



ICE COOLED DISPENSER

OPERATOR'S MANUAL

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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.

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

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Contact Information:

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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



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.
- Keep your machine in proper working condition and do not allow unauthorized modifications to the unit.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- The appliance is not suitable for installation in an area where a water jet could be used.

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

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

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 ice makers. 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.

**CAUTION:**

This appliance is not suitable for installation in an area where a water jet could be used. Maximum tilt of the appliance for safe operation is 10°.

**CAUTION:**

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.

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 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 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 gauge on the back room package.
3. Check carbonation of the drink
4. 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).

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)



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.
8. 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.

PRODUCT TUBING (MONTHLY CLEANING)



IMPORTANT:

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, BIB Systems

1. Remove all the quick disconnects from all the BIB 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 BIB disconnects in the sanitizing solution.
6. Sanitizing fittings must be attached to each BIB disconnect. If these fittings are not available, the fittings from empty BIB bags can be cut from the bags and used. These fittings open the disconnect so the sanitizing solution can be drawn through the disconnect.
7. Place all the BIB disconnects into the pail of sanitizing solution. Operate all the valves until the sanitizing solution is flowing from the valve. Allow sanitizer to remain in 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.
9. Remove the sanitizing fittings from the BIB disconnects and connect the disconnects to the appropriate BIB 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.



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 accidentally 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.
2. 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 manufacturers directions and spray the entire interior bin surfaces. Allow to air dry.

ADJUST WATER-TO-SYRUP RATIO

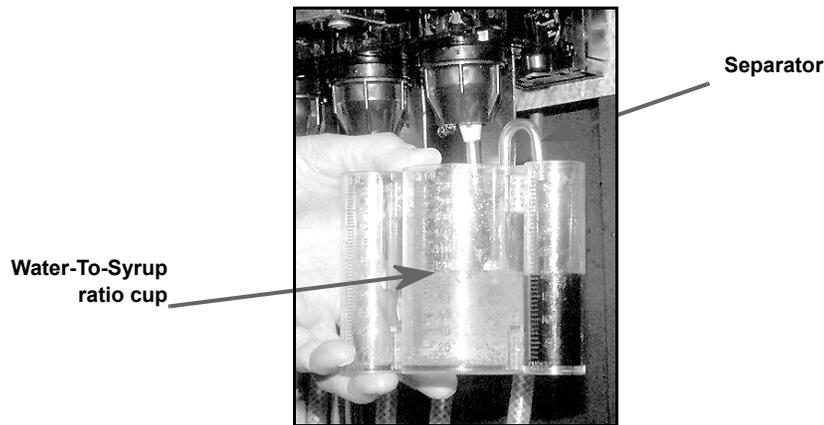


Figure 1.

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 Pressure
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



DRINK DISPENSER VALVES

Cornelius Inc. Reynosa, MX. Drink Dispensers

VALVE TYPE (BY MANUFACTURER)

Portion Control	Maximum Operating Pressure
Cornelius	130 psi
Lancer	100 psi
Flowmatic	100 psi
McCann	130 psi
Push Button	Maximum Operating Pressure
Cornelius	130 psi
Lancer	100 psi
Flowmatic	100 psi
McCann	130 psi
Lever Type	Maximum Operating Pressure
Cornelius	130 psi
Lancer	100 psi
Flowmatic	100 psi
McCann	130 psi
Auto fill Lever	Maximum Operating Pressure
Cornelius	130 psi
Lancer	100 psi
Flowmatic	100 psi
McCann	130 psi
Non-Electric	Maximum Operating Pressure
Cornelius	130 psi
Lancer	100 psi
Pre-Mix Type	Maximum Operating Pressure
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
Water-to-syrup "ratio" too low or too high	<ul style="list-style-type: none"> A. Dispensing valve syrup flow regulator not properly adjusted. B. CO₂ gas pressure to syrup tanks insufficient to push syrup out of tank or to pump from the BIB container. 	<ul style="list-style-type: none"> A. Adjust Water-to-Syrup "Ratio" of dispensed drink as instructed. B. Adjust syrup tanks secondary CO₂ regulator as instructed.
Adjustment of dispensing valve syrup flow regulator does not increase to desired water-to-syrup "ratio"	<ul style="list-style-type: none"> A. Dispensing valve syrup flow regulator, syrup tank quick disconnect, or syrup line restricted. B. Syrup tank quick disconnects not secure. C. Syrup tanks secondary CO₂ regulator out of adjustment. D. No syrup supply. E. Improper syrup Baume. F. Dirty or inoperative piston or spring in dispensing valve syrup flow regulator. G. Tapered nylon washer inside tube swivel nut connector distorted from being overtightened. 	<ul style="list-style-type: none"> A. Sanitize syrup system as instructed. B. Secure quick disconnects. C. Adjust syrup tanks secondary CO₂ regulator as instructed. D. Replenish syrup supply. E. Replace syrup supply. F. Disassemble and clean dispensing valve syrup flow regulator. G. Replace nylon washer and make sure it seats properly.
Adjustment of dispensing valve syrup flow regulator does not decrease to desired water-to-syrup "ratio".	<ul style="list-style-type: none"> A. Dirty or inoperative piston or spring in dispensing valve syrup flow regulator. 	<ul style="list-style-type: none"> A. Disassemble and clean dispensing valve syrup flow regulator.
Dispensed product carbonation too low.	<ul style="list-style-type: none"> A. Carbonator primary CO₂ regulator out of adjustment for existing water conditions or temperature. B. Air in carbonator tank. C. Water, oil, or dirt, in CO₂ supply. 	<ul style="list-style-type: none"> A. Adjust carbonator primary CO₂ regulator (Reference manual provided with carbonator). B. Vent air out of carbonator tank through relief valve. Actuate dispensing valve carbonated water lever to make carbonator pump cycle on. C. Remove contaminated CO₂. Clean CO₂ system (lines, regulators, etc.) using a mild detergent. Install a clean CO₂ supply.

Trouble	Probable Cause	Remedy
Dispensed product comes out of dispensing valve clear but foams in cup or glass.	A. Oil film or soap scum in cup or glass. B. Ice Used for finished drink is sub-cooled. C. Carbonator CO ₂ regulator pressure too high for existing water conditions or temperature. D. Syrup over-carbonated with CO ₂ as indicated by bubbles in inlet syrup lines leading to unit.	A. Use clean cup or glass. B. Do not use ice directly from freezer. Allow ice to become "wet" 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. Reduce carbonator CO ₂ regulator pressure setting. (Reference manual provided with carbonator). D. Remove syrup tanks quick disconnects. Relieve tank CO ₂ pressure, shake tank vigorously, then relieve tank CO ₂ pressure as many times as necessary to remove over-carbonation.
Dispensed product produces foam as it leaves dispensing valve.	A. Dispensing valve restricted or dirty. B. Tapered nylon washer inside carbonated water line swivel nut connector distorted restricting carbonated water flow. C. Dirty water supply. D. Warm Product - No ice in bin, bridged ice on cold plate or plugged drain.	A. Sanitize syrup system as instructed. B. Replace nylon washer. Make sure it is properly seated. C. Check water filter. Replace cartridge. (see NOTE) D. Replenish ice, break ice up to eliminate bridging, unplug the drain NOTE: If water supply is dirty, be sure to flush lines and carbonator completely. It may be necessary to remove lines to carbonator tank, invert tank, and flush tank and all inlet lines to remove any foreign particles or dirt.
No product dispensed from all dispensing valves.	A. Transformer unplugged. B. No electrical power to transformer. C. Disconnected dispensing valves power cord. D. Disconnected or broken wiring to dispensing valves. E. Inoperative transformer.	A. Plug in the transformer. B. Check fuse or circuit breaker. C. Connect dispensing valves power cord. D. Connect or replace wiring. E. Replace transformer as instructed.

Trouble	Probable Cause	Remedy
No product dispensed from one dispensing valve.	<ul style="list-style-type: none"> A. Broken or disconnected wiring. B. Inoperative dispensing valve solenoid coil. C. Inoperative dispensing valve micro-switch. 	<ul style="list-style-type: none"> A. Repair or connect wiring. B. Replace solenoid coil as instructed. C. Replace micro-switch as instructed.
Only carbonated water dispensed.	<ul style="list-style-type: none"> A. Quick disconnects not secure on syrup tanks. B. Out of syrup. C. BIB connectors not properly connected. D. Syrup secondary CO₂ regulator not properly adjusted. E. Inoperable dispensing valve. F. Dispensing valve syrup flow regulator not properly adjusted. G. Dispensing valve syrup flow regulator, syrup tank quick disconnect, or syrup lines restricted. 	<ul style="list-style-type: none"> A. Secure quick disconnects on syrup tanks. B. Replenish syrup supply as instructed. C. Inspect and properly attach the connectors. D. Adjust syrup tanks secondary CO₂ regulator as instructed. E. Repair dispensing valve. F. Adjust dispensing valve syrup flow regulator (Water-to-Syrup "Ratio") as instructed. G. Sanitize syrup system as instructed.
Only syrup dispensed.	<ul style="list-style-type: none"> A. Plain water inlet supply line shutoff valve closed. B. Carbonator power cord unplugged from electrical outlet. C. Carbonator primary CO₂ regulator not properly adjusted. 	<ul style="list-style-type: none"> A. Open plain water inlet supply line shutoff valve. B. Plug carbonator power cord into electrical outlet. C. Adjust carbonator primary CO₂ regulator (Reference manual provided with carbonator).

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