

INTELLICARB ICE COOLED DISPENSER

INSTALLATION MANUAL



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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. This appliance is **not** intended for use by very young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance.
- Keep your unit in proper working condition and do not allow unauthorized modifications to the unit.

QUALIFIED SERVICE PERSONNEL

WARNING:

Only trained and certified electrical, plumbing and refrigeration technicians should service this unit. **ALL WIRING AND PLUMBING MUST CONFORM TO NATIONAL AND LOCAL CODES. FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR EQUIPMENT DAMAGE.**

SAFETY PRECAUTIONS

This unit has been specifically designed to provide protection against personal injury. To ensure continued protection observe the following:

WARNING:

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

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

CAUTION:

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

SHIPPING AND STORAGE

CAUTION:

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

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 **1522-230 lbs. 2323-340lbs. 3023-390lbs.** 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 additional 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:

- Front inlet fittings
- 75 lbs., 80 lbs., 100 lbs., and 130 lbs. capacity ice bin
- Foamed polyurethane insulation
- Key lock switch
- 9 3/4 inch cup clearance
- Extended drip-tray for cup staging, removable for cleaning
- High capacity 11/18 cold plate, 5-2-1 configuration
- All fittings are 3/8 inch
- Supports UF-1 fast flow (3.0 oz./sec.), UF-1 Ultra flow (4.5 oz./sec.), and UFB 2.0 - 4.0 valves
- Improved ability to clean outlet line area
- Lighted and non-lighted merchandiser options
- Optional cabinet stand for free standing installations.



Figure 1. Drop-In Unit

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

Custom Compact Dimensions

Counter Top Cutout	23 1/4 x 23 1/4 inches
Height above counter	18 inches
Height of Merchandiser	8 inches
Width	23 inches
Depth	23 inches
Shipping weight (approx)	235 pounds

Drop-in Dimensions (CB3023)

Counter Top Cutout	30 1/4 x 23 1/4 inches
Height above counter	18 inches
Width	23 inches
Depth	23 inches
Shipping weight (approx)	285 pounds

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 in accordance with Federal, State and Local laws.

INSTALLATION REQUIREMENTS

Weight:	counter must be level and able to support 450 lbs.
Environment:	indoor installation only
Temperature:	40 to 100° F 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.

DELIVERY INSPECTION AND UNPACKING

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.

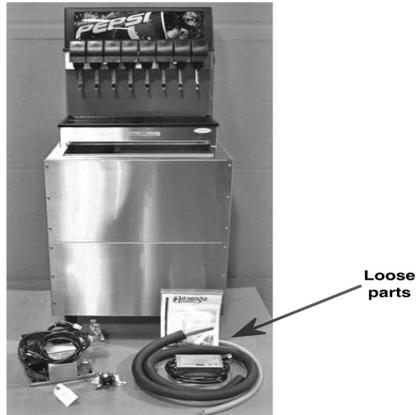


Figure 2.

Make sure all items are present.

Part Name	Drop-In	
	P/N	Qty.
Pump & motor assy.	629087457	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	630000601	1
Ftg-3/4 Soc x 3/4 fpt	n/a	n/a
Ftg-3/4 mptx1" barb	n/a	n/a

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.

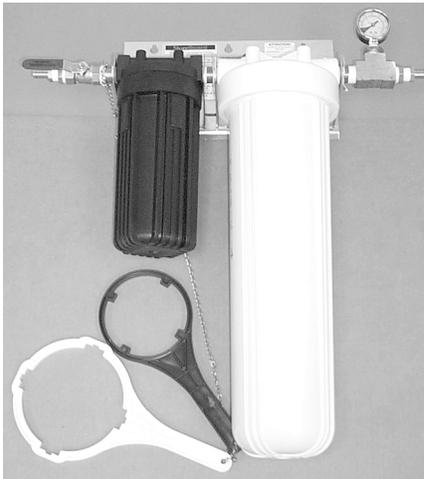


Figure 3. Pre filter (P/N 605620)

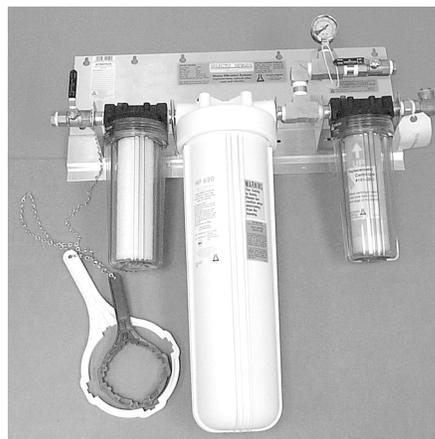


Figure 4. Main Filter (P/N 605625ST)

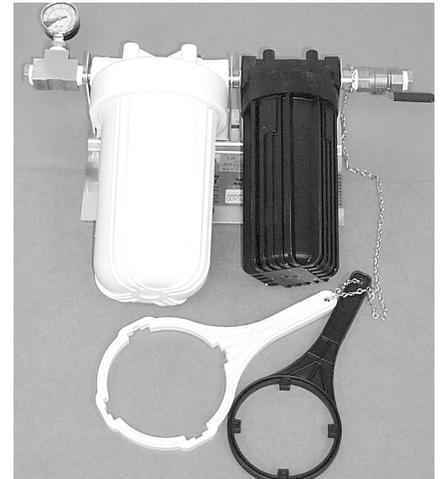


Figure 5. Polyphosphate feeder (Ice maker)

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.

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

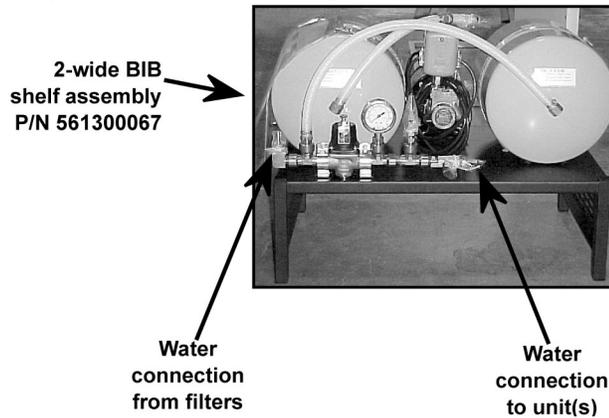


Figure 7. 2-Wide BIB Shelf Assembly

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

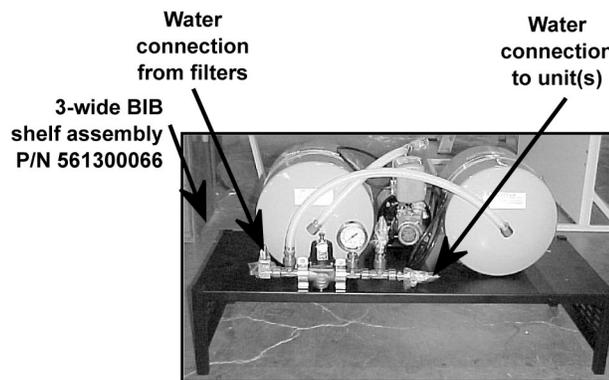


Figure 8. 3-Wide BIB Shelf Assembly

Syrup

Connect syrup lines from bundled tubing to BIB pump outlet fitting

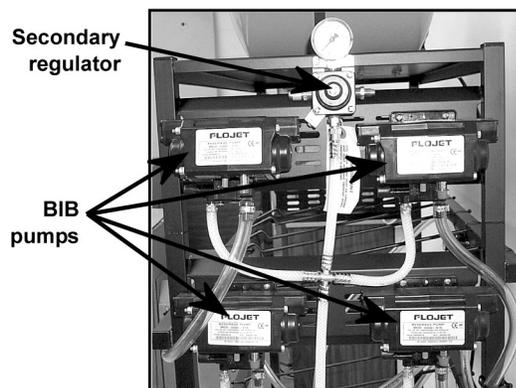


Figure 9.

High Pressure Cylinder CO₂

1. Connect primary regulator manifold to high pressure cylinder CO₂ source and connect tubing to the secondary regulator mounted on the side of BIB rack.
2. Connect one CO₂ line from the bundled tubing to the primary regulator manifold on CO₂ source to supply each dispenser.

Bulk CO₂ Tank

Connect bulk CO₂ tank to the secondary regulator mounted on the side of BIB rack. **Do not use primary regulator with bulk co2 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 CO₂ 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.

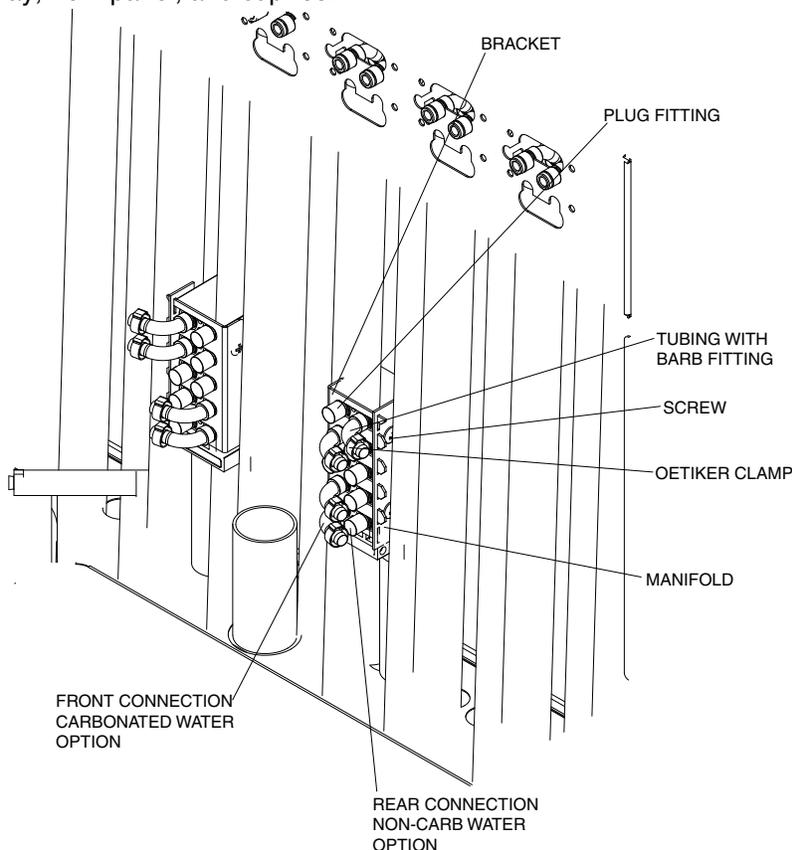


Figure 10.

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 CO₂ 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 12).
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 12).
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 12).
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 CO₂ 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. Connect the tower 2 wire harness to the transformer
11. Connect CO₂ line from bundled tubing to fixed secondary regulator inlet fitting. Connect tubing from secondary regulator outlet to carbonator tank CO₂ inlet. Route CO₂ line down center channel raceway with wire harness.

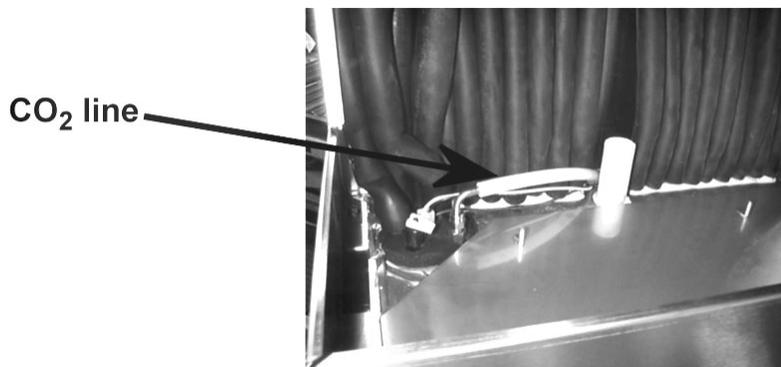


Figure 12.

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.

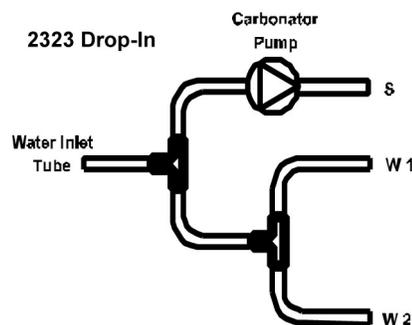


Figure 13.

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 CO₂ source on. Set secondary regulator for BIB pumps (located on side of rack) at 60 psi min. Bleed carbonator.
17. Fill bin with ice.
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.

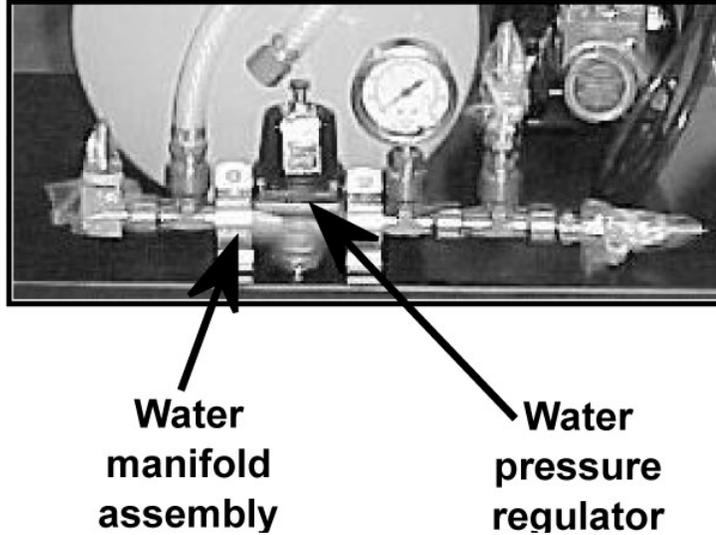


Figure 14.

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).

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 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 BIBSystems

1. Remove all the quick disconnects from all the BIBcontainers.
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 BIBdisconnects in the sanitizing solution.
6. Sanitizing fittings must be attached to each BIBdisconnect. If these fittings are not available, the fittings from empty BIBbags 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 BIBdisconnects 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 BIBdisconnects and connect the disconnects to the appropriate BIBcontainer. 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 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.



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 CO₂ 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 ice. DO NOT use ice taken directly from the freezer.
6. Adjust the brix (water-to-syrup ratio) for post-mix valves.

ADJUST WATER-TO-SYRUP RATIO

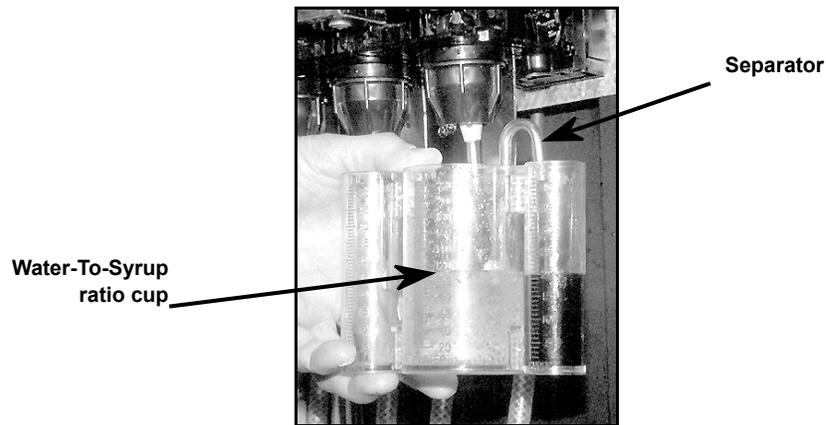


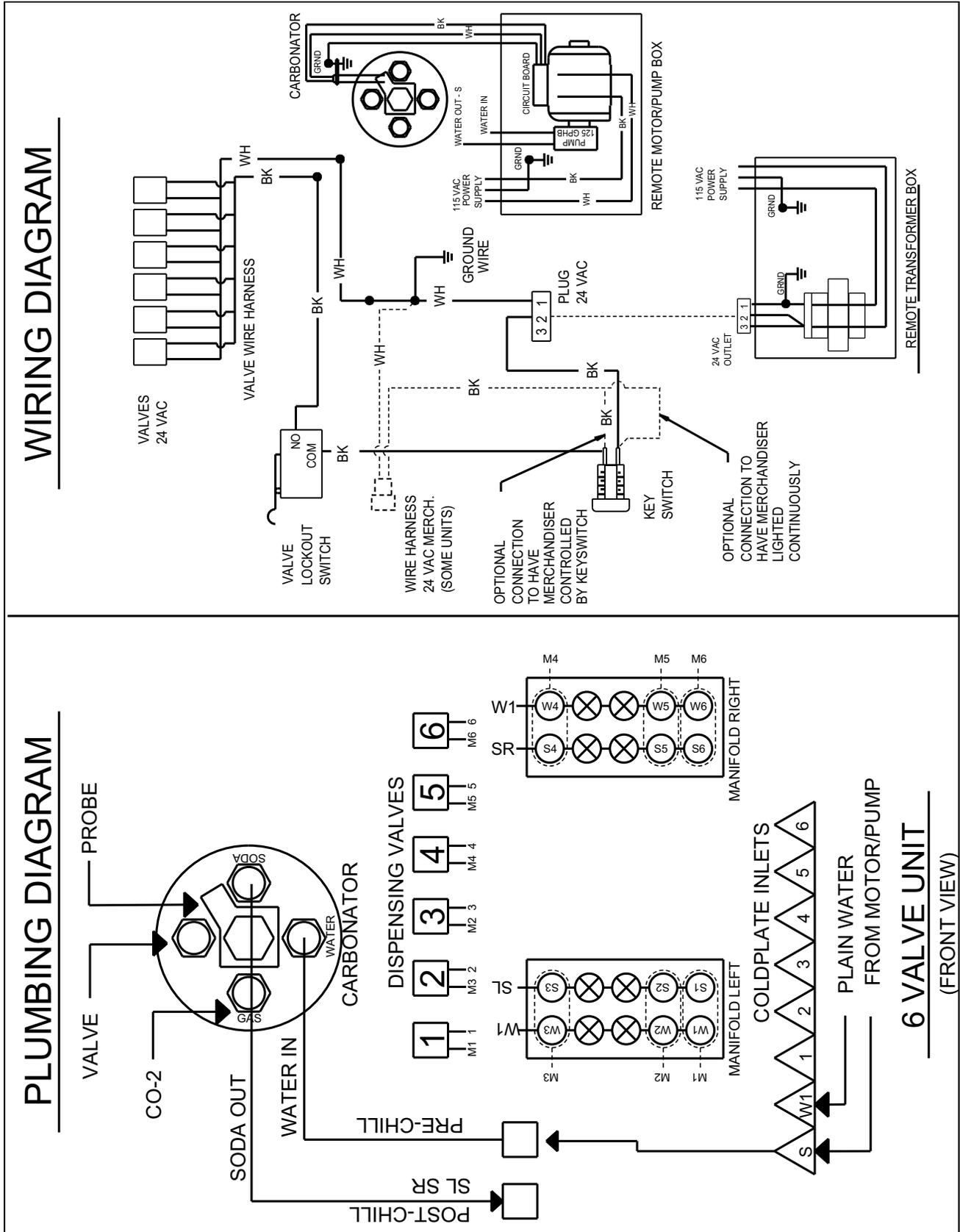
Figure 15.

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.

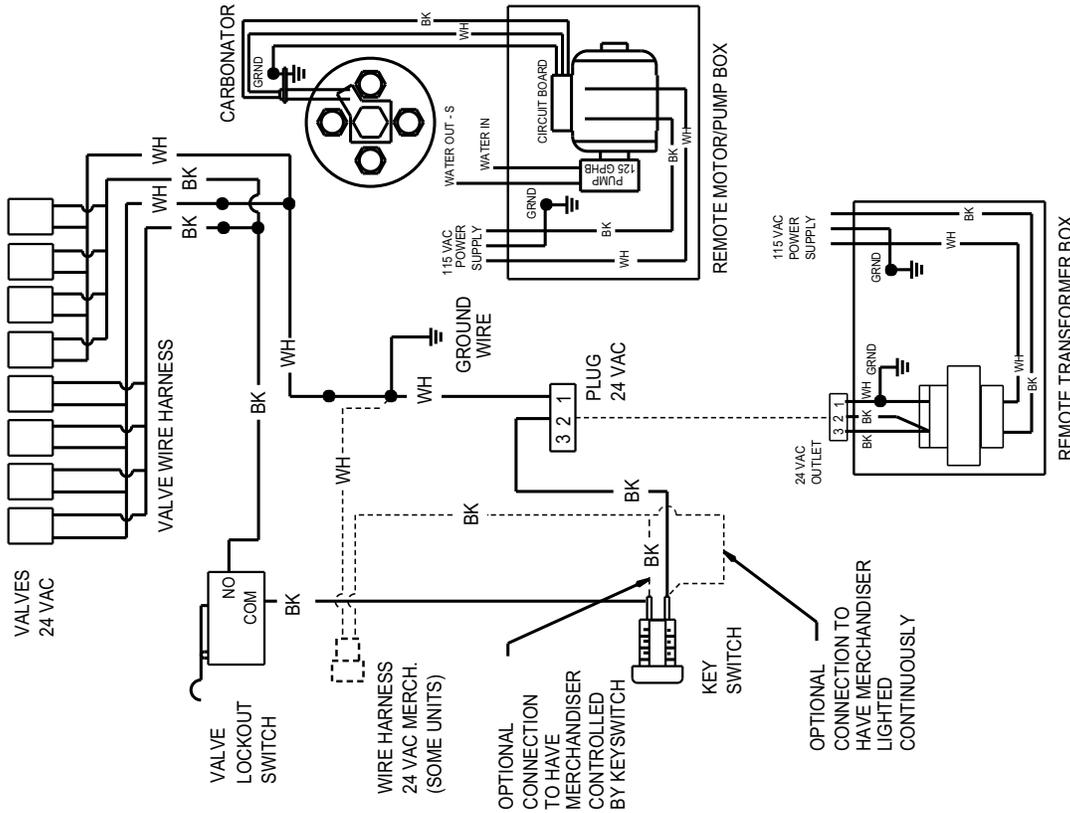
Valve Type	
Manufacturer	Maximum Operating Pressure
Portion Control	
Cornelius	130 psi
Flowmatic	100 psi
Pushbutton	
Cornelius	130 psi
Flowmatic	100 psi
Lever Type	
Cornelius	130 psi
Flowmatic	100 psi
Autofill Lever	
Cornelius	130 psi
Flowmatic	100 psi
Non-Electric	
Cornelius	130 psi

Plumbing and Wiring diagram 6 valves (Lean Units)

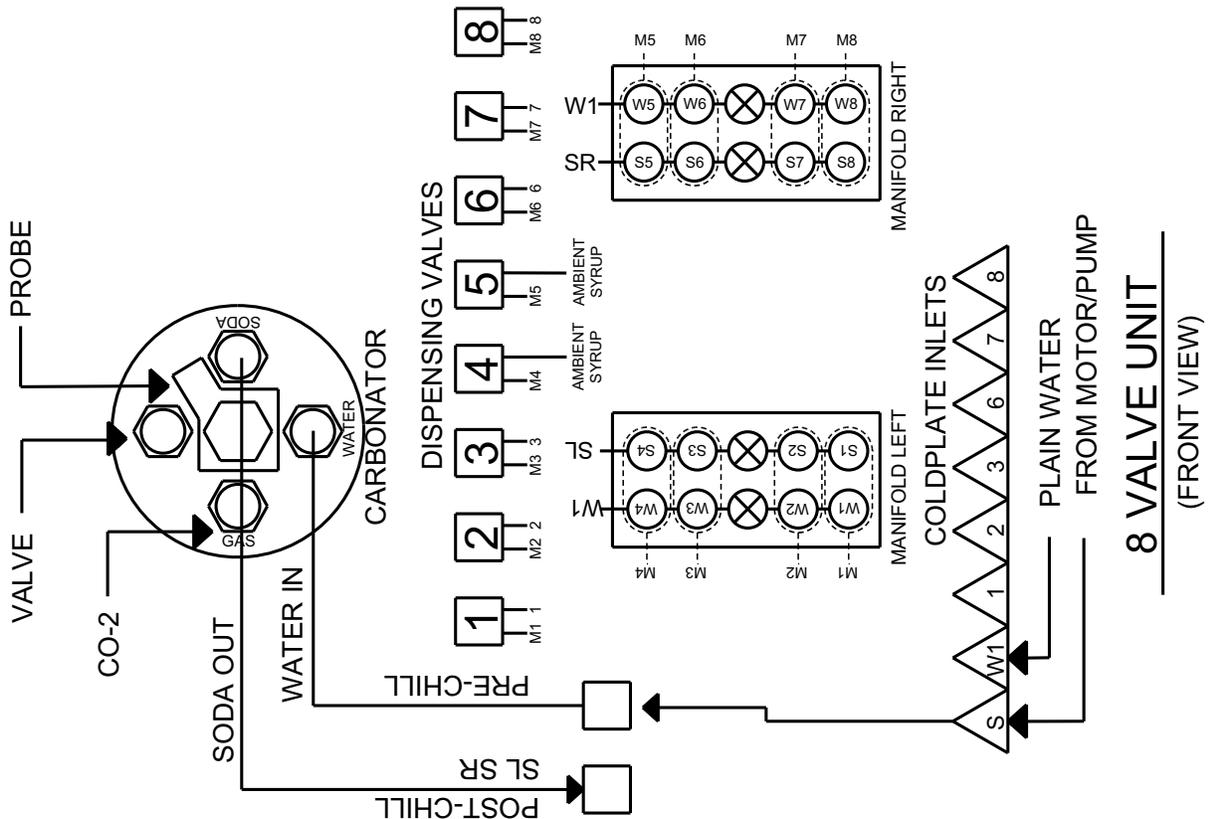


Plumbing and Wiring diagram 8 valves (Lean Units)

WIRING DIAGRAM



PLUMBING DIAGRAM



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

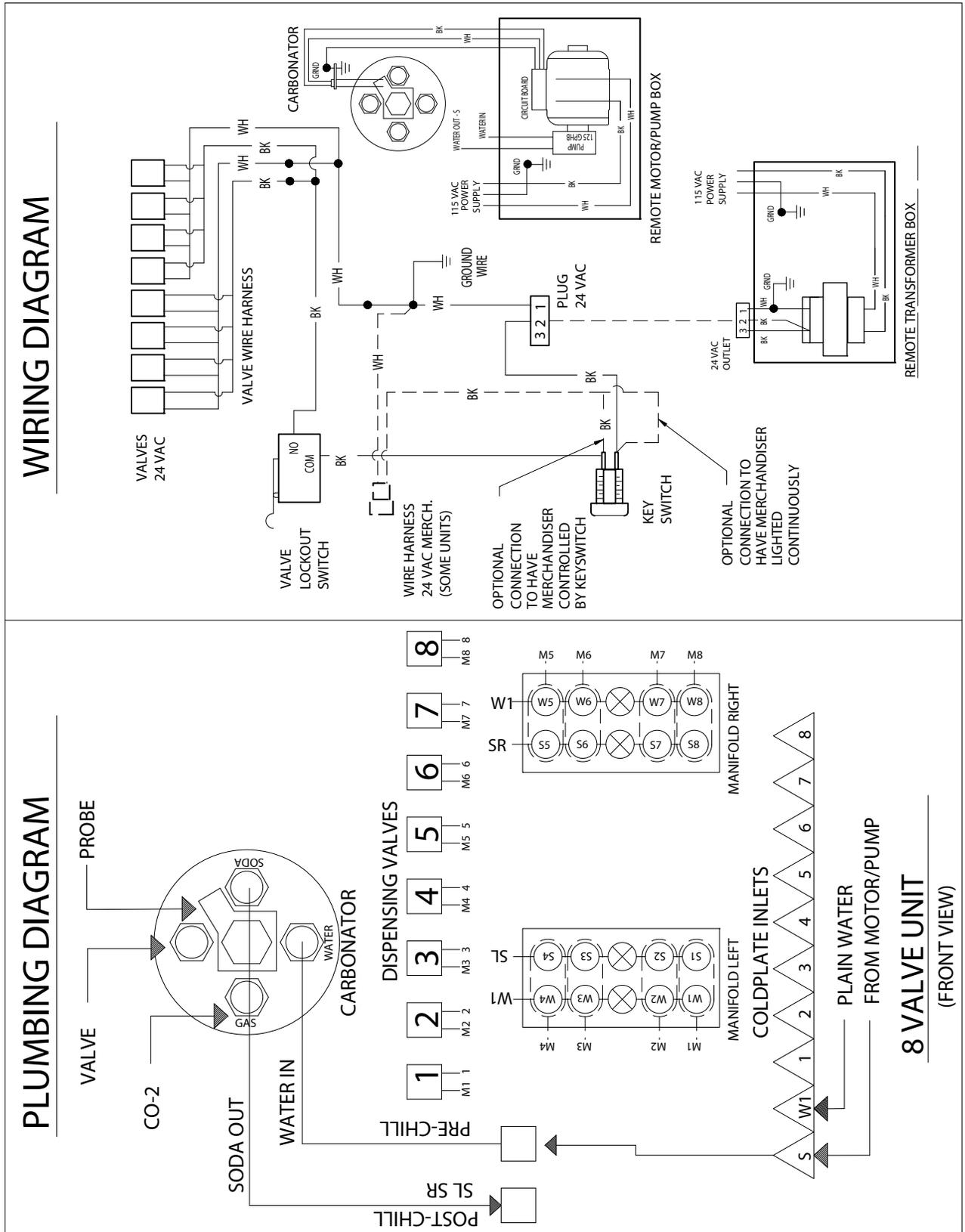


Figure 16.

Cold Plate Plumbing & Wiring Diagram for CB2323 6 valve

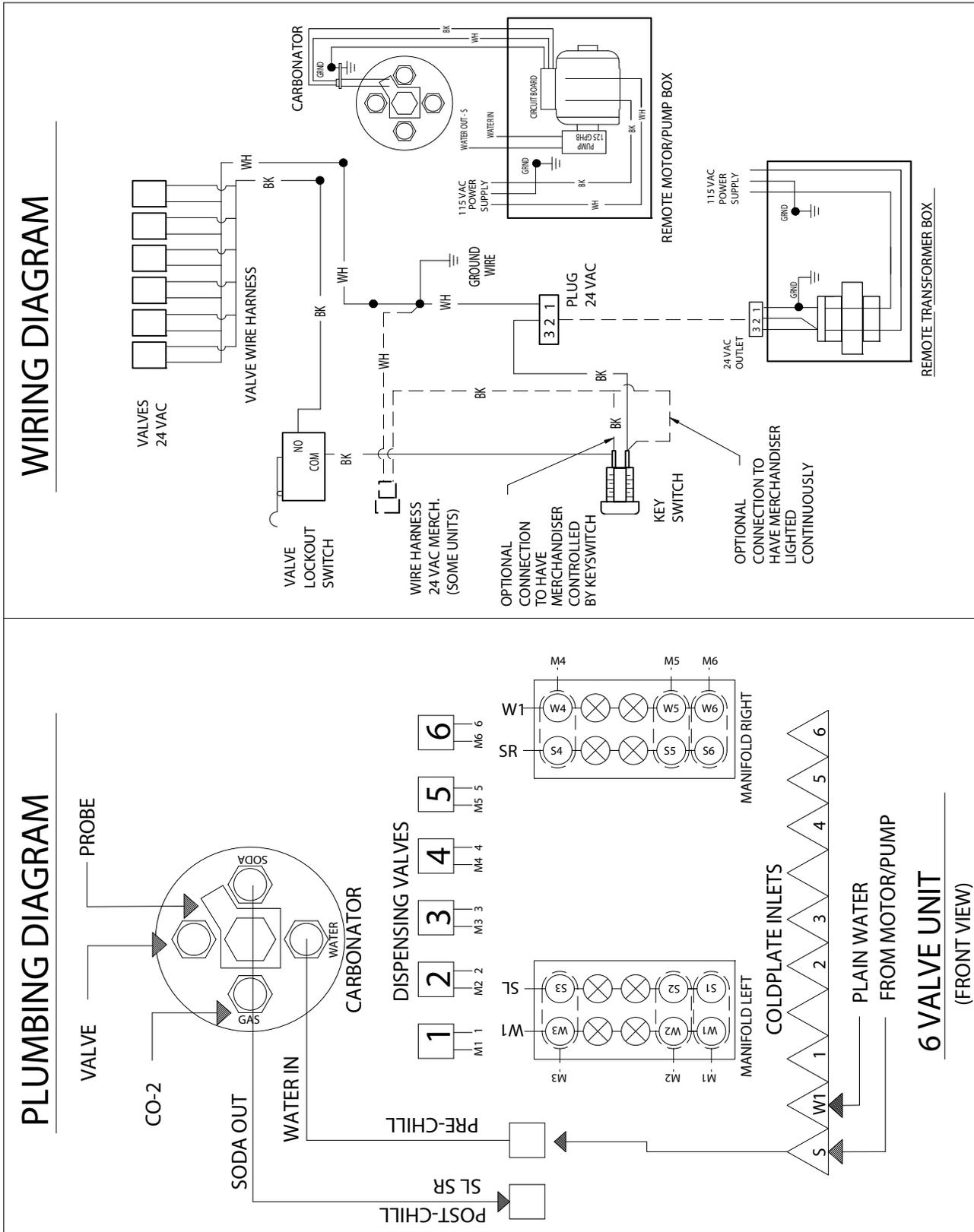


Figure 17.

Cold Plate Plumbing & Wiring Diagram for CB1522 6 Valve

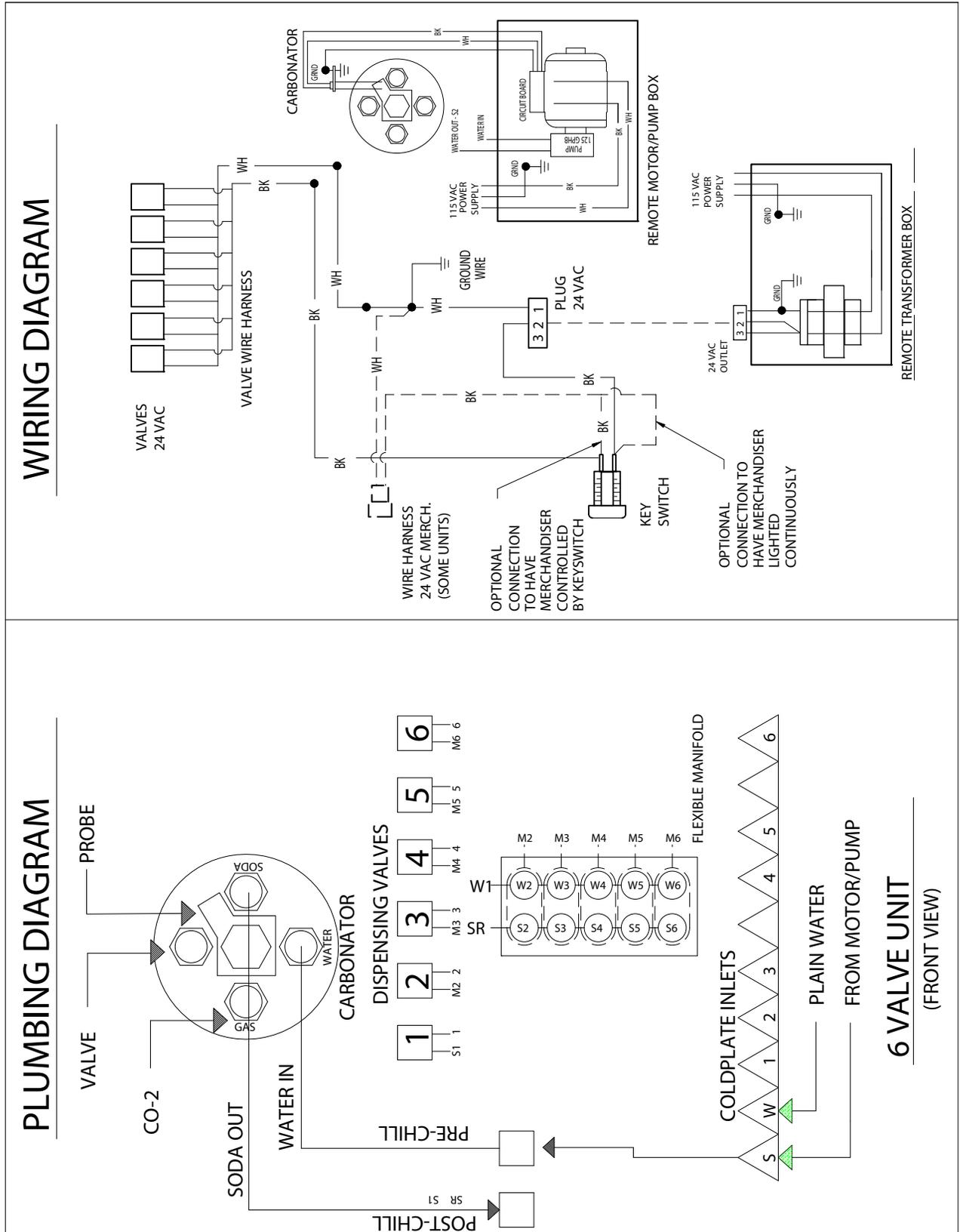


Figure 18.

IntelliCarb Back Room Plumbing and Settings

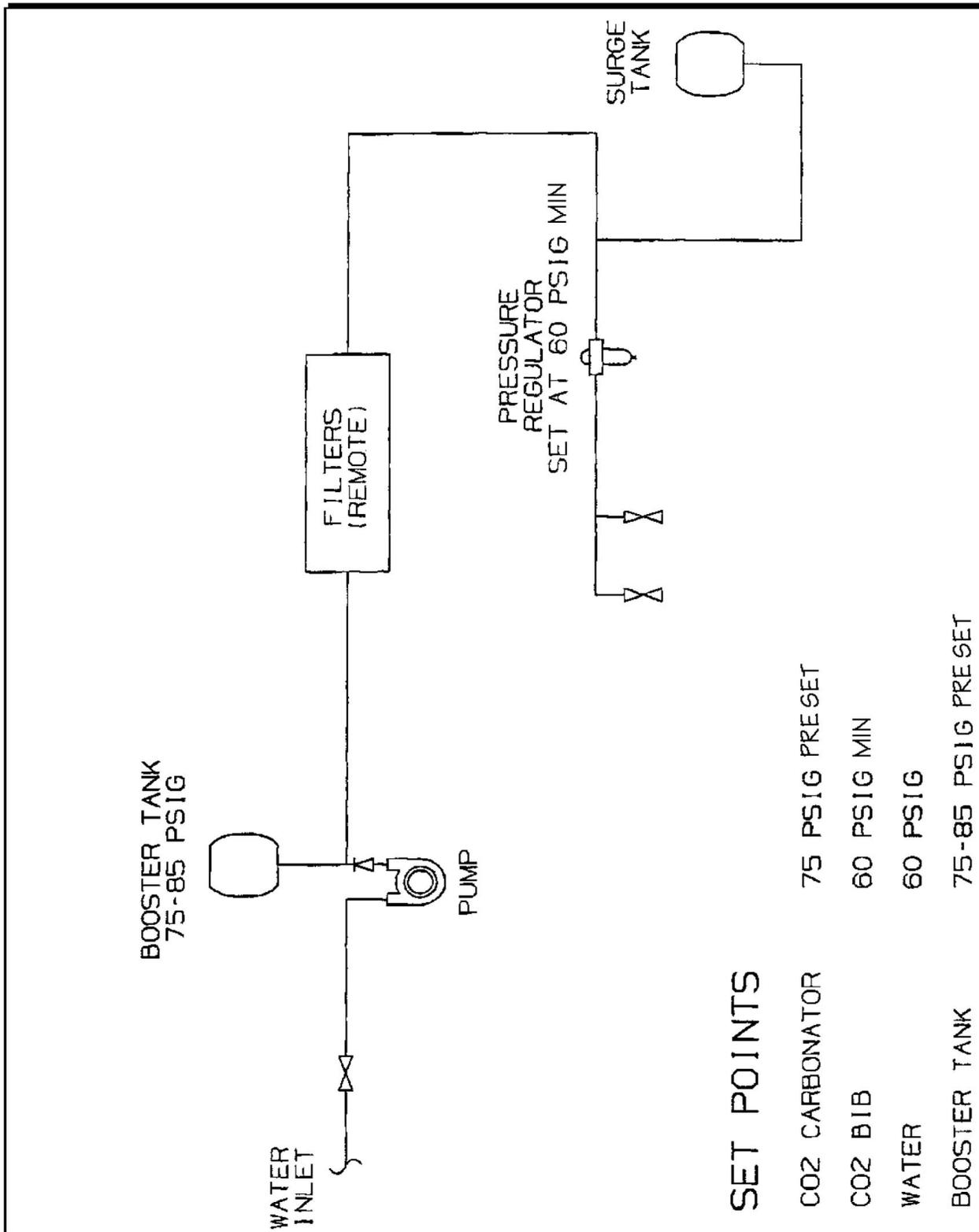


Figure 19.

Removal and Installation of Carbonator

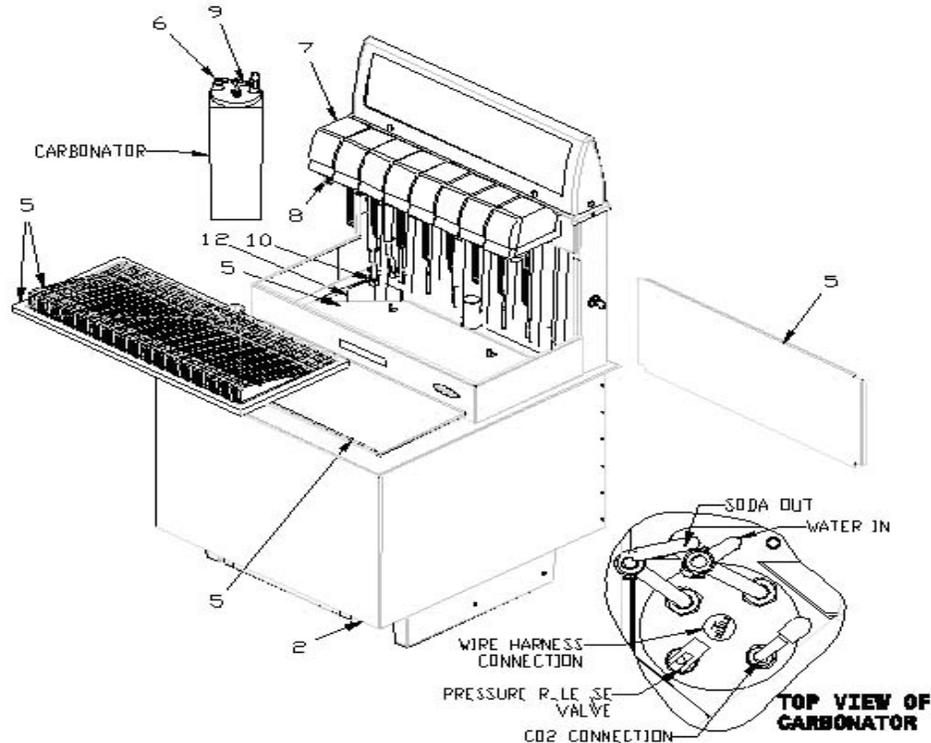


Figure 20.

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 CO₂ 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 CO₂ 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 CO₂ 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 CO₂ 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 CO₂ 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.

CB1522, CB2323, CB3023 MANIFOLD PARTS BREAKDOWN

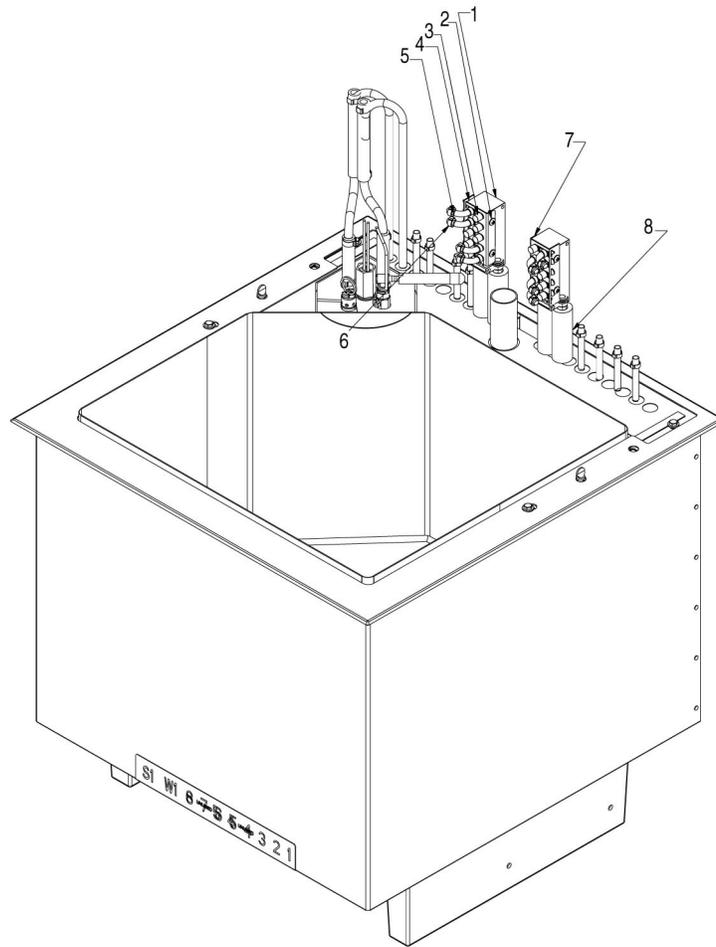


Figure 22.

Item No.	Part No.	Name	Qty.
1	620407728	Manifold Flex 5 POS	2
2	164126000	Screw SM 08 TA TRPH 16 SS	10
3	620519005	Plug Manifold	12
4	630201533	Brkt Manifold Block	2
5	77051500	Fitg-Val Dole Elb 102 Degree	8
6	309854000	Clamp Oetr 413 Open Stpls #10.5	8
7	630201532	Brkt Retainer Manifold	2
8	630600024	Hose .375 B 5.00" C-PLT to Manifold Block	4

CB 1522 INTELLICARB STAINLESS TOWER 75LB WITH 12 X 4 CARBONATOR

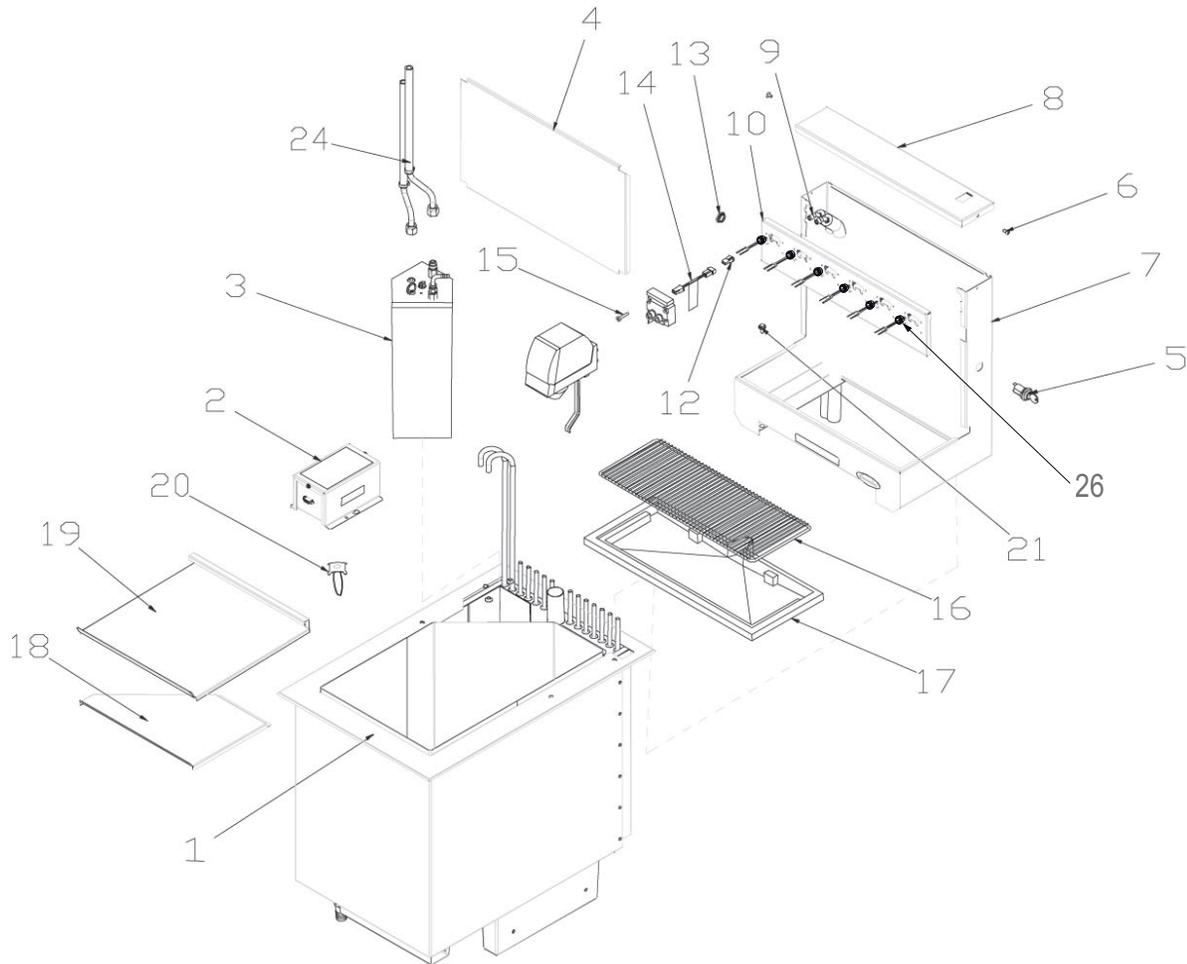


Figure 23.

Item No.	Part No.	Name	Item No.	Part No.	Name
1	630201449	Frame Dec CB1522	15	318308000	Screw TR 10-32 PAPH 32 SS HRD
2	630000601	Transfmr 115/24 RMT 75VA	16	630200858	Cup-Rest CB1522 Opti (Opti-Fill™ only)
3	630001125	Tank Carb Foam Asy 4X12		167787000	Cup-Rest 1522SST STND
4	167491001	Splashguard Panl SBR TWR GE	17	630900910	Drip-Tray 18" 1522 IntelliCarb
5	33300	Lock SWT & KEY #2007	18	630001101	Plate Sanitary 75# IntelliCarb
6	161168014	Screw Ma 1032 012TR SS PH	19	630001100	Lid Sliding 1522 IntelliCarb
7	630000794	Tower W/A 18" SS BLT DN 1522	20	162865010	Strainer Corner Drain W/A
8	167244008	Cover TWR 18.5 x 3.5 SS	21	168745001	Bolt MA 1/4-20 HX 16 STZI
9	162968004	Hose 0.265F 16"	22	630300341	Harn Wire TWR 96" 2 CR 25R
10	630201568	Panel 6VLV 18" SS TWR	23	629087457	Pump Asy MTR
11	630300344	Harn Wire 6VLV 2CR 3.50SPC	24	630000952	Hose Asy Carb to C-PLT S-Tube
12	163518000	Conn Elec Mate-N-Lok 2CR	25	630201516	Lid Top 1522 Sliding (not shown)
13	168462002	Plug-Butn 1/2 Hole STNI SWC	26	164510003	Bushing Snap H 250 ID X 312
14	630300373	Harn Wire Jumper (Opti-Fill™ only)			

CB 2323 INTELLICARB STAINLESS TOWER 100LB WITH 12 X 4 CARBONATOR

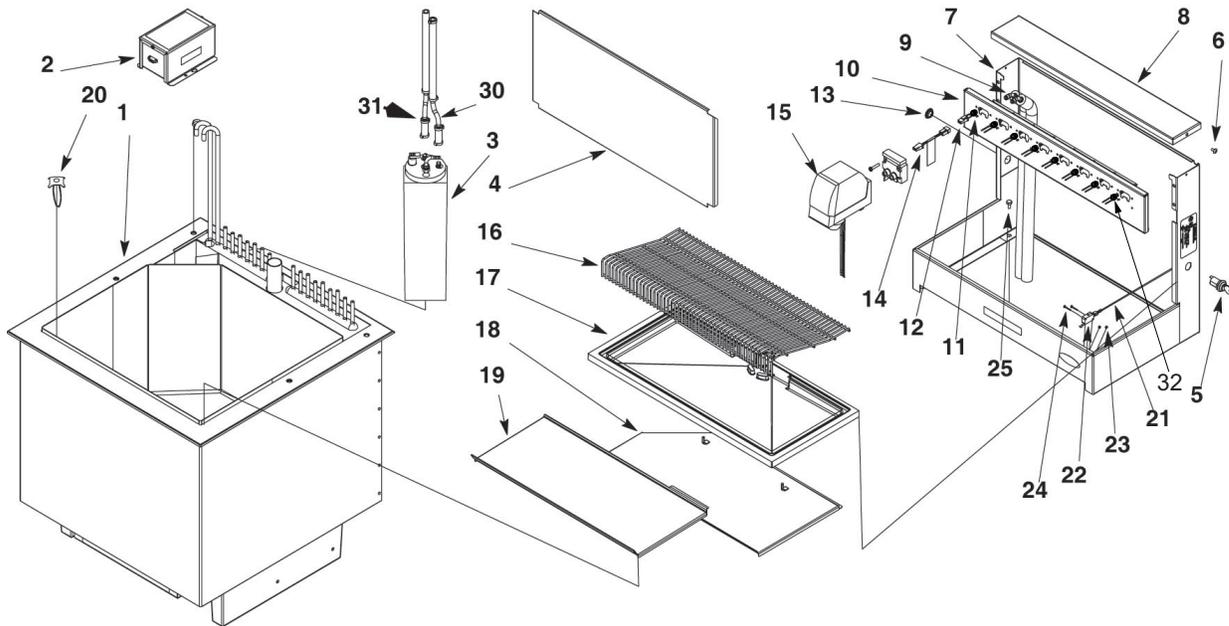


Figure 24.

Item No.	Part No.	Name
1	630201423	Decorative Frame
2	630000601	Transformer Assy, 115/24V RMT 75V
3	630001125	Carbonator (12 X 4)
4	167491003	Panel, Splash
5	33300	Lock SWT & KEY #2007
6	161168014	Machine Screw, Phil Truss Hd., No. 10-32 By 3/8-In. Long
7	630000631	Tower
8	167244007	Cap, Tower
9	630000936	Hose, .265 I.D.
10	630201561	Panel Valve, 6-Flavor
	630201551	Panel Valve, 8-Flavor
11	630300344	Wire Harness, 6-Flavor
	630300345	Wire Harness, 8-Flavor
12	163518000	Connector, 2 Circuit
13	168462000	Button Plug
14	630300373	Wire Harness (Opti-Fil Valves only)
15	318308000	Thread Rolling Screw, Phil Pan Hd., No. 10-32 By 1-In. Long

Item No.	Part No.	Name
16	630900042	Cup Rest, Grille (Opti-Fill™)
	167787002	Cup Rest (Standard)
17	630150005	Drip Tray
18	630001129	Plate, Sanitary
19	630200832	Lid, Sliding
20	162865010	Strainer
21	630300357	Lead Wire, Black)
22	167570001	Switch, Valve Lockout
23	21633	Hex Nut, No. 4-40
24	21632	Machine Screw, Rd Hd, No. 4-40 By 3/4-In. Long
25	168745001	Machine Screw, 1/4-20 By 1/2-In. Long
26	630300341	Wire Harness, Power Supply to Tower
27	41710	Fitting, 3/4-MPT By 3/4-Barb
28	161508006	Fitting, 3/4-FPT By 3/4-Barb
29	629087457	Pump and Motor with Double Check Valve
30	630000951	Hose Ass'y, Carb to Cold Plate
31	630000952	Hose Ass'y, Carb to Cold Plate S-Tube
32	164510003	Bushing Snap H 250 ID X 312

CB 2323 INTELLICARB STAINLESS TOWER 80LB WITH 8 X 4 CARBONATOR

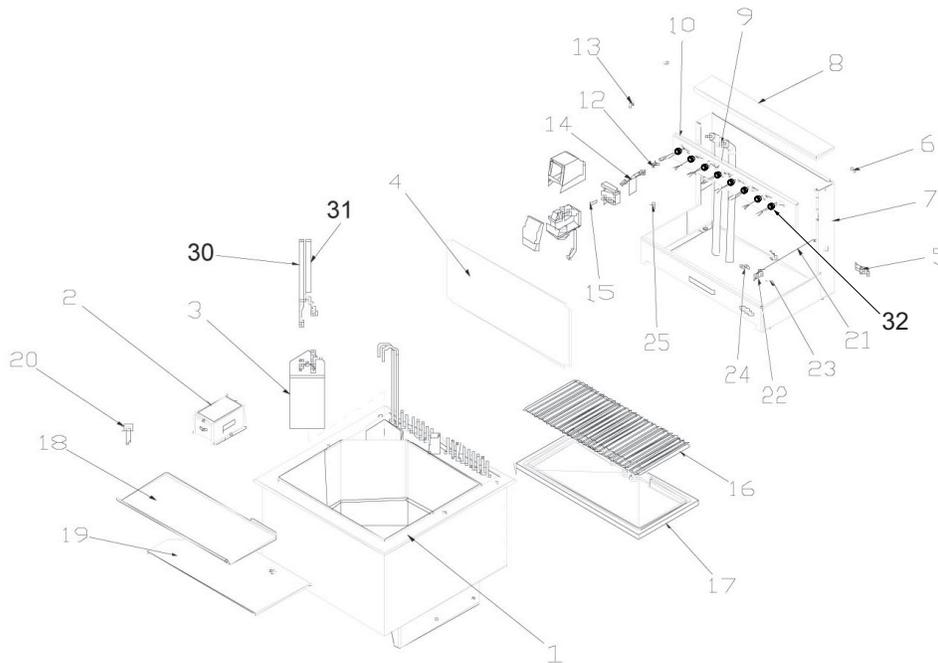


Figure 25.

Item No.	Part No.	Name	Item No.	Part No.	Name
1	630201423	Decorative Frame	16	630900042	Cup Rest, Grille (Opti-Fil)
2	630000601	Transformer Ass'y, 115/24V RMT 75V	16	167787002	Cup Rest (Standard)
3	630001124	Carbonator (8 X 4)	17	630150005	Drip Tray
4	167491003	Panel, Splash	18	630001129	Plate, Sanitary
5	33300	Lock SWT & KEY #2007	19	630200832	Lid, Sliding
6	161168014	Machine Screw, Phil Truss Hd., No. 10-32 By 3/8-In. Long	20	162865010	Strainer
7	630000631	Tower	21	630300357	Lead Wire, Black)
8	167244007	Cap, Tower	22	167570001	Switch, Valve Lockout
9	630000936	Hose, .265 I.D.	23	21633	Hex Nut, No. 4-40
10	630201561	Panel Valve, 6-Flavor	24	21632	Machine Screw, Rd Hd, No. 4-40 By 3/4-In. Long
	630201551	Panel Valve, 8-Flavor	25	168745001	Machine Screw, 1/4-20 By 1/2-In. Long
11	630300344	Wire Harness, 6-Flavor	26	630300341	Wire Harness, Power Supply to Tower
	630300345	Wire Harness, 8-Flavor	27	41710	Fitting, 3/4-MPT By 3/4-Barb
12	163518000	Connector, 2 Circuit	28	161508006	Fitting, 3/4-FPT By 3/4-Barb
13	168462000	Button Plug	29	629087457	Pump and Motor with Double Check Valve
14	630300373	Wire Harness (Opti-Fil Valves only)	30	630000952	Hose Ass'y, Carb to Cold Plate
15	318308000	Thread Rolling Screw, Phil Pan Hd., No. 10-32 By 1-In. Long	31	630000951	Hose Ass'y, Carb to Cold Plate
			32	164510003	Bushing Snap H 250 ID X 312

CB 3023 INTELLICARB STAINLESS TOWER 130LB WITH 12 X 4 CARBONATOR

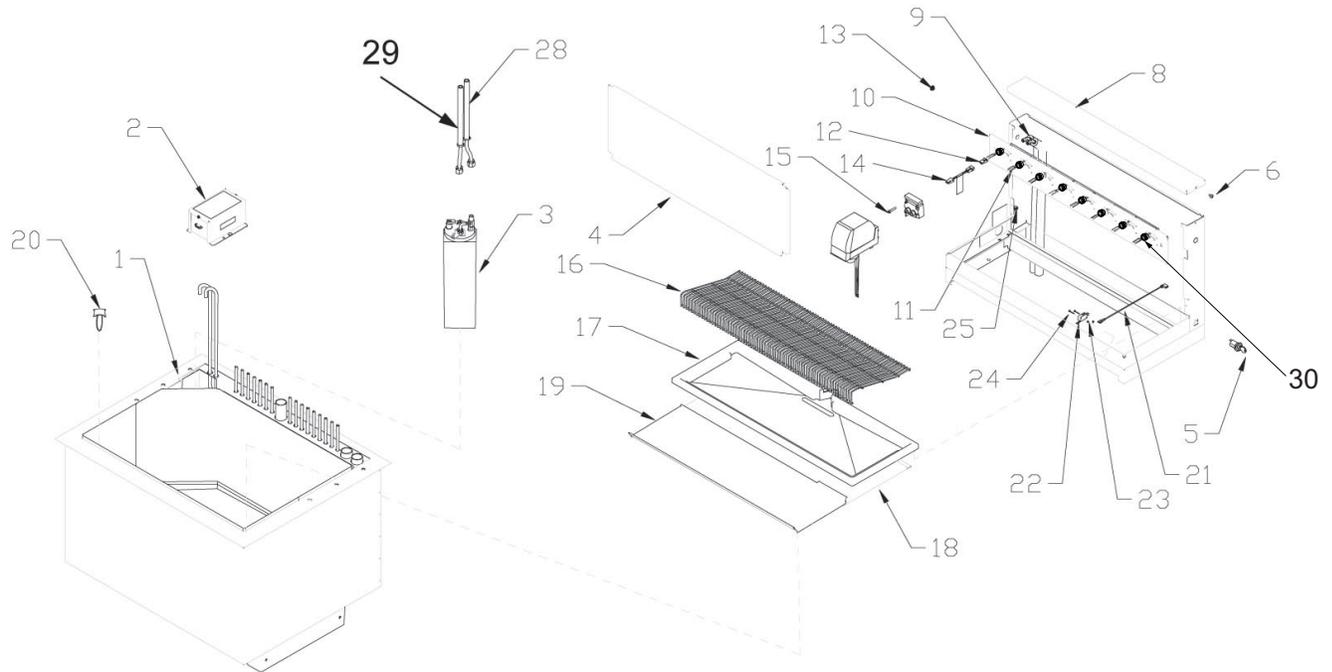


Figure 26.

Item No.	Part No.	Name
1	630201420	Frame Dec CB3023
2	630000601	Transfrmr 115/24 RMT 75VA
3	630001125	Carbonator Tank Assy
4	167491009	Splashguard Panl 30" SST
5	33300	Lock SWT & KEY #2007
6	161168014	Screw Ma 1032 012TR SS PH
7	630000993	Tower W/A 30" SS
8	167244011	Cover TWR 30" SS TWR
9	630000936	Hose 0.265F 16"
10	630001123	Panel Val CB3023 W/A
11	630300345	Harn Wire 8VLV 2CR 2.56SPC
12	163518000	Conn Elec Mate-N-Lok 2CR
13	168462002	Plug-Butn 1/2 Hole STNI SWC
14	630300373	Harn Wire Jumper (Opti-Fill™ only)
15	318308000	Screw TR 10-32 PAPH 32 SS HRD

Item No.	Part No.	Name
16	167787013	Cup-Rest CB3023 Opti (Opti-Fill™ only)
	167787007	Cup-Rest 3023SST STND
17	167481019	Drip-Tray 30" TWR BLK
18	630000658	Plate Sanitary W/A 30" IntelliCarb
19	630200933	Lid SLI 3023 IntelliCarb
20	162865010	Strainer Corner Drain W/A
21	630300357	Lead Wire 22" BK 20G2 187-250
22	167570001	Switch Val Lock-Out
23	21633	Nut Hex 04-40 STZI
24	21632	Screw MA 04-40 RD 24 STZI
25	168745001	Bolt MA 1/4-20 HX 16 STZI
26	630300341	Harn Wire TWR 96" 2CR 25R
27	629087457	Pump Asy Mtr
28	630001001	Hose Asy Carb to C-Plt S-Tube
29	630001006	Hose Insulation
30	164510003	Bushing Snap H 250 ID X 312

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 CO₂ 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 CO₂ system, stop dispensing, shut off CO₂ 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"	<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. Air in carbonator tank. B. Water, oil or dirt in CO₂ supply 	<ul style="list-style-type: none"> 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 CO₂. Clean CO₂ system (lines, regulators, ect.) using a clean CO₂ supply.
Dispensed product comes out of dispensing valve clear but foams in cup or glass.	<ul style="list-style-type: none"> A. Oil film or soap scum in cup or glass. B. Ice used for finished drink is sub-cooled. 	<ul style="list-style-type: none"> 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).
<p>NOTE: Crushed ice in the glass also causes dispensing problems. When finished drink hits sharp edges of ice, carbonation is released from dispensed drink.</p>		



Trouble	Probable Cause	Remedy
<p>Dispensed product comes out of dispensing valve clear but foams in cup or glass - (Cont'd)</p>	<p>C. Syrup over-carbonated with CO₂ as indicated by bubbles in inlet syrup lines leading to unit.</p> <p>D. Warm product-No ice in bin, bridged ice on cold plate or plugged drain.</p>	<p>C. 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.</p> <p>D. Replenish ice, break ice up to eliminate bridging, unplug the drain.</p>
<p>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.</p>		
<p>No product dispensed from one dispensing valve</p>	<p>A. Broken or disconnected wiring.</p> <p>B. Inoperative dispensing valve solenoid coil.</p> <p>C. Inoperative dispensing valve micro switch.</p>	<p>A. Repair or connect wiring.</p> <p>B. Replace solenoid coil as instructed.</p> <p>C. Replace micro switch as instructed.</p>
<p>Only carbonated water dispensed.</p>	<p>A. Quick disconnects not secure on syrup tanks.</p> <p>B. Out of syrup.</p> <p>C. B-I-B connectors not properly connected.</p> <p>D. Syrup secondary CO₂ regulator not properly adjusted.</p> <p>E. Inoperative dispensing valve.</p> <p>F. Dispensing valve syrup flow regulator not properly adjusted.</p> <p>G. Dispensing valve syrup flow regulator, syrup tank quick disconnect, or syrup lines restricted.</p>	<p>A. Secure quick disconnects on syrup tanks.</p> <p>B. Replenish syrup supply as instructed.</p> <p>C. Properly attach the connectors.</p> <p>D. Adjust syrup tanks secondary CO₂ regulator as instructed.</p> <p>E. Repair dispensing valve.</p> <p>F. Adjust dispensing valve syrup flow regulator (Water-to Syrup "Ratio") as instructed.</p> <p>G. Sanitize syrup system as instructed.</p>
<p>Only syrup dispensed</p>	<p>A. Plain water inlet supply line shutoff valve closed.</p> <p>B. Carbonator power cord unplugged from electrical outlet.</p>	<p>A. Open plain water inlet supply line shutoff valve.</p> <p>B. Plug carbonator power cord into electrical outlet.</p>

TROUBLESHOOTING for Carbonator		
Trouble	Probable Cause	Remedy
Pump motor will not run	<p>A. Locked pump rotor-dirt or pipe compound in pump; pump seized.</p> <p>B. Carbonator flooded.</p> <p>C. No power.</p>	<p>A. Remove and check for free rotation or replace. Also check CO₂ supply, faulty single check valve, liquid level control or probe.</p> <p>B. Main water supply pressure higher than CO₂ pressure within the carbonator. If maximum water supply pressure is within 20 PSI of CO₂ pressure, install water pressure regulator.</p> <p>C. Check source of electrical supply and for loose connections.</p>
Pump runs continuously	<p>A. Pump water supply restricted.</p> <p>B. Pump discharge line restricted.</p> <p>C. Inefficient or worn pump.</p>	<p>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.</p> <p>B. Water inlet check valve may be plugged. Remove, clean, or replace rubber O-Rings.</p> <p>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: A badly 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.</p>



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 intermittently	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

TROUBLESHOOTING		
Trouble	Probable Cause	Remedy
<p>Drink has off-taste or odor (water contamination)</p>	<ul style="list-style-type: none"> A. Leaking check valves. B. Too much plumbers pipe compound on pipe joints. C. Soda water and beverage lines made of brass or copper. D. High chlorine level. E. Tank corrosion. F. Contaminated CO₂ 	<ul style="list-style-type: none"> A. Replace O-Rings in double check valve or replace double check valve. See check valve installation instruction section. B. Remove pipe compound and clean joints. Use PTFE pipe thread tape. C. Carbonated water reacts with brass or copper and should <u>not</u> be dispensed through lines of this material. Replace lines with stainless steel or beverage grade plastic. D. Install water filter to eliminate chlorine in excess of 1.5 ppm. Use type that do not remove all chlorine. E. Replace tank. F. Check that CO₂ is beverage grade.

Cornelius Inc.
www.cornelius.com