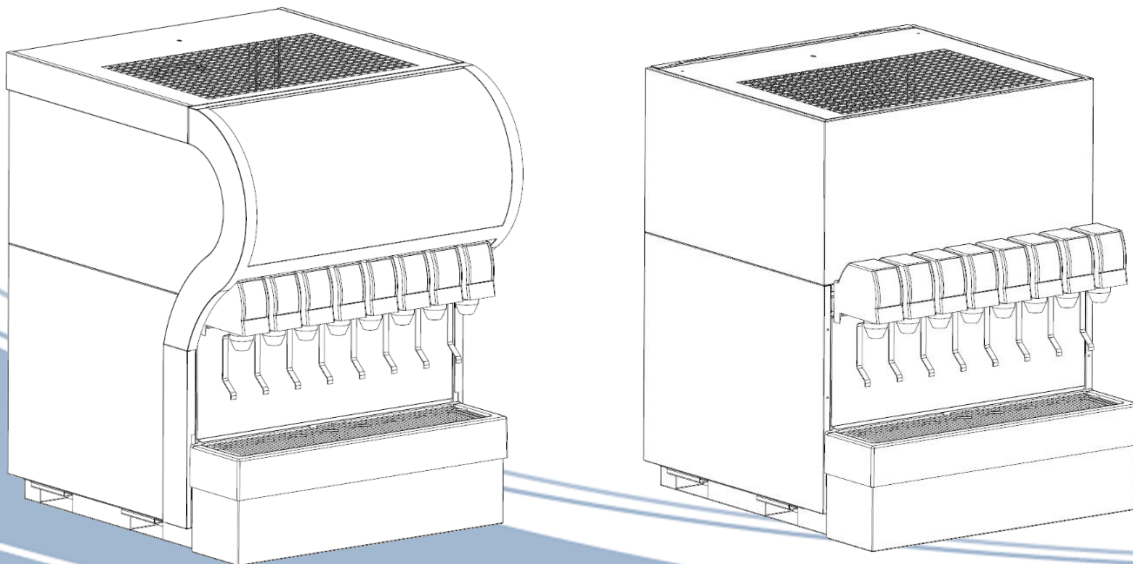




VANGUARD 2.0

POST-MIX BEVERAGE DISPENSER

Installation, Operation & Service Manual



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Revision: B

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

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Contact Information:

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

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This document contains the original instructions for the unit described.

CORNELIUS INC

12 Xin Tai Road, TEDA, Tianjin,

PRC300457

Correct Disposal of this Product



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

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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.
- **Must wear gloves when the technicians start to service or maintain .**

Recognition

Recognize Safety Alerts
 <p><i>This is the safety alert symbol. When you see it in this manual or on the unit, be alert to the potential of personal injury or damage to the</i></p>

DIFFERENT TYPES OF ALERTS

DANGER:

Indicates an immediate hazardous situation which if not avoided **WILL** result in serious injury, death or equipment damage.

WARNING:

Indicates a potentially hazardous situation which, if not avoided, **COULD** result in serious injury, death, or equipment damage.

CAUTION:

Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury or equipment damage.

SAFETY TIPS

- Carefully read and follow all safety messages in this manual and safety signs on the unit.
- Keep safety signs in good condition and replace missing or damaged items.

- Learn how to operate the unit and how to use the controls properly.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- 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:



Unit contains flammable refrigerant. care to be taken while handling, moving and use of the unit to avoid either damaging the refrigerant tubing or increasing the risk of a leak.

 **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**.

POWER CORD

If the power cord is damaged, it must be replaced by a special cord available from the manufacturer or its service agent. Detachable cord sets should meet the below requirements:

- Cord type should be H05VV-F or stronger, with earthing conductor;
- Cord section should be minimum nominal cross-sectional area of 1.0mm²;
- Plug should also be earthing type and obtain approval with above cord.

SOUND LEVEL

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

UNIT LOCATION

This unit is not designed for use in outdoor locations.

 **CAUTION:**

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

 **CAUTION:**

The Appliance must be placed vertically on horizontal Surface.

GENERAL INSTRUCTIONS

GENERAL DESCRIPTION

This manual is a guide for installing, operating, and maintaining this equipment.

This section gives the Unit Description, Theory of Operation, and

Design Data for Pioneer Post-Mix Beverage Over Counter Dispenser. This Unit must be installed and serviced by a qualified Service Person. This Unit Contains no User serviceable parts.

WARRANTY REFERENCE INFORMATION

Warranty Registration Date (to be filled out by customer)	
Unit Part Number:	
Serial Number:	
Install Date:	
Local Authorized Serviced Center:	

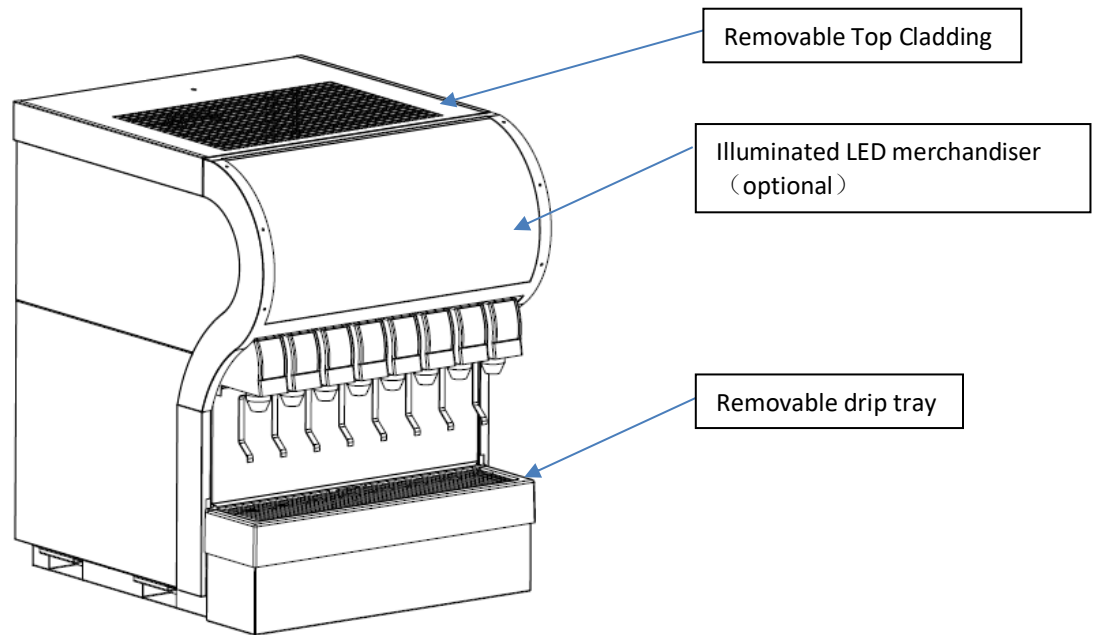
UNIT DESCRIPTION

The Vanguard 2.0 over-the-counter, post-mix, beverage dispenser is compact and may be installed on a countertop as a self-service Unit or the Units are equipped with drop-in type refrigeration assemblies that are easily removed for service and maintenance. Adjustable water flow regulators and syrup flow regulators, located on the dispensing valves, are easily accessible to control the water flow rate of the dispensing valves and Water-to-Syrup “Ratio” of the dispensed product.

The only requirements for operation are installation of the Unit on a counter top, installation of LOOSE-SHIPPED PARTS, filling water tank with water, connection to a remote carbonator (Unit requiring connection to a remote carbonator), connections to plain water and syrup supplies, adjustment of CO2 regulators, plugging unit power cord into an electrical outlet, and adjusting the dispensing valves water and syrup flow regulators for proper water flow rate and Water-to-Syrup ‘ ‘Ratio’ ’ of the dispensed product.

The units are available in two sizes. both sizes can be ordered with or without built-in carbonator.

- Medium — six valve (In developing)
- Large — eight valve



VANGUARD 2.0 DISPENSER (EIGHT-FLAVOR UNIT SHOWN) Internal carbonation model

The Vanguard 2.0 over the counter, post-mix, beverage dispenser offers the following features:

- Six or eight valves
- Built-in carbonator (optional)
- Removable refrigeration deck
- Removable drip tray
- Removable cladding and Merchandiser
- New ID design (General ID is also available)
- Illuminated LED Merchandiser

SPECIFICATIONS

DESIGN DATA

Valve 6 or 8 valves 6 or 8 valves	Unit Requiring Connection To Remote Carbonator	Unit With Built-In Carbonator
Valve Positions Convertible To Water*	6 or 8 valves	6 or 8 valves
All No. 3 & No. 4 (6 Valves)	All	No. 3 & No. 4 (6 Valves) No. 4, No. 7 & No. 8 (8 Valves)
Nominal Ice Bank Weight	25 kg (55 lbs)	25 kg (55 lbs)
Water Bath Capacity(no ice bank)	80 L (21.1 gal.)	77 L (20.6 gal.)
Overall Height (Art ID)	860mm(33.9")	860mm(33.9")
Overall Height (General ID)	810mm(31.9")	810mm(31.9")
Overall Width	636mm(25")	636mm(25")
Overall Depth	716mm(28.2")	716mm(28.2")
Counter Weight (Empty water bath)	102Kg	112Kg
Shipping Weight	117Kg	127Kg
Counter Weight(filled water bath)	182Kg	190Kg
* valves numbered right to left facing the front of the dispenser		

PART NUMBER

Unit requiring connection to Remote carbonator

891813501 (220VAV,60Hz,8SFVPC, Latin American)

891813502 (220VAV,60Hz,8SFVPC, Japan)

891813503 (220VAV,60Hz,8SFVPC, Korea)

Unit with built-in carbonator

891816501(220VAV,60Hz,8SFVPC, Art ID Latin American)

CAPABILITY

Dispensing rate : 12 OZ. drinks 2 / min. or fewer 320drinks(IC)/400drinks(RE)

C Condition: 90°F(32.2°C)65%RH

* NOTE: Number of drinks dispensed 4.4° C (40° F) or below @ 32° C (90° F)

syrup and water inlet temperature and 32° C (90° F) ambient.

MISCELLANEOUS INFORMATION

Refrigerant.....R290

Compressor HP.....3/4 HP
Standard Valve.....LEV, LWV, FFV, UF-1, SFV
Cup Clearance.....298 mm (11.7inches), 197 mm (7.8 inches) optional
Agency Listing.....CB, ETL
Electronic Controls..... Electronic ice bank control

THEORY OF OPERATION

UNIT REQUIRING CONNECTION TO REMOTE CARBONATOR

NOTE: The unit is factory set to dispense non-carbonated water and carbonated water as per customer's requirement. It is available to convert carbonated waters to non-carbonated water valve(s). Non-carbonated water dispensing valve(s) may be converted to also dispense carbonated drink(s).

A CO2 cylinder delivers carbon dioxide (CO2) gas through adjustable CO2 regulators to the applicable syrup tanks or bag-in-box syrup pumps and also the remote carbonator. Plain water enters the remote carbonator water tank and is carbonated by CO2 gas pressure also entering the water tank. When dispensing valve is opened, CO2 gas pressure exerted upon the applicable syrup tank contents or bag-in-box syrup pump pushes syrup from the syrup supply, through the Unit cooling coils, and on to the dispensing valve.

Carbonated water is pushed from the remote carbonator by CO2 gas head pressure and is pushed through the Unit cooling coils to the dispensing valve. Syrup and carbonated water meet simultaneously at the dispensing valve resulting in a carbonated drink being dispensed. Still (non-carbonated) drink is dispensed in the same manner as the carbonated drink except plain water is substituted for carbonated water.

UNIT WITH INTERNAL CARBONATOR

NOTE: The unit is factory set to dispense non-carbonated water and carbonated water as per customer's requirement. It is available to dispense at most 2 non-carbonated waters (6 Flavours) or 6 non-carbonated waters (8 Flavors) with carbonated water dispensing from the remaining valve(s). Non-carbonated water dispensing valve(s) may be converted to also dispense carbonated drink(s).

A CO2 cylinder delivers carbon dioxide (CO2) gas through adjustable CO2 regulators to the applicable syrup tanks or bag-in-box syrup pumps and also the integral (built-in) carbonator. Plain water enters the integral carbonator carbonated water tank and is carbonated by CO2 gas pressure also entering the water tank. When dispensing valve is opened, CO2 gas pressure exerted upon the applicable syrup tank contents or bag-in-box syrup pump pushes syrup from the syrup supply, through the Unit syrup cooling coil, and on to the dispensing valve.

Carbonated water is pushed from the integral carbonator carbonated water tank by CO2 gas head pressure and is pushed through the carbonated water manifold to the dispensing valve. Syrup and carbonated water meet simultaneously at the dispensing valve resulting in a carbonated drink being dispensed. Still (non-carbonated) drink is dispensed in the same manner as the carbonated drink except plain water is substituted for carbonated water.

NOTE

INSTALLATION

⚠ CAUTION— Only trained and certified electrical, plumbing and refrigeration technicians should service this unit. All wiring and plumbing must confirm to national and local codes.

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.

UNPACKING

- * Remove shipping tape and other packing material.
- * Remove four shipping nuts that secure the drop-in refrigeration assembly in the lower cabinet.
- * Unpack the loose parts and make sure all items are present and in good condition.

No.	Part No.	Description	Quantity
1	890816703	Cup Rest	1
2	890817602	Drip Tray	1
3	890811504H	Drip Tray Bracket	1
4	317784000	Screw,	6
5	1408120020	Drip Tray Drain Hose	1
6	140135000	Clamp,Drip Tray Drain Hose	1
7	188072000	Screw	6
8	As request	Valve Stickers set	1
9	Service	Manual	1

IDENTIFICATION OF LOOSE-SHIPPED PARTS

1. Drip tray brackets to be installed on the unit, then drip tray to be installed on the drip tray brackets. Cup rest is then to be installed in the drip tray.
2. PC valve unit needs to install a high bracket to keep a small clearance from the valve to cup rest. The syrup and water source inlet Lines to be connected to the unit will not be routed through the access hole.
3. Drip tray drain hose is to be connected to the drip tray and secured with clamp, drip tray drain hose.
4. Water lever kit to be installed on dispenser' s equipped with UF-1 dispensing valves.

SELECTING LOCATION



DANGER: To avoid possible fatal electrical shock or serious injury to the operator, it is required that a GFI (ground fault circuit interrupt) be installed in the electrical circuit for the domestic Units. It is required that an ELCB (earth leakage circuit breaker) be installed in the electrical circuit for the export Units.

This Unit may be installed on a countertop as a self-serve Unit or the Unit may be installed in a drive-through or a center-island installation. Locate the Unit so the following requirements are satisfied.

1. Near a properly grounded electrical outlet with proper electrical requirements. The electrical circuit must be properly fused (slow blow type fuse) or circuit must be connected through an equivalent HACR circuit breaker. The electrical outlet must be accessible for ease of connecting and disconnecting the Unit power cord. No other electrical appliance should be connected to this circuit. ALL ELECTRICAL WIRING MUST CONFORM TO NATIONAL AND LOCAL ELECTRICAL CODES.



CAUTION: Do not place or store anything on top of the Unit.

2. Clearance above top of the Unit must be open to the ceiling. A minimum clearance of 300 mm (12 inches) must be maintained on the back side of the Unit and a minimum of 150 mm (6 inches) clearance to the nearest obstruction must be maintained on both sides of the Unit. These clearances must be provided to allow for proper air flow through the Unit to cool the refrigeration system. The Unit must be located close to a permanent drain to route and connect the Unit drip tray drain hose.

Installation

Placing Unit In Operating Position



CAUTION: This Unit is intended for indoor installation only. Do not install this Unit in an outdoor environment which would expose it to the outside elements.

The water tank drain hose, drip tray drain hose, and the water tank overflow hose may either be routed out through access hole on back of the Unit or they may be routed down through hole cut in the countertop under front of the Unit. The carbonated water (Unit with integral carbonator), plain water, and the syrup source inlet lines that are to

be connected to the Unit may either be routed in through the back access hole or they may be routed up through hole cut in the countertop under front of the Unit. Proceed to applicable installation instructions.

1. Remove Unit front access panel by lifting up the panel, then remove the panel.
2. Install drip tray brackets on front of Unit and insert it in the hole.
3. Install the drain fitting and drain hose, then tighten the clamps. Put the drip tray on the bracket.
4. Place the Unit in operating position on the countertop.

Out Unit base back access hole - Route water tank drain hose, drip tray drain hose, and

water tank overflow hose out Unit base back access hole. The carbonated water, plain water, and the syrup inlet lines that are to be connected to the Unit will be routed through the back access hole up to the front of the Unit for connection to the stainless-steel inlet tubes.

6. Through hole cut in the countertop, cut hole in countertop as indicated, then place Unit in position on the countertop. Cutting hole in the countertop allows routing the drip tray drain hose, water tank drain hose, and the water tank overflow hose down through the hole and syrup and water source inlet lines up through the hole to the stainless-steel inlet tubes on front of the Unit. Route water tank and drip tray drain hoses and the water tank overflow hose down through hole in the countertop. Install rear access cover over Unit back access hole.

7. Place Unit in operating position on the countertop.
8. To comply with NSF International (NSF) requirements within the United States, the Unit base must be sealed to the countertop and all access holes in the Unit base must be closed and sealed. Proceed as follows to seal the Unit base to the countertop. An equivalent

A. Tilt the Unit up to expose the bottom of its base.

B. Liberally apply silastic sealant (such as Dow Corning RTV 731 or equivalent) on Unit base bottom edges.

NOTE: Do not move the Unit after positioning or the seal from the base to the countertop will be broken.

C. Lower the Unit into operating position on the countertop to complete seal from the Unit base to the countertop.

D. Apply additional sealant around bottom of the Unit base. The seal must have a minimum radius of 13 mm (1/2-inch) to prevent crevices and to ensure a complete seal.

E. All access holes to inside of the Unit must be closed and sealed.

INSTALLING WATER LEVER KITS

The water lever kits are loose-shipped only with dispenser's equipped with UF-1 dispensing valves. The water lever kits may be installed on dispensing valves to dispense plain or carbonated water only.

Refer to instructions included with the kits for installation instructions.

CONNECTING DRIP TRAY DRAIN HOSE TO A PERMANENT DRAIN

NOTE: Connection of drip tray drain hose to a permanent drain is recommended.

Drip tray drain hose routed to a waste container is not recommended due to sanitation and cleaning problems.

The drip tray drain hose must be attached to the drain to allow a 76mm (3-inch) air to the drain to allow a 76mm (3-inch) air local plumbing codes and health codes.

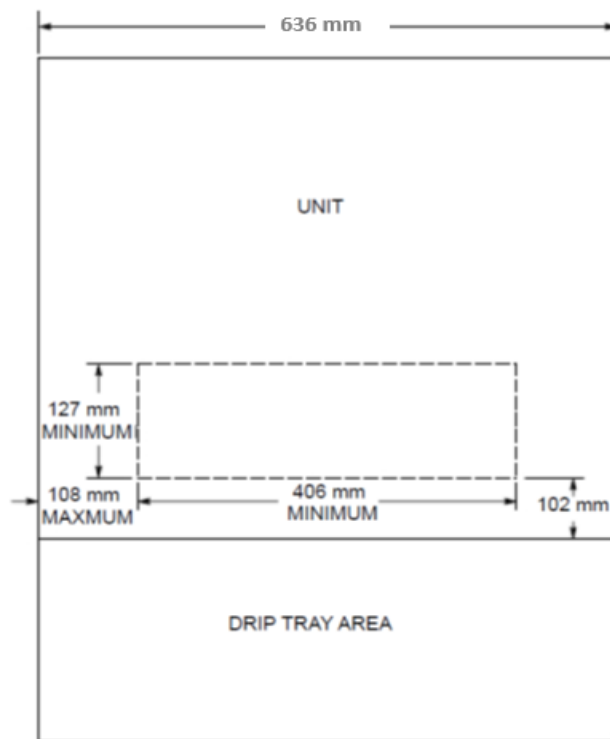
1. Connect drip tray hose to nipple on the drip tray. Secure connection with clamp.
2. Route lower end of drip tray drain hose to and attach to the drain allowing a 76mm (3-inch) air gap between the drain and end of the drain hose.

Connecting Syrup Source Lines To The Unit

NOTE: The Unit barbed stainless-steel syrup inlet tubes located on the front of the Unit are labeled to identify the dispensing valves they serve. For example, the barbed stainless-steel tube labeled “1” provides syrup to be dispensed from the No. 1 dispensing valve.

Proceed as follows to connect syrup source lines to the Unit.

1. Route the syrup source lines (numbered for identification) from the syrup source location up to the Unit barbed stainless-steel syrup inlet tubes on front of the Unit.
2. Connect the numbered syrup source lines to the corresponding labeled Unit barbed stainless-steel syrup inlet tubes.



VANGUARD 2.0 COUNTER CUTOUT

Connecting carbonated water source (unit requiring connection to remote carbonator)

Proceed as follows to connect carbonated water source line to Unit requiring connection to a remote carbonator.

1. Route carbonated water source line from the remote carbonator up to the Unit .
2. Connect the carbonated water source line to the labeled barbed stainless-steel carbonated water inlet tubes on front of the Unit.

Connecting plain water source line to unit

NOTE: Cornelius Inc; recommends that a water shutoff valve and a water filter be installed in the plain water source to be connected to the Unit. The plain water source water pressure must not be less than 35-psi or more than 45-psi. If water pressure exceeds 45-psi, a water pressure regulator must be used to regulate the water pressure.

The plain water source to the equipment shall be installed with adequate back flow protection to comply with applicable Federal, State, and local codes.

Unit requiring connection to remote carbonator

Refer to remote carbonator flow diagram on page 53 & 54, below show the sample for plain water connect to unit:

1. Route plain water source line from plain water source up to the Unit.
2. Connect plain water source line to barbed stainless-steel plain water inlet tube labeled “WTR 3” (six-flavor Unit) or “WTR 4” (eight-flavor Unit) on front of the Unit.

Unit with integral (built-in) carbonator

Proceed as follows to connect plain water source line to Unit with an integral (built-in) carbonator.

1. Route plain water source line from plain water source up to the Unit.
2. Connect plain water source line to barbed stainless-steel main water inlet with labeled “WTR” when the access panel is removed .

For Non-carbonated drink, connect plain water source line to barbed stainless -steel inlet in the bottom of manifold when the access panel is removed.

Connecting CO₂ source line (unit with integral carbonator)

Proceed as follows to connect CO₂ source line to Unit with integral (built-in) carbonator.

1. Route CO₂ source line, connected to an adjustable CO₂ regulator, up to the Unit.
2. Connect CO₂ source line to CO₂ check valve on end of the Unit CO₂ inlet tube labeled “CO₂” .

CO₂ REGULATORS ADJUSTMENTS



WARNING: CO₂ displaces oxygen. Strict attention must be observed in the prevention of CO₂ (carbon dioxide) 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 concentration of CO₂ gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

Adjusting carbonator CO₂ regulator

Unit requiring connection to a remote carbonator

Adjust CO₂ regulator (regulator controls carbonator CO₂ pressure) as instructed in manual provided with the remote carbonator.

Unit with integral (built-in) carbonator

Adjust CO₂ regulator (regulator controls Unit built-in carbonator CO₂ pressure) to a nominal 80-psi.

Adjusting syrup supplies CO₂ regulator

Sugar syrup tanks CO₂ regulator

Adjust syrup tanks CO₂ regulator to a minimum of 45-psi.

LOW-CALORIE (DIET) Syrup tank CO₂ regulator

Adjust low-calorie (diet) syrup tank secondary CO₂ regulator to 10-psi for syrup lines up to 30-feet in length. Syrup lines longer than 30-feet in length may require a slightly higher setting of 12-psi maximum. Excessive CO₂ pressure may cause low-calorie syrup carbonation resulting in foam.

SYRUP PUMPS (BAG-IN-BOX SYSTEM)

Adjust the syrup pumps CO₂ regulator to 70-psi.

DO NOT EXCEED MAXIMUM PRESSURE SPECIFIED ON THE SYRUP PUMPS.

Fill water tank and start the refrigeration system

1. Make sure plug in end of the water tank drain hose is secure.

NOTE: Use a low-mineral-content water where a local water problem exists.

2. Remove plug from drop-in refrigeration assembly platform water fill hole. Fill the water tank with clean water until water flows out of the water tank overflow hose.

USE A LOW-MINERAL-CONTENT WATER WHERE A LOCAL WATER PROBLEM EXISTS.

3. Connect the water tank filling tube with the supply line, then fill the water tank. A shut off valve is recommended.

4. Unit with integral (built-in) carbonator—Activate plain water and CO₂ supplies to the Unit. Make sure CO₂ inlet pressure to the carbonator is adjusted to a nominal 80-psi.



WARNING: The Unit must be electrically grounded to avoid possible fatal electrical shock or serious injury to the operator. The power cord is equipped with a three-prong plug. If a three-hole (grounded) electrical outlet is not available, use an approved method to ground the Unit.

5. Place dispensing valves keyed lock-out switch on side of the Unit in the ‘ ‘OFF’ ’ position.
6. Make sure Unit power switch (if applicable) is in “ON” position.
7. Plug the Unit power cord into an electrical outlet with the proper electrical requirements. The compressor, condenser fan motor, and agitator motor will start and begin forming an ice bank. When full ice bank has been formed, the compressor and condenser fan motor will stop but the agitator motor will continue to operate circulating ice water bath in the water tank.

8. Unit With Integral Carbonator

The Unit integral carbonator water pump motor will start and begin filling the carbonated water tank when the Unit is put into operation. The carbonator water pump motor will stop after the water tank has been filled with carbonated water.

IMPORTANT: Circulating air, required to cool the refrigeration assembly condenser coil, is drawn in through grille on back of the hood and is exhausted out through grille on top of the hood. For proper cooling of the condenser coil, the hood back grille must be positioned over the condenser coil on back side of the Unit.

9. Install hood on the Unit and secure with screw.

Preparation for operation

1. **Unit requiring connection to a remote carbonator**—Activate plain water and carbonated water supplies to the Unit.
2. Place dispensing valves keyed lock-out switch on side of the Unit in the ‘ ‘ON’ ’ position.
3. Dispense from all dispensing valves to purge all air from the carbonated water and the plain water systems.
4. Check entire system for plain water, carbonated water, and CO₂ leaks and repair any leaks.

IMPORTANT: All syrup systems must be sanitized before the Unit is put into operation.

5. Sanitize all syrup systems as instructed in the SERVICE AND MAINTENANCE section of this manual.
6. Activate syrup supplies to the Unit.
7. Dispense from all dispensing valves to purge all air from the syrup systems.

NOTE: The dispensing valves adjustable water flow regulators are factory adjusted and should require no further adjustment. If re-adjustment should become necessary, consult the dispensing valve manufacturer for the proper adjustment procedure.

8. Adjusting Dispensing Valves For Water-To-Syrup “Ratio” (Brix) Of Dispensed Product. The dispensing valves are each equipped with adjustable syrup flow regulators. The Water-To-Syrup “Ratio” (Brix) of the dispensed product is controlled by adjustment of these syrup flow regulators. Consult the dispensing valve manufacturer for the adjustment procedure.

9. If your dispenser is equipped with portion control dispensing valves, consult the dispensing valves manufacturer for the proper portion control adjustment procedure.
10. Recheck entire installation for CO2, plain water, carbonated water, and syrup leaks and repair any leaks.
11. Install Unit front access panel on Unit and secure with two screws.
12. Slide drip tray all the way up on the drip tray brackets, then secure drip tray to brackets with two screws, thread rolling.

Operator's Instructions



WARNING: Disconnect electrical power to the Unit to prevent personal injury before attempting any internal maintenance. Only qualified personnel should service the internal components or electrical wiring.



CAUTION: Do not place or store anything on top of unit.

Operating Controls

Dispensing Valve Operation

Push Button Dispensing Valve

The push button on front of the dispensing valve need only to be pressed and held until the cup or glass is full of product, then release the button.

Dispensing valve with dispense lever

The dispensing valve lever, located below the dispensing valve, need only to be pressed with a cup or glass to dispense product.

Portion control dispensing valve

- A. Place desired amount of ice in appropriate cup or glass.
- B. Hold cup or glass under dispensing valve nozzle.
- C. Press appropriate “S” (Small), “M” (Medium), “L” (Large), or “XL” (Extra Large) dispense switch to dispense product into cup or glass.

NOTE: Dispensing of a portion control drink may be stopped by pressing the “CANCEL/POUR” switch. Drinks may be manually dispensed (non-portion control) by pressing and holding the “CANCEL/POUR” switch.

Unit Power Switch

The Unit power switch must be in ‘ ‘ON’ ’ position before the Unit will operate if have.

DISPENSING VALVES KEYED LOCK-OUT SWITCH

The dispensing valves keyed lock-out switch, located on side of the Unit must be in the “ON” (vertical) position to operate the electric dispensing valves. The keyed lock-out switch in the “OFF” (horizontal) position turns off electrical power to the dispensing valves only but the refrigeration system will continue to operate.

Daily Pre-Operation Check

1. The CO2 supply should be checked daily to make sure there is an adequate supply of CO2. If necessary, replenish the CO2 supply.
2. Make sure there is sufficient syrup supply. If necessary, replenish the syrup supply.
3. Make sure the drip tray is clean and clean cup rest is in place in the drip tray.

Unit Operation

1. Make sure the Unit power switch (if applicable) is in the ‘ ‘ON’ ’ position.
2. Make sure the dispensing valves keyed lock-out switch, located on side of the Unit, is in the “ON” (vertical) position.
3. Hold cup or glass under the dispensing valve nozzle, then activate the valve to dispense product.

CLEANING AND SANITIZING

Daily Cleaning Of Unit

Daily cleaning procedure for the Unit should be performed at the end of daily operation as instructed in SERVICE AND MAINTENANCE section of this manual.

Sanitizing Syrup Systems

The syrup systems should be sanitized every 90-days following Sanitizer Manufacturer’ s recommendations as instructed in SERVICE AND MAINTENANCE section of this manual.

The sanitizing procedures should be performed by a qualified Service Person.

CHECKING DROP-IN REFRIGERATION ASSEMBLY CONDENSER COIL FOR RESTRICTIONS



CAUTION: Circulating air, required to cool the refrigeration assembly condenser coil, is drawn in through grille on back of the hood and is exhausted out through grille on top of the hood. Restricting air in or out of the Unit will decrease the refrigeration system cooling efficiency. Failure to clean, and allowing the condenser coil to become clogged, will cause the refrigeration system to overheat which will eventually result in refrigeration compressor failure and will automatically void the factory warranty.

Area on top and back side of the hood must be always kept free of obstructions. Make sure nothing is stored on top of the hood. The Condenser coil must be cleaned every 30-days as instructed in SERVICE AND MAINTENANCE section of this manual to maintain proper cooling of the condenser coil. The condenser coil cleaning procedure should be performed by a qualified Service Person.

Checking Ice Water Bath

A ‘ ‘gurgle’ ’ heard from the Unit indicates the water level in the water tank is low and more water should be added for maximum product cooling. Water should be added to the water tank as instructed in SERVICE AND MAINTENANCE section. This procedure should be performed by a qualified Service Person.

Carbonator water pump yearly maintenance or after water system disruptions

Unit requiring connection to remote carbonator

The remote carbonator water pump water inlet strainer screen and the liquid double check valve must be inspected and cleaned by a qualified Service Person at least once a year under normal circumstances and after any water system disruption (plumbing work, earthquake, etc.). Refer to manual provided with the carbonator for the liquid double check valve inspection and cleaning procedure.

Unit With Integral (BUILT-IN) Carbonator

The water pump water strainer screen and the liquid double check valve must be inspected and cleaned as instructed at least once a year under normal circumstances and after any water system disruption (plumbing work, earthquake, etc.). Refer to SERVICE AND MAINTENANCE section of this manual for inspecting and cleaning procedure.

Cleaning CO₂ Gas Check Valves

The CO₂ gas check valves must be inspected and serviced as instructed at least once a year under normal conditions and after any CO₂ system servicing or disruption. Servicing of the CO₂ gas check valves should be performed by qualified Service Personnel. Refer to SERVICE AND MAINTENANCE section of this manual for CO₂ gas check valve inspecting and servicing procedure.

SERVICE

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



WARNING: Disconnect electrical power from the Unit to prevent personal injury before attempting any internal maintenance. Only qualified personnel should service the internal components or electrical wiring.

Preparing Unit For Shipping or Relocating



CAUTION: Before shipping, storing, or relocating this Unit, the syrup systems must be sanitized and all sanitizing solution must be purged from the syrup systems. All water must also be purged from the plain and carbonated water systems. A freezing ambient environment will cause residual water in the Unit to freeze resulting in damage to internal components.

Hood And Front Access Panel Removal

Hood Removal



CAUTION: Do not place or store anything on top of the Unit.

Remove screw securing the hood, then lift the hood straight up off the Unit to remove.

IMPORTANT: Circulating air, required to cool the refrigeration assembly condenser coil, is drawn in through grille on back of the hood and is exhausted out through grille on top of the hood. For proper cooling of the condenser coil, the hood back grille must be positioned over the condenser coil on back side of the Unit.

Front Access Panel Removal

Slide up the splash panel, then lift and remove the panel. There' re no screws fixed with the frame.

Periodic Inspection

1. Clean the drop-in refrigeration assembly condenser coil every 30-day as instructed in this manual section. Cleaning the condenser coil should be performed by a qualified Service Person. **DO NOT** place objects on top of or on back side of the Unit hood.

Restricting circulating air in and out of the Unit hood will cause the refrigeration system to overheat.

2. Check the dispensing valves for dripping that indicates leakage and repair as necessary.

Adjustments

CO₂ Regulators Adjustments



WARNING: CO₂ displaces oxygen. Strict attention must be observed in the prevention of CO₂ (carbon dioxide) 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 concentration of CO₂ gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

Adjusting Carbonator CO₂ Regulator

Unit Requiring Connection to A Remote Carbonator

Adjust CO2 regulator (regulator controls carbonator CO2 pressure) as instructed in manual provided with the remote carbonator.

Unit With Integral (Built-in) Carbonator

Adjust CO2 regulator (regulator controls Unit built-in carbonator CO2 pressure) to a nominal 80-psi. Adjusting Syrup Supplies CO2 Regulator.

Sugar Syrup Tanks CO₂ Regulator

Adjust syrup tanks CO2 regulator to a minimum of 45-psi.

Low-calorie (Diet) Syrup Tank CO₂ Regulator

Adjust low-calorie (diet) syrup tank secondary CO2 regulator to 10-psi for syrup lines up to 30-feet in length. Syrup lines longer than 30-feet in length may require a slightly higher setting of 12-psi maximum. Excessive CO2 pressure may cause low-calorie syrup carbonation resulting in foam.

Syrup Pumps (Bag-in-box System)

Adjust the syrup pumps CO2 regulator to 70-psi. **DO NOT EXCEED MAXIMUM CO2 PRESSURE SPECIFIED ON THE SYRUP PUMPS.**

Adjusting Dispensing Valves for Water Flow Rate

The dispensing valves adjustable water flow regulators are factory adjusted and should require no further adjustment. If readjustment should become necessary, consult the dispensing valve manufacturer for the proper adjustment procedure.

Adjusting Dispensing Valves For WATER-TO-SYRUP “RATIO”

(BRIX) Of Dispensed Product

The dispensing valves are each equipped with adjustable syrup flow regulators. The Water-To-Syrup “Ratio” (Brix) of the dispensed product is controlled by adjustment of these syrup flow regulators. Consult the dispensing valve manufacturer for the proper adjustment procedure.

Cleaning And Sanitizing

Daily Cleaning of Unit

1. Remove cup rest from the drip tray.
2. Wash drip tray in place on the Unit, then rinse drip tray with hot water allowing water to drain out through the drain hose.
3. Wash cup rest, then rinse the cup rest with clean water. Install cup rest in the drip tray.
4. Clean all external surfaces of the Unit with a sponge. Rinse out the sponge with clean water, then wring excess water out of the sponge and wipe off all external surfaces on the Unit. Wipe Unit dry with a clean soft cloth.
DO NOT USE ABRASIVE CLEANERS.
5. Remove nozzle and syrup diffusers from the dispensing valves. Place nozzles and syrup diffusers in sanitizing solution.
6. Wash the nozzles and syrup diffusers in sanitizing solution, then rinse them with potable water.

7. Re-install nozzles and syrup diffusers back on the dispensing valves.

Sanitizing Post-Mix Syrup Systems

IMPORTANT: Only qualified Service Personnel should perform sanitizing procedure on the post-mix syrup systems.

The post-mix syrup systems should be sanitized every 90-days using a non-scented household liquid bleach containing a 5.25 % sodium hypochlorite concentration. Proceed as follows to sanitize the post-mix syrup systems.

Wash Syrup Systems

1. Disconnect syrup supplies from syrup systems.
2. Rinse quick disconnects (syrup tanks systems) or bag-in-box connectors (syrup bag-in-box systems) in warm potable water.
3. Using a clean syrup tank (syrup tank system) or a five-gallon container (bag-in-box system), prepare a full tank or container of liquid dishwasher detergent by using 70° F (21° C) to 100 F (38° C) potable water and 0.5 oz. (15 ml) of liquid dishwasher detergent to one gallon of potable water. Stir detergent solution to thoroughly mix the solution.

4. Syrup Tank Systems

- A. Observe and note CO2 pressure setting on the syrup tanks CO2 regulator, then re-adjust CO2 regulator to 60 to 80-psi. Pressurize syrup tank containing detergent solution to 60 to 80-psi.
- B. Connect detergent solution tank, pressurized at 60 to 80-psi, into one of the syrups systems.

Bag-in-Box Syrup Systems.

- A. Install bag valves, cut from empty bag-in-box syrup containers, on ends of syrup containers syrup outlet tubes connectors.
 - B. Place all syrup outlet tubes, with bag valves on their ends, in container containing detergent solution.
5. Flush the syrup system and dispensing valve as follows:
- A. Place waste container under applicable dispensing valve.
 - B. Activate the dispensing valve for one minute to purge all syrup and flush out the syrup system.
 - C. Continue to activate the dispensing valve in cycles (“ON” for 15-seconds, “OFF” ,then “ON” for 15-seconds). Repeat “ON” and “OFF” cycles for 15-cycles.
6. Connect detergent solution to the remaining syrup systems and flush syrup out of the syrup systems as instructed in step 5 preceding.
7. Remove detergent solution source from the syrup system.

Flush Syrup Systems

8. Syrup Tank Systems

Connect syrup tank containing potable water, pressurized at 60 to 80-psi, into one of the syrup systems.

Bag-in-Box Syrup System

Fill five-gallon container with potable water, then place all bag-in-box syrup containers syrup outlet tubes in container containing potable water.

9. Flush detergent solution out of the syrup system and dispensing valve as follows:
 - A. Place waste container under applicable dispensing valve.

- B. Activate the dispensing valve for one minute to purge all detergent solution and flush out the syrup system.
- C. Continue to activate the dispensing valve in cycles (“ON” for 15-seconds, “OFF” ,then “ON” for 15-seconds). Repeat “ON” and “OFF” cycles for 15-cycles.
- 10. Connect potable water source to the remaining syrup systems and flush detergent solution out of the syrup systems as instructed in step 9 preceding.
- 11. Remove potable water source from the syrup system.

Sanitize Syrup Systems

12. Using a clean syrup tank (syrup tanks system) or a five-gallon container (bag-in-box system), prepare sanitizing solution using 70° F (21 °C) to 100° F (38° C) potable water and 0.5 oz. (15 ml) of non-scented household liquid bleach that contains a 5.25 % sodium hypochlorite concentration to one gallon of potable water. This mixture must not exceed 200 PPM of chlorine. Stir sanitizing solution to thoroughly mix.

13. Syrup Tank Systems


Connect sanitizing solution tank, pressurized at 60 to 80-psi, into one of the syrup systems.

Bag-in-Box Syrup System

Place all bag-in-box syrup containers syrup outlet tubes in container containing sanitizing solution.

- 14. Sanitize the syrup system and dispensing valve as follows:
 - A. Place waste container under applicable dispensing valve.
 - B. Activate the dispensing valve for one minute to purge all water from and install sanitizing solution in the syrup system and dispensing valve.
 - C. Continue to activate the dispensing valve in cycles (“ON” for 15-seconds, “OFF” ,then “ON” for 15-seconds). Repeat “ON” and “OFF” cycles for 15-cycles.
- 15. Repeat steps 13 and 14 to flush water out of and install sanitizing solution in the remaining syrup systems and dispensing valves.
- 16. Remove sanitizing solution source from the syrup system.
- 17. Allow sanitizing solution to remain in the syrup systems for not less than 10 or no more than 15-minutes (max.) contact time.

Water Flush Syrup Systems

	WARNING: Flush sanitizing solution from the syrup systems as instructed. Residual sanitizing solution left in the syrup systems could create a health hazard.
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18. Fill syrup tank (syrup tank system) or a five-gallon container (bag-in-box system) with potable water.

19. Syrup Tank Systems

Connect syrup tank containing potable water, pressurized at 60 to 80 psi, into one of the syrup systems.

Bag-in-Box Syrup System

Place all bag-in-box syrup containers syrup outlet tubes in container containing potable water.

20. Flush sanitizing solution from the syrup system and the dispensing valve as follows:

- A. Place waste container under applicable dispensing valve.
- B. Activate the dispensing valve for one minute to purge all sanitizing solution out of the syrup system and the dispensing valve.
- C. Continue to activate the dispensing valve in cycles (“ON” for 15-seconds, “OFF” ,then “ON” for 15-seconds). Repeat “ON” and “OFF” cycles for 15-cycles.
- 21. Repeat steps 19 and 20 preceding to purge sanitizing solution out of the remaining syrup systems and dispensing valves.
- 22. Remove potable water source from the syrup system.

Purge water out of syrup systems (restore operation)

23. Syrup Tank Systems

- A. Noting syrup tanks CO2 regulator pressure setting observed in step 4 preceding, readjust CO2 regulator to the observed pressure setting.
- B. Connect tanks containing syrup into syrup systems.

Bag-in-Box Syrup System

- C. Remove all bag valves from bag-in-box syrup containers outlet tubes connectors.
- D. Connect bag-in-box syrup containers into the syrup systems.
- 24. Place waste container under dispensing valves. Dispense from all dispensing valves to permit syrup to purge all potable water from the syrup systems and the dispensing valves. Continue to dispense from the dispensing valves until only syrup is dispensed from the syrup systems and valves.



WARNING: To avoid possible personal injury or property damage, do not attempt to remove the syrup tank cover until CO₂ pressure has been released from the tank.

- 25. Dispose of waste sanitizing solution in a sanitary sewer, not in a storm drain, then thoroughly rinse the inside and the outside of the container that was used for sanitizing solution to remove all sanitizing solution residue.

Cleaning Drop-In Refrigeration Assembly Condenser Coil



CAUTION: The refrigeration assembly condenser coil must be cleaned every 30-days. Excessive accumulation of dust, lint, and grease on the condenser coil will restrict air flow through the coil and cause the refrigeration system to overheat. Operating the refrigeration system in an overheated condition will eventually lead to compressor failure and will automatically void the factory warranty. Clean the condenser coil and air filter as follows:

1. Disconnect electrical power from the Unit.
2. Remove screw securing the hood, then lift the hood straight up to remove from the Unit.
3. Vacuum or use a soft brush to clean the condenser coil. If available, use low-pressure compressed air.
4. Clean dust and dirt from around top of the drop-in refrigeration assembly.
5. Install hood on the Unit and secure with screw.
6. Connect electrical power to the Unit.

Checking Ice Water Bath

There is a water level indication pipe which is behind the splash panel. It is easy to check the water level of the tank. If it needs to fill the water, please follow bellow steps:

1. Disconnect electrical power from the Unit.
2. Remove the splash panel.
3. Observe the water level through the water level indication pipe.
4. Connect the water source with the water tank filling pipe.
5. Fill the water tank with clean water until water runs out of the water tank overflow hose. USE LOW-MINERAL-CONTENT WATER WHERE A LOCAL WATER PROBLEM EXISTS.
7. Cut off the water sourcing and disconnect the pipe with the water filling pipe.
8. Install the splash panel
9. Connect electrical power to the Unit.



Remote control model



Internal Carbonation model

Cleaning Water Tank

1. Disconnect electrical power from the Unit.
2. Remove screw securing the hood, then lift the hood straight up to remove from the Unit.
3. Unplug the drop-in refrigeration assembly and electric dispensing valve power cords.
- 4. Unit with integral (built-in) carbonator.**
 - A. Shut off CO₂ and plain water supplies to the Unit.
 - B. Disconnect carbonated water tank ground wire (green with yellow stripe) connector, protruding up through hole in drop-in refrigeration assembly deck, from mating ground wire connector on top of the refrigeration assembly deck.
 - C. Disconnect two-conductor wiring harness connector from electrical terminals on top of the carbonated water tank.
 - D. Pull up on the carbonated water tank relief valve ring protruding up through hole in the drop-in refrigeration deck (see Figure 8) to bleed off all pressure from the water tank.
 - E. Disconnect plain water inlet and outlet lines from the carbonator water pump.
5. Extend the water tank drain hose to a waste container or floor drain. Remove plug from end of the drain hose and allow the water tank to drain.
6. Allow the ice bank to melt. Hot water may be used to speed melting.
7. Very carefully, lift the drop-in refrigeration assembly up and out of the Unit.



CAUTION: Never use an ice pick or other instrument to remove ice from the drop-in refrigeration assembly evaporator coils. Such practice can result in a punctured refrigeration circuit.

8. Use a fiber brush and carefully clean mineral deposit build-up from the agitator motor shaft and the ice bank sensing bulb.

9. Wash inside of the water tank and the drop-in refrigeration assembly evaporator coils, then rinse with clean water.

10. Install plug in end of the water tank drain hose.

11. Unit with integral (built-in) carbonator.

IMPORTANT: For proper alignment when lowering drop-in refrigeration assembly into the Unit lower housing, steel tube welded on top of the carbonated water tank must align with alignment funnel fastened into top of the refrigeration assembly deck. The carbonated water tank ground wire (green with yellow stripe) must also be routed up through hole in the refrigeration assembly deck and be connected to mating ground wire connector on top of the refrigeration assembly deck. *Failure to connect the carbonated water tank ground wire will cause erratic operation of the carbonator water pump motor.*

A. Referring to previous IMPORTANT note, very carefully, lower drop-in refrigeration assembly down into the Unit lower housing. Make sure carbonated water tank ground wire connector is routed up through hole in the refrigeration assembly deck.

B. Connect carbonated water tank ground wire connector to mating ground wire connector on top of the refrigeration assembly deck.

C. Connect two-conductor wiring harness connector to electrical terminals on top of the carbonated water tank.

D. Connect plain water inlet and outlet lines to the carbonator water pump.

E. Restore CO₂ and plain water supplies to the Unit.

12. Remove plug from the drop-in refrigeration assembly platform water fill hole.

13. Fill the water tank with clean water until water runs out of the water tank overflow hose.

USE LOW-MINERAL-CONTENT WATER WHERE A LOCAL WATER PROBLEM EXISTS.

14. Install plug in the drop-in refrigeration assembly platform water fill hole.

15. Plug drop-in refrigeration assembly and electric dispensing valve power cords into their mating connectors.

16. Install Unit hood and secure with screw.

17. Connect electrical power to the Unit.

Carbonator Water Pump Yearly Maintenance or After Water System Disruptions



WARNING: The carbonator water pump water inlet strainer screen and the double liquid check valve must be inspected and cleaned at least once a year under normal circumstances, and after any disruptions (plumbing work, earthquake, etc.) to the water supply system that might cause turbulent (erratic) flow of water through the system. A carbonated water pump with no screen or a defective screen in the strainer would allow foreign particles to foul the double liquid check valve. CO₂ gas could then back flow into the water system and create a health hazard in the water system.

Unit Requiring Connection to Remote Carbonator

The remote carbonator water pump water inlet strainer screen and the double liquid check valve must be inspected and cleaned at least once a year under normal circumstances and after any water system disruption (plumbing work, earthquake, etc.). Refer to manual provided with the remote carbonator for servicing procedure.

Unit With Integral (BUILT-IN) Carbonator

The carbonator water pump water inlet strainer screen and double liquid check valve must be inspected and cleaned at least once a year under normal circumstances and after any water system disruption (plumbing work, earthquake, etc.). This service procedure must be performed by a qualified Service Person.

Servicing Water Pump Water Inlet Strainer Screen

1. Disconnect electrical power from the Unit.
2. Shut off CO₂ and plain water supplies to the Unit.
3. Remove screw securing the hood, then lift hood up and off the Unit.
4. Pull up on the carbonated water tank relief valve ring protruding up through the drop-in refrigeration deck to bleed off all CO₂ pressure from the water tank.
5. Loosen screen retainer, then pull screen retainer and strainer screen from the water pump.
6. Pull screen from screen retainer. Clean any sediment from the screen retainer and the water pump screen.
7. Inspect screen for holes, restrictions, corrosion, and other damage. Discard damaged screen.
8. Check O-Ring on the screen retainer. Replace worn or damaged O-Ring.

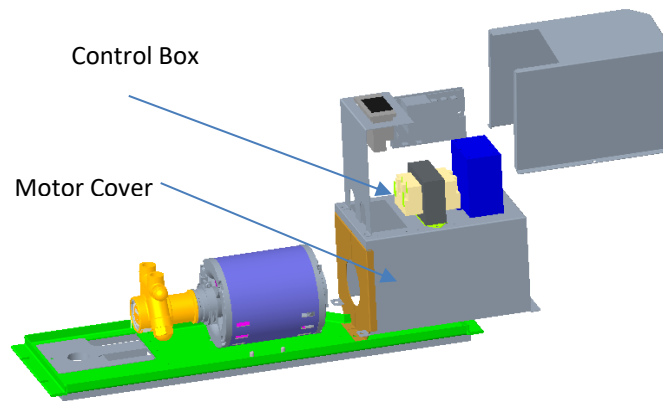
NOTE: A screen should always be used, otherwise particles could foul the double liquid check valve.

9. Install screen in screen retainer, then screw retainer into the water pump and tighten securely.
10. Proceed to servicing double liquid check valve and service the double liquid check valve as instructed.

Servicing Carbonation pump

1. Service water pump as instructed in previous paragraph.
2. Disconnect plain water outlet line from double liquid check valve outlet, then remove double liquid check valve from the water pump outlet port.
3. Disassemble each check valve as shown in Figure CHECK VALVE ASSEMBLY.

4. Wipe each part with clean lint-free cloth. Inspect each part, especially the ball for burrs, nicks, corrosion, deterioration, and other damage. Discard ball seat and any damaged or suspicious parts and replace with new parts during reassembly.



Internal carbonation model

5. Re-assemble check valves.

ALWAYS INSTALL NEW BALL SEAT (O-RING) AND FLAT WASHER.

NOTE: Make sure when assembling the check valves together, the FLAT WASHER is in place inside female end of the check valve.

6. Assemble check valves together. DO NOT OVER TIGHTEN.

7. Install double liquid check valve in water pump outlet port, then connect plain water outlet line to the double liquid check valve outlet.

8. Restore CO₂ and plain water supplies to the Unit.

9. Connect electrical power to the Unit. The water pump will cycle on and fill the carbonated water tank with carbonated water. Check for water leaks and tighten any loose connections.

10. Pull up on the carbonated water tank relief valve ring protruding up through the drop-in refrigeration deck to release trapped air from inside the water tank.

11. Install hood on Unit and secure with screw.

Cleaning CO₂ System CO₂ Gas Check Valves

The CO₂ regulators CO₂ gas check valves and the Unit CO₂ inlet line CO₂ gas check valve must be inspected and serviced at least once a year under normal conditions and after any servicing or disruption of the CO₂ system.

ALWAYS REPLACE BALL SEAT (QUAD RING SEAL) EACH TIME GAS CHECK VALVES ARE SERVICED.

Converting Still (NON-CARBONATED) Drink Dispensing Valve To Dispense a Carbonated Drink

Units Requiring Connection to Remote Carbonator

Non-Carbonated Drink Dispensing Valve(s) can be converted into Carbonated Drink Dispensing Valve(s) by connecting a carbonated water rather than a plain line to the unit plain water line connected to dispensing valve(s).

Unit With Integral (BUILT-IN) Carbonator

Non-Carbonated Drink Dispensing Valve(s) can be converted into Carbonated Drink Dispensing Valve(s) by connecting a carbonated water rather than a plain line to the unit plain water line connected to either No. 3 and No. 4 dispensing valve(s) (six-flavor unit) or the No. 4, No. 7 and No. 8 dispensing valve(s) (eight-flavor unit).

Notes

COMPONENT SERVICE

The following are procedures for replacing the major components of the Pioneer dispenser.

CARBONATOR PUMP REPLACEMENT

1. Disconnect power to the unit.
2. Shut off water and CO₂ at their sources.
3. Remove top panel and side cladding.
4. Depressurize carbonator by removing the solenoid dust cover from any dispensing valve and press valve lever to release the pressure.
5. Disconnect water in and out lines.
6. Loosen the V-band clamp and remove pump.

Pump V - Band



7. Install new pump by reversing this procedure.

NOTE -- Be sure there is anti-seize compound on the pump

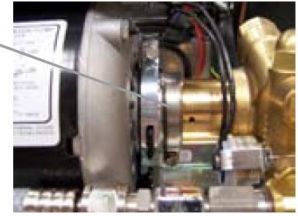
Pump Tang



PUMP MOTOR REPLACEMENT

1. Shut off water and CO₂ at their sources.
2. Remove the hood by removing screws on the top and lifting up.
3. Depressurize carbonator by dispensing drinks from any valve.
4. Disconnect power to the unit.
5. Disconnect water in and out lines.
6. Unplug motor harness.
7. Remove control box. Disconnect the wires with the control box. Remove the control part above the pump cover.
8. Loosen the V - band clamp and remove pump.

Pump V - Band



9. Remove nuts from bolts and remove the motor.

10. Install new motor by reversing this procedure.

NOTE -- Be sure there is anti-seize compound on the pump drive tang.

AGITATOR MOTOR REPLACEMENT

1. Disconnect power to the unit.
2. Remove top panel.
3. Unplug motor harness.
4. Remove mounting screw.
5. Install new motor by reversing this procedure.

CONTROLLER REPLACEMENT

1. Disconnect power to the unit.
2. Remove top cladding.
 - Remove mounting screw.
 - Lift up the cladding.
3. Unplug all connectors of the control box.
4. Remove screws of the control box. Disconnect the wires of the controller. Take off the old one .
5. Install new controller board by reversing this procedure.

CONDENSER FAN MOTOR REPLACEMENT

1. Disconnect power to the unit.
2. Remove top cladding.
3. Unplug motor harness.
4. Remove fan mounting Screw
5. Lift up fan Motor Assembly.
6. Remove fan motor.
7. Install new motor by reversing this procedure.

TROUBLE SHOOTING



WARNING:

Only an authorized service person should service internal components or electrical components.



CAUTION:

If repairs are to be made to one of the syrup circuits, disconnect applicable syrup tank and bleed pressure from the system before proceeding.



WARNING:

If repairs will be made to the CO₂ or carbonated water systems, disconnect electrical power to the carbonator, shut off CO₂ and water supplies, then bleed systems before proceeding.



WARNING:

To avoid personal injury disconnect electrical power to the unit before attempting any electrical repairs or working on the internal parts of the unit.

Table 2. Troubleshooting Post-mix System

Trouble	Probable Cause	Remedy
Adjustment of dispensing valve syrup flow regulator does not increase to desired water-to-syrup ratio.	<ol style="list-style-type: none"> 1. No syrup supply. 2. Syrup supply container not securely connected into system. 3. Tanks System- Syrup tanks secondary CO₂ regulator out of adjustment. Bag-in-Box System- Primary CO₂ regulator out of adjustment. 4. Inoperative dispensing valve syrup flow control. 	<ol style="list-style-type: none"> 1. Replenish syrup supply. 2. Securely connect syrup supply container into syrup system. 3. Adjust syrup tanks secondary CO₂ regulator as instructed. Adjust primary CO₂ regulator as instructed. 4. Repair dispensing valve syrup
Adjustment of dispensing valve syrup flow regulator does not decrease to desired water-to-syrup ratio.	<ol style="list-style-type: none"> 1. Dirty or inoperative dispensing valve syrup flow control. 	<ol style="list-style-type: none"> 1. Disassemble and clean dispensing valve syrup flow control.

<p>Dispensed product carbonation too low.</p>	<ol style="list-style-type: none"> 1. Primary CO₂ regulator out of adjustment for existing water conditions or temperature. 2. Air in carbonator water tank. 3. Water, oil, or dirt, in CO₂ supply. 4. CO₂ supply depleted. 	<ol style="list-style-type: none"> 1. Adjust primary CO₂ regulator. As instructed. 2. Vent air out of carbonator water tank through relief valve. 3. Remove contaminated CO₂. Clean CO₂ system (lines, regulator, etc.) using a mild detergent. Install a clean CO₂ supply. 4. Replenish CO₂ supply.
<p>Dispensed product comes out of dispensing valve clear but foams in cup or glass.</p>		<ol style="list-style-type: none"> 1. Use clean cups or glasses. 2. Do not use ice directly from freezer. Allow ice to become “wet” before using. (Refer to following NOTE).
<p>NOTE: Crushed ice also causes dispensing problems. When finished drink hits sharp edges of ice, carbonation is released from dispensed drink.</p>		

<p>Dispensed product produces foam as it leaves dispensing valve.</p>	<ol style="list-style-type: none"> 1. Recovery rate of refrigeration of system exceeded, ice bank depleted. 2. Primary CO₂ regulator pressure too high for existing water conditions or temperature. 3. Tanks System-Syrup over-carbonated with CO₂ as indicated by bubbles in inlet syrup lines leading to unit. 4. Dispensing valve restricted or dirty. 	<ol style="list-style-type: none"> 1. Allow ice bank to recover. 2. Reduce primary CO₂ regulator pressure settings. 3. Remove syrup tanks quick disconnects. Relieve tank CO₂ pressure as many times as necessary to remove over-carbonation. 4. Sanitize syrup system as instructed in Service and
<p>No product dispensed.</p>	<ol style="list-style-type: none"> 1. No electrical power to dispenser. 2. Disconnected dispensing valves power cord. 3. Disconnected or broken wiring to dispensing valve. 4. Inoperative transformer or dispensing valve solenoids. 	<ol style="list-style-type: none"> 1. Plug in dispenser power cord or check for blown power fuse or tripped circuit breaker. 2. Connect dispensing valves power cord. 3. Connect or replace wiring. 4. Replace inoperative part.

Only carbonated water dispensed.	<ol style="list-style-type: none"> 1. Syrup supply container not securely connected into syrup system. 2. No syrup supply. 3. Bag-in-Box System – Inoperable syrup pump. Tanks System – Syrup tanks CO₂ regulator not properly adjusted. 4. Inoperable dispensing valve. 5. Dispensing valve syrup flow control not properly adjusted. 	<ol style="list-style-type: none"> 1. Securely connect syrup supply container into syrup system. 2. Replenish syrup supply. 3. Replace inoperable syrup pump. Adjust syrup tanks CO₂ regulator as instructed. 4. Repair dispensing valve. 5. Adjust dispensing valve syrup flow control (Water-to-Syrup ratio) as instructed.
Compressor will not stop after sufficient ice bank is	<ol style="list-style-type: none"> 1. Ice bank probe location incorrect. 2. Ice temperature sensor inoperative. 3. Control board inoperative. 	<ol style="list-style-type: none"> 1. Place probe in proper location. 2. Replace ice temperature sensor. 3. Place power switch in ON position.
Compressor operates continuously but does not form sufficient ice bank.	<ol style="list-style-type: none"> 1. Cooling capacity is exceeded by overdrawing. 2. Unit located in excessively hot area or air circulation through condenser coil is restricted. 	<ol style="list-style-type: none"> 1. Reduce amount of drinks drawn per given time. 2. Relocate unit or check and if necessary, clean condenser coil as instructed.
Carbonator pump not operating	<ol style="list-style-type: none"> 1. 3 minutes run limit exceeded. 2. Water supply to carbonator disrupted. 3. Carbonated water tank water level probe electrical wiring disconnected. 4. Inoperative carbonated water tank water level probe. 5. Inoperative carbonator pump or motor. 6. Inoperative control board. 	<ol style="list-style-type: none"> 1. Turn power OFF for 15 second. 2. Correct water supply problem. 3. Connect electrical wiring to water level probe (see note). 4. Replace probe (see note). 5. Replace pump or motor. 6. Replace control board.

<p>Agitator motor notoperating.</p>	<ol style="list-style-type: none"> 1. No power source (blown fuse ortripped circuit breaker). 2. Agitator motor propeller obstructed. 3. LowVoltage. 4. Loose, disconnected, or broken wiring. 5. Inoperative agitator motor. 	<ol style="list-style-type: none"> 1. Replace fuse or reset circuitbreaker. (NOTE: Fuse or circuit breakerare not part of unit). 2. Remove obstruction. 3. Voltage must be 90- 135VAC (110- 120VAC unit) or 180-260(230VAC unit) at compressor terminalswhen compressor is trying to start. 4. Tighten connections orreplace broken wiring. 5. Replace agitator motor.
<p>Refrigeration compressor does not operate.</p>	<ol style="list-style-type: none"> 1. Ice bank sufficient. 2. No water in water tank. 3. Control board power switch on top of unit in “OFF” position. 4. Unit power cord un- plugged, ordrop-in refrigeration assembly power cord unplugged. 5. Ice sensor electrically disconnected. 6. No power source (blown fuse or tripped circuit breaker). 7. Low/high voltage. 8. Loose, disconnected, or broken wiring. 9. Overload protector cut out; overheated compressor. Condenser fan motor not operating as required. 10. Inoperative overload protector or start relay. 11. Inoperative ice bank probe. 12. Inoperative control board. 	<ol style="list-style-type: none"> 1. No refrigeration called for. 2. Fill water tank with water as instructed. 3. Place control board power switchin “ON” position (will be a built-in3- minute time delay before refrigeration compressor starts). 4. Plug in power cord. 5. Electrically connect orreplace inoperable sensor. 6. Replacefuse or resetcircuit breaker. (Note: Fuse or circuit breaker are not part of unit). 7. Voltage must be 180- 255 Volts or 90 -130Volts. 8. Tighten connections orreplace broken wiring. 9. Compressor will cool enough to restart, Do not overdraw cooling capacity of unit. Refer to “Condenser Fan Motor Not Operating section. 10. Replace inoperative part. 11. Replace ice bank probe. 12. Replace control board.

REFERENCE MATERIAL

WIRING DIAGRAM

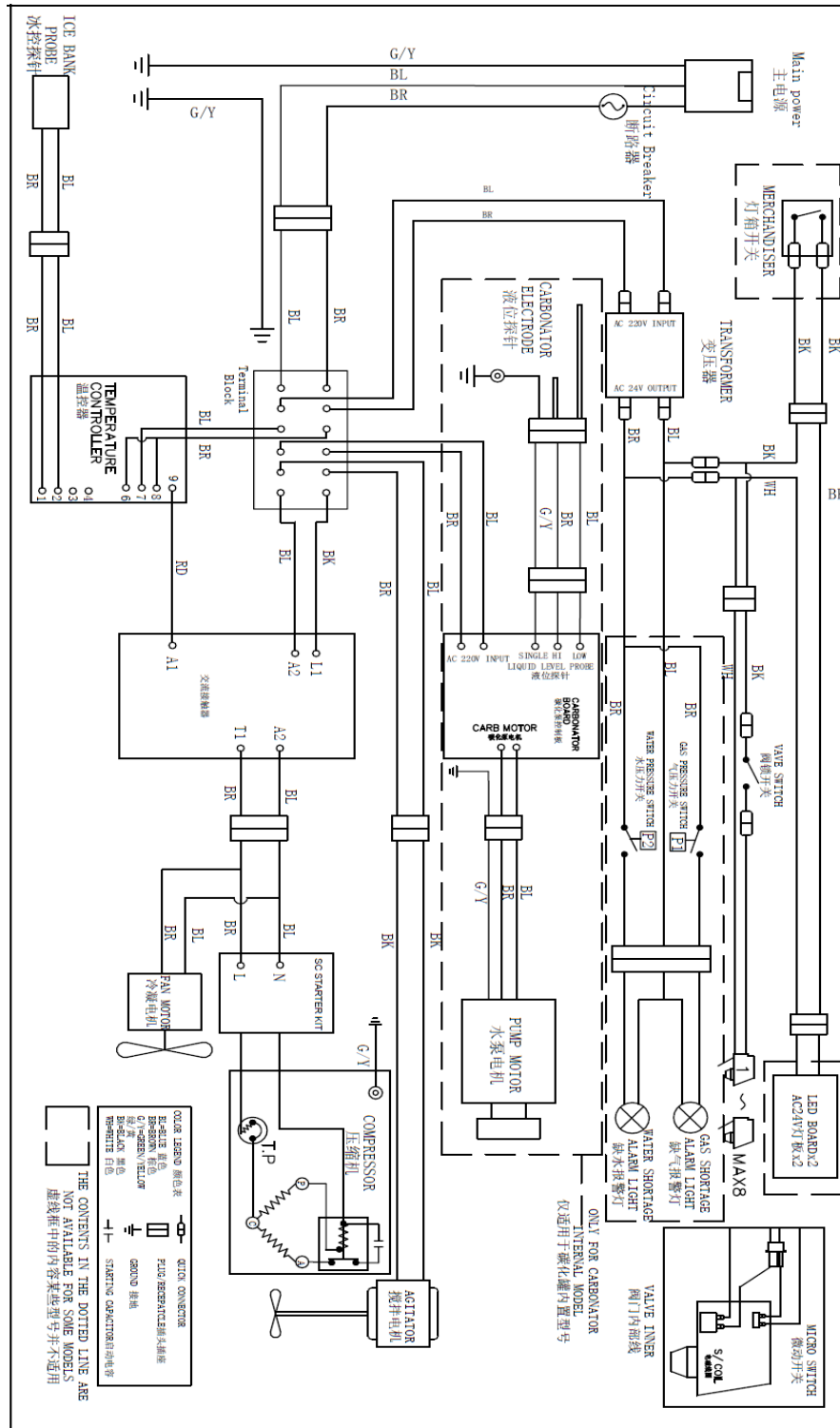


Figure 14

PLUMBING DIAGRAM

Internal carbonator plumbing diagram/Valve configuration

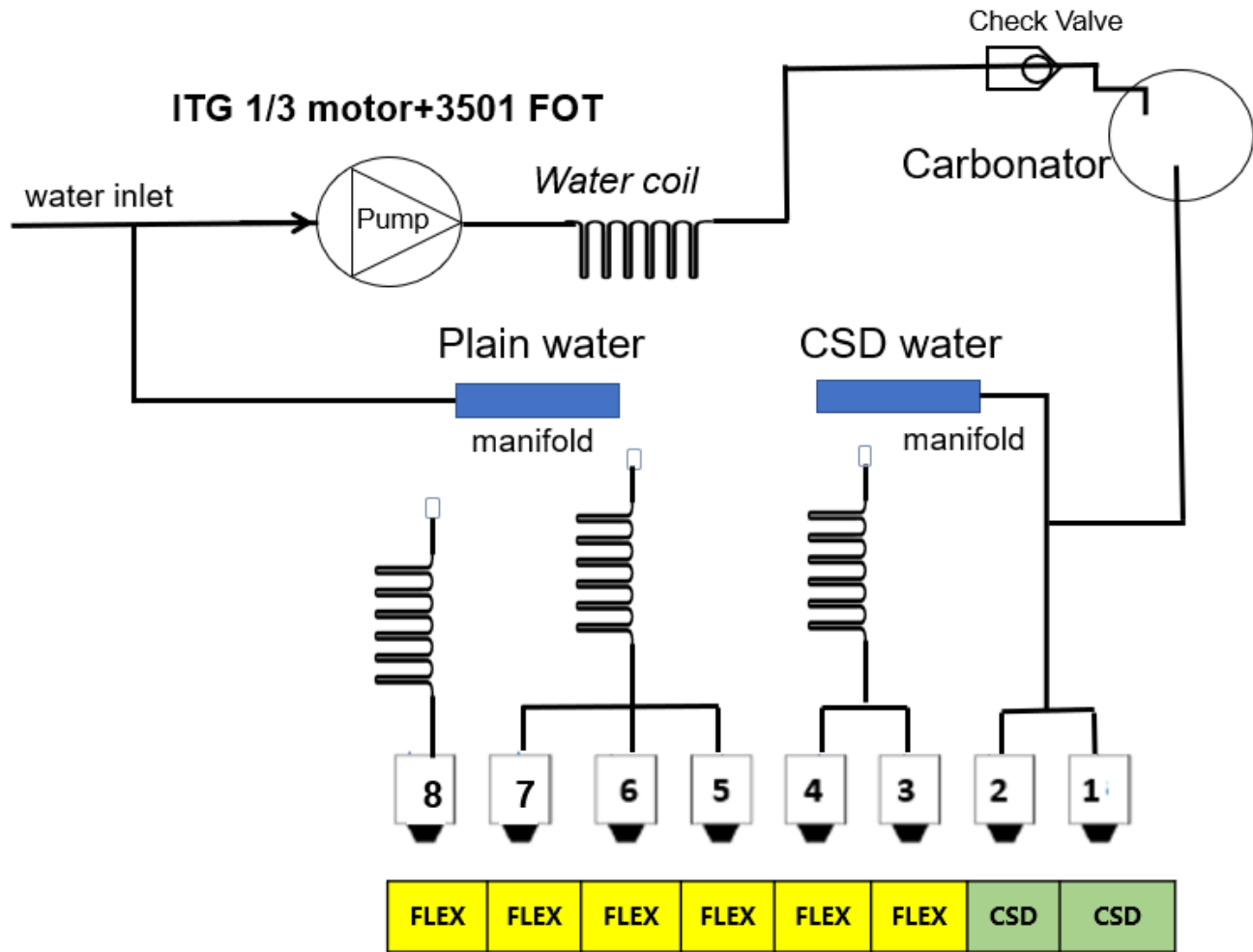


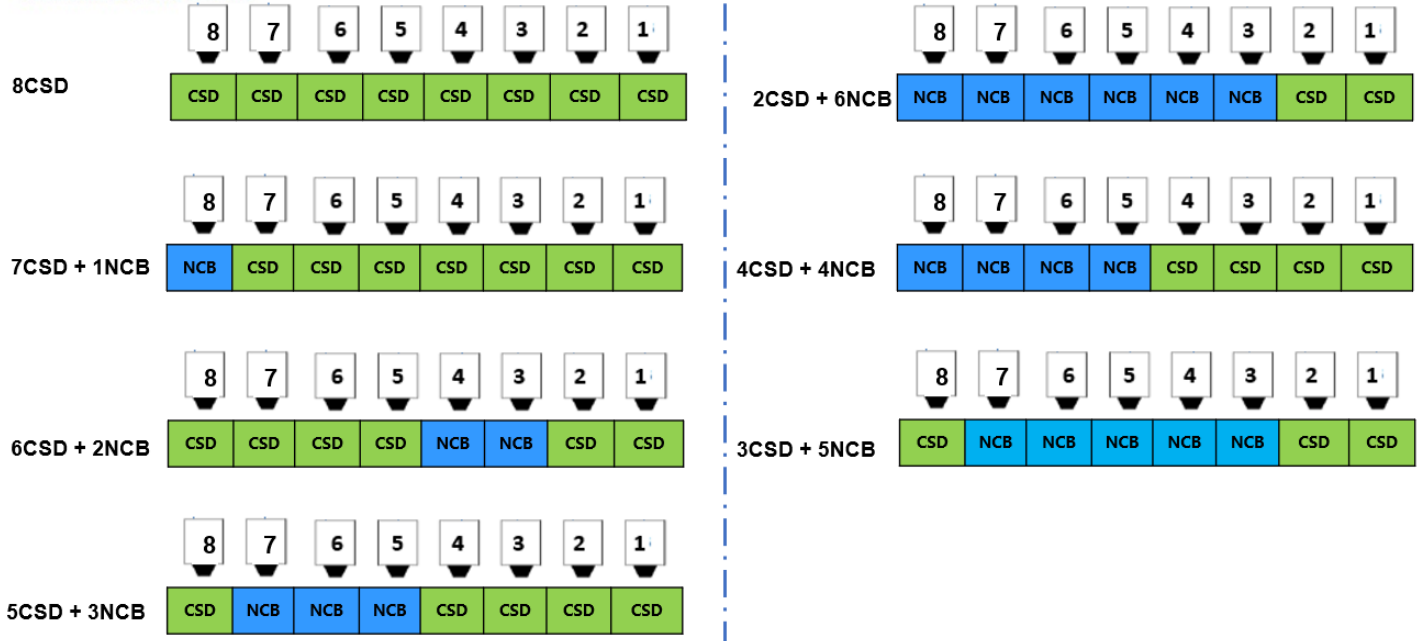
Figure 15



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Internal carbonator model valve configuration



VGD2.0 Remote carbonator plumbing diagram/ Valve configuration

