INTELLICARB

ICE COOLED DISPENSER

INTERNATIONAL VERSION

Installation Manual

Release Date: February 20, 2003

Publication Number: 630460210INS

Revision Date: February 8, 2018

Revision: G

Visit the Cornelius web site at 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 Warrant 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:

Printed in U.S.A.

TABLE OF CONTENTS

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.**

Publication Number: 630460210INS

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.

CO_2 (CO_2 Carbon Dioxide) Warning

DANGER:
CO_2 displaces oxygen. Strict attention **MUST** be observed in the prevention of CO_2 gas leaks in the entire CO_2 and soft drink system. If a CO_2 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_2 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 1522-230lbs, 2323-340lbs. 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.

SYSTEM OVERVIEW

DROP-IN PRODUCT OVERVIEW

The Drop-In IntelliCarb consists of the following:

1. Front inlet fittings.
2. 75, 80 and 100 lbs. capacity ice bin.
3. Foamed polyurethane insulation.
4. Key lock switch.
5. 9 3/4 inch cup clearance.
6. Extended drip-tray for cup staging, removable for cleaning.
7. High capacity 11/18 cold plate, 5-2-1 configuration.
8. All fittings are 3/8 inch.
9. Supports UF-1 fast flow (3.0 oz./sec.) and UFB 2.0 - 4.0 valves.
10. Improved ability to clean outlet line area.
11. Lighted and non-lighted merchandiser options.
12. Optional cabinet stand for free standing installations.

Figure 1. Drop-in unit

Publication Number: 630460210INS

SPECIFICATIONS

Drop-In Dimensions (CB1522)

Counter Top Cutout	15 1/4 x 23 1/4 inches
Height above counter	18 inches
Width	15 inches
Depth	23 inches
Shipping weight (approx)	235 pounds

Drop-In Dimensions (CB2323)

Counter Top Cutout	23 1/4 x 23 1/4 inches
Height above counter	18 inches
Width	23 inches
Depth	23 inches
Shipping weight (approx)	235 pounds

Drop-In Accessories — Optional

Lighted marquee merchandise	166208004
Cabinet stand	165492000

INSTALLATION

WARNING:
It is the responsibility of the installer to ensure that the water supply to the dispensing equipment is provided with portion backflow by an air gap as defined in ANSI A112.1.2-1979; or an approved vacuum break or other such method as proved 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.

INSTALLATION REQUIREMENTS

Requirements Summary

Weight:	counter must be level and able to support 450 lbs.
Environment:	indoor installation only
Temperature:	40° F (4.4°C) to 100° F (37.7°C) ambient temperature
CO_2:	75 psi at unit
Syrup:	60 psi. min.,.70 –.75 ounces per sec., not to exceed 3.75 oz/sec Finished Product Flow Rate (.6 gpm) at unit
Water Pressure	60 psi max. at pump
Electrical	see name plate
Water Volume	125 gph
Product Supply Beverage Tubing	.375 min.

Publication Number: 630460210INS

DELIVERY INSPECTION AND UNPACKING

Inspection

Upon delivery inspect the unit for damage or irregularities and immediately report problems to the delivering carrier and file a claim with that carrier.

Open loose parts packages and inspect parts.

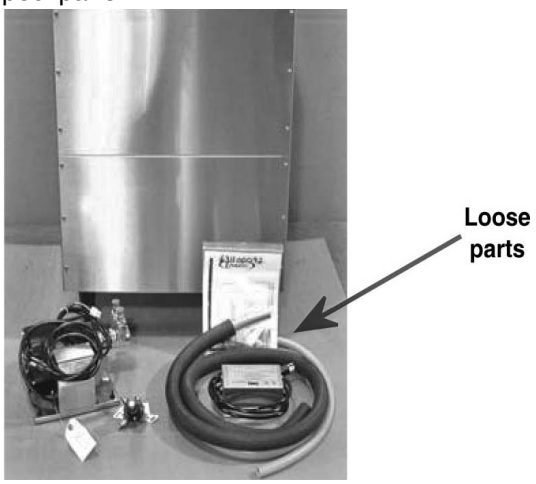


Figure 2.

Make sure all items are present.

	Part Name	Drop-In	
		P/N	Qty.
	Pump &motor assy.	629087458	1
	4" legs	n/a	n/a
	Clamps	Oetiker	n/a
	Drain pan drain line	167090002	1
	Cold plate drain line	167467072	1
	Merchandiser assy.	166167010	1
*	Transformer	630000765	1
	Ftg-3/4 Soc x 3/4 fpt	n/a	n/a
	Ftg-3/4 mptx1” barb	n/a	n/a

NOTE: * Power plug is not included with the transformer. This should be installed by qualified service personnel only according to the regulations of the country where the unit will be used.

INSTALLATION PROCEDURE

Back Room Package

Tubing

Run bundled tubing from back room to dispenser location.

NOTE: Tubing, hoses, and cabling can come from underneath or in back of the unit.

Water

1. Install water filter system between booster pump and water pressure regulator.

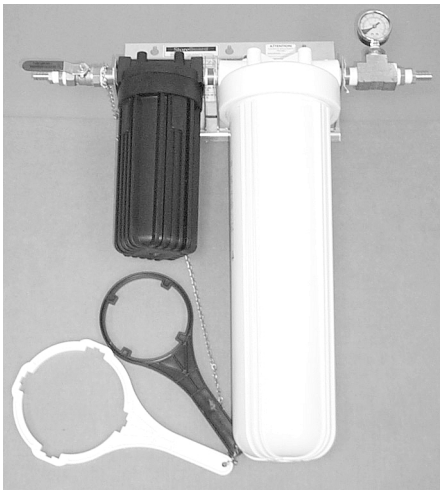


Figure 3. Pre filter (P/N 605620)

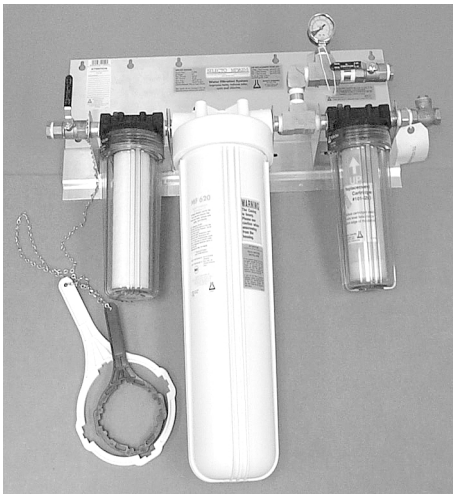


Figure 4.Main Filter (P/N 605625ST)

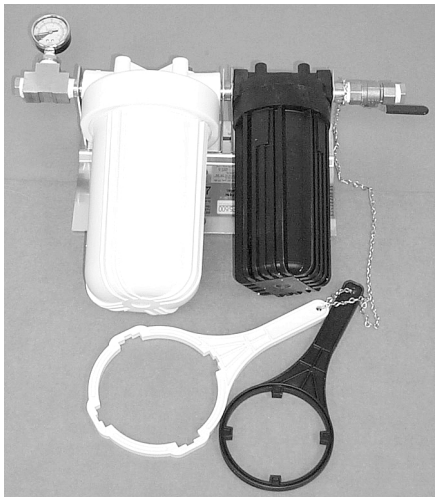


Figure 5. Poly phosphate feeder (Ice maker)

NOTE: Recommended shut off valve be installed on outlet side of filter system.

2. Run water line from source to inlet connection on booster pump.
3. Connect water line from booster pump outlet to water filter system inlet.

NOTE: Do not route beverage make up water through poly phosphate feeder.

Publication Number: 630460210INS

Intelli-Carb Enduro Plumbing

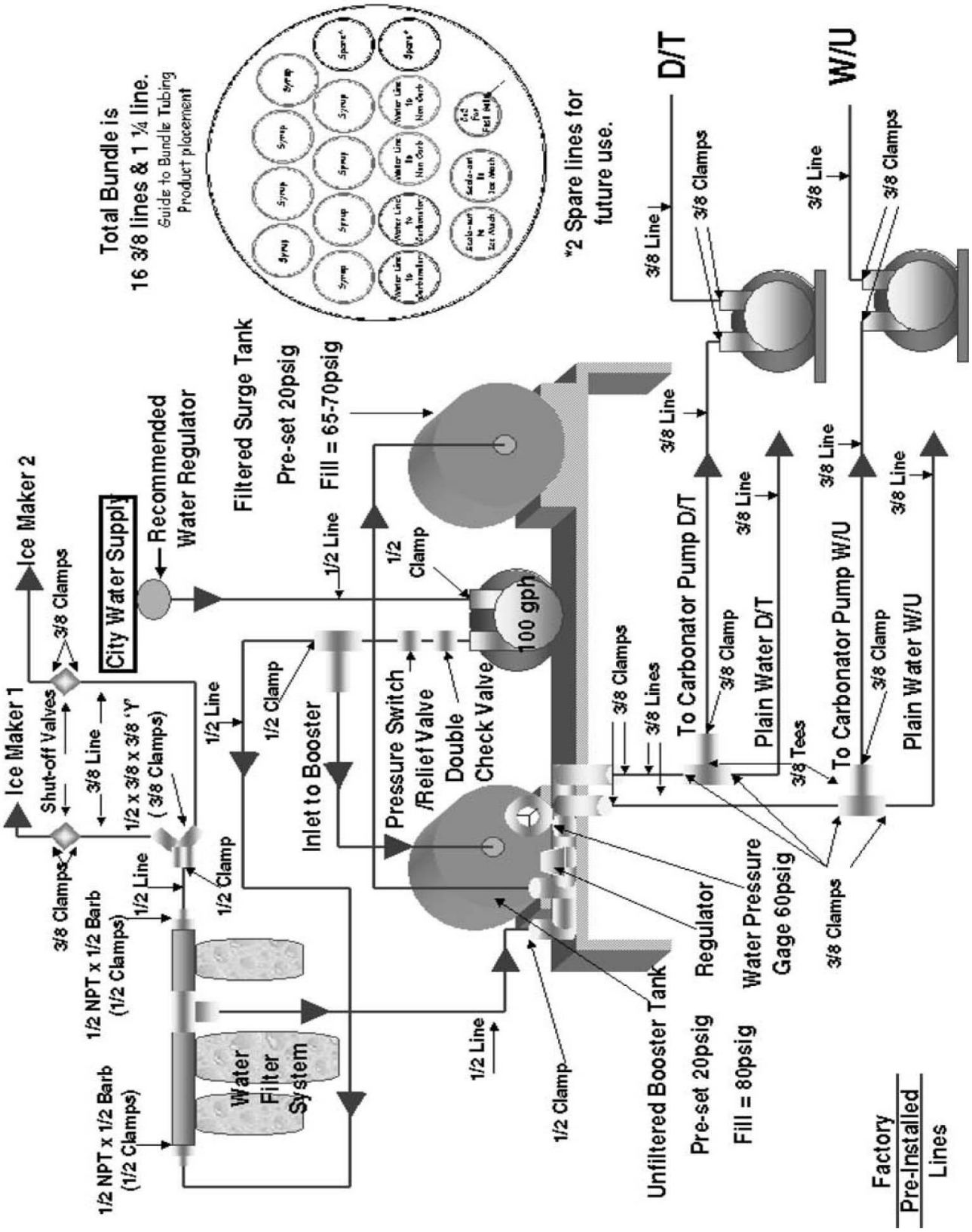


Figure 6.

4. Connect from water filter system outlet to water regulator assembly and tee to surge tank.

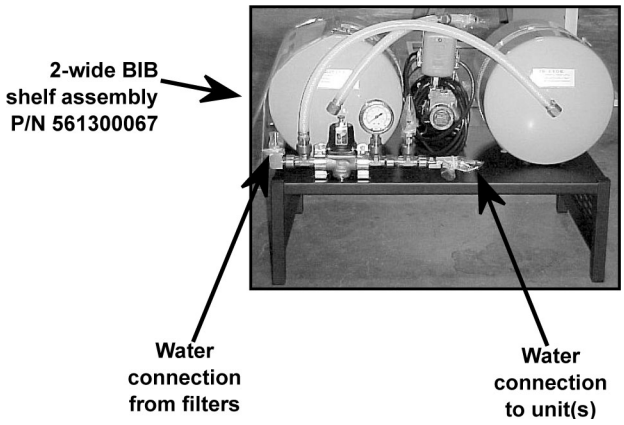


Figure 7. 2-Wide BIB Shelf Assembly

5. Connect water lines from manifold outlet to water line going to each dispenser.

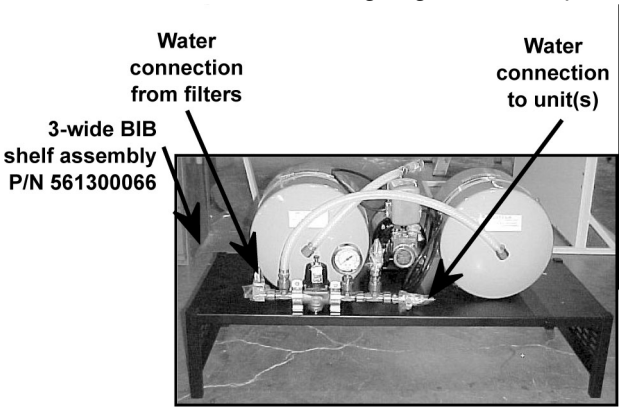


Figure 8. 3-Wide BIB Shelf Assembly

Syrup

Connect syrup lines from bundled tubing to BIB pump outlet fitting.

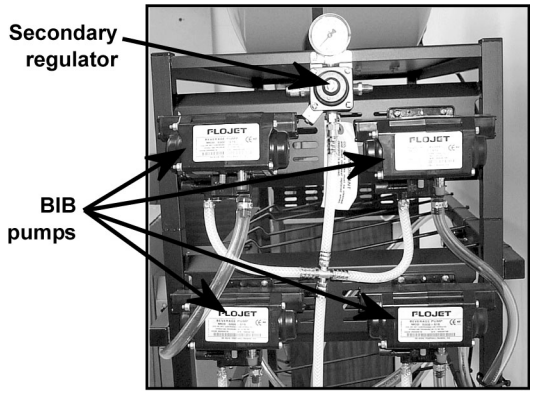


Figure 9.

High Pressure Cylinder CO_2

1. Connect primary regulator manifold to high pressure Cylinder CO_2 source and connect tubing to the secondary regulator mounted on the side of BIB rack.
2. Connect one CO_2 line from the bundled tubing to the primary regulator manifold on CO_2 source to supply each dispenser.

Bulk CO_2 Tank

1. Connect bulk CO_2 tank to the secondary regulator mounted on the side of BIB rack. **Do not use primary regulator with bulk CO_2 tanks.**

1522-2323-3023 DROP-IN

Conversion Instructions for Valves Connected into Manifold

⚠ 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.

⚠ WARNING:
Water and CO_2 to the system must be turned off and the system depressurized prior to performing this service.

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

1. Remove the cup rest, front panel, and drip tray.
2. Remove insulation pad, 2 screws, and bracket (as shown below).
3. Pull out the plug fitting and tubing with barb fitting of the desired valve for conversion.
4. Place tubing with barb fitting into desired outlet on the manifold.
5. Replace plug fitting in open outlet.
6. Reassemble bracket, 2 screws, and insulation pad.
7. Reassemble drip tray, front panel, and cup rest.

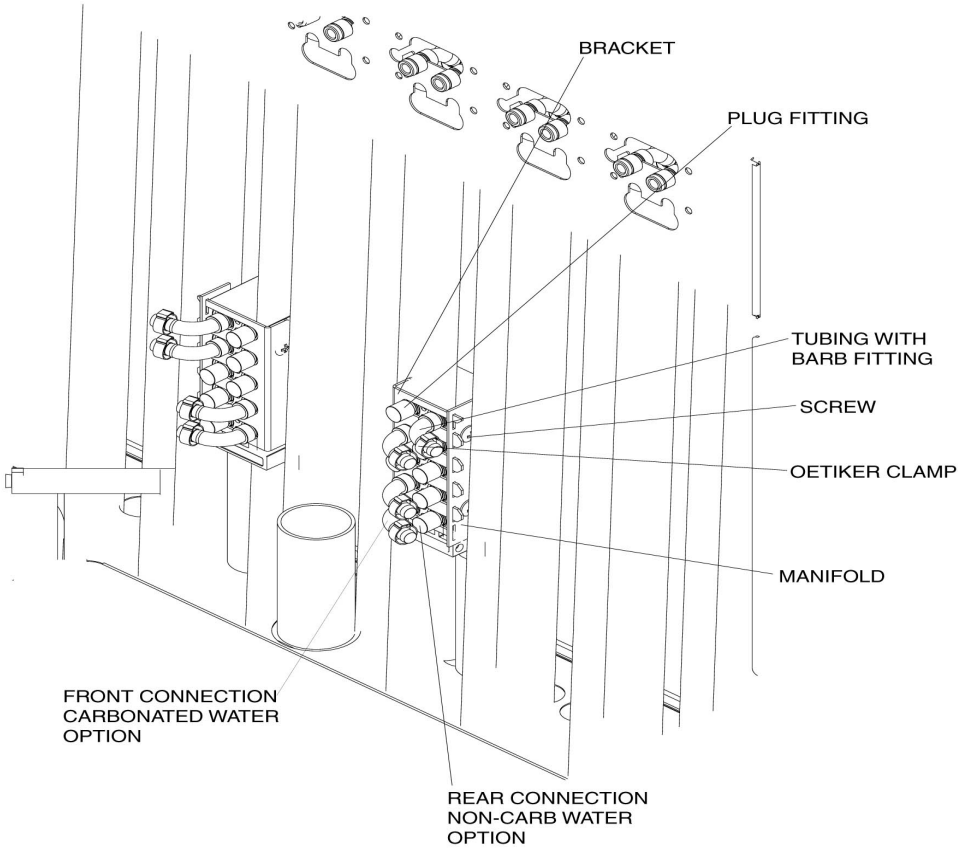


Figure 10.

Conversion Instructions for 1522 Valve #1 from Carb to Non/Carb

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.

WARNING:
Water and CO_2 to the system must be turned off and the system depressurized prior to performing this service.

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

1. Remove the cup rest, front panel, and drip tray.
2. Remove insulation pad, 2 screws, and bracket (as shown above on page 11).
3. Pull out a plug fitting from the rear connection of the manifold.
4. Disconnect soda line from valve #1.
5. Assemble straight fitting and oetiker clamp to soda line from valve #1 (as shown on page 11).
6. Assemble soda line from valve #1 to manifold.
7. Assemble hose plug and clamp oetiker to soda line valve #1 (as shown on page 11).
8. Reassemble bracket, 2 screws, and insulation pad.
9. Reassemble drip tray, front panel, and cup rest.

Drop-In Installation

1. Install dispenser in counter following standard procedures.
2. 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.
3. 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.

4. Liberally apply a sealant, such as Dow Corning RTV 731 or equivalent, to the unit flange bottom surface.
5. 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.

6. Remove any excess sealant.

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

7. 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.
8. Install the drain hose to the ice bin drain fitting and route the drain hose to a permanent drain.
9. Mount secondary CO_2 regulator, carbonator pump with motor, and valve transformer in a convenient location, no more than 7 feet from the unit.

Figure 11.

10. Connect carbonator motor 3 wire plug to the tower 3 wire harness.

    NOTE: Connect the tower 2 wire harness to the transformer

11. Connect CO_2 line from bundled tubing to fixed secondary regulator inlet fitting.Connect tubing from secondary regulator outlet to carbonator tank CO_2 inlet.Route CO_2 line down center channel raceway with wire harness.

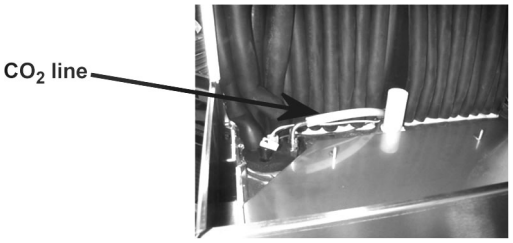


Figure 12.

12. For 2323 Drop-In install a tee in water line (must be before pump). Run one line to carbonator pump inlet. Run other line to another tee.Connect two lines from second tee to “W1 & W2” plain water connections. Connect carbonator pump outlet to “S”.
13. Connect syrup lines.
14. Connect fittings and drain hoses to ice bin and drip tray drains. Run separate hoses all the way to the drain. Allow a 3” air gap between the drain and the end of the hose. All connections must comply with local plumbing and health codes.

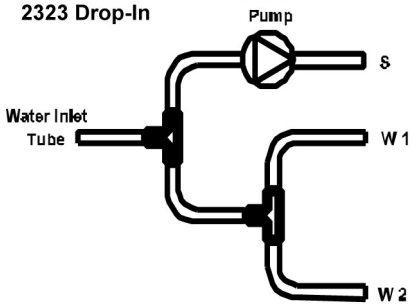


Figure 13.

15. Turn water supply on. Plug in water booster pump (on BIB rack). After the booster pump cycles off, check that water pressure regulator is set at 60 psi.
16. Turn CO_2 source on. Set secondary regulator for BIB pumps (located on side of rack) at 60 psi min. Bleed carbonator.
17. Fill bin with ice.

Publication Number: 630460210INS

18. Plug in Pump Motor and valve transformer.The carbonator tank should fill in 7 to 12 seconds.Open each valve until carbonated water comes out.

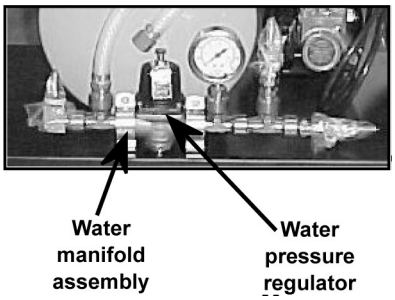


Figure 14.

19. Connect syrup lines to bag-in-boxes. Bleed syrup from each valve.

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 gauges 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).

Publication Number: 630460210INS

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.

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 CO_2 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 CO_2 Supply (As Required)

NOTE: When indicator on the 1800-psi gage is in the shaded ("change CO_2 cylinder") portion of the dial, CO_2 cylinder is almost empty and should be changed.

1. Fully close (clockwise) the CO_2 cylinder valve.
2. Slowly loosen the CO_2 regulator assembly coupling nut allowing CO_2 pressure to escape, then remove the regulator assembly from the empty CO_2 cylinder.
3. Unfasten safety chain and remove the empty CO_2 cylinder.

WARNING:
To avoid personnel injury and/or property damage, always secure the CO_2 cylinder with a safety chain to prevent it from falling over. Should the valve become accidentally damaged or broken off, a CO_2 regulator can cause serious personnel injury or death could occur.

4. Position the full CO_2 cylinder and secure with a safety chain.
5. Make sure gasket is in place inside the CO_2 regulator assembly coupling nut, then install the regulator assembly on the CO_2 cylinder.
6. Open (counterclockwise) the CO_2 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 CO_2 connections for leaks. Tighten any loose connections.

Cleaning the Ice Bin

1. Prepare a mild detergent soap solution in 100°F (37.7°C) 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 manufacture'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 supplied. Refer to plumbing diagram for details of the hook-up.

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

Publication Number: 630460210INS

Preparing for Operation

On units Without Electrically Operated Valves, Skip Steps 1 and 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 CO_2 regulators as indicated in the following chart:

Post-Mix	
Regulator	**Pressure Setting**
Primary (Carbonator) feed line to Carb secondary regulator	90-120 PSI
Secondary, Sugared Syrup Tank	55 PSI min.
Secondary, Diet Syrup Tank	8-12 PSI
Secondary, B-I-B	60 PSI min

4. Operate each valve until product is flowing.
5. Fill the bin with 32°F (0°C) ice. DO NOT use ice taken directly from the freezer.
6. Adjust the brix (water-to-syrup ratio) for post-mix valves.
7. Set the flow rate for pre-mix valves.

ADJUST WATER- TO-SYRUP RATIO

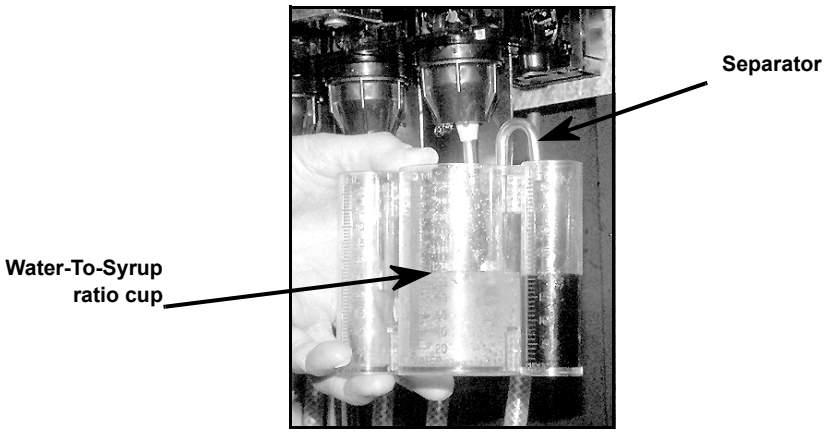


Figure 15.

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
Push button	
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

Publication Number: 630460210INS

Cold Plate Plumbing & Wiring Diagram for CB2323 & CB3023 8 Valve

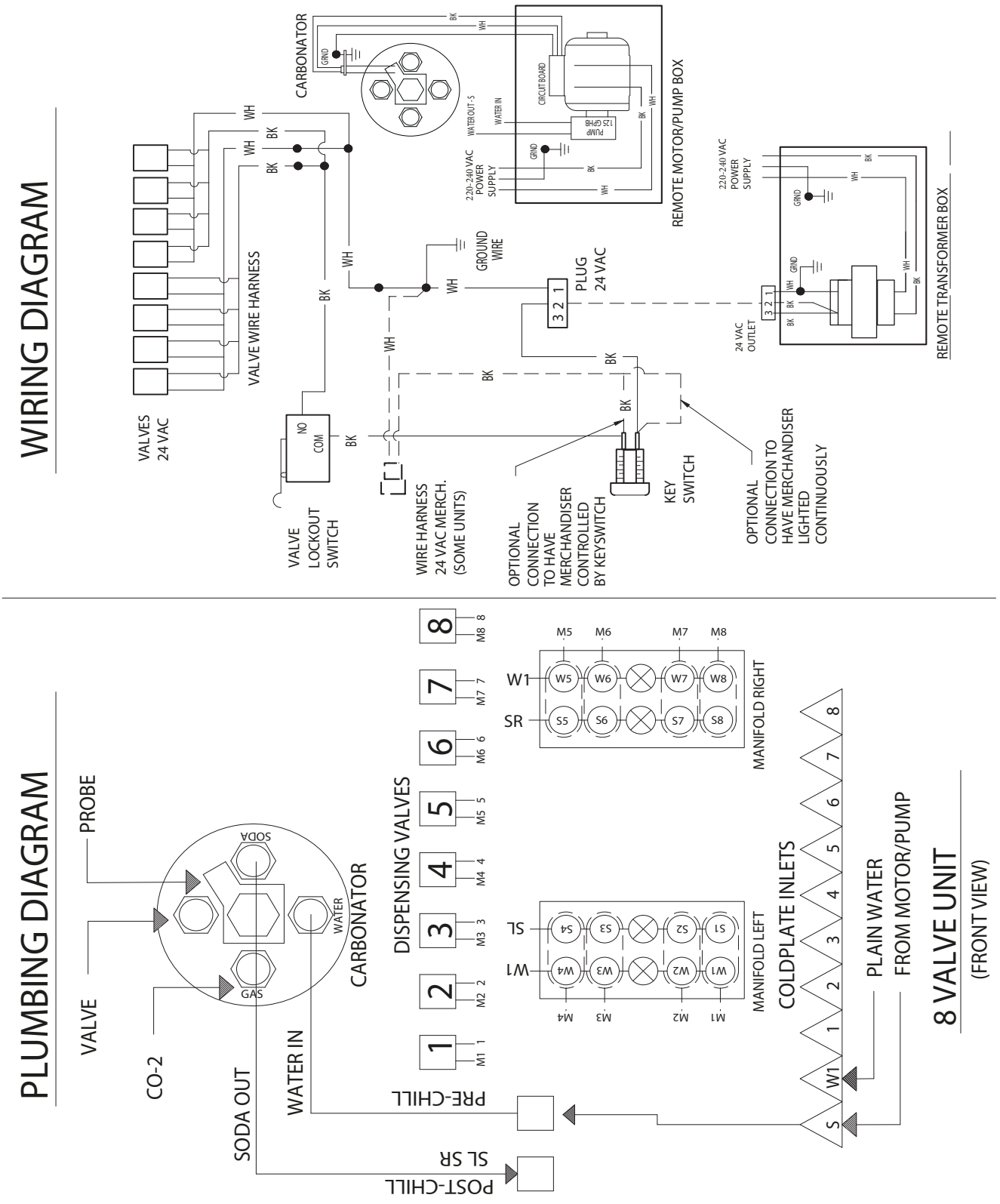


Figure 16.

Cold Plate Plumbing & Wiring Diagram for CB2323 6 valve

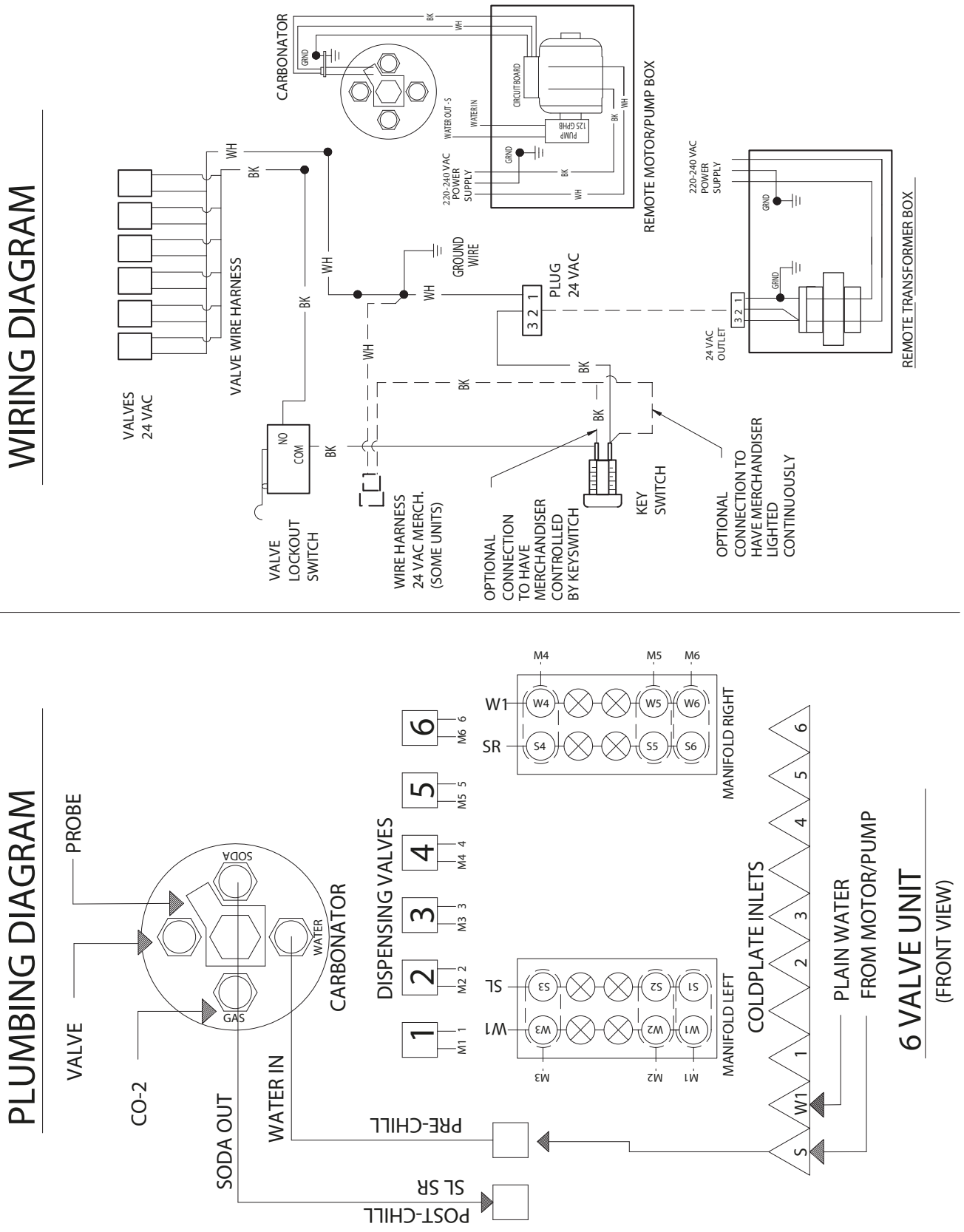
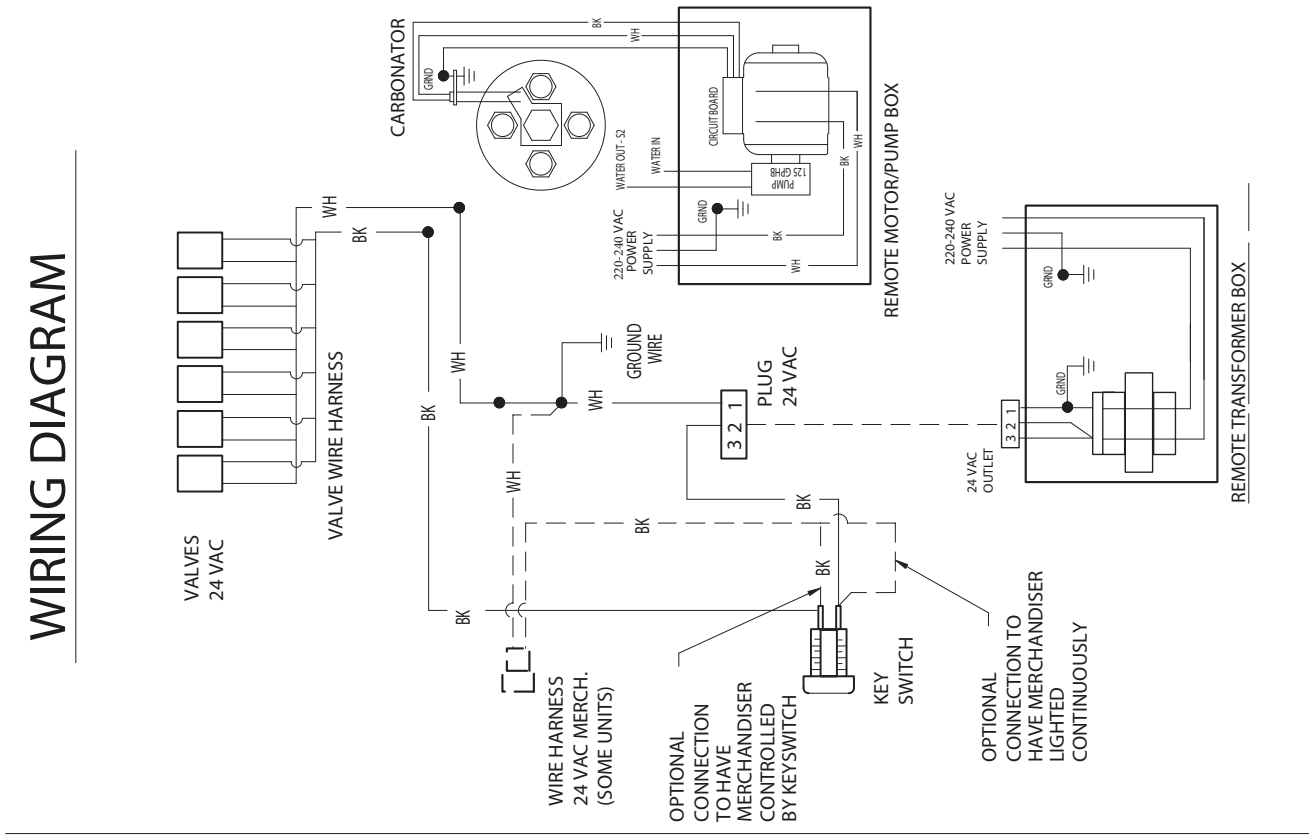


Figure 17.

Cold Plate Plumbing & Wiring Diagram for CB1522 6 Valve



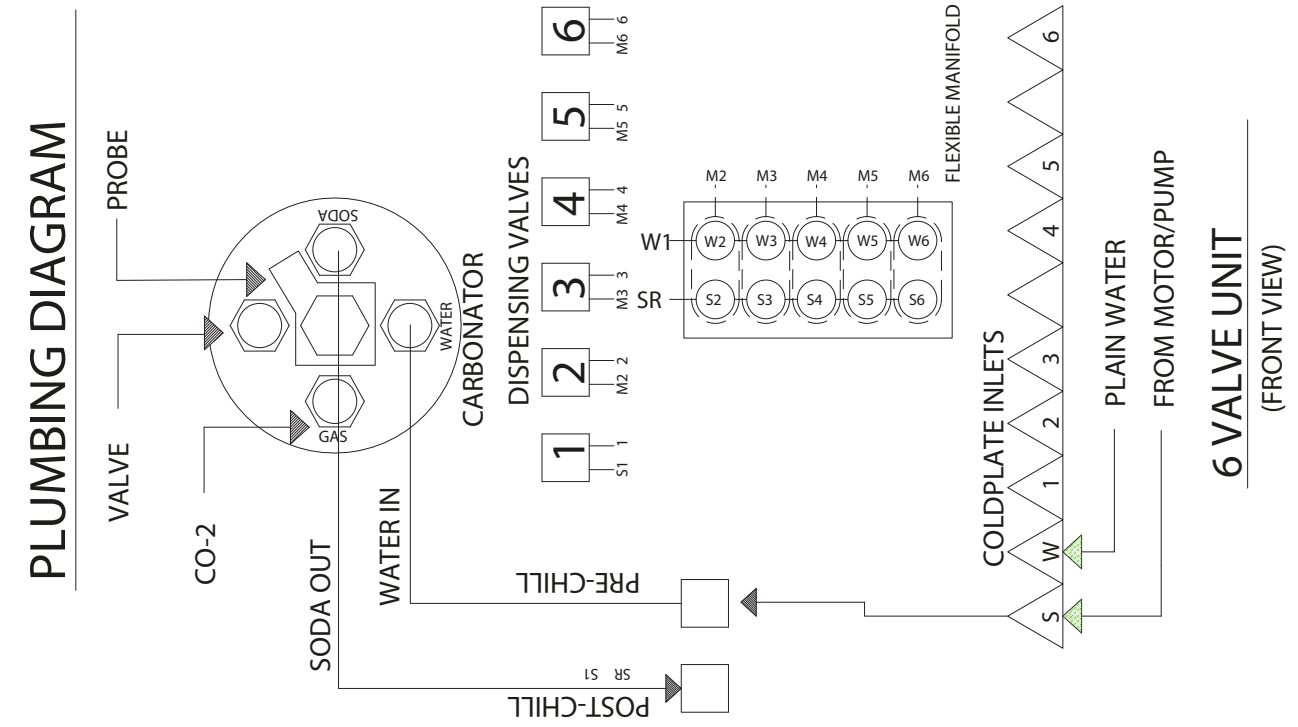


Figure 18.

IntelliCarb Back Room Plumbing and Settings

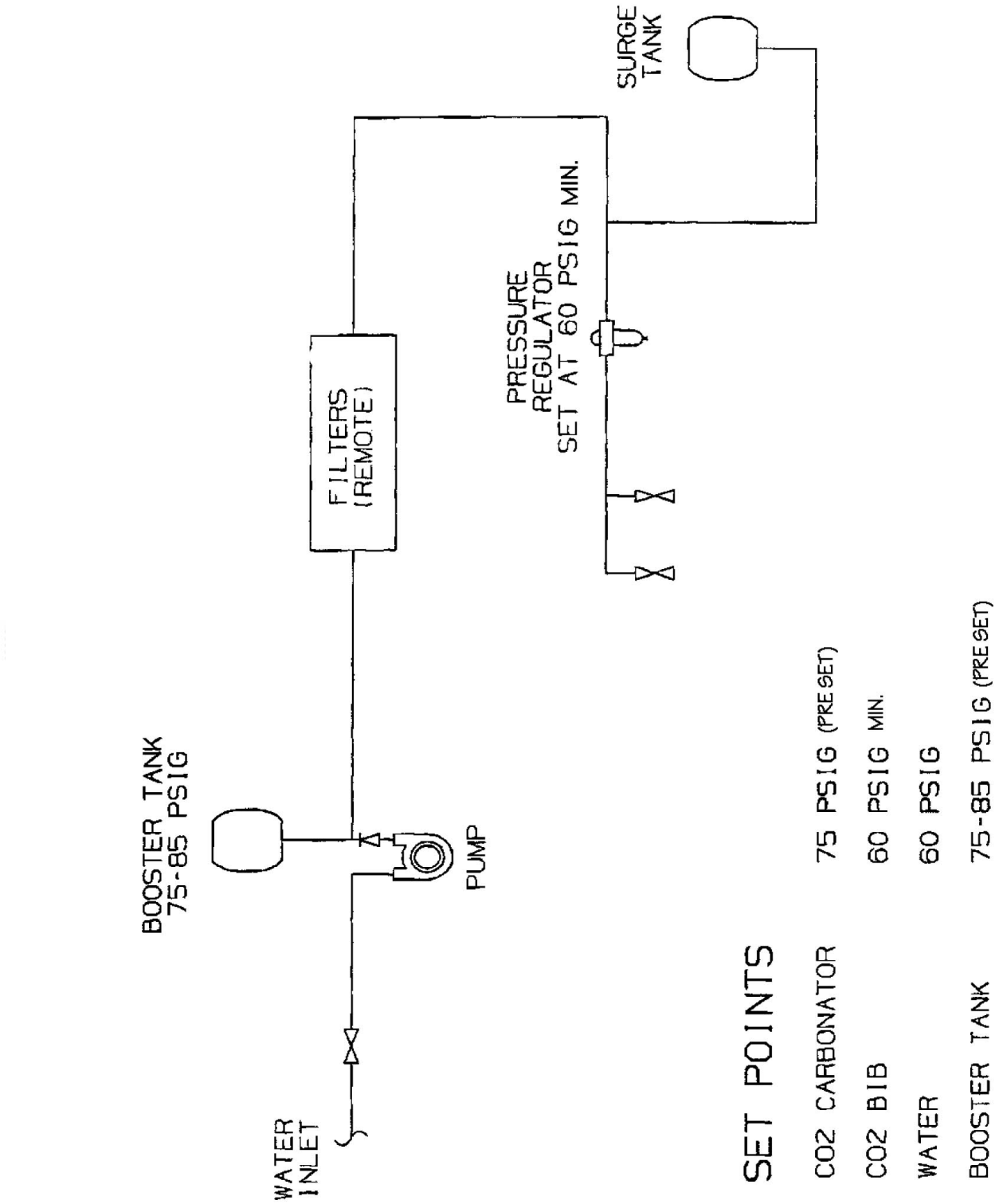


Figure 19.

REMOVAL AND INSTALLATION OF CARBONATOR

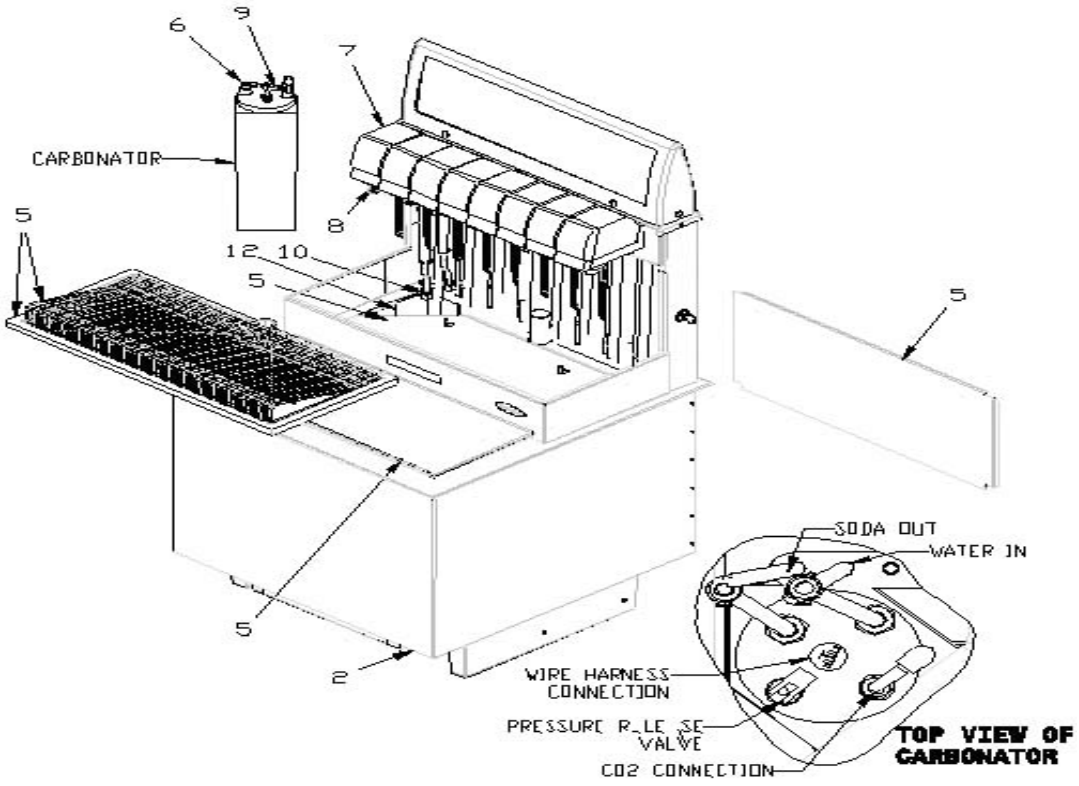


Figure 20.

Carbonator Removal

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.

WARNING:
Water and CO_2 to the system must be turned off and the system depressurized prior to performing this service.

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

1. Remove ice from bin.
2. Disconnect the power to the unit and to the pump and motor.
3. Shut off the CO_2 supply that is connected to the Carbonator.
4. Shut off the water supply that is connected to the pump and motor.
5. Remove Cup Rest, Splash Panel, Drip Tray, Sliding Lid and Sanitary Plate.
6. Relieve pressure in the system by flipping the pressure relief valve to the up position on the Carbonator.
7. Remove front cover, back cover and valve body of No. 8 (left side).
8. Remove the plug button on the left side of tower and cover hole with tape (safety).
9. Disconnect the barb fitting for the CO_2 line on Carbonator.
10. Disconnect the barb fitting on the Carbonator lines to the cold plate tubes.
11. Disconnect probe wire from pump and motor harness.
12. Cut the silicone seal with putty knife around Carbonator a minimum of 1.5” deep and remove.

Carbonator Installation

Figure 21.

1. Clean around Carbonator tank opening removing all silicone, and make sure cavity is clean and dry.
2. Place new Carbonator in place of the old one.
3. Reconnect probe wire harness to pump and motor.
4. Seal top of Carbonator with silicone.
5. Connect the CO_2 line from the barbed fitting Carbonator and tighten to 80+/- 10 in pounds (Note: replace white gasket).
6. Reconnect the Carbonator lines to the Carbonator.
7. Reinstall valve body, back cover and front cover of the valve No. 8 to unit.
8. Turn on the CO_2 supply that is connected to the Carbonator.
9. Turn on the water supply that is connected to the pump and motor.
10. Reconnect the power to the unit and to the pump and motor.
11. Test system and pump and motor for leaks.
12. Apply insulation tape as needed to cover tubes on Carbonator.
13. Remove and clean all foreign substance from bin and replace ice.
14. Replace Sanitary Plate, Sliding Lid, Drip Tray, Splash Panel and Cup Rest.

Publication Number: 630460210INS

TROUBLESHOOTING

IMPORTANT: Only qualified personnel should service internal components or electrical wiring.

WARNING:
If repairs are to be made to carbonated water system, disconnect electrical power to Cooling Unit, shut off plain water and CO_2 supplies, and relieve the carbonated water system pressure before proceeding. If repairs are to be made to syrup system, remove quick disconnects from applicable syrup tank, then relieve the system pressure before proceeding. If repairs are to be made to CO_2 system, stop dispensing, shut off CO_2 supply, then relieve the system pressure before proceeding.

If repairs are to be made to an existing Remote Condensing unit, disconnect the power to the condensing unit before proceeding

Trouble	Probable Cause	Remedy
Adjustment of dispensing valve syrup flow regulator does not increase to desired water-to-syrup "ratio"	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 CO_2 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.	A. Sanitize syrup system as instructed. B. Secure quick disconnects. C. Adjust syrup tanks secondary CO_2 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"	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. Air in carbonator tank. B. Water, oil or dirt in CO_2 supply	A. Vent air out of carbonator tank through relief valve. Actuate dispensing valve carbonated water lever to make carbonator pump cycle on. B. Remove contaminated CO_2. Clean CO_2 system (lines, regulators, ect.) using a clean CO_2 supply.
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 subcooled.	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.		

Trouble	Probable Cause	Remedy
	C. Syrup over-carbonated with CO_2 as indicated by bubbles in inlet syrup lines leading to unit. D. Warm product-No ice in bin, bridged ice on cold plate or plugged drain.	C. 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. 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. Flush tank and all inlet lines to remove any foreign particles or dirt.		
No product dispensed from one dispensing valve	A. Broken or disconnected wiring. B. Inoperative dispensing valve solenoid coil. C. Inoperative dispensing valve micro switch.	A. Repair or connect wiring. B. Replace solenoid coil as instructed. C. Replace micro switch as instructed.
Only carbonated water dispensed.	A. Quick disconnects not secure on syrup tanks. B. Out of syrup. C. B-I-B connectors not properly connected. D. Syrup secondary CO_2 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.	A. Secure quick disconnects on syrup tanks. B. Replenish syrup supply as instructed. C. Properly attach the connectors. D. Adjust syrup tanks secondary CO_2 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	A. Plain water inlet supply line shutoff valve closed. B. Carbonator power cord unplugged from electrical outlet.	A. Open plain water inlet supply line shutoff valve. B. Plug carbonator power cord into electrical outlet.

Publication Number: 630460210INS

TROUBLESHOOTING for Carbonator		
Trouble	**Probable Cause**	**Remedy**
Pump motor will not run	A. Locked pump rotor-dirt or pipe compound in pump; pump seized.	A. Remove and check for free rotation or replace. Also check CO_2 supply, faulty single check valve, liquid level control or probe.
	B. Carbonator flooded.	B. Main water supply pressure higher than CO_2 pressure within the carbonator. If maximum water supply pressure is within 20 PSI of CO_2 pressure, install water pressure regulator.
	C. No power.	C. Check source of electrical supply and for loose connections.
Pump runs continuously	A. Pump water supply restricted.	A. Check water filter and pump inlet strainer and clean. NOTE: Noisy pump operation usually indicates restricted water supply. Also check for faulty double check valve, water leak or low pump bypass.
	B. Pump discharge line restricted.	B. Water inlet check valve may be plugged. Remove, clean, or replace rubber O-Rings.
	C. Inefficient or worn pump.	C. To test for efficiency, disconnect discharge line from pump. Connect a 300 pound gauge and hand shut off valve to pump discharge. Start pump. Bleed off any air, close hand valve then observe pressure. If it is approximately 180 PSI, pump is O.K. If it is significantly below 180 PSI, it may be increased by adjusting the pump by-pass. Increasing the by-pass is accomplished by removing sealing acorn cap and turning the adjusting screw in. If pressure rises to 180 PSI, pump is O.K. If it is still below 150 PSI, and the screw is turned all the way in, the pump is worn. Replace. NOTE: Abadly worn pump and/or premature failure usually indicates foreign material in the supply water. Install a water filter in supply line. Also check for faulty liquid level control, corroded electrode, or broken pump shaft.

TROUBLESHOOTING for Carbonator		
Trouble	**Probable Cause**	**Remedy**
Pump runs continuously (Cont'd)	D. Overdrawing.	D. Check capacity of pump. The combined rate of flow from dispensing valves should not exceed the stated GPH for pump, or pump will run continuously.
Noisy pump	A. Bad motor bearings or worn pump shaft. B. Failure of Triac on liquid level control. C. Insufficient water supply.	A. Repair or replace motor. B. Repair or replace liquid level control. C. Check that water supply is on. Also check for clogged water filter, ruptured tank or bad double check valve.
Valve delivers co_2 gas continuously	A. Pump motor will not run. B. Pump water supply restricted. C. Relief valve venting. D. Worn pump.	A. See Pump Motor Will Not Run. B. Clean strainer. Check for faulty double check valve. C. Repair or replace. D. See Pump Motor Will Not Stop.
Valve delivers soda water and co_2 gas intermittenly	A. Pump water supply restricted. B. Relief valve venting. C. Inefficient or worn pump.	A. Clean strainer. Check for faulty single check valve, clogged water filter, water supply off or blocked, ruptured tank, faulty liquid level control or double check valve. B. Replace or repair. C. See Pump Motor Will Not Stop.
Poor carbonation	A. Flooded carbonator. B. Water temperature too high (warm). C. Oil in water supply. D. Supply water containing too much air in solution. E. Poor quality paper cups. F. Dirty or greasy glassware. G. Excessive foam. H. Flat drinks.	A. See Pump Motor Will Not Run. B. Check water inlet temperature. Lower temperature provides better carbonation. C. Check pipe thread compound. Remove and clean and replace with PTFE pipe thread tape. D. To remove air before it enters pump, it will be necessary to install an open tank with float to control water level. E. Purchase quality cups made for this application. F. Wash all glassware. G. CO_2 BIB pump pressure too high, contamination within the beverage system, poor quality paper cups or dirty glassware. H. Draw drinks against side of glass or cup. Check for insufficient CO_2 contamination, bad check valve, ruptured CO_2 line

Publication Number: 630460210INS

TROUBLESHOOTING		
Trouble	**Probable Cause**	**Remedy**
Drink has off-taste or odor (water contamination)	A. Leaking check valves.	A. Replace O-Rings in double check valve or replace double check valve. See check valve installation instruction section.
	B. Too much plumbers pipe compound on pipe joints.	B. Remove pipe compound and clean joints. Use PTFE pipe thread tape.
	C. Soda water and beverage lines made of brass or copper.	C. Carbonated water reacts with brass or copper and should not be dispensed through lines of this material. Replace lines with stainless steel or beverage grade plastic.
	D. High chlorine level.	D. Install water filter to eliminate chlorine in excess of 1.5 ppm. Use type that do not remove all chlorine.
	E. Tank corrosion.	E. Replace tank.
	F. Contaminated CO_2	F. Check that CO_2 is beverage grade.

Cornelius Inc.
www.cornelius.com