

INSTALLATION INSTRUCTIONS

This Installation Instructions Applies to All Models of Drop-in-and Free-Standing Ice Cooled Dispenser

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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:

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TABLE OF CONTENTS

Safety Instructions
Read and Follow ALL Safety Instructions
Safety Overview1
Recognition1
Different Types of Alerts1
Safety Tips
Qualified Service Personnel1
Safety Precautions
Shipping And Storage
CO2 (Carbon Dioxide) Warning
Mounting in or on a Counter
Unpacking and Inspection
SELECTING A LOCATION
Installing the Dispenser
Drop-In Dispenser
Free-Standing Dispenser
CLEANING AND MAINTENANCE INSTRUCTIONS
Daily Cleaning:
Daily Maintenance:
Monthly Cleaning: (In addition to daily and weekly procedures)
Yearly Maintenance:
Cleaning Interior Surfaces (Monthly Cleaning)
Cold Plate (Yearly Maintenance)
Dispensing Valves: (Daily Cleaning)
Product Tubing (Monthly Cleaning)
Sanitize Pre-Mix And Post-Mix Tank System6
Sanitize syrup lines, B–I–B Systems
Replenishing CO2 Supply (As Required)
Cleaning the Ice Bin
Connecting product to the Dispenser
Preparing for Operations
Drink Dispenser Valves
Adjust Water-To-Syrup Ratio
Troubleshooting11





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



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.

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.



A 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



A 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.

CO₂ (CARBON DIOXIDE) WARNING



A DANGER:

CO2 displaces oxygen. Strict attention **MUST** be observed in the prevention of CO2 gas leaks in the entire CO2 and soft drink system. If a CO2 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 CO2 gas experience tremors which are followed rapidly by loss of consciousness and **DEATH**.

MOUNTING IN OR ON A COUNTER



WARNING:

When installing the unit in or on a counter top, the counter must be able to support a weight in excess of **340** lbs. to insure adequate support for the unit. **FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR EQUIPMENT DAMAGE.**

NOTE:Many units incorporate the use of additional equipment such as icemakers. When any addition equipment is used you must check with the equipment manufacturer to determine the additional weight the counter will need to support to ensure a safe installation.



UNPACKING AND INSPECTION

The unit was thoroughly inspected before leaving the factory and the carrier has accepted and signed for it. Any damage or irregularities should be noted at the time of delivery and immediately reported to the delivery carrier. Request a written inspection report from Claims Inspector to substantiate any necessary claim.

NOTE: Claims must be filed with the delivery carrier.

SELECTING A LOCATION



A CAUTION:

Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed and maintained according to federal, state and local laws.

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

Units with electrically operated valves must be located near a properly grounded electrical outlet. Circuit should be fused and no other electrical appliance should be connected to the circuit. All electrical wiring must conform to national and local electrical codes.

INSTALLING THE DISPENSER



WARNING:

It is the responsibility of the installer to ensure that the water supply to the dispensing equipment is provided with protection backflow by an air gap as defined in ANSI A112.1.2-1979; or an approved vacuum breaker or other such method as provided effective by test and must comply with all federal, state and local codes.

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

Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed and maintained according to federal, State and Local laws.

Drop-In Dispenser

- 1. Use the Template supplied to mark the location of the hole to be cut into the counter top. Cut the hole as marked and remove the material.
- 2. Apply the double stick tape (if supplied with the loose shipped parts).

NOTE:To comply with the National Sanitation Foundation (NSF) requirements, the unit must be sealed to the counter top.

- 3. Liberally apply a sealant, such as Dow Corning RTV 731 or equivalent, to the unit flange bottom surface.
- 4. Lower the unit into position to complete the seal of the rim to the counter top. Apply additional sealant around the rim to ensure a complete seal.

NOTE:Do not move the unit after positioning or the seal will be broken.

Remove any excess sealant.

NOTE:For non-electrical valves, skip the next step.

- 6. Mount the Transformer power supply under the counter, in a position to allow access to the electrical outlet and to allow the 24V power cord to reach the dispenser.
- 7. Install the drain hose to the ice bin drain fitting and route the drain hose to a permanent drain.

Free-Standing Dispenser

- 1. Install the 6"legs to the dispenser cabinet if they are to be used.
- 2. Place the dispenser in the location selected. Be sure the dispenser is level. This is important to ensure that the bin drains properly.
- 3. Mount the Transformer power supply in a convenient location to allow access to the electrical outlet and to allow the 24V power cord to reach the dispenser.
- 4. Install the drain hose to the ice bin drain fitting and route the drain hose to a permanent drain.



CLEANING AND MAINTENANCE INSTRUCTIONS

These instructions are used on all Cornelius ice drink dispensers. Some models may have additional cleaning requirements. Those models will have addition procedures listed later in the manual.



WARNING:

Disconnect power to the unit before cleaning or servicing following all lock out / tag out procedures established by the user. Verify all of the 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 as damage to the unit may result. Do not use solvents or other cleaning agents as they may attack the material resulting in damage to the unit.

- Soap solution Use a mixture of mild detergent and warm (100° F) potable water.
- Sanitizing Solution Dissolve 2 packets (4 oz) of Stera Sheen Green Label into 2 gallons of warm (80 100° F) potable water to ensure 200 ppm of chlorine.

DAILY CLEANING:

- 1. Remove cup rest from drip tray and clean with warm soapy water, rinse with clean water and allow to air dry.
- 2. Wipe down the exterior of the unit with warm soapy water, rinse with clean water and allow to air dry.
- 3. Remove valve nozzles and diffusers and wash in warm soapy water, rinse in clean water and allow to air dry.
- 4. Clean the interior of the ice chute using the brush provided with the unit with warm soapy water, rinse with clean water and allow to air dry.
- 5. Spray the ice chute inside and out with sanitizer and allow to air dry.
- 6. Pour warm soapy water down the drains to keep them clean and flowing smoothly.
- 7. Spray the nozzles and diffusers inside and outside with approved sanitizing solution, reinstall them on the valves and allow to air dry.
- 8. Reinstall the cup rest into the drip tray.
- 9. Pour all remaining sanitizer solution down the drains to help keep the drain clear.

DAILY MAINTENANCE:

- 1. Check the temperature, smell and taste of the product.
- 2. Check the water pressure coming to the unit using the pressure gauges on the back room package.
- 3. Check carbonation of the drink
- Check level of CO₂ supply to the system.
- 5. Check the date on all of the BIB's (bags in boxes).

MONTHLY CLEANING: (IN ADDITION TO DAILY AND WEEKLY PROCEDURES)

- 1. Flush and sanitize all syrup lines as well as all of the syrup connectors. (See the sanitize syrup lines section shown later in this manual).
- 2. Remove ice from hopper and clean and sanitize the hopper. (See the Cleaning the interior surfaces section shown later in this manual).
- 3. While cleaning the hopper use the brush provided with the unit to clean the cold plate surface. To accomplish this, the brush needs to be extended through the opening in the bottom of the hopper.



YEARLY MAINTENANCE:

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

CLEANING INTERIOR SURFACES (MONTHLY CLEANING)



A CAUTION:

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

- 1. Remove agitator assembly.
- 2. Using a nylon bristle brush or sponge, clean the interior of the hopper, top cover and agitator assembly with soap solution. Thoroughly rinse the hopper, cover and agitator surfaces with clean potable water.
- 3. Reassemble agitator assembly. Take special care to ensure that the thumbscrew is tight.
- 4. Using a mechanical spray bottle filled with sanitizing solution, spray the entire interior and agitator assembly. Allow to air dry.
- 5. Remove merchandiser and ice chute cover from unit.
- 6. With a nylon bristle brush or sponge, clean the inside of the ice chute, gasket, and cover with soap solution and rinse thoroughly to remove all traces of detergent.
- 7. Reassemble ice chute assembly.
- 8. Using a mechanical spray bottle filled with sanitizing solution, spray the inside of the ice chute. Allow to air dry.
- 9. Reinstall merchandiser.

COLD PLATE (YEARLY MAINTENANCE)

- 1. Remove splash panel.
- 2. Remove or move the plastic cold plate cover to expose the cold plate.
- 3. Locate and remove any debris from the drain trough. Check that the drain holes are not clogged.
- 4. Pour small amount of soap solution through cold plate openings in hopper.
- 5. Using a cloth, wash down the surfaces of the cold plate and plastic cover with soap solution.
- 6. Install and properly position the access covers on the cold plate.
- 7. Install the splash panel in the reverse order it was removed.
- Rinse cold plate surface by pouring potable water through hopper openings.

DISPENSING VALVES: (DAILY CLEANING)

Refer to addendum supplied with the unit that is applicable to the manufacturer of the valves installed on the unit.

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PRODUCT TUBING (MONTHLY CLEANING)

NOTE:Only trained and qualified persons should perform these cleaning and sanitizing procedures.

Sanitize Pre-Mix And Post-Mix Tank System

- 1. Remove all the quick disconnects from all the tanks. Fill a suitable pail or bucket with soap solution.
- 2. Submerge all disconnects (gas and liquid) in the soap solution and then clean them using a nylon bristle brush. (**Do not use a wire brush**). Rinse with clean water.
- 3. Prepare sanitizing solution and using a mechanical spray bottle, spray the disconnects. Allow to air dry.
- 4. Using a clean, empty tank, prepare five (5) gallons of the sanitizing solution. Rinse the tank disconnects with approximately 9 oz. of the sanitizing solution. Close the tank.
- 5. Prepare cleaning tank by filling clean five (5) gallon tank with a mixture of mild detergent and potable water (120°F).
- 6. Connect a gas disconnect to the tank and then apply one of the product tubes to the cleaning tank. Operate the appropriate valve until liquid dispensed is free of any syrup.
- 7. Disconnect cleaning tank and hook up sanitizing tank to syrup line and CO2 system.
- 8. Energize beverage faucet until chlorine sanitizing solution is dispensed through the faucet. Flush at least two (2) cups of liquid to ensure that the sanitizing solution has filled the entire length of the syrup tubing.
- 9. Allow sanitizer to remain in lines for fifteen (15) minutes.
- 10. Repeat the step above, applying a different product tube each time until all tubes are filled with the sanitizing solution.
- 11. Remove the nozzle and syrup diffuser and clean them in a mild soap solution.

 Rinse with clean water and reassemble the nozzle and syrup diffuser on the valve.
- 12. Rinse the parts in clean water, reassemble the valve and reconnect it to the dispenser.
- 13. Discard the tank of sanitizing solution and reconnect the product syrup tanks. Operate the valves until all sanitizer has been flushed from the system and only product syrup is flowing.

Sanitize syrup lines, B-I-B Systems

- 1. Remove all the quick disconnects from all the B-I-B containers.
- 2. Fill a suitable pail or bucket with soap solution.
- 3. Submerge all disconnects (gas and liquid) in the soap solution and then clean them using a nylon bristle brush. (**Do not use a wire brush**). Rinse with clean water.
- 4. Using a plastic pail, prepare approximately five (5) gallons of sanitizing solution.
- 5. Rinse the B–I–B disconnects in the sanitizing solution.
- 6. Sanitizing fittings must be attached to each B–I–B disconnect. If these fittings are not available, the fittings from empty B–I–B bags can be cut from the bags and used. These fittings open the disconnect so the sanitizing solution can be drawn through the disconnect.
- 7. Place all the B–I–B disconnects into the pail of sanitizing solution. Operate all the valves until the sanitizing solution is flowing from the valve. Allow sanitizer to remain in lines for fifteen (15) minutes.
- 8. Remove the nozzle and syrup diffuser from each valve and clean them in a soap solution. Rinse with clean water and reassemble the nozzle and syrup diffuser to the valve.
- Remove the sanitizing fittings from the B–I–B disconnects and connect the disconnects to the appropriate B–I–B container. Operate the valves until all sanitizer has been flushed from the system and syrup is flowing freely.



REPLENISHING CO2 SUPPLY (AS REQUIRED)

NOTE: When indicator on the 1800-psi gage is in the shaded ("change CO₂ cylinder") portion of the dial, CO₂ cylinder is almost empty and should be changed.

- 1. Fully close (clockwise) the CO2 cylinder valve.
- 2. Slowly loosen the CO2 regulator assembly coupling nut allowing CO2 pressure to escape, then remove the regulator assembly from the empty CO2 cylinder.
- 3. Unfasten safety chain and remove the empty CO2 cylinder.

A WARNING:

To avoid personnel injury and/or property damage, always secure the CO₂ cylinder with a safety chain to prevent it from falling over. Should the valve become accidently damaged or broken off, a CO₂ regulator can cause serious personnel injury or death could occur.

- 4. Position the full CO2 cylinder and secure with a safety chain.
- 5. Make sure gasket is in place inside the CO₂ regulator assembly coupling nut, then install the regulator assembly on the CO₂ cylinder.
- 6. Open (counterclockwise) the CO₂ cylinder valve slightly to allow the lines to slowly fill with gas, then open the valve fully to back-seat the valve (back-seating the valve prevents gas leakage around the valve shaft).
- 7. Check CO2 connections for leaks. Tighten any loose connections.

CLEANING THE ICE BIN

- 1. Prepare a mild detergent soap solution in 100°F potable water.
- Using a nylon (not wire) bristle brush, clean the cold plate and the interior of the ice bin with the soap solution.
- 3. Rinse the cold plate and interior bin surfaces with clean potable water.
- 4. Using a mechanical spray bottle, prepare a sanitizing solution according to the manufacturer's directions and spray the entire interior bin surfaces. Allow to air dry.

CONNECTING PRODUCT TO THE DISPENSER

NOTE: All inlet connections are clearly marked with a label adjacent to the inlet connections.

NOTE: Always leak check all connections.

Post–Mix units must have syrup, carbonated water and plain water connected. The number of syrups will depend on the number of valves on the dispenser. Refer to the plumbing diagram for details of the hookup.

Pre-Mix units must have a pre-mix supply connected to each inlet for each valve to be supplied. Refer to the plumbing diagram for details of the hook-up.

NOTE: A plumbing diagram when supplied with the unit, can be found in the dispensing tower.



PREPARING FOR OPERATIONS

NOTE:: On Units Without Electrically Operated Valves, Skip Steps 1 & 2 Below

- 1. Plug transformer into electrical outlet. The 24V supply must be connected in the dispensing tower.
- 2. Turn the key-switch to the ON position. The ice-bin lid must be closed to allow the valves to operate.
- 3. Adjust the CO2 regulators as indicated in the following chart:

Post Mix					
Regulator	Pressure Setting				
Primary (Carbonator)	90 - 120 PSI				
Secondary, Sugared Syrup Tank	55 PSI				
Secondary, Diet Syrup Tank	8 - 12 PSI				
Secondary, B-I-B	60 PSI				

Basic pressure shown is based on ambient temperature of 72°F. Use a Cornelius Pre-Mix slide rule for exact calculations.

Pre-mix					
Basic Pressure	47 PSI				
For each 10 ft. of horizontal tubing between tank and dispenser	Add 1 PSI				
For each 2 ft. of elevation	Add 1 PSI				
For each tank per flavor over 3 tanks	Add 1 PSI				

- 4. Operate each valve until product is flowing.
- 5. Fill the bin with 32°F ice. **Do not** use ice taken directly from a freezer.
- 6. Adjust the brix (water-to-syrup ratio) for post-mix valves.
- 7. Set the flow rate for pre-mix valves.



DRINK DISPENSER VALVES

VALVE TYPE

MANUFACTURER

PORTION CONTROL	MAXIMUM OPERATING PRESSURE
CORNELIUS	130 psi
LANCER	100psi
FLOWMATIC	100psi
FLOWMATIC	100psi
McCANN	130psi
PUSH BUTTON	
CORNELIUS	130 psi
LANCER	100psi
FLOWMATIC	100psi
FLOWMATIC	100psi
McCANN	130psi
LEVER TYPE	
CORNELIUS	130 psi
LANCER	100psi
FLOWMATIC	100psi
FLOWMATIC	100psi
McCANN	130psi
AUTOFILL LEVER	
CORNELIUS	130 psi
LANCER	100psi
FLOWMATIC	100psi
FLOWMATIC	100psi
McCANN	130psi
NON-ELECTRIC	
CORNELIUS	130psi
LANCER	100psi
PREMIX TYPE	
CORNELIUS	130psi



ADJUST WATER-TO-SYRUP RATIO

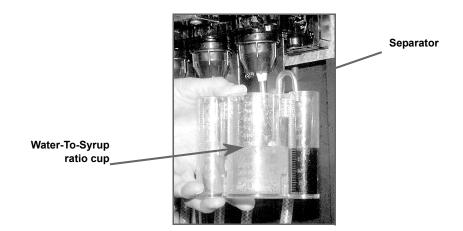


Figure 1.

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

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

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

Valve Type					
Manufacturer Maximum Operating Pressur					
Portion Control					
Cornelius	130 psi				
Flowmatic	100 psi				
	Pushbutton				
Cornelius	130 psi				
Flowmatic	100 psi				
	Lever Type				
Cornelius	130 psi				
Flowmatic	100 psi				
	Autofill Lever				
Cornelius	130 psi				
Flowmatic	100 psi				
	Non-Electric				
Cornelius	130 psi				
	•				



TROUBLESHOOTING

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.

Trouble		Probable Cause		Remedy
Adjustment of dispensing valve syrup flow regulator does not increase to desired water-to-	A.	Dispensing valve syrup flow regulator, syrup tank quick disconnect, or syrup line restricted.	A.	Sanitize syrup system as instructed.
syrup "ratio"	B.	Syrup tank quick disconnects not secure.	B.	Secure quick disconnects.
	C.	Syrup tanks secondary CO2 regulator out of adjustment.	C.	Adjust syrup tanks secondary CO2 regulator as instructed.
	D.	No syrup supply.	D.	Replenish syrup supply.
	E.	Improper syrup Baume.	E.	Replace syrup supply.
	F.	Dirty or inoperative piston or spring in dispensing valve syrup flow regulator.	F.	Disassemble and clean dispensing valve syrup flow regulator.
	G.	Tapered nylon washer inside tube swivel nut connector distorted from being overtightened.	G.	Replace nylon washer and mak sure it seats properly.
Adjustment of dispensing valve syrup flow regulator does not decrease to desired water-to-syrup "ratio"	A.	Dirty or inoperative piston or spring in dispensing valve syrup flow regulator.	A.	Disassemble and clean dispensing valve syrup flow regulator.
Dispensed product carbonation too low	A.	Carbonator primary CO2 regulator out of adjustment for existing water conditions or temperature.	Α.	Adjust carbonator primary CO2 regulator (Reference manual prvided with carbonator).
	B.	Air in carbonator tank.	B.	Vent air out of carbonator tank through relief valve. Actuate dis pensing valve carbonated water lever to make carbonator pump cycle on.
	C.	Water, oil, or dirt, in CO2 supply.	C.	Remove contaminated CO2. Clean CO2 system (lines, regul tors, etc.) using a mild detergen Install a clean CO2 supply.
Dispensed product comes out of dispensing valve clear but	Α.	Oil film or soap scum in cup or glass.	A.	Use clean cup or glass.
foams in cup or glass	B.	Ice used for finished drink is subcooled.	B.	Do not use ice directly from freezer. Allow ice to become "we before using. (Refer to following NOTE).

NOTE:Crushed ice in the glass also causes dispensing problems. When finished drink hits sharp edges of ice, carbonation is released from dispensed drink.



	C.	Carbonator CO2 regulator pressure too high for existing water conditions or temperature.	F.	Reduce carbonator CO2 regulator pressure setting. Reference manual provided with carbonator.
		Syrup over-carbonated with CO2 as indicated by bubbles in inlet syrup lines leading to unit.	G.	Remove syrup tanks quick disconnects. Relieve tank CO2 pressure, shake tank vigorously, then relieve tank CO2 pressure as many times as necessary to remove over-carbonation.
	E.	Warm Product - No ice in bin, bridged ice on cold plate or plugged drain.	H.	Replenish ice, break ice up to eliminate bridging, unplug the drain.
		be sure to flush lines and carbon tank. Invert and flush tank and a		
No product dispensed from one	A.	Broken or disconnected wiring.	Α.	Repair or connect wiring.
dispensing valve	B.	Inoperative dispensing valve solenoid coil.	B.	Replace solenoid coil as instructed.
	C.	Inoperative dispensing valve micro switch.	C.	Replace micro switch as instructed.
Only carbonated water dispensed	A.	Quick disconnects not secure on syrup tanks.	Α.	Secure quick disconnects on syrup tanks.
	B.	Out of syrup.	В.	Replenish syrup supply as instructed.
	C.	B-I-B connectors not properly connected.	C.	Properly attach the connectors.
	D.	Syrup secondary CO2 regulator not properly adjusted.	D.	Adjust syrup tanks secondary CO2 regulator as instructed.
	E.	Inoperable dispensing valve.	E.	_
	F.	Dispensing valve syrup flow regulator not properly adjusted.	F.	Adjust dispensing valve syrup flow regulator (Water-to-Syrup "Ratio") as instructed.
	G.	Dispensing valve syrup flow regulator, syrup tank quick discon-	G.	Sanitize syrup system as

Only syrup dispensed

- A. Plain water inlet supply line shutoff valve closed.
- B. Carbonator power cord unplugged from electrical outlet.

ulator, syrup tank quick discon-

nect, or syrup lines restricted.

- C. Carbonator primary CO2 regulator not properly adjusted.
- A. Open plain water inlet supply line shutoff valve.

instructed.

- B. Plug carbonator power cord into electrical outlet.
- C. Adjust carbonator primary CO2 regulator (Reference manual provided with carbonator).

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