

---

# ABS 2.0

## Operator's Manual



**Release Date:**

**Publication Number:** 621058590OPR

**Revision Date:** February 1, 2019

**Revision:** 4

Visit the Cornelius web site at [www.cornelius.com](http://www.cornelius.com) for all your Literature needs.

---

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

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

Cornelius will not be responsible for any repair, replacement or other service required by or loss or damage resulting from any of the following occurrences, including but not limited to, (1) other than normal and proper use and normal service conditions with respect to the Product, (2) improper voltage, (3) inadequate wiring, (4) abuse, (5) accident, (6) alteration, (7) misuse, (8) neglect, (9) unauthorized repair or the failure to utilize suitably qualified and trained persons to perform service and/or repair of the Product, (10) improper cleaning, (11) failure to follow installation, operating, cleaning or maintenance instructions, (12) use of "non-authorized" parts (i.e., parts that are not 100% compatible with the Product) which use voids the entire warranty, (13) Product parts in contact with water or the product dispensed which are adversely impacted by changes in liquid scale or chemical composition.

### **Contact Information:**

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

**www.cornelius.com**  
**800-238-3600**

### **Trademarks and Copyrights:**

This document contains proprietary information and it may not be reproduced in any way without permission from Cornelius.

This document contains the original instructions for the unit described.

CORNELIUS INC  
101 Regency Drive  
Glendale Heights, IL  
Tel: + 1 800-238-3600

Printed in U.S.A.

### **Correct Disposal of this Product**

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

---

# TABLE OF CONTENT

<b>Safety Instructions</b> .....	<b>1</b>
Read and Follow All Safety Instructions .....	1
Safety Overview .....	1
Recognition .....	1
Different Types of Alerts .....	1
Safety Tips .....	1
Qualified Service Personnel .....	1
Safety Precautions .....	2
Shipping And Storage .....	2
CO2 (Carbon Dioxide) Warning .....	2
Sound Level .....	2
Unit Location .....	2
<b>INTRODUCTION</b> .....	<b>3</b>
System Overview .....	3
Specification .....	3
Features .....	4
<b>UNIT DRAWING</b> .....	<b>5</b>
<b>NORMAL OPERATIONS</b> .....	<b>6</b>
Location, Power On Unit & Usage .....	6
LOCATION OF UNIT .....	6
POWER ON UNIT .....	6
Preparing Unit For Use .....	7
ICE FILLING .....	7
CUP LOADING/ CUP CHANGE / TURRET SETUP INSTRUCTIONS .....	8
<b>Operational Modes</b> .....	<b>10</b>
Automatic Operation .....	10
Special Ice Drinks .....	10
P.O.S. Signal To Manager's Computer .....	10
Cup Turret Rotates .....	10
Cup Grabber Rises & Closes .....	10
Grabber Lowers & Opens .....	10
Conveyor Operates .....	10
Ice Portion Is Dispensed .....	10
Cup To Dispensing Nozzle .....	10
Beverage Dispensed .....	11
Cup Is Moved To Cup Serve Point .....	11
Crew Member Serves Drink .....	11
Semiautomatic Operation (Unit in Automatic) .....	11
Press Cup Size .....	11
Press Special Ice Requirement If Requested .....	11
When Correct, Press Enter .....	11
<b>CLEANING / MAINTENANCE PROCEDURES</b> .....	<b>12</b>
Daily Cleaning and Sanitation .....	12
Locate Required Tools .....	12
STAGING CLEANING .....	13

---

Dis-assemble Staging . . . . .	13
Clean Drip-Tray Area . . . . .	14
Clean Conveyor & Grille . . . . .	15
Re-assemble Staging . . . . .	16
NOZZLE CLEANING . . . . .	17
Dis-assemble Nozzle . . . . .	17
Clean Nozzle . . . . .	18
Sanitize Nozzle . . . . .	19
Re-assemble Nozzle . . . . .	20
Weekly Cleaning . . . . .	21
Required Tools . . . . .	21
Lid Storage Cleaning . . . . .	21
Dis-assemble Lid Storage . . . . .	21
Clean Lid Storage . . . . .	21
Re-assemble Lid Storage . . . . .	22
Clean Gripper Pads (Daily also) . . . . .	22
CLEANING OF EXTERIOR SURFACES . . . . .	23
Monthly Cleaning . . . . .	25
Tools Required . . . . .	25
Hopper Cleaning . . . . .	25
Empty Hopper of Ice . . . . .	25
Gather equipment . . . . .	25
Prepare to Clean Hopper . . . . .	26
Clean Hopper . . . . .	26
Prepare to Rinse Hopper . . . . .	27
Rinse Hopper . . . . .	27
Prepare to Sanitize Hopper . . . . .	27
Sanitize Hopper . . . . .	28
Post-cleaning Phase . . . . .	28
ICE CHUTE CLEANING (WEEKLY OR DAILY CLEANING ALSO) . . . . .	29
Dis-assemble Ice Chute . . . . .	29
Clean Ice Chute . . . . .	29
Sanitize Ice Chute . . . . .	29
Re-assemble Ice Chute . . . . .	29
Product Line Cleaning . . . . .	30
Dis-assemble Product Line . . . . .	30
Prepare Cleaning Solutions . . . . .	30
Sub BIB Quick Disconnect . . . . .	30
Purging Valves (Soap) . . . . .	30
Quarterly Cleaning (Only for Pre-chiller Units) . . . . .	33
Tools Required . . . . .	33
Condenser Filter Cleaning . . . . .	33
<b>Schematics . . . . .</b>	<b>34</b>
Plumbing Diagram . . . . .	34
<b>Troubleshooting . . . . .</b>	<b>35</b>
Mechanical Issues . . . . .	35
Beverage / Ice related Issues: . . . . .	36
POS Related Issues . . . . .	37

# 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

<i>Recognize Safety Alerts</i>
 <p><i>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.</i></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.**

**IF THE SUPPLY CORD IS DAMAGED, IT MUST BE REPLACED BY THE MANUFACTURER, ITS SERVICE AGENT OR SIMILARLY QUALIFIED PERSONS IN ORDER TO AVOID A HAZARD.**

## 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

### **WARNING:**

Do not use dispense spigot to lift or move unit as this could result in personal injury.

### **CAUTION:**

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

## CO<sub>2</sub> (CARBON DIOXIDE) WARNING

### **DANGER:**

CO<sub>2</sub> displaces oxygen. 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. If a CO<sub>2</sub> gas leak is suspected, particularly in a small area, **IMMEDIATELY** ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentrations of CO<sub>2</sub> gas experience tremors which are followed rapidly by loss of consciousness and **DEATH**.

## SOUND LEVEL

### **CAUTION:**

The A-weighted sound pressure level has been determined to be below 70dBA.

## UNIT LOCATION

### **CAUTION:**

Appliance is not suitable for installation in an area where a water jet could be used.

### **CAUTION:**

The appliance must be placed in a horizontal position.

### **CAUTION:**

This unit is not designed for use in outdoor locations.

# INTRODUCTION

## SYSTEM OVERVIEW

The Automated Beverage System ABS 2.0 is an upgraded version of ABS. The ABS 2.0 is designed for drive-thru 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>	Length	35.9 inch
	Width	35.5 inch
	Height	75.0 inch
<b>Unit weight</b>	Dry weight	TBD
	Operational weight (With ice, water, etc.)	TBD
<b>Cooling method</b>	Method of product cooling	Cold plate & on board chiller for condition "C"
<b>Ice storage capacity</b>	W/o bin extender	135 lbs
<b>Electrical</b>	Line voltage	120 ± 10% VAC, 60 Hz, 1 Phase
	Current	15 amps
	Connection method	115/60Hz (North America): TBD 230/50Hz (Rest of World): TBD
<b>Water</b>	Supply pressure	80 psi static
	Supply method	1/2 inch ID tube (Python)
<b>Syrup</b>	Supply pressure	65 psi Optimal
	Supply method	3/8 inch ID tube (Python)
<b>Air/and CO<sub>2</sub></b>	Supply pressure	CO <sub>2</sub> : 80 +/- 10% psi, Compressed Air: 65psi ±10psi
	Supply method	3/8 inch ID tube
<b>Clearance Requirement</b>	Top	No ice Maker: 75 inch + 12 inch refill area =87 inch With ice Maker: 98.5 inch
	Back	2 inch clearance to wall (min)

## FEATURES

Table 2. Product features

<b>Mounting type (leg/caster)</b>	4 legs mounted
<b>UI interface type and size</b>	Two 7" touch screen display
<b>Number of flavors</b>	8 brands
<b>Cup storage</b>	6 cup dispenser
<b>Lid Storage</b>	8 lid compartment
<b>Ice dispensing</b>	1 portion controlled ice dispenser
<b>Product dispensing</b>	Cornelius Multi Flavor Valve
<b>Automatic cleaning</b>	Wand type cleaning nozzle Kit.
<b>No of stage drinks</b>	6
<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 Table 5 on page 7)</li> </ul>

# UNIT DRAWING

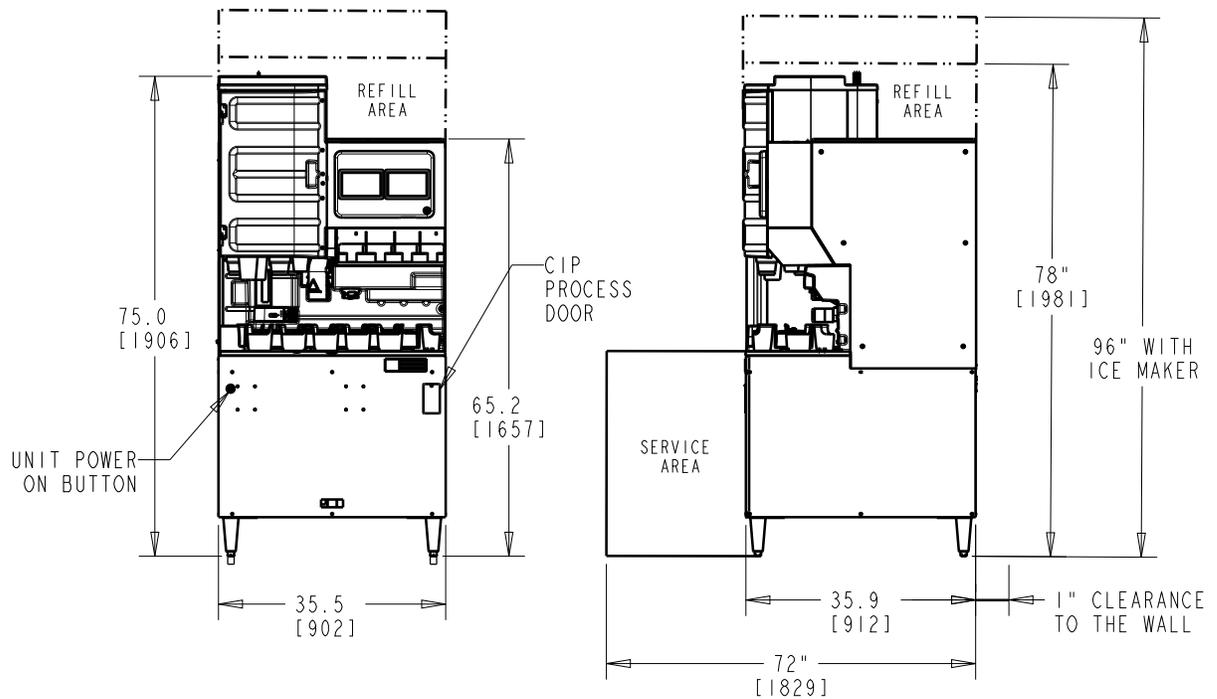
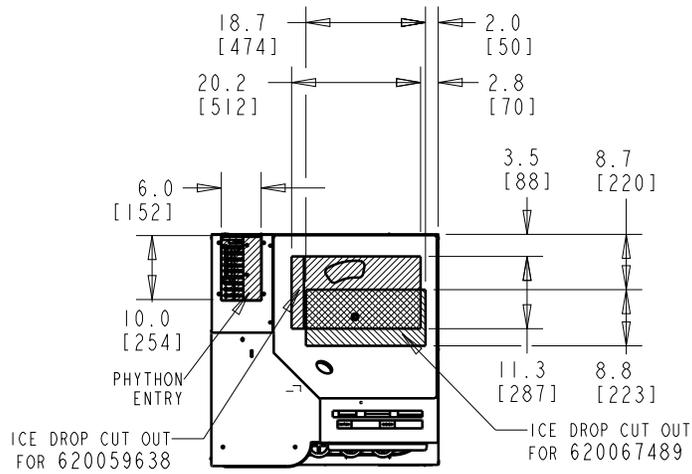


Figure 1.

# NORMAL OPERATIONS

## LOCATION, POWER ON UNIT & USAGE

### LOCATION OF UNIT

Locate the dispenser so that the following requirements are satisfied:

1. Unit is not to be installed in an area where a water jet (power washer) is used.
2. Unit must be located in an area with a level floor surface. The unit must be installed within 2° of level for the unit to operate properly.
3. The unit should only be installed in a location where its use and maintenance is restricted to trained personnel.
4. Unit must be located in an area with nearest access to floor drain port, preferably under the foot print of unit.
5. The clearance above top of the unit must be open and the front of the unit must be open to the room. These clearances must be provided to allow for proper air flow and to allow access to the ice bin for refilling.

### POWER ON UNIT

#### **DANGER:**

To avoid possible fatal electrical shock or serious injury to the operator, it is highly recommended that a GFI (ground fault circuit interrupter) be installed in the electrical power circuit.

The machine is equipped with a power cord (hot, neutral and ground) and is plugged into any standard wall outlet capable of handling 15 A at 120VAC, 60Hz volts as shown in Table 3 on page 6.

Table 3. Product electrical requirement

Unit	Plug Type	Voltage-Frequency-Phase	Amps
ABS 2.0	IEC-NEMA 5-15P	120 VAC – 60 Hz – 1Ph	15

#### **CAUTION:**

The electrical circuits must be properly fused (Slow-blow type fuses). **Do not** use HACR circuit breakers on the circuit of the unit. HACR circuit breakers may not react to voltage surges or spikes that can damage the electronics

**NOTE: The electrical outlets must be accessible for ease of connecting and disconnecting the dispenser cords. No other electrical appliances should be connected to these electrical circuits.**

**NOTE: All electrical wiring must conform to national and local electrical codes.**

**Table 4.**

1. Connect the unit power cord to electrical outlet.	
2. Locate the rocker switch at the bottom left side below conveyor of the unit, behind the front panel. A hole is provided to access the rocker switch.	
3. Turn ON the rocker switch on the unit to power it up.	

**Figure 2.**

## PREPARING UNIT FOR USE

### ICE FILLING

ABS 2.0 comes with 2 types of ice maker adapters.

The list of ice makers compatible with ice maker adapter PN 620059638 (Manitowoc/Scotsman) are below in Table 5 on page 7.

**Table 5. List of ice makers compatible with ABS 2.0**

SL NO.	BRAND	MODEL
1.	MANITOWOC	IB-894
2.	MANITOWOC	IB-1094
3.	SCOTSMAN	EH222 800
4.	SCOTSMAN	EH222 1000

The list of ice makers compatible with ice maker adapter PN 620067489 (Hoshi) are below in Table 6 on page 7.

**Table 6. List of ice makers compatible with ABS 2.0**

SL NO.	BRAND	MODEL
1.	HOSHI	KMS-1122MLH

1. Turn on the ice maker, see procedure on ice maker's user manual, and keep the unit idle until ice is filled. Don't operate until hopper is 50% full.
2. Ice can also be filled manually by opening the manual fill door located on top of the unit.

# CUP LOADING/ CUP CHANGE / TURRET SETUP INSTRUCTIONS

Table 7.

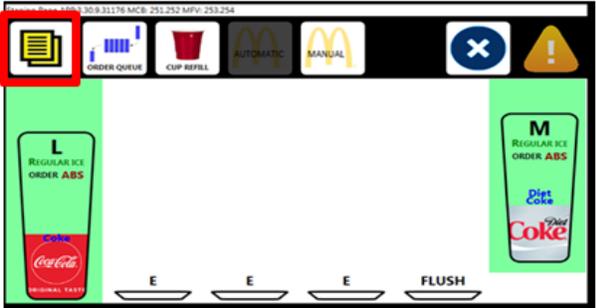
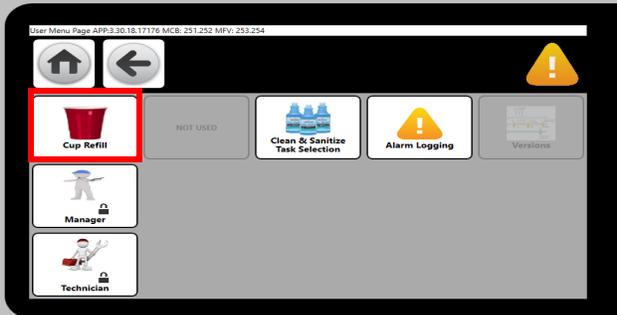
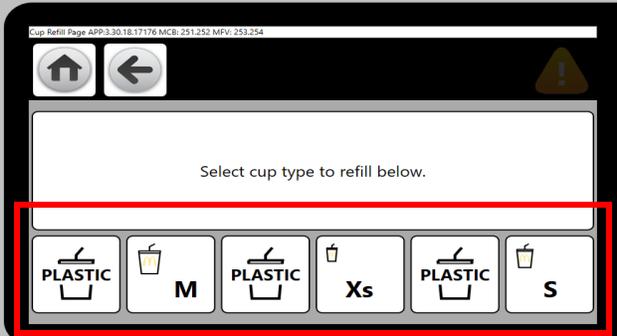
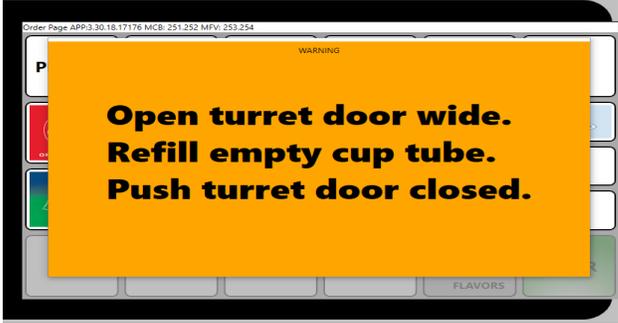
Step	Action	
1	Select <b>Menu</b> as shown in Figure 3. or select cup refill	 <p style="text-align: center;">Figure 3.</p>
2	If in menu page Select <b>Cup Refill</b> ICON as shown in Figure 4.	 <p style="text-align: center;">Figure 4.</p>
3	Select Cup size to bring the cup holder position to front.	 <p style="text-align: center;">Figure 5.</p>

Table 7.

<p>4</p>	<p>After selecting the cup size the screen with instruction message will pop up as shown in Figure 6. Open the turret door.</p>	 <p>Figure 6.</p>
<p>5</p>	<p>Fill Cup's in the cup holder. Spin Turret by hand for all other size. Ensure the cup size with holder cup size mark see Figure 7. Load from top only.</p>	 <p>Figure 7.</p>
<p>6</p>	<p>DO NOT Over Fill Must stay below black motor cover or turret will not spin</p>	 <p>Figure 8.</p>
<p>7</p>	<p>Close turret Door</p>	 <p>Figure 9.</p>

# OPERATIONAL MODES

The “ABS 2.0” has three modes of operation:

- Automatic (Normal Operation).
- Semi-Automatic (while in Auto).
- Manual.

## AUTOMATIC OPERATION

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

With the unit in automatic mode, the customer places an order at the Drive-Thru.

## Special Ice Drinks

Extra and no ice drinks are entered from the P.O.S. as a “TBD” The A.B.S. will automatically produce the drink to the special order.

## P.O.S. Signal To Manager's Computer

The order is transmitted from the P.O.S. to the store computer and from there to the A.B.S. unit.

## Cup Turret Rotates

The cup turret rotates to move the proper size to the extract position.

## Cup Grabber Rises & Closes

The cup grabber is lifted by a pneumatic cylinder up to the cup. The travel is sensed by three sensors. If full height is reached, a pneumatic cylinder closes the grabber arms against the cup. A grip sensor detects if cups are available.

## Grabber Lowers & Opens

The cup grabber lowers, pulling the cup from the cup holder and then the arms open dropping the cup into the cup-holder on the conveyor.

If the grabber should slide off a cup, it would be detected by the grabber sensor.

## Conveyor Operates

Sensors check for a cup in position “A.” If the sensor is clear, the conveyor rotates clockwise to move the cup to the ice chute.

This is based on only one drink being ordered. If a second drink had been ordered, the conveyor would have moved only one position and the second cup would have been extracted and dropped into the conveyor. The two cups would then be moved clockwise until the first cup reaches the ice fill position.

## Ice Portion Is Dispensed

The ice gate is opened by a pneumatic cylinder for the time needed to dispense the selected ice portion.

The agitator continues to operate for the set refill time to refill the ice chute.

## Cup To Dispensing Nozzle

Sensors check for a cup in position A. If the sensor is clear, the conveyor moves the cup to the beverage fill point. The valve opens to dispense the desired syrup and water in the desired portions into the cup.

## Beverage Dispensed

The P.O.S sends the drink portion of the order to the ABS 2.0 where the information is interpreted and the drink is dispensed.

If the drink requires a top-off, the initial portion will be dispensed. After a delay, the balance of the drink will be dispensed.

## Cup Is Moved To Cup Serve Point

Sensors check for a cup in position "A." If the sensor is clear, the conveyor moves the cup to cup serve position "F."

The display will indicate the Brand & Ice portion of the beverage along with the order # at cup serve position "F."

## Crew Member Serves Drink

A crew member caps the drink while still on the conveyor and serves it with the remainder of the order.

## SEMI-AUTOMATIC OPERATION (UNIT IN AUTOMATIC)

### Press Cup Size

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

While in automatic mode, to dispense a drink semi-automatically, press the desired cup size button.

### Press Special Ice Requirement If Requested

If extra ice is desired, press the EXTRA ICE button. If no ice is required, press the NO ICE button. If light ice is desired, press the LIGHT ICE button. If only ice is desired, press the ONLY ICE button. If normal ice is desired, no button is pressed. As shown in Figure Figure 10.

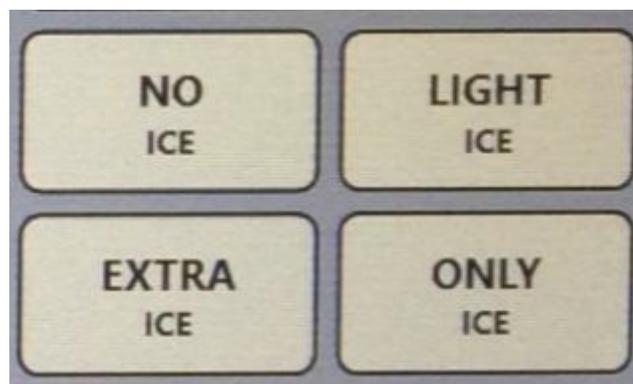


Figure 10.

### When Correct, Press Enter

Sequence of pressing the cup size, brand, and special ice buttons is not important. At any time, pressing any button will change the selection of the drink to be dispensed. When the correct order is displayed, press ENTER and the drink will be dispensed.

Any Drink through Semi automatic method, OR under quotes are identified by the order ID saying "ABS" instead of a number.

## CLEANING / MAINTENANCE PROCEDURES

### **WARNING:**

Disconnect power to the unit before servicing. Follow all lock out/tag out procedures established by the user. Verify all power is off to the unit before performing any work

**Failure to comply could result in serious injury, death or damage to the equipment.**

### **CAUTION:**

Do not use metal scrapers, sharp objects or abrasives on the ice storage hopper, top cover, agitator disc or exterior surfaces. Do not use solvents or other cleaning agents as they may attack the material resulting in damage to the unit

**Soap solution** – Use a mixture of mild detergent & warm (100°F) potable water.

**Sanitizing Solution** – Dissolve 1 packet [1oz. (29.6 ml)] of Kay - 5 or Stera Sheen Green Label into 2.5 gallons (9.46 L) of warm [80 - 100°F (26.7 - 37.8°C)] potable water to ensure 100 ppm of chlorine.

## DAILY CLEANING AND SANITATION

1. Check the temperature, smell, and taste of the product.
2. Check the water pressure coming to the unit using a pressure gauge on the back room package, it should be same as mentioned in Table 3 on page 6.
3. Check carbonation of the drink visually or by tasting.
4. Using a pressure gauge check the inlet pressure CO<sub>2</sub> or air supply to the system, it should be same as mentioned in Table 3 on page 6 .
5. Check the date on all of the BIB's (bags in boxes).

## Locate Required Tools

- Soap Solution
- Paper Towel
- Clean Cloth
- Carbonated Water
- Sanitizing Solution
- Sanitizing Bucket
- Clean Sanitized Cloth

## STAGING CLEANING

### Dis-assemble Staging

1. Unscrew the 3 thumb screws holding the screw in place as shown in Figure Figure 11. and remove the cover.



Figure 11.

2. Remove the conveyor by lifting it up as shown in Figure Figure 12.

**NOTE: Do not carry conveyor by cup holder.**

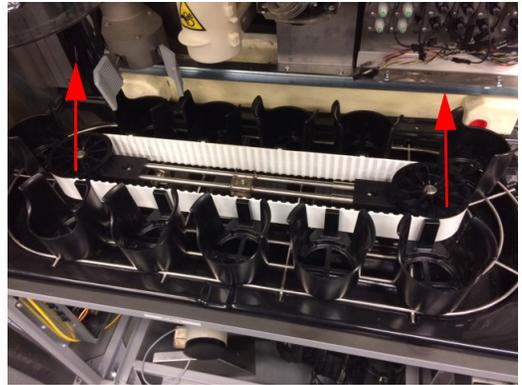


Figure 12.

3. Remove the cup rest by lifting it up as shown in Figure Figure 13.



Figure 13.

### Clean Drip-Tray Area

1. Make sure water deflector is properly installed, this will help prevent motor failures. (Order replacement if the deflector is missing) as shown in Figure Figure 14.



Figure 14.

2. Pour warm (NOT HOT) water down the drip-tray drain. Flush the drip-tray using carbonated water as shown in Figure Figure 15.



Figure 15.

3. Wash the drip-tray area, splash panel and clean any spills from the machine exterior using Soap Solution with a clean cloth as shown in Figure Figure 16.



Figure 16.

4. Wipe down drip-tray and splash panel with a clean cloth to remove any soapy residue as shown in Figure Figure 17.



Figure 17.

5. Spray Sanitizing Solution all around drip-tray and splash panel. Let air dry for 5 minutes.



Figure 18.

### Clean Conveyor & Grille

1. Wash the conveyor and grille in lukewarm soapy water. Rinse with plain water as shown in Figure Figure 19.

**NOTE: Do not use hot water or place in dishwasher.**



Figure 19.

**Re-assemble Staging**

1. The cup rest must be installed with the oval rails up and the “Cup Positioning Bracket” must be at the rear of the drip tray as shown in Figure Figure 20.

**NOTE: The cup positioning bracket, located on the cup rest, 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 its size.**

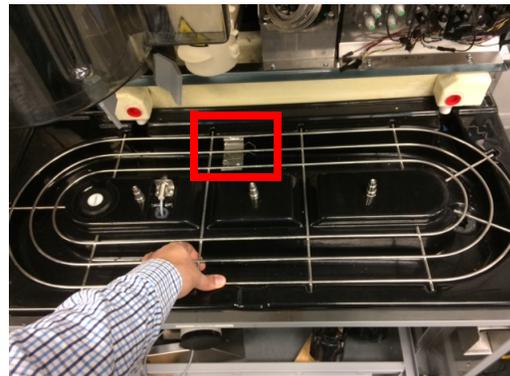


Figure 20.

2. Align the drive pin on the left side of the conveyor assembly so that the conveyor seats properly as shown in Figure 19. The conveyor drive pin must engage the drive socket on the gear box as shown in Figure Figure 21.

**NOTE: When installing the conveyor, it may be necessary to move the conveyor manually to allow the drive pin to insert into the drive socket**



Figure 21.

3. Re-install the cover and then tighten the thumb screws on the cover as shown in Figure Figure 22.



Figure 22.

## NOZZLE CLEANING

### Dis-assemble Nozzle

1. Remove the valve nozzle by rotating clockwise direction as shown in Figure Figure 23.



Figure 23.

2. Remove the diffuser by pulling it vertically downward as shown in Figure Figure 24.



Figure 24.

3. Remove diffuser gasket from diffuser as shown in Figure Figure 25. Clean nozzle, diffuser and gasket in warm soapy water, then rinse it in clean water and then allow to air dry. wipe down with clean cloth.

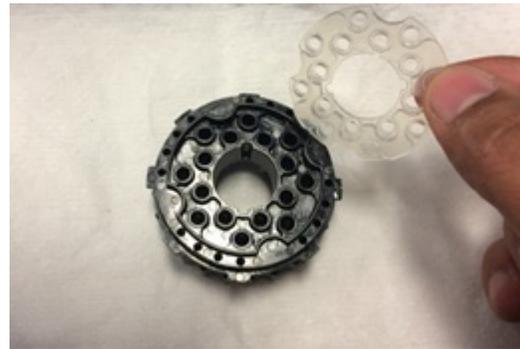


Figure 25.

**Clean Nozzle**

1. Prepare bucket of Soap Solution.



**Figure 26.**

2. Place outer nozzle housing, diffuser, and gasket in the soap solution. Let soak for a few minutes.



**Figure 27.**

3. Rinse the nozzle components in lukewarm, clean water to remove soapy residue.

### Sanitize Nozzle

1. Spray sanitizer on the nozzle, diffuser, and gasket as shown in Figure Figure 28.

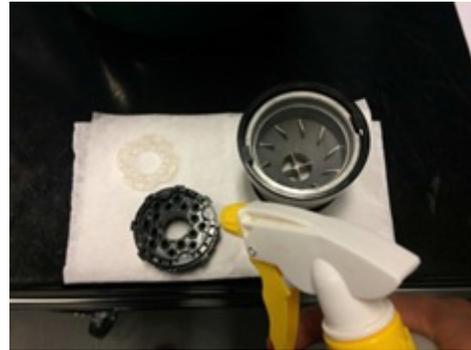


Figure 28.

2. Wipe the nozzle and diffuser with a soft cloth as shown in Figure Figure 29.



Figure 29.

3. Let air dry for 5 minutes



Figure 30.

## Re-assemble Nozzle

1. Re-install the diffuser gasket in the diffuser by aligning the key-slot of the diffuser gasket and the diffuser as shown in Figure Figure 31.

**NOTE: Ensure gasket is seated properly and the correct side is facing upwards.**



Figure 31.

2. Reinstall the diffuser by pushing it vertically upward by aligning the key-slot as shown in Figure Figure 32.

**NOTE: Make sure the nozzle is assembled and it is vertically aligned or both the locking tabs are properly engaged in slot.**



Figure 32.

3. Re-install the nozzle in the unit by rotating it in clockwise direction as shown in the Figure Figure 33.

**NOTE: Make sure the tabs are aligned properly before rotating in order to avoid cross threading.**

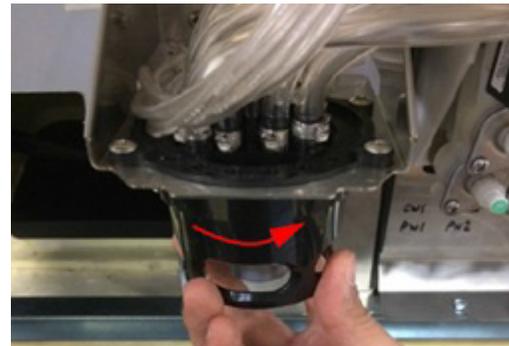


Figure 33.

## WEEKLY CLEANING

### Required Tools

- Soap Solution
- Clean Cloth
- McD Stainless Steel Cleaner

### Lid Storage Cleaning

#### Dis-assemble Lid Storage

1. Empty all lids from the lid dispenser.

2. Remove the lid separator from the dispenser by lifting up slightly and pulling out as shown in Figure Figure 34.



Figure 34.

#### Clean Lid Storage

3. Wipe dirt and dust from all internal surfaces of lid storage with Soap Solution and wipe dry with a soft, sanitized cloth as shown in Figure Figure 35.



Figure 35.

4. Apply McD Stainless Steel Cleaner dressing to all exterior stainless steel surfaces and wipe dry with a paper towel as shown in Figure Figure 36.



Figure 36.

5. Wipe dirt and dust from lid separator with Soap Solution and wipe dry with a soft, sanitized cloth.
6. Apply McD Stainless Steel Cleaner dressing to lid separator and wipe dry with a paper towel.

**Re-assemble Lid Storage**

7. Return lid separator to original position and refill with lids as shown in Figure Figure 37.



**Figure 37.**

**Clean Gripper Pads (Daily also)**

8. Wipe dirt and dust from the inside faces of the gripper pads with Soap Solution and wipe dry with a soft, sanitized cloth as shown in Figure Figure 38.



**Figure 38.**

## CLEANING OF EXTERIOR SURFACES

Follow the below procedure to clean all the exterior surface that includes, splash panel, UI screen, exterior panels, turret door and inside surface, etc.

1. Wipe dirt and dust from all exterior surfaces with Soap Solution and wipe dry with a soft, sanitized cloth. Wipe the Turret Door, Touch Screen, Back splash, Side Wall, Exterior Panels. Caution: Do not wipe displays with solvents or cleaning agents as shown in Figure Figure 39.



Figure 39.

2. Clean and wipe turret door as shown in Figure Figure 40.



Figure 40.

3. Clean and wipe touch screen bezel. Gently wipe touch screens with clean, moistened cloth if needed as shown in Figure Figure 41.

**NOTE: Do not wipe displays with solvents or cleaning agents.**



Figure 41.

4. Clean and wipe turret wall surface as shown in Figure Figure 42.



**Figure 42.**

5. Clean and wipe lower exterior panels below drip-tray.

## MONTHLY CLEANING

Using a long handled nylon bristle brush, clean the interior of the cold plate with warm, soapy solution. The cold plate is to be cleaned by reaching through the ice opening into the hopper bottom with the long handle brush. Be certain to clean the entire surface area of the cold plate including all the corners. Thoroughly rinse the cold plate with clean potable water.

### Tools Required

- Soap Solution
- Sanitizing Solution
- Clean Buckets (3 if possible)
- Clean Cloth
- McD Stainless Steel Cleaner
- Ice Collection Tray
- Long Handle Nylon Bristle Brush
- Clean Sanitized Cloth

### Hopper Cleaning

<p><b>Empty Hopper of Ice</b></p> <p>1. Turn off ice maker by either locating the power button behind the ice maker's front panel or navigating through the ice maker menu screen. Refer to ice maker manual. To allow hopper time to empty itself and avoid wasting ice, turn off 2-3 hours prior to monthly cleaning procedure as shown in Figure Figure 43.</p>	 <p style="text-align: center;"><b>Figure 43.</b></p>
<p>2. Remove remaining ice in the hopper. Press and hold *ICE DUMP* button on the screen until fully empty. Collect ice in separate tray or chute and avoid dumping in ABS drip-tray.</p>	
<p><b>Gather equipment</b></p> <p>1. Gather cleaning buckets and fill accordingly as shown in Figure Figure 44.</p> <p>A. Cleaning – Soap Solution mix with warm water.</p> <p>B. Rinse Water – clean potable water.</p> <p>C. Sanitizing – Sanitizing Solution mix with luke-warm water.</p>	 <p style="text-align: center;"><b>Figure 44.</b></p>

2. Locate the CIP access door on the lower right hand side of the unit and pull the 2 CIP hoses out as shown in Figure Figure 45.



Figure 45.

### Prepare to Clean Hopper

1. Put strainer hose in bucket of soap solution. Make sure it reaches the bottom as shown in Figure Figure 46.



Figure 46.

2. Open manual ice fill door and put the spray hose inside the hopper. Make sure the valve is closed (handle perpendicular to valve) as shown in Figure Figure 47.



Figure 47.

### Clean Hopper

1. When ready press \*START CIP PUMP\* button, open spray valve with a 90° turn and begin spraying all around hopper and hard to reach corners. Spray until bucket is empty. Avoid spraying directly into bottom of ice maker. Try to spray both sides of agitator.
2. When finished press \*STOP CIP PUMP\* button and close valve with a 90° clockwise turn. To avoid excessive wear to CIP pump, turn off immediately after bucket is empty.

### Prepare to Rinse Hopper

1. Put strainer hose in bucket of clean potable water. Make sure it reaches the bottom as shown in Figure 48.



Figure 48.

2. Open manual ice fill door and put the spray hose inside the hopper. Make sure the valve is closed (handle perpendicular to valve) as shown in Figure 49.

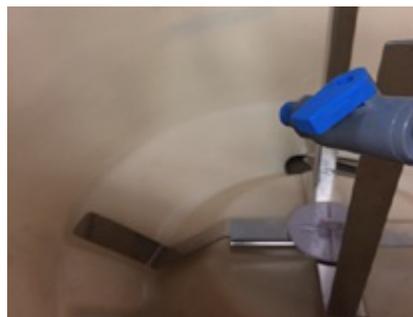


Figure 49.

### Rinse Hopper

1. When ready press \*START CIP PUMP\* button, open spray valve with a 90° turn and begin spraying all around hopper and hard to reach corners. Spray until bucket is empty. Avoid spraying directly into bottom of ice maker. Try to spray both sides of agitator.
2. When finished press \*STOP CIP PUMP\* button and close valve with a 90° clockwise turn. To avoid excessive wear to CIP pump, turn off immediately after bucket is empty.

### Prepare to Sanitize Hopper

1. Put strainer hose in bucket of Sanitizing Solution. Make sure it reaches the bottom as shown in Figure 50.



Figure 50.

<p>2. Open manual ice fill door and put the spray hose inside the hopper. Make sure the valve is closed (handle perpendicular to valve) as shown in Figure Figure 51.</p>	 <p style="text-align: center;"><b>Figure 51.</b></p>
<p><b>Sanitize Hopper</b></p> <p>1. When ready press *START CIP PUMP* button, open spray valve with a 90° turn and begin spraying all around hopper and hard to reach corners. Spray until bucket is empty. Avoid spraying directly into bottom of ice maker. Try to spray both sides of agitator.</p> <p>2. When finished press *STOP CIP PUMP* button and close valve with a 90° clockwise turn. To avoid excessive wear to CIP pump, turn off immediately after bucket is empty.</p>	
<p><b>Post-cleaning Phase</b></p> <p>1. Drain both CIP hoses and return back to unit as shown in Figure Figure 52.</p>	 <p style="text-align: center;"><b>Figure 52.</b></p>
<p>2. Make sure manual fill door is closed.</p>	
<p>3. Turn on the ice maker by either locating the power button behind the ice maker's front panel or navigating through the ice maker menu screen. Refer to ice maker manual. Ice maker takes a while to start making ice again, use this time to complete the ice chute cleaning as shown in Figure Figure 53.</p>	 <p style="text-align: center;"><b>Figure 53.</b></p>

## ICE CHUTE CLEANING (WEEKLY OR DAILY CLEANING ALSO)

The ice chute needs to be cleaned monthly to remove mold/mildew buildup.

**NOTE: The ice chute has a built-in safety feature. When the ice chute cover is removed, the unit is disabled. If the ice Chute cover is not properly installed, then ice chute gate will not operate.**

### Dis-assemble Ice Chute

1. Hold ice chute cover and push up until you hear a click and side latches are disengaged as shown in Figure Figure 54.



Figure 54.

2. Lift off the ice chute cover and set it aside as shown in Figure Figure 55.



Figure 55.

### Clean Ice Chute

1. Clean the interior of the ice chute and cover with a long handled nylon bristle brush. Use soap solution and warm water mixture, rinse with clean potable water, and allow to air dry.

**NOTE: Do not place ice chute or cover in the dishwasher.**

### Sanitize Ice Chute

1. Spray the ice chute and cover inside and out with Sanitizing Solution and allow it to air dry.

### Re-assemble Ice Chute

1. Carefully insert ice chute cover and slide down to fully engage. Make sure cover side latches mate flush with ice chute base before sliding down as shown in Figure Figure 56.



Figure 56.

## Product Line Cleaning

### Dis-assemble Product Line

1. Remove all of the quick disconnects from all of the BIB containers as shown in Figure Figure 57.



Figure 57.

### Prepare Cleaning Solutions

1. Using a plastic pail, prepare approximately five (5) gallons of soap solution as shown in on Page 30 Figure Figure 58. Refer Page 12.
2. Using a plastic pail, prepare approximately 5 gallons (18.93 L) of sanitizing solution refer Page 12.



Figure 58.

### Sub BIB Quick Disconnect

1. Submerge all of the “disconnects” (gas and liquid) in the soap solution, then clean them using a nylon bristle brush (do not use a wire brush). Rinse with clean, potable water.

### Purging Valves (Soap)

1. Attach fittings to each BIB “disconnect.” If these fittings are not available, the fittings from empty BIB bags can be cut from the bags and used. These fittings open the “disconnect” so that the soap solution can be drawn through the “disconnect” as shown in Figure 59.

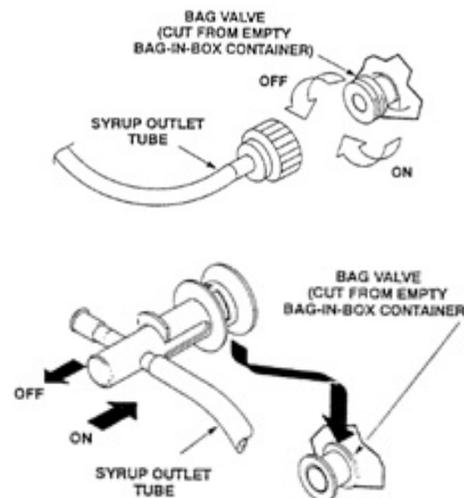


Figure 59.

2. Press the menu button in upper left as shown in Figure Figure 60.

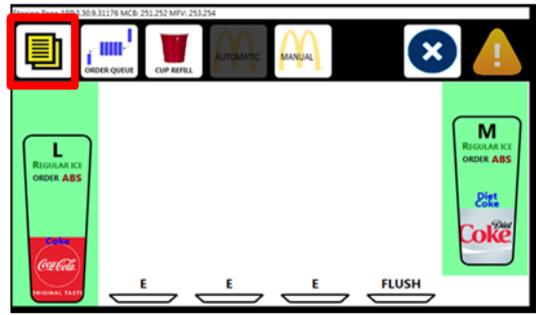
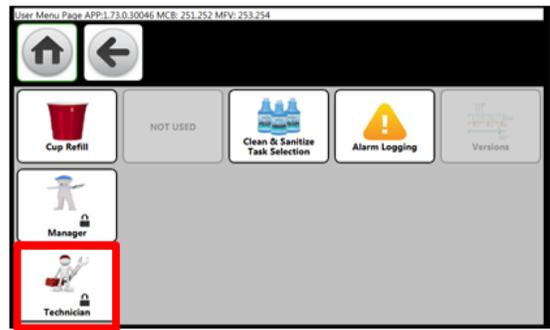


Figure 60.

3. Enter technician mode. Enter "9876" for the password as shown in Figure Figure 61.



Cornelius Next Generation Automated Beverage System

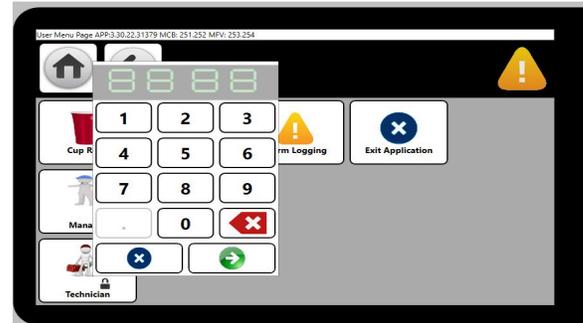


Figure 61.

4. Enter "Unit Setup." Select "Syrup Valve Purging." As shown in Figure Figure 62.



Figure 62.

5. Press the brand button to open the valve. Press the button again to close the valve as shown in Figure Figure 63.

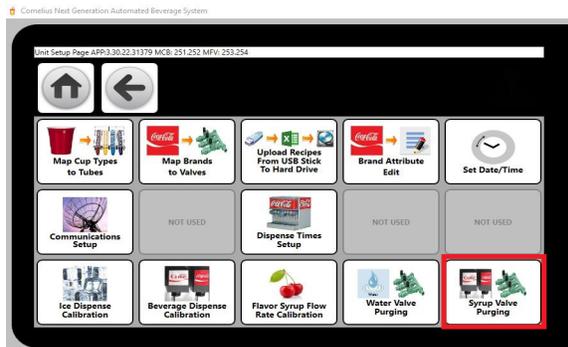


Figure 63.



6. Repeat the steps from Figure Figure Figure Purging Valves (Soap) on Page 30 with potable water, sanitizer solution and again with potable water to rinse the lines off from sanitizer solution.

7. Clean the nozzle following the procedure Page 17.

8. Remove the sanitizing fittings from the BIB "disconnects" and connect them to the appropriate BIB container. Operate all of the brand options until all of the sanitizing solution has been flushed from the system and the syrup is flowing freely.

## QUARTERLY CLEANING (ONLY FOR PRE-CHILLER UNITS)

### Tools Required

- Phillips Head Screw Driver

### Condenser Filter Cleaning

- |  |
|--|
| 1. Remove lower front panel by removing screws and lifting up with the handle. |
| 2. Turn power supply off via the Pre-Chiller power switch.                     |
| 3. Slide the condenser air filter vertically and remove the unit.              |
| 4. Clean the filter using hot water and shake it dry.                          |
| 5. Reinstall the condenser air filter.   |
| 6. Turn power supply "ON".   |
| 7. Reinstall the lower front panel.  |

# SCHEMATICS

## PLUMBING DIAGRAM

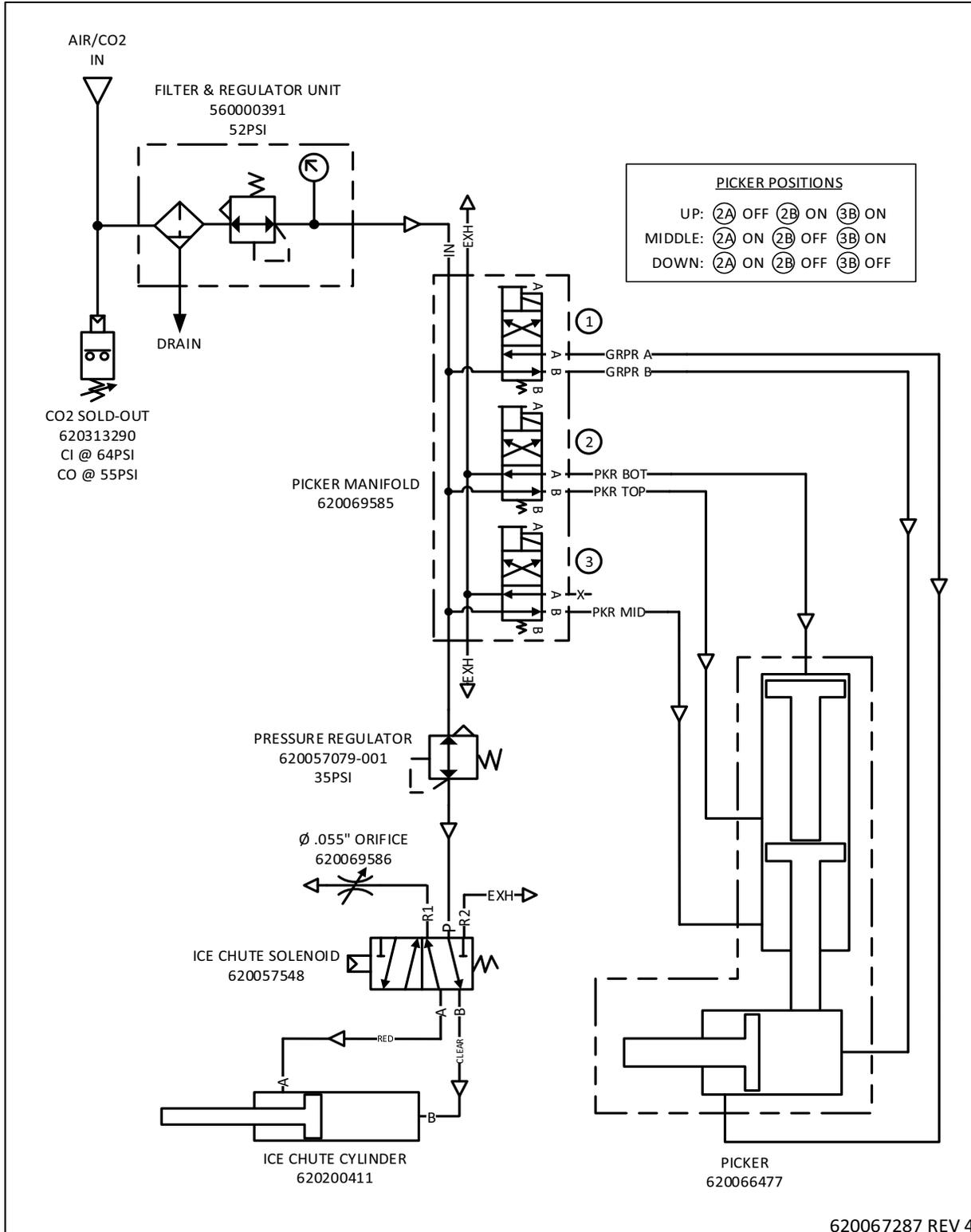


Figure 64.

# TROUBLESHOOTING

## MECHANICAL ISSUES

Table 8.

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 9**

<b>Message</b>	<b>Explanation</b>	<b>Correction</b>
<b>NO ICE DISPENSE</b>	<ul style="list-style-type: none"> <li>A. Ice Chute not installed correctly.</li> <li>B. Bad solenoid valve.</li> <li>C. Plugged orifice.</li> <li>D. No / Low CO<sub>2</sub>.</li> </ul>	<ul style="list-style-type: none"> <li>Reinstall Ice Chute.</li> <li>Call for service.</li> <li>Call for service.</li> <li>Call for service.</li> </ul>
<b>BEVERAGES TOO SWEET</b>	<ul style="list-style-type: none"> <li>A. Carbonator not working.</li> <li>B. No co2 pressure in carbonator.</li> <li>C. Valve ratio requires adjusting.</li> <li>D. Plugged filter.</li> </ul>	<ul style="list-style-type: none"> <li>Call for service.</li> <li>Call for service.</li> <li>Call for service.</li> <li>Replace.</li> </ul>
<b>BEVERAGES NOT SWEET ENOUGH</b>	<ul style="list-style-type: none"> <li>A. Empty B.I.B container.</li> <li>B. Valve ratio requires adjusting.</li> </ul>	<ul style="list-style-type: none"> <li>Replace.</li> <li>Call for service.</li> </ul>
<b>BEVERAGE NOT COLD</b>	<ul style="list-style-type: none"> <li>A. No ice in hopper.</li> <li>B. Drains plugged and water standing on coldplate.</li> <li>C. Master Cooling system not cooling.</li> </ul>	<ul style="list-style-type: none"> <li>Fill ice bin.</li> <li>Clean ice bin and flush drain with warm water.</li> <li>Call for service.</li> </ul>
<b>DRINKS FOAMY</b>	<ul style="list-style-type: none"> <li>A. Nozzle &amp; Syrup diffuser not clean.</li> <li>B. Bulk coke tank needs to be sanitize.</li> <li>C. Lower or out of Co2.</li> <li>D. No jumper transfer hose used on bulk tank</li> </ul>	<ul style="list-style-type: none"> <li>Clean and Sanitize.</li> <li>Clean and Sanitize.</li> <li>Replace or Switch to Back Up.</li> <li>Make sure jumper hose on bulk tank is connected when changing bulk tanks</li> </ul>

**POS RELATED ISSUES**
**Table 10**

<b>Message</b>	<b>Explanation</b>
<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>





**Cornelius Inc.**  
**[www.cornelius.com](http://www.cornelius.com)**