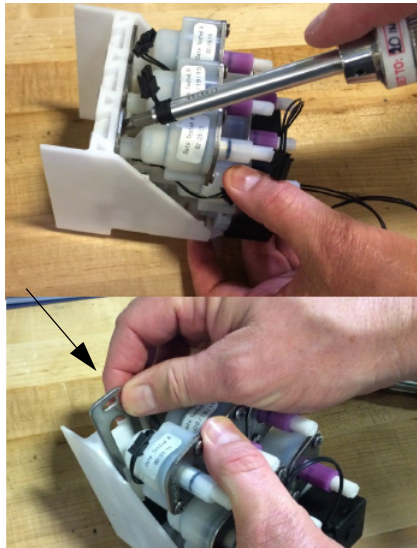
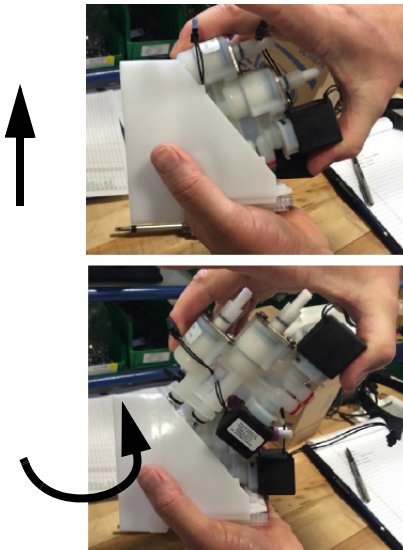

Table 6.

Step	Action	
1	Back-block layout behind each valve bank.	 Figure 20.
2	MFV Valve Module placed on the back-block.	 Figure 21.
3	Press the top snap (Dovetail) of back-block towards down as indicated in Figure 22.	 Figure 22.
4	Each round shutoff (Spindle) needs to be pressed towards down as shown as in Figure 23 to allow fluid to flow past the back-block into the valves.	 Figure 23



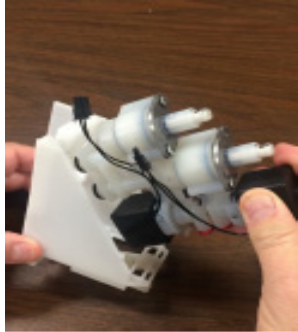

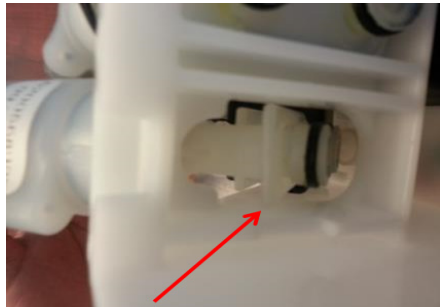
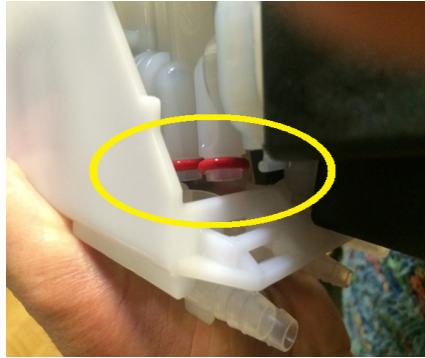
# DISASSEMBLY OF AN MFV VALVE MODULE

Table 7.

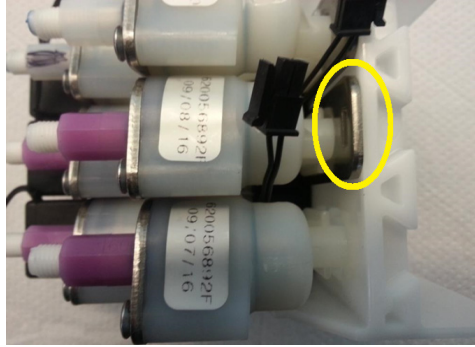
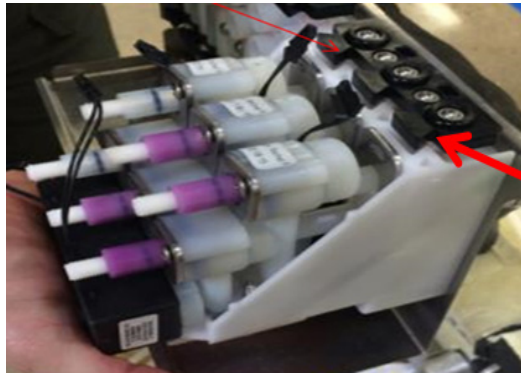

Step	Action	
1	Once the valve module is removed, pull the locking clip upwards and remove.	 <p>Figure 24.</p>
2	Pull up and rotate valve upwards of bracket to remove from the module.  <b>NOTE: Check for all O-rings on bottom of valves.</b>	 <p>Figure 25.</p>
3	Rotate solenoid counterclockwise and remove to service the solenoid and plunger.  <b>NOTE: Solenoid should read 9.1ohms.</b> <b>NOTE: Solenoid wiring top left position.</b>	 <p>Figure 26.</p>

## REASSEMBLY OF MFV VALVE

Table 8.

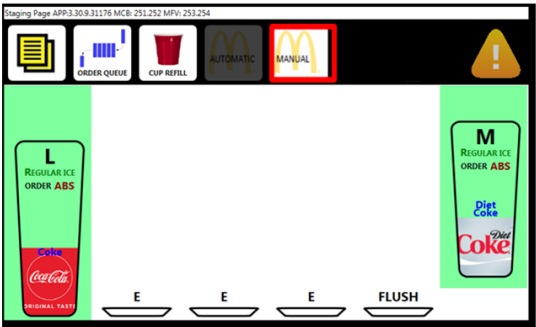
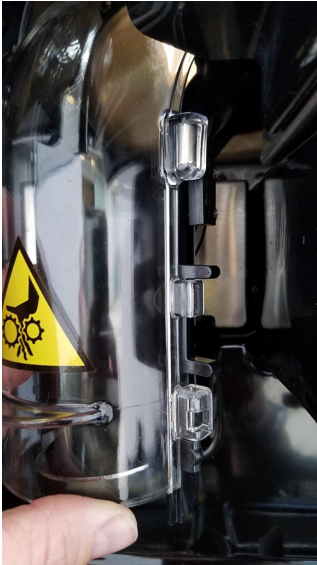

Step	Action	
1	Place valve into the valve carrier.  <b>NOTE: Use only Dow III or equivalent on all o-rings</b>	 <p>Figure 27.</p>
2	Start the solenoid at a 45 deg. angle and ensure that rear flange of the valve fits behind the wall of the carrier bracket	  <p>Figure 28.</p>
3	<ul style="list-style-type: none"> <li>• Ensure that bottom o-rings seat and are not pinched in the outlet barbs.</li> <li>• Replacement of o-rings (<b>black</b>) and lubrication with <b>Dow 111</b> or equivalent is recommended.</li> <li>• Black quad rings shown on previous slide.</li> </ul>	 <p>Figure 29</p>



Step	Action	
4	The valve is back in position and ready to insert stainless steel locking clip.	 <p><b>Figure 30.</b></p>
5	<ul style="list-style-type: none"> <li>Place valve on the backblock. (make sure wires are not pinched)</li> <li>Push down on dovetail to lock valve.</li> </ul>	 <p><b>Figure 31.</b></p>
6	<ul style="list-style-type: none"> <li>Push spindles down to open shut offs.</li> <li>Re-connect wire harnesses.</li> <li>Test for leaks and function.</li> </ul>	 <p><b>Figure 32.</b></p>

# ICE CHUTE REMOVAL

Table 9.

Step	Action	
1	Select manual button from start screen	 <p>Figure 33.</p>
2	Lift chute upward to release the locking tabs as shown in Figure 34.	 <p>Figure 34.</p>
3	Then lift chute upwards to remove as shown in Figure 35.	 <p>Figure 35.</p>

## CONNECTING PRODUCT TO the UNIT

The unit must have a product supply connected to each inlet on the valve. Refer to the “Plumbing Diagram” see on Refer on page54 for details of the hook-up.

**NOTE: All inlet connections are clearly marked with a label adjacent to the inlet connections.  
Always check for leaks on all connections.**

## WATER & SYRUP LINE CONNECTIONS

The standard unit supports the following:

- 2-water lines from carbonator/chiller/ Recirculation system.
- 1-water line for non-carbonated drinks.
- 8-Syrup lines.

### Product Line Connections

To connect the syrup, water and flavor shot lines from the back-room package to the unit, perform the procedure.

**NOTE: If lines are to be cut, mark the line numbers above the cut with a marker. If syrup lines are mixed up they can be mapped later in the control. Make sure that syrup lines and flavor lines are NOT mixed.**

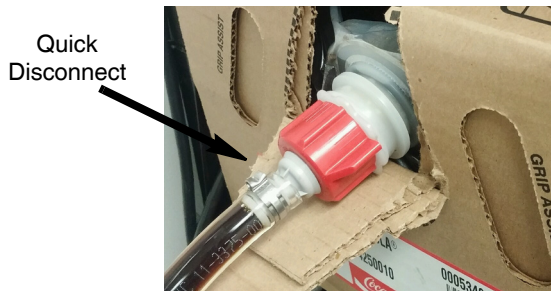


## Syrup Line Cleaning & Sanitizing



### CAUTION:

Only trained and qualified persons should perform these cleaning and sanitizing procedures. To sanitize the tubing and BIB connectors, perform the procedure in Table 10.

**Table 10**

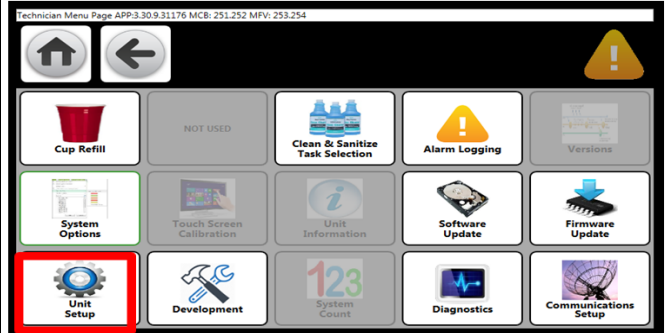
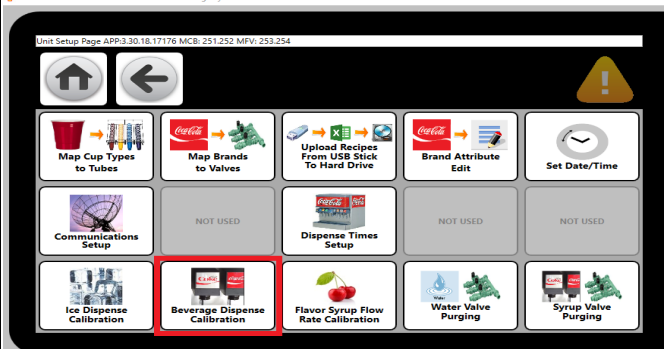
Step	Action	
1	Remove all the quick disconnects from all the BIB containers.	 <p><b>Figure 36.</b></p>
2	Fill a suitable bucket with a sanitizing solution.	
3	Submerge all disconnects (gas and liquid) in the sanitizing solution and then clean them using a nylon bristle brush. <b>(Do not use a wire brush.)</b> Rinse with clean, potable water.	 <p><b>Figure 37.</b></p>
4	Using a plastic pail, prepare approximately 5 gallons (18.93 l) of sanitizing solution.	
5	Sanitizing fittings must be attached to each BIB disconnect. If the fittings are not available, the fittings from empty BIB bags can be cut from the bags and used. These fittings open the disconnects so the sanitizing solution can be drawn through the disconnect.	
6	Place all the BIB disconnects with the sanitizing fittings in place into the pail of sanitizing solution. Use the Purging the syrup line section (need to update procedure page number) to purge the lines. Allow the sanitizer to remain in the lines for 15 minutes.	 <p><b>Figure 38.</b></p>
7	While the lines are soaking, remove the nozzles and syrup diffusers and clean them in a mild sanitizing solution, rinse them with clean water.	
8	Use a mechanical sprayer filled with sanitizing solution to spray the nozzles and diffusers and allow them to air dry.	
9	Reassemble the nozzles and syrup diffusers and replace them on the valves.	
10	Remove the sanitizing fittings from the BIB disconnects and connect the disconnects to the appropriate BIB container.	
11	Use the Purging the syrup line section (need to update procedure page number) to purge the lines. Continue until all the sanitizer has been flushed from the system and only syrup is flowing.	

## SET FLOW RATE AND VALVE RATIO

**NOTE:** Cold plate should have ice on it and should be cold.

Remove the conveyor assembly to allow easy access to the area under the valve for the ratio cup.

Table 11

Step	Action	
1	Select the Unit setup Menu from technician screen	 <p>Figure 39.</p>
2	Select the Beverage Dispense Calibration	 <p>Figure 40.</p>

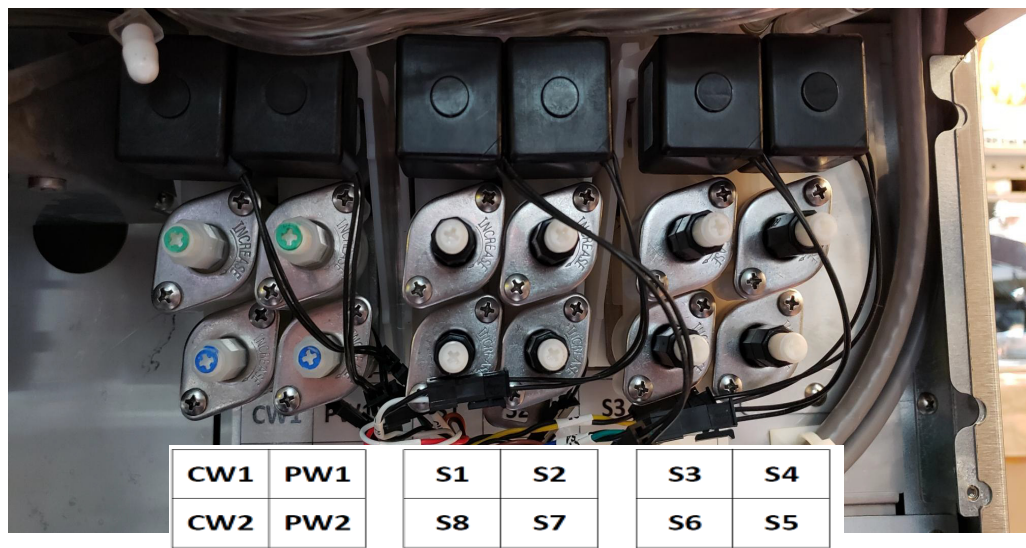


Figure 41. Front View, Valve

## ADJUSTING WATER FLOW RATE

**Overview:** The ABS 2.0 uses 2 MFV water valves for both carbonated water (CW1 & CW2) and plain water (PW1 & PW2). Each valve module has a high-flow orifice and a low-flow orifice. The high-flow orifice provides approximately 75% and the low-flow orifice provides approximately 25% of the total flowrate. During a beverage dispense, both valves are activated and together provide the total water flowrate required.

**NOTE:** The default water volume shown on the Beverage Dispense Calibration screen is 12.00. This is the target volume after calibration which equates to a water flowrate of 3.0 oz/sec. If the final water flowrate is different than 3.0 oz/sec, this procedure will update the default value.

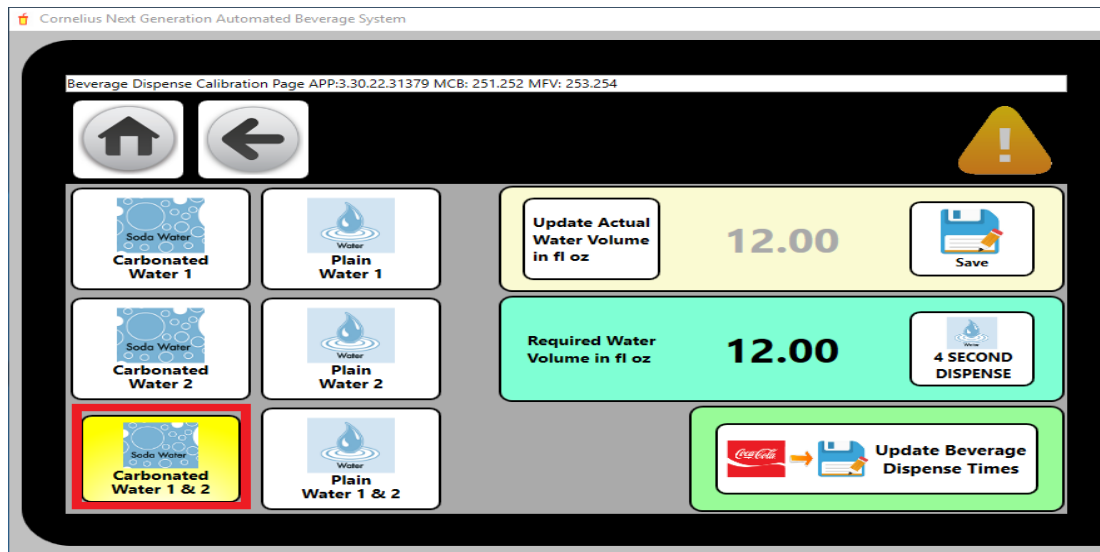


Figure 42.

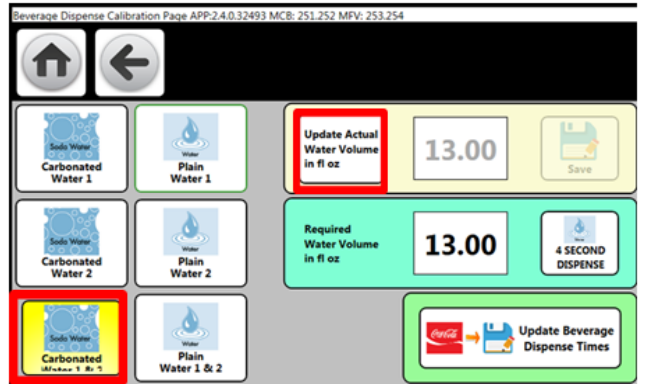

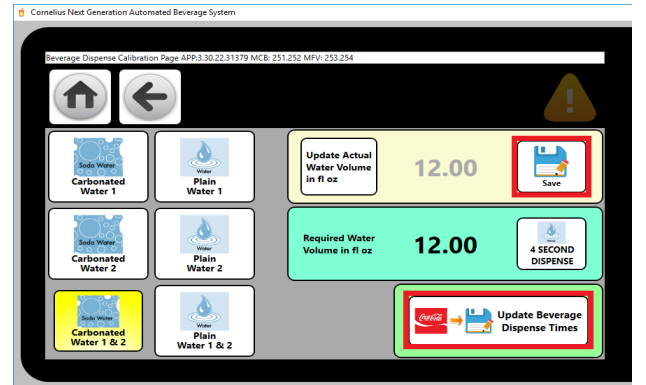
- 1) From the Beverage Dispense Calibration screen, select the button for **Carbonated Water 1**. Hold the water compartment of the ratio cup under the nozzle and press the **4 SECOND DISPENSE** button. Target volume for CW1 is approximately 9 ounces. Turn the **CW1** adjustment screw on the MFV valve clockwise to increase the flowrate or counter-clockwise to decrease the flowrate until the target volume is reached.
- 2) Next, select the button for **Carbonated Water 1 & 2**. Hold the water compartment of the ratio cup under the nozzle and press the **4 SECOND DISPENSE** button. Target volume for CW1 & CW2 is 12 ounces. Turn the **CW2** adjustment screw on the MFV valve clockwise to increase the flowrate or counter-clockwise to decrease the flowrate until the target volume is reached.
- 3) Repeat steps 1 & 2 for the plain water valves PW1 & PW2. The total target volume for plain water is 12 ounces.



## SET OVERALL WATER VALVE

**Important:** This is the step that adjusts the pour times of all beverages dispensed from the ABS 2.0. If this step is not completed, then drinks will either over- or under-pour depending on the flowrate adjustment of the valves.

Table 12

Step	Action	
1	After both CW valves are adjusted, do another 4 second dispense and measure the volume dispensed in the ratio cup. Select <b>Update Actual Water Volume in fl oz</b> and using the keypad enter the volume measured in the ratio cup and press the <b>green arrow</b> .	 <p>Figure 43.</p>
2	Press <b>Save</b> and then press <b>Update Beverage Dispense Times</b> . The dispense times for all drink sizes and types are now updated based on the set flowrate.	 <p>Figure 44.</p>
3	Repeat steps 1 & 2 for the plain water valves PW1 & PW2.	 <p>Figure 45.</p>

### Troubleshooting:

- If drinks **overflow**, this means the dispense times are too high for the flowrate that the valves have been adjusted to. Repeat the above steps and **increase** volume entered. This will shorten the dispense time prevent overflowing.
- If drinks **underfill**, this means the dispense times are too low for the flowrate that the valves have been adjusted to. Repeat the above steps and **decrease** volume entered. This will lengthen the dispense time prevent underfilling

## ADJUST THE SYRUP RATIO (BRAND)

After the water flow rates are set, the syrup ratio must be adjusted. The water flow rates were set based on a ratio of 4.75:1 (4.25:1 = Australia). The actual ratios will be set at 4.75:1 and 5.25:1, therefore, the finished drink flow rate will vary *slightly* from the desired flow rate of 4.0 oz/sec.

**NOTE:** Always adjust the ratio for the syrup with the highest viscosity first. Some syrups may be too viscous and you might be unable to achieve the desired ratio. In these cases, the PW or CW flow rate will have to be lowered to permit setting the proper ratio.

**NOTE:** Once the PW and CW flow rates are set they should not be changed. Any change to the PW or CW will require that all syrup to water ratios be readjusted.

**NOTE:** Be sure to use the correct ratio cup for the ratio being adjusted.



Figure 46.



### U.S.A. FOLLOW THE PROCEDURE BELOW:

1. Hold the ratio cup water compartment below the valve and select the Plain Water button if adjusting a non-carbonated drink or the carbonated water button if adjusting a carbonated water drink.
2. Hold the appropriate ratio cup syrup compartment below the valve. Select the syrup brand and press the **"4 SECOND DISPENSE"**.
3. Acceptable ratio is shown in the illustration below as the Correct Reading within the same bandwidth.

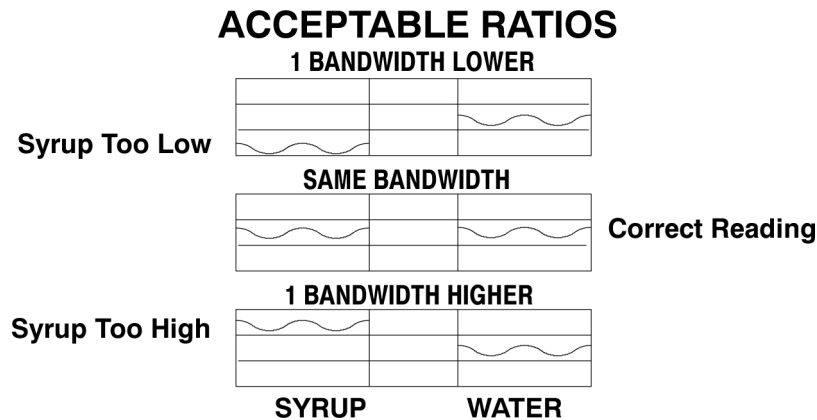


Figure 47. Ratio Cup, Acceptable Ratio

### AUSTRALIA FOLLOW THE PROCEDURE BELOW:

1. Using the table below, determine the volume of syrup that should dispense in the 4 second pour.

Example: The ratio for the brand is 5.25, and it is a carbonated (CW) drink, the unit should dispense 75.7 ml of syrup in the 4 second dispense. If the ratio for the brand is 5.25, and it is plain water (PW) drink, the unit should dispense 66.3 ml of syrup in the 4 second dispense.

Table 13.		
Ratio	CW/PW	ml Syrup
5.25/1	CW	75.700
5.25/1	PW	66.300
4.75/1	CW	82.300
4.75/1	PW	72.000
4.25/1	CW	90.100
4.25/1	PW	78.900
9.5/1	PW	39.500

2. Hold the volume measuring device below the valve, Select the syrup brand and press the **"4 SECOND DISPENSE"**.
3. Adjust the flow regulator as required.

See Figure 41 for location of the adjustment screws on the valve.

At the end of this adjustment press the **HOME** button twice to return to the main menu.

## CLEANING INTERIOR SURFACES


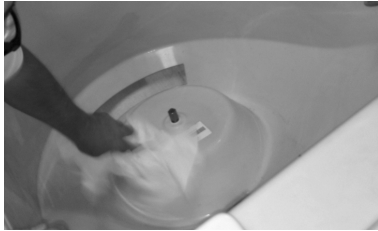


As part of the monthly cleaning and sanitizing the hopper, perform the procedure in Table 14.




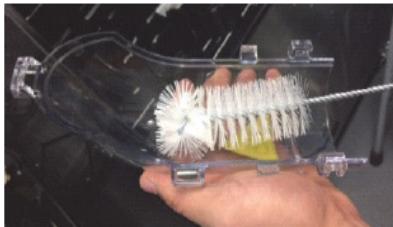

### CAUTION:

When pouring sanitizing liquid into the hopper, do not exceed the rate of 1/2 gallon per minute. Pouring liquid into the hopper faster than the recommended rate could result in an overflow situation which may result in personal injury or damage to the equipment.

**Table 14.**

Step	Action	
1	Remove the agitator assembly by unscrewing the thumbscrew and lifting the agitator assembly out of the hopper.	 <p><b>Figure 48.</b></p>
2	Using a nylon bristle brush or sponge, clean the interior of the hopper, top cover and agitator assembly with sanitizing solution. Thoroughly rinse the hopper, cover and agitator surfaces with clean potable water.	 <p><b>Figure 49.</b></p>
3	Reassemble agitator assembly. Take special care to ensure that the thumbscrew is tight.	 <p><b>Figure 50.</b></p>
4	Using a mechanical spray bottle filled with sanitizing solution, spray the entire interior and the agitator assembly. Allow them to air dry.	 <p><b>Figure 51.</b></p>

**Table 14.**

5	Open the turret door and remove the ice chute cover from the unit.	 <p><b>Figure 52.</b></p>
6	With a nylon bristle brush or sponge, clean the inside of the ice chute, gasket, and cover with sanitizing solution and rinse thoroughly to remove all traces of detergent.	 <p><b>Figure 53.</b></p>
7	Using a mechanical spray bottle filled with sanitizing solution, spray the inside of the ice chute. Allow it to air dry.	 <p><b>Figure 54.</b></p>
8	Re-assemble the ice chute assembly.	

## INITIALIZING and SELF TEST

Turn ON the ABS 2.0 unit at the ABS 2.0 ON/OFF switch located on the left top corner of the stand. During the power-up sequence the **Self Test** and **Initializing** messages will be displayed as each test is being made. When the tests are complete the final message will be displayed and will remain for 5 seconds before the unit is placed in the manual mode.



Figure 55.

If the initializing process doesn't detect an Ethernet connection it will generate an error, plug in (POS) cable.

**NOTE:** Closes by operator or in 30 sec so unit can be ran in semi auto or manual.

**NOTE:** Once plugged (POS) in the unit/ application has to be restarted.

# AUTO MODE OPERATION

The ABS 2.0 is either in AUTO or MANUAL mode. When the ABS 2.0 is in Auto mode it can be switched to MANUAL by pressing the MANUAL button Figure 33. And the reverse is also true, when in MANUAL the ABS 2.0 can be switched to AUTO by pressing the AUTO button.

When the ABS 2.0 is in the AUTO mode it is just that – Automatic. There are no settings to be made in this mode and no menus to access.

## Automatic Mode:

1. The automatic mode are operated by computer. The communication via Ethernet cable between ABS 2.0 unit to Computer. It's called POS system.

**NOTE: Without communication cable the automatic mode is not working.**

2. The computer must install application of ABS 2.0 to operate the Unit.
3. Press the No Ice or Extra Ice button if either ice feature is desired. Not pressing these buttons will cause the normal ice portion to dispense. The display will indicate the selection made. These buttons are toggle switches. Pressing once turns ON the selection, pressing the second time turns the selection OFF.
4. After the proper selections are made, press the Enter button to dispense the drink.

**NOTE: Failing to enter a Brand flavor selection will result in an empty cup being produced with or without ice.**

Once entered, the ABS 2.0 system will determine how many drinks are ahead in the POS queue before the manual drink will be started. This manually entered drink will appear as a “Special” on the drink display.

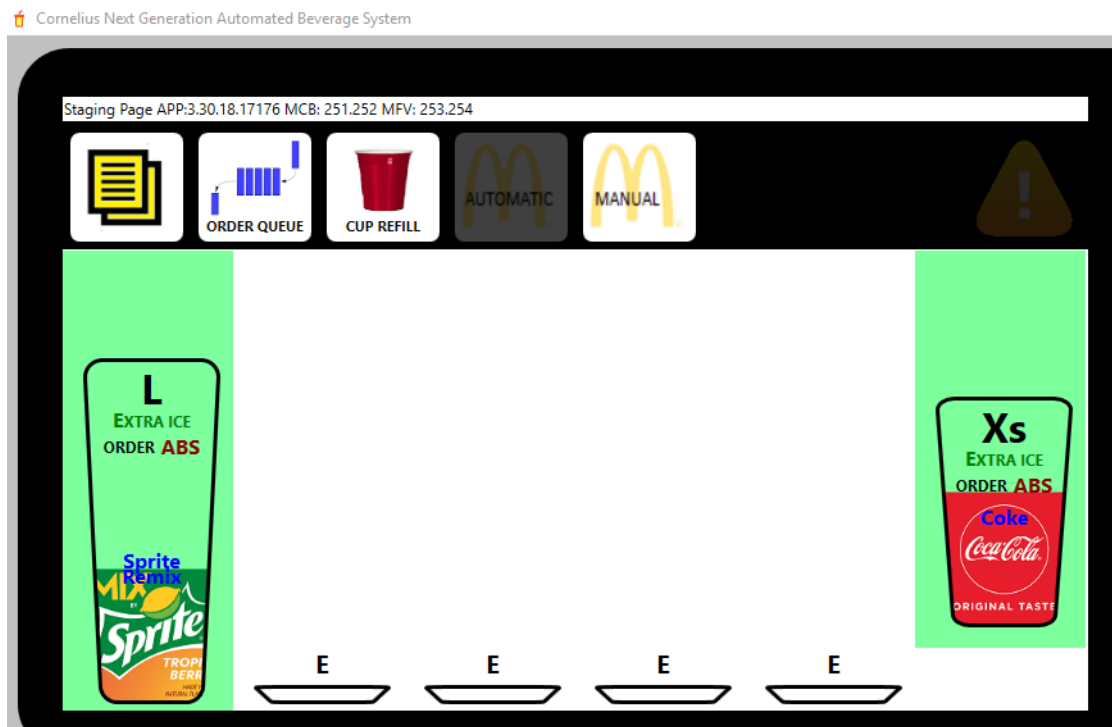
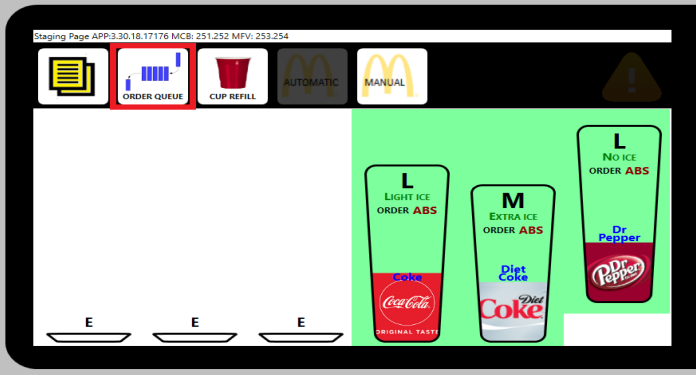



Figure 56.



CLEAR THE POS ORDER BUFFE

Table 15

Step	Action	
1.	Select the Order Queue from starting menu as shown in Figure 57.	
2.	Press Delete for each order or Delete all button as shown in NOTE:Figure 58.	

**NOTE:** If several orders stack up and are no longer needed, it may be easier to delete all and use semi auto to replace orders that are still need.

# MANUAL MODE OPERATION

In the MANUAL mode, POS data is updated and ALARM messages are displayed. In MANUAL mode the highlight flashes to alert operator that the ABS 2.0 unit is in the MANUAL mode. While in the MANUAL mode, POS drink orders continue to be received and placed in the order buffer.

It is highly recommended that the MANUAL mode be used when refilling the cup tubes or removing foreign objects from the conveyor/drip tray to prevent sudden movement of the turret or conveyor when an order is received.

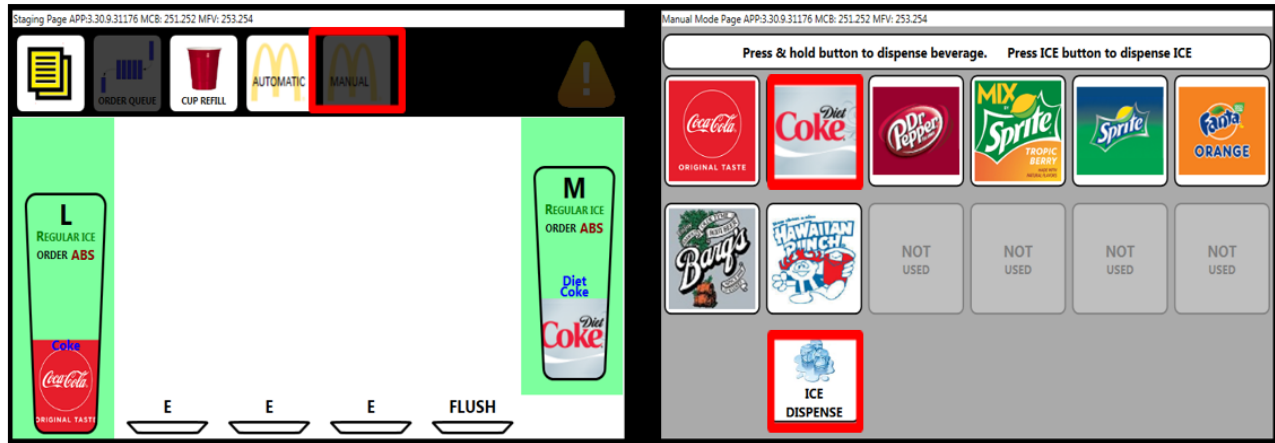


Figure 59.

In the manual mode select the **Brand** then Press and hold button to dispense Beverage as required. as same as Press and hold **ICE** button to dispense ice. There is no need of cup selection in manual mode.

## To SERVICE

### Introduction to ABS 2.0 Programming

#### Default Settings/Restoring Settings

The ABS 2.0 system is factory set to satisfy the majority of all installations. Do not make any adjustments until you are sure the factory settings will not satisfy the store requirements. Touch Panel Layout & Explanation

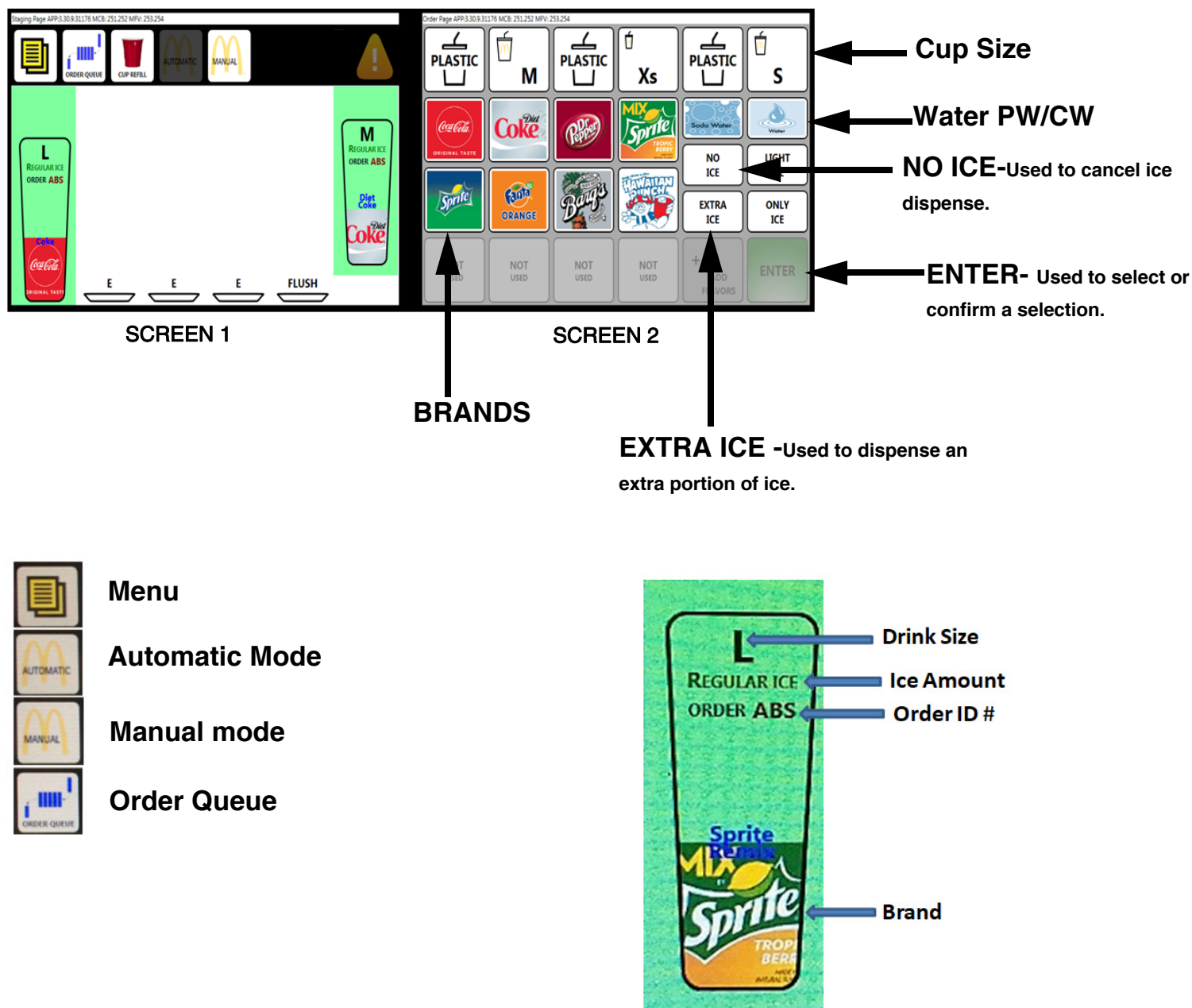


Figure 60.



## DISPLAY EXPLANATION

The screen displays represented in the following illustrations are samples of the screen data.

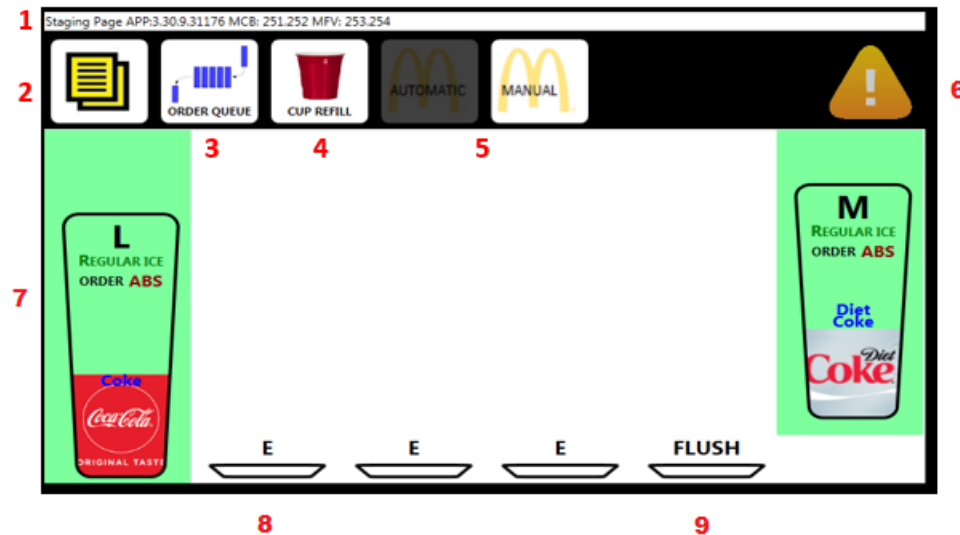
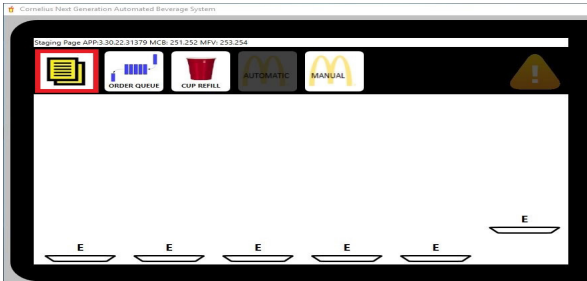
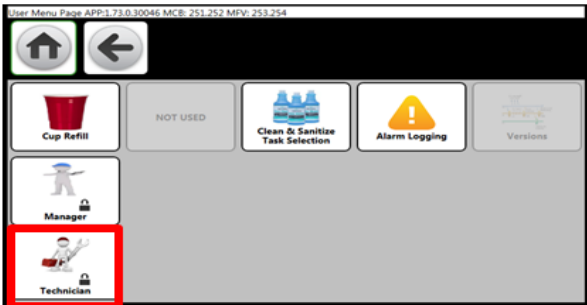
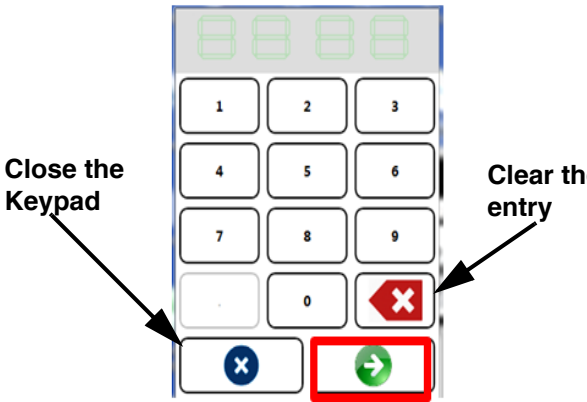
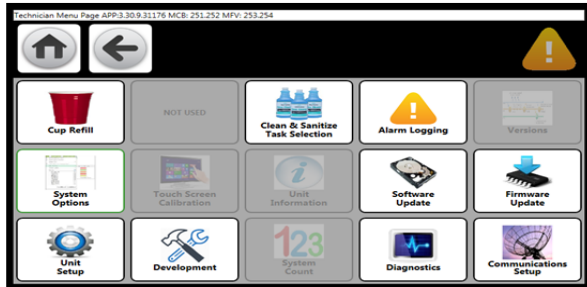


Figure 61.

1. Software Version.
2. Page/Menu.
3. Order Queue.
4. Cup Refill.
5. Automatic/ Manual (Dark is Selected).  
-Currently in Automatic Mode
6. Alarm, cleaning due or past due.
7. Order - Current example.  
-L (Large), Regular (Ice type)  
-Order (ABS 2.0 = Semi Auto or Order Number)
8. Finished Drinks 1-6, left to right, Coke is Position one.
9. Flush - CW has flushed the Nozzle.

## ENTERING the TECHNICIAN SCREEN

Table 16.

Step	Action	
1.	1. Select the Menu as shown in Figure 62.	 <p>Figure 62.</p>
2.	3. Select the Technician Icon as shown Figure 63.	 <p>Figure 63.</p>
4.	5. Enter 9876, then green arrow as shown Figure 64.	 <p>Figure 64.</p>
6.	7. See the Technician Screen as shown Figure 65.	 <p>Figure 65.</p>

## SYRUP MAPPING (BRAND)

### Syrup Map

The table below, shows all the brand names that are resident in the ABS 2.0 system. The shaded area is the default brands.

U.S. Version as follows:

Table 17.			
DEFAULT SETTINGS		POS PROGRAMMING DATA	
VALVE	DISPLAY ID	POS ID	ACTUAL brand
1	COCA COLA	1	
2	DIET COKE	2	
3	Dr. PEPPER	3	
4	SPRITE REMIX	4	
5	SPRT	5	
6	FANTA ORANGE	6	
7	BARQ'S ROOT BEER	7	
8	HAWAIIAN PUNCH	8	

Australian Version as follows:

Table 18.			
DEFAULT SETTINGS		POS PROGRAMMING DATA	
VALVE	DISPLAY ID	POS ID	ACTUAL brand
1	COCA COLA	1	
2	DIET COKE	2	
3	Dr. PEPPER	3	
4	SPRITE REMIX	4	
5	SPRT	5	
6	FANTA ORANGE	6	
7	BARQ'S ROOT BEER	7	
8	HAWAIIAN PUNCH	8	

## BRAND MAPPING EXPLANATION

The Store POS system will be programmed with each drink flavor. The Brand Map makes the POS system agree with the flavor information in the ABS 2.0 system.

### Mapping – First Step

**NOTE:** The illustration () does not represent an actual situation. It is for Explanation only.

In this illustration, Diet Coke has been installed at valve #2. We must now tell the ABS 2.0 system that Diet Coke is installed on valve #2. The **SYRUP MAP: EDIT** must be set at **2**. Then the **LABEL** must be set to display **DIET COKE** (See B). When this has been done, the ABS 2.0 system will then display Diet Coke as the flavor dispensed on valve #2.

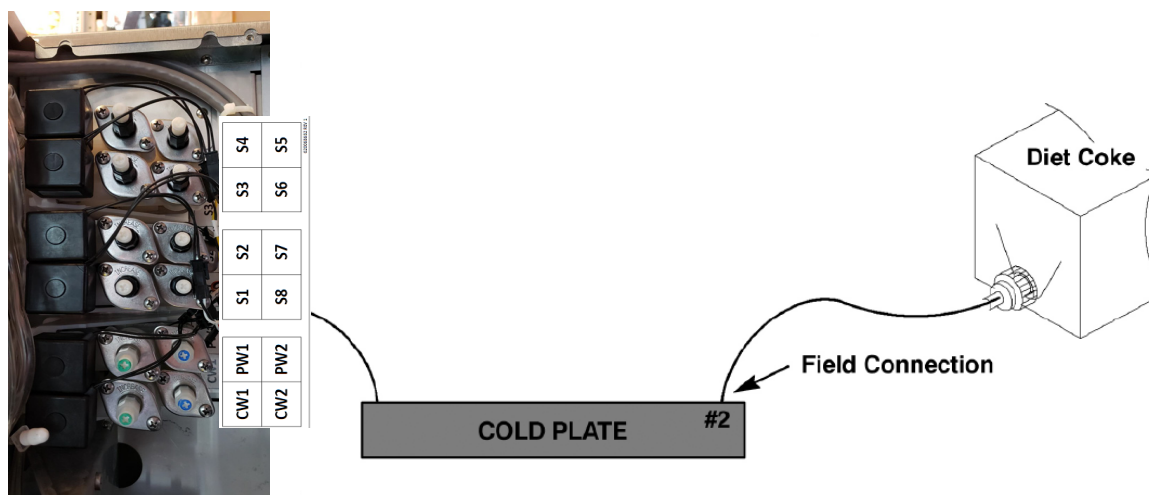


Figure 66.Syrup Map Explanation 1

### Drink List

Create a drink list showing the exact position of each drink in the ABS 2.0 system give to GM or keep at the unit (Behind screen)

Table 19.	
POS ID	brand / Aust. Version
1	COCA COLA
2	DIET COKE
3	Dr. PEPPER
4	SPRITE REMIX
5	SPRT
6	FANTA ORANGE
7	BARQ'S ROOT BEER
8	HAWAIIAN PUNCH

## Mapping – Second Step

Table 20

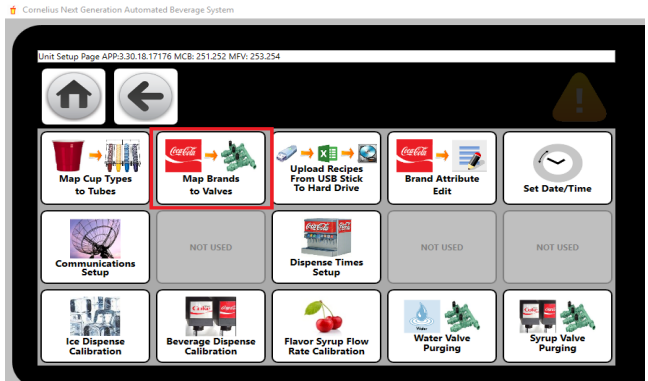
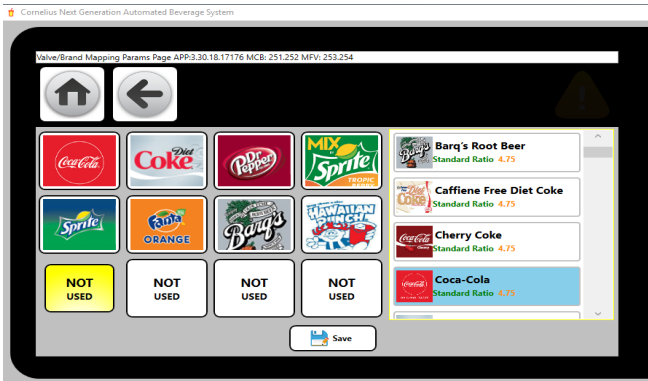
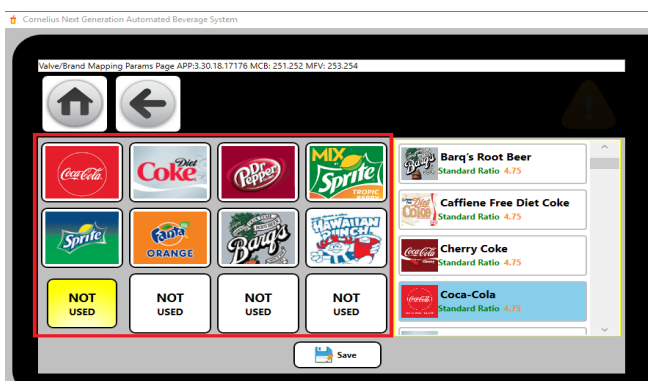
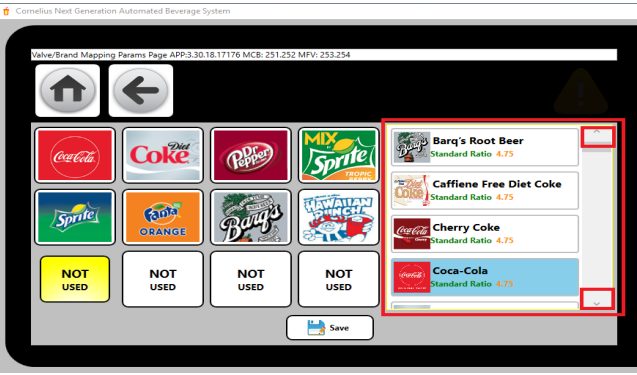

Step	Action	
1.	From unit setup Menu select the Map Brands to Valves as shown in Figure 67.	 <p>Figure 67.</p>
2.	Brand mapping menu as shown in Figure 68.	 <p>Figure 68.</p>
3.	Select the Valve's as shown in Figure 69.	 <p>Figure 69.</p>

Table 20

4.	Select the brand to assign the valve by scroll the brand's using of up/down arrow as shown in Figure 70.	 <p>Figure 70.</p>
5.	Save the Mapping and back to home or previous menu	 <p>Figure 71.</p>

## Drink List

Create a drink list showing the exact position of each drink in the ABS system and present this to the POS programmer. The chart at the back of the installation manual can be used for this purpose.

Table 21.

POS ID	Flavor
1	COCA COLA
2	DIET COKE
3	Dr. PEPPER
4	SPRITE REMIX
5	SPRITE
6	FANTA ORANGE
7	BARQ'S ROOT BEER
8	HAWAIIAN PUNCH

## ADJUSTING WATER FLOW RATE

**Overview:** The ABS 2.0 uses 2 MFV water valves for both carbonated water (CW1 & CW2) and plain water (PW1 & PW2). Each valve module has a high-flow orifice and a low-flow orifice. The high-flow orifice provides approximately 75% and the low-flow orifice provides approximately 25% of the total flowrate. During a beverage dispense, both valves are activated and together provide the total water flowrate required.

**NOTE:** The default water volume shown on the Beverage Dispense Calibration screen is 12.00. This is the target volume after calibration which equates to a water flowrate of 3.0 oz/sec. If the final water flowrate is different than 3.0 oz/sec, this procedure will update the default value.

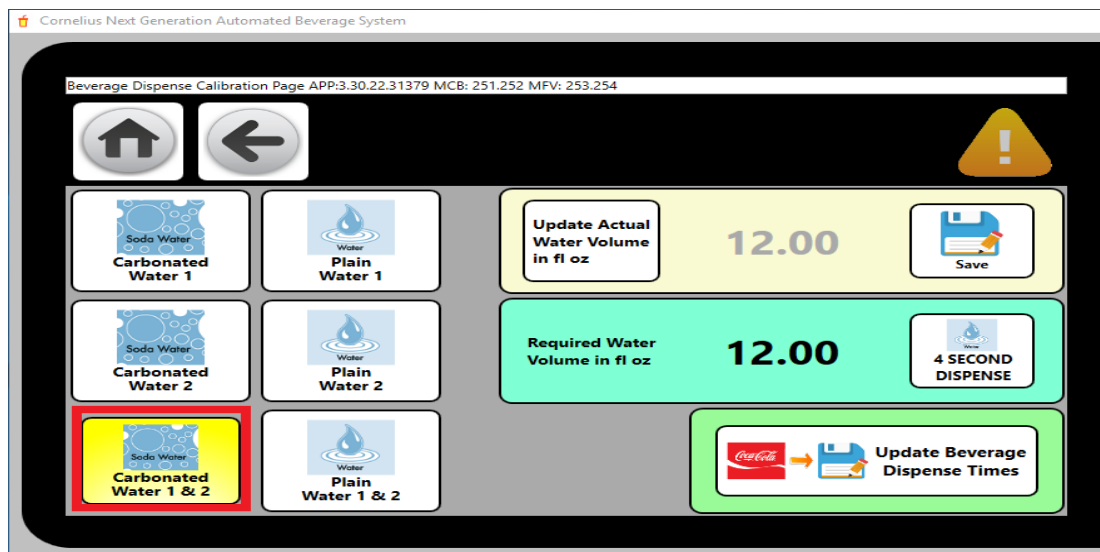


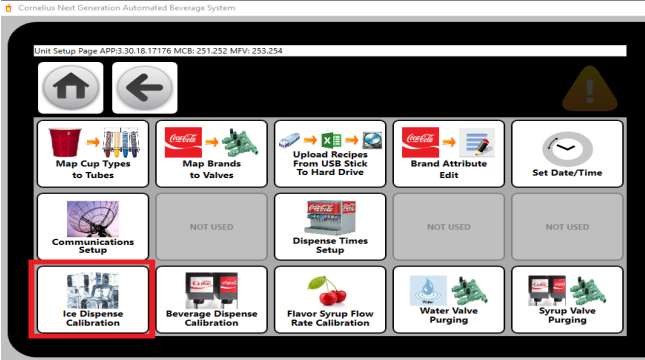
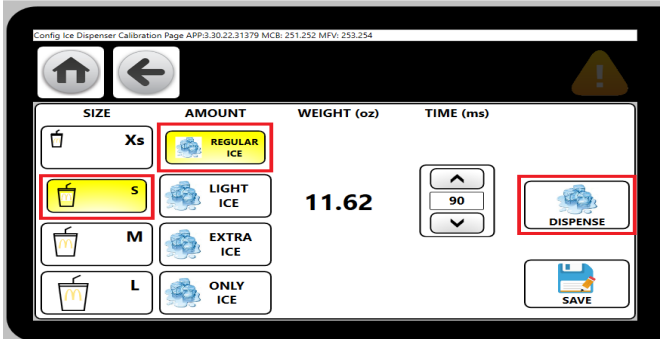
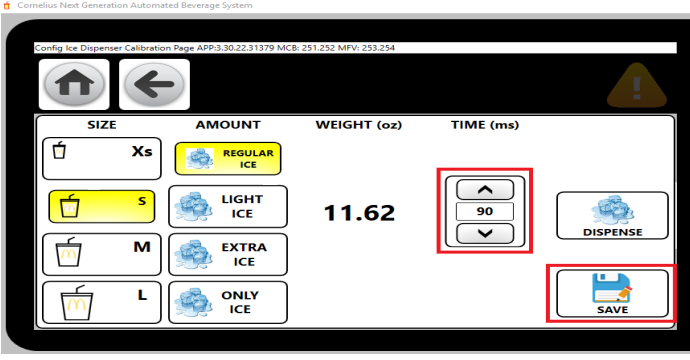
Figure 72.

- 1) From the Beverage Dispense Calibration screen, select the button for **Carbonated Water 1**. Hold the water compartment of the ratio cup under the nozzle and press the **4 SECOND DISPENSE** button. Target volume for CW1 is approximately 9 ounces. Turn the **CW1** adjustment screw on the MFV valve clockwise to increase the flowrate or counter-clockwise to decrease the flowrate until the target volume is reached.
- 2) Next, select the button for **Carbonated Water 1 & 2**. Hold the water compartment of the ratio cup under the nozzle and press the **4 SECOND DISPENSE** button. Target volume for CW1 & CW2 is 12 ounces. Turn the **CW2** adjustment screw on the MFV valve clockwise to increase the flowrate or counter-clockwise to decrease the flowrate until the target volume is reached.
- 3) Repeat steps 1 & 2 for the plain water valves PW1 & PW2. The total target volume for plain water is 12 ounces.

## ADJUSTMENT ICE

The conveyor assembly must be installed before beginning this procedure.

**Table 22**

1.	Place the measuring cup under the ice dispenser. Select the <b>"Ice Dispense Calibration"</b> Icon from the Unit setup menu as shown in Figure 73.	 <p>Figure 73.</p>
2.	From the Ice Dispense Calibration Menu Select the Cup Size, Amount of Ice and Press <b>"DISPENSE"</b> button as shown in Figure 74. and measure the weight of the Ice.	 <p>Figure 74.</p>
3.	If weight is not correct adjust the Ice dispense time by pressing the up/down arrow as shown in Figure 75. if correct weight is obtained. Save the setting by pressing the save button.	 <p>Figure 75.</p>
4.	Repeat the process for all remaining cup sizes with different amount of Ice and save the setting.	

## SAVING THE SET-UP

Select preferences in respective set up and press **"SAVE"** icon shown in Figure 76. to save the setting of the menu




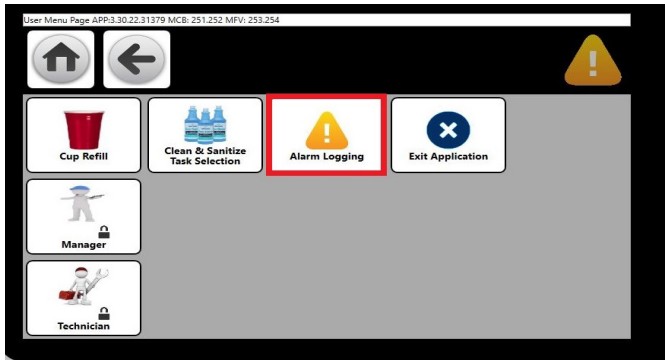
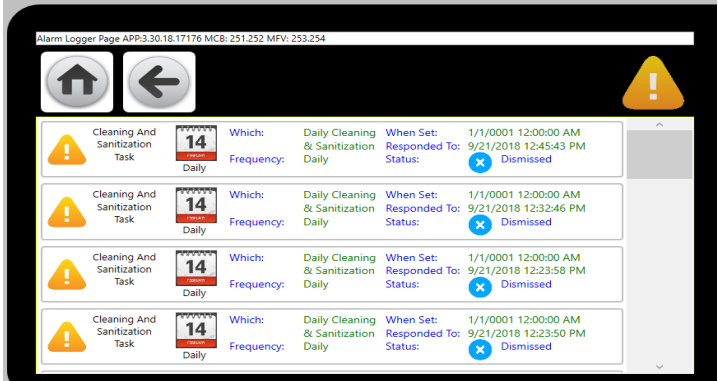
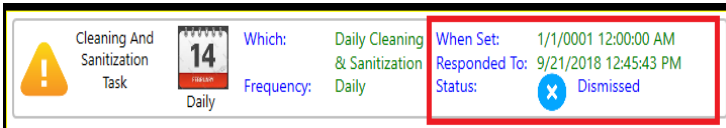
**Figure 76.**



## ALARM and WARNING MESSAGES

Follow the steps to alarm logging

Table 23

Step	Action	
1.	From the starting page select the Menu page Icon as shown in Figure 77.	 <p>Figure 77.</p>
2.	From the menu page select "Alarm Logging" button to entering the menu as shown in Figure 78.	 <p>Figure 78.</p>
3.	In the alarm logging menu all alarms and cleanings messages are listed. Use scroll button to view all the messages.	 <p>Figure 79.</p>
4.	current status of the messages show at right side as shown in Figure 80.	 <p>Figure 80.</p>

# CUP CONVEYOR

## DESCRIPTION OF OPERATION

The conveyor is controlled by the Motion Control Board. When a drink order is placed at the POS the correct cup is pulled and placed into the conveyor. The conveyor is then rotated clockwise by the gear motor to move the cup to the ice drop position based on the following information:

- If a cup is in Cup Serve Point "A" the conveyor will not operate until that cup is removed.
- If No Ice was part of the drink order the cup will not be filled with ice.

**NOTE: The conveyor will not operate if there is a cup or any other obstruction in the cup holder at Cup Serve Point**

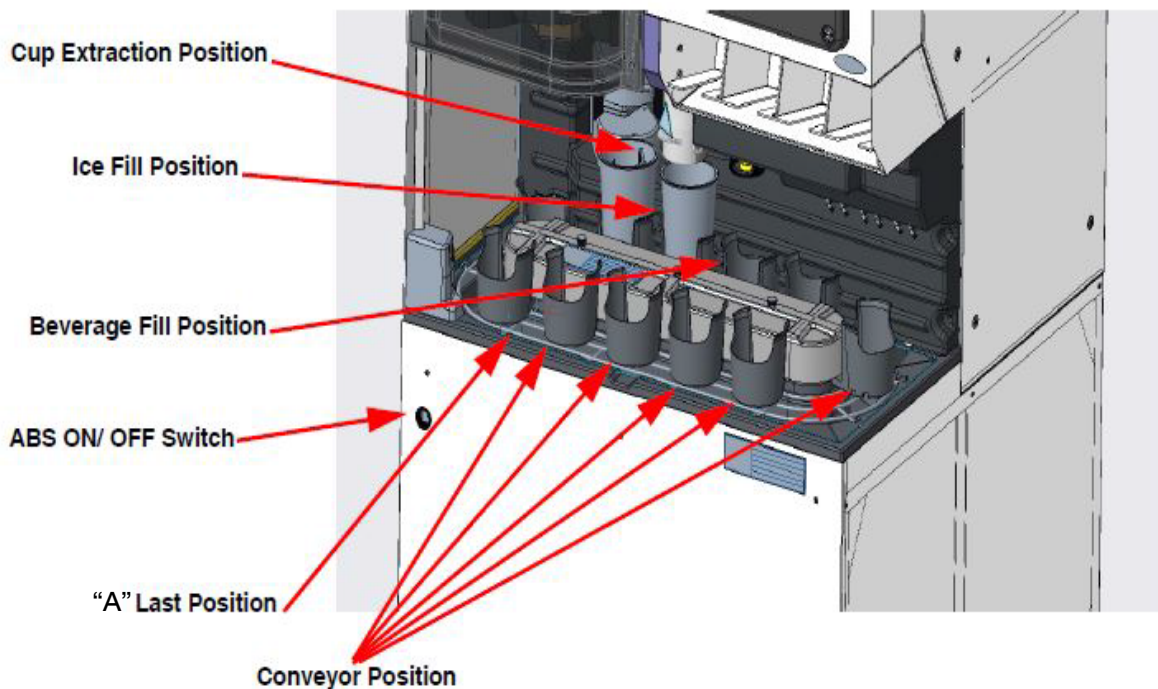


Figure 81. Conveyor Reference Location

## POSITION SENSOR.

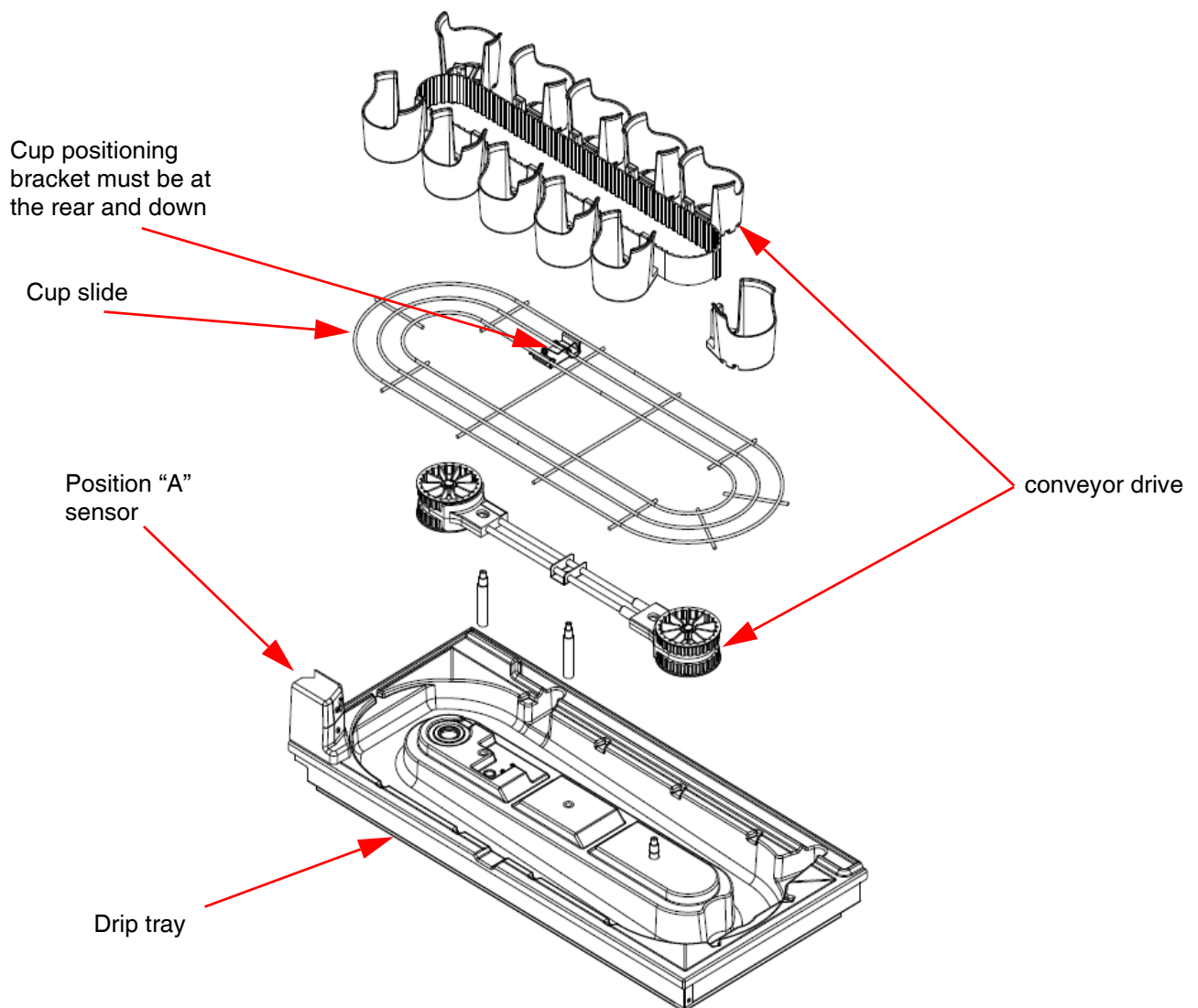
A sensor is located near edge of the sink (drip tray) near the cup drop area (see Figure 81.). This sensor detects the magnet in each cup holder on the conveyor belt and is thus responsible for aligning the cup holder in the proper position. When the sensor detects the magnet in the cup holder, the conveyor gear motor is stopped and then reversed for a fraction of a second to provide a braking action.

## CUP SERVE POINT “A” SENSOR

A sensor is located near edge of the sink, in the serving area. This sensor casts a light through the cop holder in Cup Serve Point “A” position (see Figure 82.). When a cup or anything else is present in that holder that blocks the light, the conveyor is halted until it is removed.

When a cup reaches the Cup Serve Point “A” it cannot be allowed to rotate any farther since the next position is the extract position. Therefore, once a cup reaches Cup Serve Point “A”, the ABS will stop operating until that cup is removed. If, for example, there were cups at Cup Serve Positions; “A” and “B”, and the cup at Point “A” was removed the conveyor would rotate one space until the cup that was at Point “B” moves to Point “A”, then the ABS 2.0 would be stopped again.

The conveyor mechanization assembly consists of: a drive motor, gear box, drive sprocket, idler sprocket, conveyor belt with cup holders attached, and drive belt cover with 3 thumb screw fasteners.



**Figure 82. Conveyor Assembly**

### Conveyor Drive Alignment

## CONVEYOR DRIVE ALIGNMENT

When installing the conveyor the conveyor belt may be rotated to align the Drive Pin and the Drive Socket. The Drive Pin on the conveyor must engage the Drive Socket on the gear motor or the conveyor is not properly installed and will not operate.

## CONVEYOR BELT ASSEMBLY

The conveyor belt and cup holder assembly must be installed only one way – the cups must face up and the drive pin to the left. The only replacement part is the cup holder.

## CONVEYOR MOTOR

The conveyor is powered by a electric motor and gear box. The motor and gear box are secured to the drip tray with four screws. The screws are accessible from inside the ABS lower cabinet. The motor is electrically connected to the Motion Control Board.

## CUP SLIDE

The cup slide must be installed with the oval rails up and with the “Cup Positioning Bracket” must be at the rear of the drip tray.

## CUP POSITIONING BRACKET

The cup positioning bracket, located on the cup slide, contains a spring that is positioned so it touches the cup in the cup holder as the cup moves past the spring. This moves the cup to the rear (based on the direction of movement) of the cup holder. This ensures that all cups will be in the same position regardless of it's size.

# CUP PICKER

## DESCRIPTION of OPERATION

The Cup Puller is activated by a command from the POS to the ABS 2.0. When a drink order is placed at the POS, the correct cup is pulled and placed into the conveyor.

The cup puller consists of, two cup grabber arms actuated by a pneumatic cylinder, an elevating mechanism operated by a pneumatic cylinder, and two guide rods.

## SEQUENCE of EVENTS

The sequence of events that occur when a cup is to be pulled and placed in the conveyor are as follows:

- The cup turret rotates to place the correct cup at the extract position;
- The cup lifter is raised up to the cup;
- The cup grabber arms close onto the cup (If the grabber arms do not encounter a cup and close completely a sensor will send an “Empty Cup Tube” message.);
- The cup grabber is lowered by the pneumatic cylinder (lift), pulling the cup from the cup tube (If the grabber arms slip off the cup and close completely, an “Empty Cup Tube” message will be sent.);
- The grabber arms are opened dropping the cup into the conveyor.

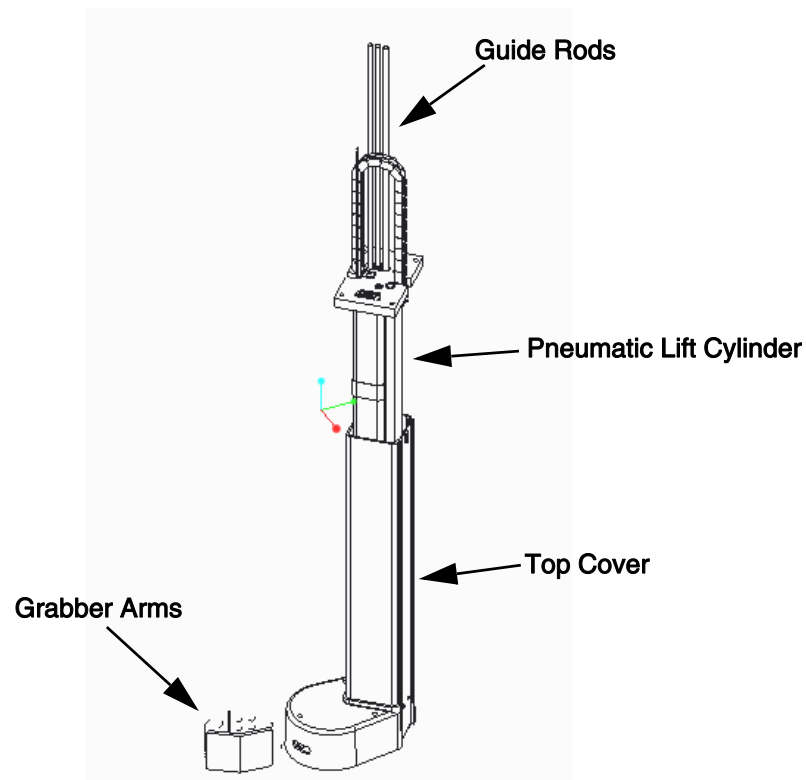


Figure 83.

## **EMPTY CUP TUBE SENSOR**

If the cup grabber arms close completely and do not encounter a cup, a sensor will detect that no cup was gripped by the grabber arms. This will cause a “Empty Cup Tube” message to be sent. See the sequence of events above for a full description of this sensor.



### **CAUTION:**

Do Not attempt any repair until the ABS 2.0 unit has been shut down and the air/CO2 has been shut OFF. Serious injury could occur if the cup grabber activates during repair.

## **REPLACEMENT of CUP GRABBER ARMS**

The top cover can be removed by removing the XXX screws. The cup grabber arms attach to the pneumatic cylinder assembly with two screws in each arm.

## **REPLACEMENT of CUP GRABBER PNEUMATIC CYLINDER**

## **REPLACEMENT of PNEUMATIC LIFT CYLINDER**

## **REPLACEMENT of SENSOR – CUP TOO HIGH**

## **REPLACEMENT of SENSOR – CUP EMPTY**

# CUP TURRET SYSTEM

## DESCRIPTION of OPERATION

The cup turret mechanism consists of a column (six sided bracket), that will hold six cup holder assemblies. An electric motor and gear box, a 24" drive shaft, shrouded with a protective sleeve.

The cup turret is activated by a command from the POS to the ABS 2.0. The cup turret rotates so that the correct cup size is at the cup drop position. The cup is then pulled and placed into the conveyor.

When the cup turret rotates to a selected cup size, it will rotate in either direction (clockwise or counterclockwise), whichever distance is closest to the extract position.

## CUP HOLDER DEFAULT POSITIONS

The cup turret Holder default positions are setup in the ABS 2.0 using Nos. 1 to 6. The default positions are shown.

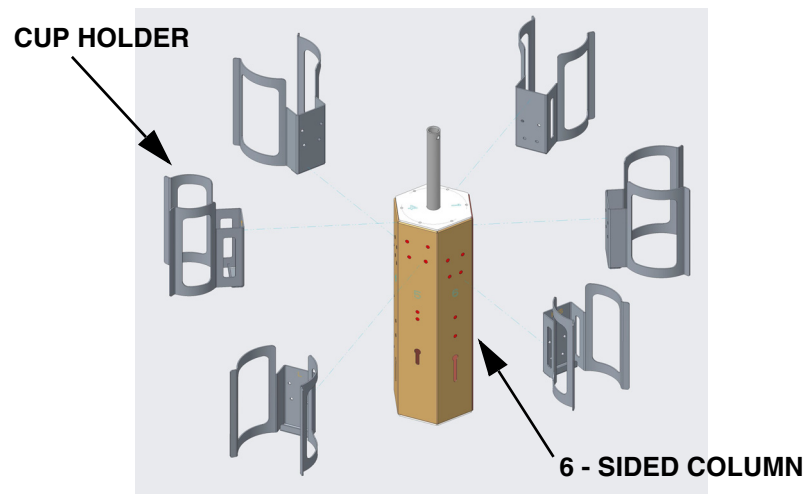


Figure 84.

## CUP HOLDER MOUNTING

Table 24.

CUP SIZE MATRIX		
Position	Upper	Lower
1.	30oz Large - Plastic	21oz Medium - Paper
2.	21oz Medium - Paper	16oz Small - Paper
3.	30oz Large - Plastic	21oz Medium - Paper
4.	12oz Child - Paper	Unused
5.	30oz Large - Plastic	21oz Medium - Paper
6.	21oz Medium - Paper	16oz Small - Paper

The mounting hole placement pattern determines which cup holder mounts on which side of the column.

## **TURRET DRIVE ASSEMBLY**

The entire turret assembly is attached to the motor coupler shaft by a pin/clip. The 6-sided column at the top of the turret shaft must align with the coupler shaft holes.

## **TURRET GEAR BOX & MOTOR**

The gear box and motor are replaceable and are accessible from top side under the black cover of the ABS 2.0. Four bolts attach them to the Gear/Motor bracket.

## **ENCODER DISK**

The alignment disk, attached with three screws to the shaft coupler, interfaces with the turret position sensor and notifies the Motion Control Board of which cup tube is at the extract position. The disk can only attach in one position.

## **TURRET POSITION SENSOR**

The turret position sensor is attached to the correct reads the holes in the disk sending position signals to the Motion Control Board. The sensor can be replaced by removing the two screws that attach it to the bracket. The sensor is electrically connected to the Motion Control Board.

## **SHAFT COUPLER**

The shaft coupler not only joins the shaft to the gear box but it ensures alignment of the flats on the shafts necessary for proper alignment communications to the Motion Control Board.



# ICE CHUTE ASSEMBLY

## ICE GATE DESCRIPTION

The ice gate is a pneumatically operated “gate” that is controlled by the Beverage Interface Board. The time the gate is open is very precise and determines the portion of ice dispensed. The gate opens and closes under pneumatic pressure(35psi). The gas is controlled by solenoids.

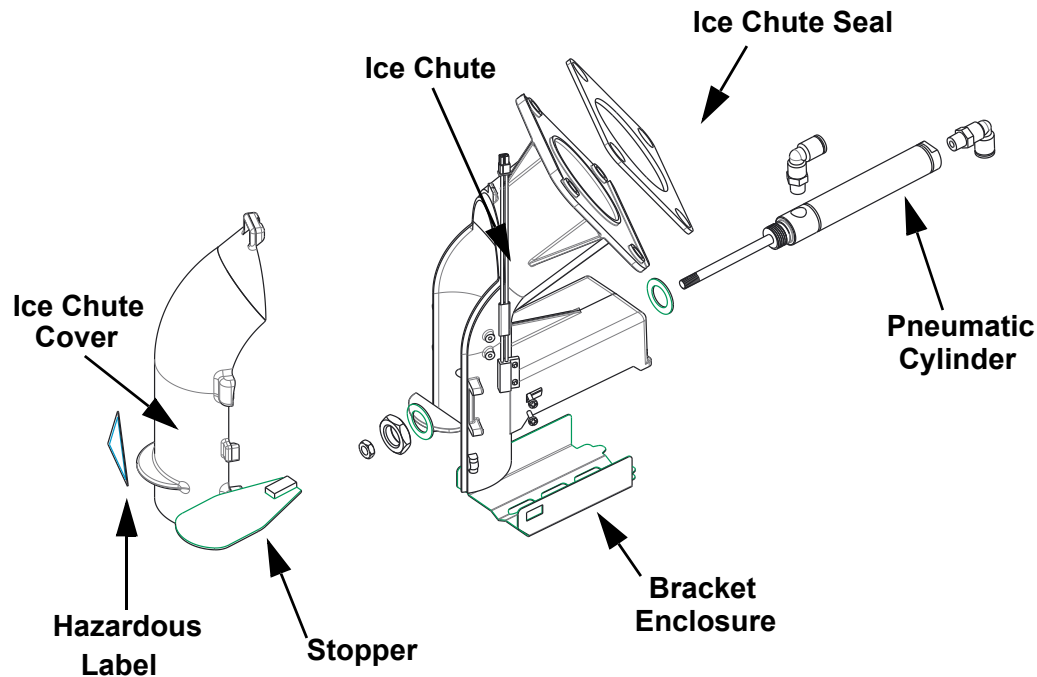


Figure 85.

## ICE CHUTE COVER

The ice chute directs the ice into the cup. It can be removed for cleaning or replacement.

## ICE CHUTE SENSOR

There is a sensor that detects when the ice chute cover is on/off. The unit will not operate when off or installed incorrectly.

## CYLINDER REPLACEMENT

The cylinder can be replaced by manually shutting off the air/CO<sub>2</sub> supply, (Back of the unit) disconnecting the tubing and removing the cylinder from the ice bin and ice chute assembly by removing the mounting nut.

## ICE GATE SOLENOID REPLACEMENT

The solenoid for the ice gate is located in the pneumatic compartment can be accessed by removing the access cover and splash panel.

# DISPENSING VALVE

## VALVE DESCRIPTION

The dispensing valve is located behind the touch panel and is made up of 5 blocks, each containing 2 solenoids, 2 flow controls and 2 shut-offs. The blocks are permanently manifolded together to supply a single outlet. The front view is shown below.



Figure 86.

## SHUT-OFF CONTROLS

The shut-offs are used mainly for service – to shut off a flavor (Syrup) in the case of a leaky solenoid, etc. Refer to the valve back block and removed section.

## FLOW CONTROLS

The flow controls are used to set the flow rates for the CW, PW and all the syrups.

The flow rate is increased by turning the adjusting screw clockwise and decreased by turning it counterclockwise.

The flow controls are removable by removing the two retaining screws on each side of the control. After shuttling of flow and de-pressurizing.

## SOLENOID VALVES

The solenoid valves are 30V DC electrically operated valves and are controlled by the MFV. The valve can be taken apart for cleaning or component replacement. A good valve 9.1 ohms

# TROUBLESHOOTING

## **⚠ 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:**

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<sub>2</sub> system, stop dispensing, shut off the CO<sub>2</sub> 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 hopper contains ice. If the unit does not dispense, check the following chart under the appropriate symptoms to aid in locating the defect.

**Table 25.**

Symptom	Cause	Remedy
Blown fuse or circuit breaker	A. Short circuit in electrical wiring. B. Inoperable agitator motor (shorted motor).	A. Repair wiring. B. Replace gear motor.
Agitator does not turn	A. No power. B. Improperly installed upper ice chute assembly (Reed switch is not being activated). C. Inoperable reed switch. D. Electrical board driver circuit is defective. E. Gear motor has open circuit. F. Reed switch is not activated, improper assembly of upper ice chute to lower chute. G. Broken wire in the 2-wire harness leading to the reed switch. H. Bad connection at main control board. I. Door not closed or not making switch connections to lid.	A. Restore power or plug in unit. B. Check the upper ice chute assembly for proper assembly and operation. C. Replace reed switch. D. Replace main control board. E. Replace gear motor. F. Check to make sure tongue of upper chute engages into the back of the lower chute, ensure upper chute engages outside the lower chute, and snap front of chute into place. G. Repair or replace 2-wire harness. H. Repair connection or replace 2-wire harness. I. Check distance from screen to lid.
Ice dispenses continuously	A. Ice gate mechanism is stuck in open position B. Stuck or bent ice lever (does not allow gate to close and open reed switch).	A. Inspect gasket for proper position. Examine gate plate to see if it slides freely behind the lower ice chute. B. Examine ice dispense lever to see if it is bent.
Slushy ice or water in hopper	A. Blocked drains in cold plate B. Poor ice quality due to water quality or ice maker problems	A. Remove access covers in cold plate cover & inspect/clean drains. B. Correct water quality or repair ice maker.
Beverage does not dispense	A. No 30 VDC to valves. B. No touch response.	A. Restore 30 VDC to valves. B. Re-start the unit.
Beverage is too sweet	A. Valve BRIX requires adjustment.	A. Adjust valve BRIX.
Low water pressure	A. Could be caused by excessively long runs (over 40 ft.) of 3/8" water supply line. B. Low water pressure. C. Plugged water filter. D. Water booster bladder has burst.	A. Increase line size to 1/2". B. Add water pressure booster pump. C. Change water filter. D. Replace water booster tank/bladder.

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

## MECHANICAL ISSUES

Table 26.

Message	Explanation	Correction
<b>CLEAR CUP JAM</b>	Cup(s) is jammed in the conveyor at the cup extraction position and the conveyor and turret are unable to operate.	Remove all cups from the conveyor cup holders at the Extract Position before pressing the ENTER button. Another cup will be extracted and dispensing will continue.
	Cup Tubes.	Over stacking of cups in cup tubes. DO not fill above the top of the cup tube.
		Cup tube fingers are damaged (bent), replace all four fingers.
		Cup tubes not properly mounted. Remove and remount cup tubes.
	Loose or missing Hardware.	Check each cup tube to insure all hardware is present on the cup tube. Replace any missing hardware.
	Cups.	Cups are packed together and will not separate.
<b>NO CUP EXTRACTED</b>	The gripper did not or could not extract a cup from the cup tube.	Check cup supply at the extract station and make sure the cups are not stuck. Make sure the gripper pads are not damaged
	Grabber Pads.	Wet, dry off if damaged, replace.
	CO <sub>2</sub>	Check bulk co <sub>2</sub> tank, if empty go to back up co <sub>2</sub> and turn on.
	Cup Tubes.	Cup tube fingers are damaged (bent), replace all four fingers.
	Cups	Cups are packed together and will not separate.
<b>TURRET STALLED</b>	Turret unable to rotate clockwise of counter-clockwise.	Clear obstruction (cup holder, cup tube or cup). Press ENTER
<b>CONVEYOR STALLED</b>	Cup(s) is jammed in the conveyor at the cup extraction position and the conveyor and turret are unable to operate. Does the conveyor rotate?	Remove all cups from the conveyor cup holders at the EXTRACT POSITION before pressing the ENTER button. Another cup will be extracted and dispensing will continue. Make sure conveyor is installed correctly. Repair or Replace.
<b>AIR OR CO<sub>2</sub> LOW OR OUT</b>	CO <sub>2</sub> supply is low or empty or Air compressor not operating	Change CO <sub>2</sub> cylinder or have bulk tank refilled. Check cause not operating and repair.

**BEVERAGE / ICE RELATED ISSUES:**
**Table 27**

Message	Explanation	Correction
<b>NO ICE DISPENSE</b>	A. Ice Chute not installed correctly. B. Bad solenoid valve. C. Plugged orifice. D. No / Low CO <sub>2</sub> .	Reinstall Ice Chute. Call for service. Call for service. Call for service.
<b>BEVERAGES TOO SWEET</b>	A. Carbonator not working. B. No co2 pressure in carbonator. C. Valve ratio requires adjusting. D. Plugged filter.	Call for service. Call for service. Call for service. Replace.
<b>BEVERAGES NOT SWEET ENOUGH</b>	A. Empty B.I.B container. B. Valve ratio requires adjusting.	Replace. Call for service.
<b>BEVERAGE NOT COLD</b>	A. No ice in hopper. B. Drains plugged and water standing on coldplate. C. Master Cooling system not cooling.	Fill ice bin. Clean ice bin and flush drain with warm water. Call for service.
<b>DRINKS FOAMY</b>	A. Nozzle & Syrup diffuser not clean. B. Bulk coke tank needs to be sanitize. C. Lower or out of Co2. D. No jumper transfer hose used on bulk tank	Clean and Sanitize. Clean and Sanitize. Replace or Switch to Back Up. Make sure jumper hose on bulk tank is connected when changing bulk tanks

## POS RELATED ISSUES

Table 28

Message	Explanation
<b>ABS SYSTEM NOT COMMUNICATING</b>	<ul style="list-style-type: none"> <li>• Verify that the ABS 2.0 unit is enabled in the POS Drink Dispenser setup.</li> <li>• Verify that POS cable is connected to COM2 on the CCU.</li> <li>• Verify that the POS cable is connected to the ABS 2.0 unit.</li> <li>• Verify all programming is correct.</li> <li>• Verify that no error messages are displayed on the ABS 2.0 unit.</li> <li>• Reboot power to the CCU.</li> <li>• Reboot power to the ABS 2.0 unit.</li> </ul>
<b>ABS UNIT WILL NOT DISPENSE A DRINK WITHOUT ICE OR WITH EXTRA ICE</b>	<ul style="list-style-type: none"> <li>• For no ice you must have to check ice chute sensor or nematic.</li> <li>• For extra ice, you must have the modify ice dispense time.</li> </ul>
<b>ABS UNIT IS DISPENSING THE WRONG SIZE OR BRANDS</b>	<ul style="list-style-type: none"> <li>• Make sure that the order in which the brands and size are the same in brand Setup and size Setup in the Drink dispenser as it is on the ABS 2.0 System. Coca-Cola will provide the brand Position Guide for POS programming.</li> <li>• Call your POS vendor for service.</li> </ul>
<b>ABS IS NOT DISPENSING ONE OR MORE OF A SIZE OR BRANDS</b>	<ul style="list-style-type: none"> <li>• Verify the brand and Size spelling is the same in both the brand and Size setup as it is in the Menu item Setup.</li> <li>• Call your POS vendor for service.</li> </ul>

[illegible]

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# PLUMBING DIAGRAM

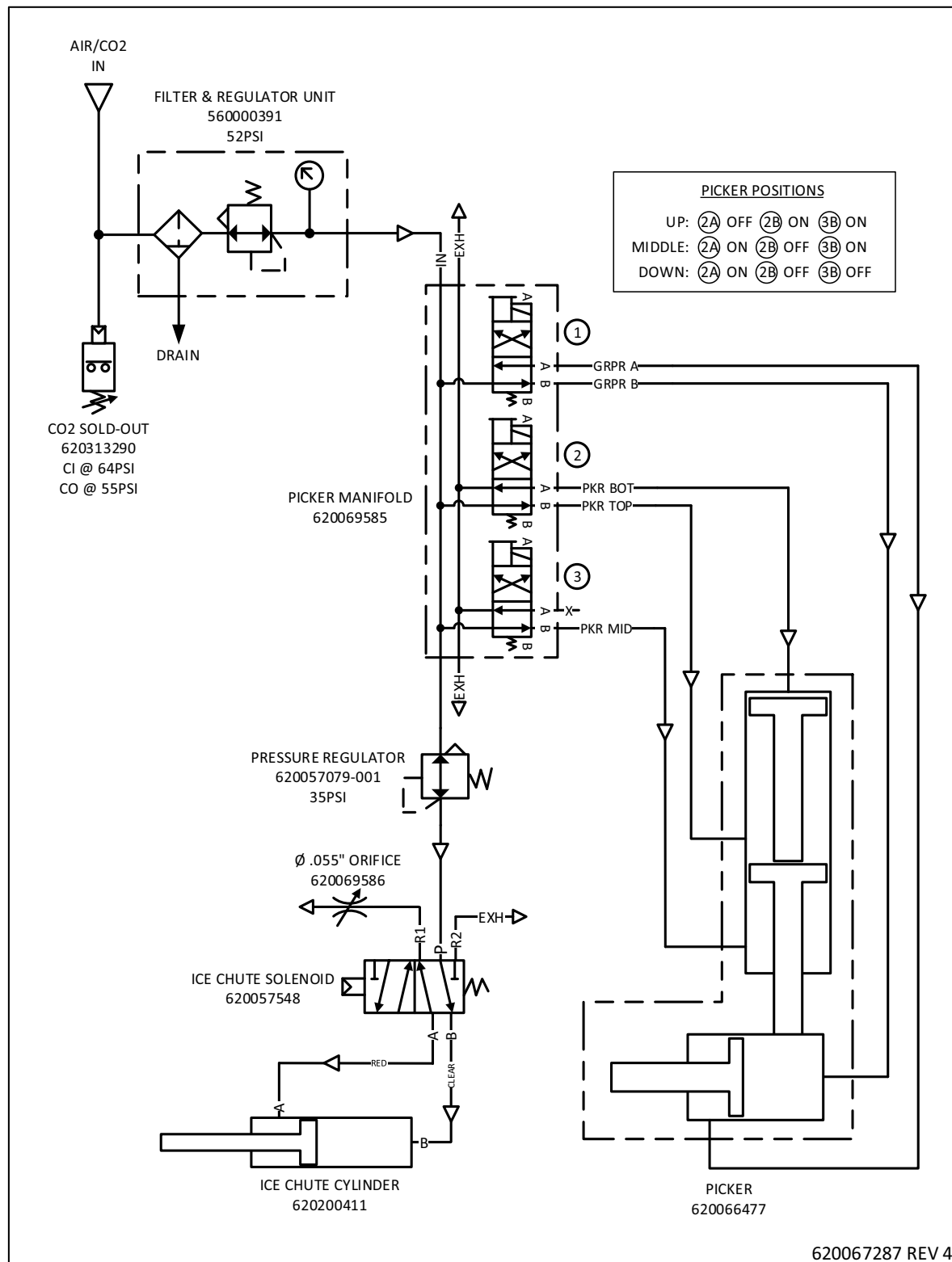


Figure 88.









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