



IMPULSE

Post-Mix Beverage Dispenser

(This manual applies to units which have a serial number from 89C0817IMXXX)

Service Manual



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Contact Information:

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This document contains the original instructions for the unit described.

IMI CORNELIUS INC
101 Regency Drive
Glendale Heights, IL
Tel: + 1 800-238-3600

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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

<i>Recognize Safety Alerts</i>

<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 unit.</i>

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.

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 **440 lbs.** to insure adequate support for the unit. **FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR EQUIPMENT DAMAGE.**

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

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**.

GENERAL INFORMATION

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 Impulse 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 Impulse over the counter, post-mix, beverage dispenser is compact, lightweight, and can be ordered with or without a built-in carbonator. Syrup pump kits are available for the units.

- Impulse — 5 & 6 valve

Impulse units may be island mounted or installed on a front or rear counter. The 1/3 H.P. refrigeration deck is easily removed for service and maintenance. Adjustable water flow regulators and syrup flow regulators, located on dispensing valves, are easily accessible.



Figure 1.

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

- Key-lock switch
- Lighted merchandiser (optional)
- Syrup pump kit (optional)
- Removable drip tray
- 5 or 6 valves on Impulse unit
- Built-in carbonator (optional)
- Removable refrigeration deck(s)

SPECIFICATIONS

Dimensions		
Height	27 inches	685 mm
Width	16 inches	406 mm
Depth	26 7/8 inches	682 mm
Shipping Weight (approx.)	120 pounds	55 kg
Water Bath Size	17 gal (US)	64 l
Ice Bank Size	30 lb	13.6 kg
Part Numbers		
60 Hz Model, 120 VAC see nameplate		
60 Hz Model, 230 VAC see nameplate		
50 Hz Model, 230 VAC see nameplate		
Capacity		
Assuming:	– a 3 oz./sec. (85g / sec.) dispensing rate	
	– a 75°F (24°C) ambient temperature	
	– four 12-oz. (340g) drinks per minute	
	– drinks dispensed at 40° F (5 °C) or below	
Capacities by unit are:		
Impulse unit, 120 volt, 60 Hz, 200 drinks / hour		
Impulse unit, 230 volt, 50 Hz, 170 drinks / hour		
Accessories		
Legs (optional), order 4 ea. — P/N 500134		

THEORY OF OPERATION

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 3 Non-carbonated Waters 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. A still (non-carbonated) drink is dispensed in the same manner as the carbonated drink except plain water is substituted for carbonated water.

INSTALLATION



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.



WARNING:

It is the responsibility of the installer to ensure that the water supply to the dispensing equipment is provided with protection back flow by an air gap as defined in ANSI A 112.1.2-1979; or an approved vacuum breaker or other such method as proved effective by test and must comply with all federal, state and local codes.

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

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

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

1. Remove shipping tape and other packing material.
2. Unpack the loose parts and make sure all items are present.

Table 1. Loose Shipped Parts

SI. No.	Name	Qty.
1	Cup rest	1
2	Drip tray	1
3	Drain hose	1
4	Hose clamp	1
5	Decal Kit	1
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INSTALLATION REQUIREMENTS

Requirements Summary	
Weight	counter must be level and able to support 400 lbs. (180 kg)
Environment	indoor installation only
Temperature	40° F to 110° F (4° C - 43° C) ambient temperature
Clearance	18 - inches (0.45 m) above 6 - inches (0.15 m) on sides and rear
CO ₂	75 psi (5 bar) pre-set regulator on unit with internal carbonator
Syrup	60 psi (4 bar)
Water	50 psi (3.5 bar) maximum
Electrical	see nameplate on unit for electrical requirements

ELECTRICAL REQUIREMENTS

Before connecting electrical power to the unit refer to nameplate to verify power requirements.



DANGER:

To avoid possible serious injury or death the ELCB (earth leakage circuit breaker) must be installed in electrical circuit of all 50 Hz units.



WARNING:

To avoid possible electrical shock the unit must be electrically grounded using the green grounding screw provided inside the electrical contactor box.



CAUTION:

The wiring must be properly grounded and connected through a 10 - amp disconnect switch (slow-blow fuse or equivalent HVAC / R circuit breaker). **ALL WIRING MUST CONFORM TO NATIONAL AND LOCAL CODES. MAKE SURE UNIT IS PROPERLY GROUNDED.**

ENVIRONMENTAL REQUIREMENTS

Ambient (room) temperature **MUST NOT EXCEED 110° F (43° C)** Temperatures in excess of 110° F (43° C) will void the factory warranty and may eventually result in refrigeration system failure.



CAUTION:

To avoid overheating and damaging to the unit, and voiding the warranty, there must be at least 6 - inch (0.15 m) of clearance on all sides and 18 - inch (0.45 m) on the top of the unit.



CAUTION:

This unit is designed for indoor installation only (in non harsh environments).



CAUTION:

If the unit is exposed to freezing temperature, water in the unit will freeze and may damage the unit.



CAUTION:

Avoid spillage into the top vents.

INSTALLATION PROCEDURE

COUNTER-TOP INSTALLATION

1. Place the unit on a level counter capable of supporting at least 400 pounds (180 kg).
2. Remove drip tray and front access panel.

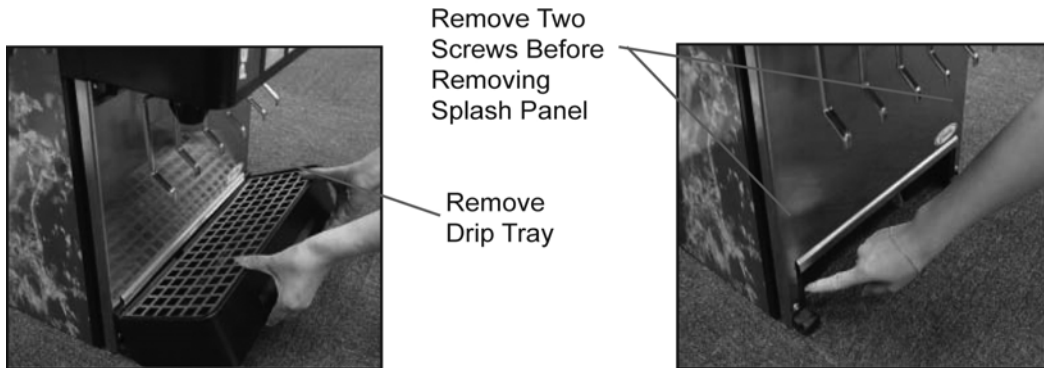


Figure 2.

3. Turn power switch off then remove screw located next to the power switch and the screw at top of front panel. Next, remove front panel, disconnect wires to valve key lock switch, and peel back magnetic decals from the top. Lift off top center section.



CAUTION:

Make sure that the power to the unit is disconnected (unplugged) before removing the covers.



Figure 3.

4. Pull water, syrup, and CO₂ lines through counter or wall. To comply with NSF International requirements the unit must be sealed to the counter top and all access holes in the unit base must be sealed, or the unit can be installed using the optional 4 legs (P/N 500134). Caulk/seal the unit to the counter using Dow Corning RTV 731 or equivalent approved sealant.
5. Pull plastic "wire tie" to remove hitch pin from condenser fan motor assembly (this pin is only needed during shipping).



Figure 4.

6. Fill the water bath with clean water around the carbonator tank or bend back the insulation on the non-carbonated unit until it comes out the overflow tube. Make sure the overflow tube is not blocked or plugged. Use low-mineral tap water, not distilled or deionized water.

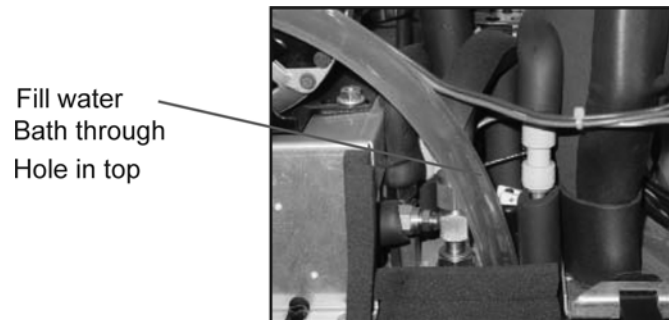


Figure 5.

NOTE: Water bath must be filled with water before the unit will run.

GLOBAL ICE BANK CONTROL (GIBO) THEORY OF OPERATION

Once electrical power is supplied to the Unit, the agitator motor will start. There will be a three-minute time delay before the refrigeration compressor and the condenser fan motor will start. This three-minute time delay will take place each time electrical power to the Unit is interrupted.

The Unit will continue to operate until ice covers all three stainless-steel pins on the ice bank control probe. The ice bank control module senses this by measuring the difference in electrical resistance between the water and the ice. When the ice on the evaporator coil

becomes thick enough, it covers the three stainless-steel pins on the ice bank control probe. The control module senses there is enough ice and turns the refrigeration compressor and the condenser fan motor off.

The Unit remains turned off until the ice bank control three stainless-steel pins are free of ice. Once this happens, the ice bank control module starts the refrigeration compressor and the condenser fan motor.

7. Make sure that the electrical power circuit breaker is switched off or the fuse removed.

NOTE: Before connecting electrical power to the unit, refer to nameplate to verify the power requirements.



Route and up and behind Valve Panel

- A. Remove the following:
 - front merchandiser by removing screws on the top and lifting up
 - key switch wires
 - hood by removing screws on the top and lifting up and forward.



Cord Fastener Cutout in Pump Deck

- B. Remove second valve from the left to facilitate routing of the new cord.

- C. First route the new cord up behind the valve panel and through the cutout in the pump deck. Use the already attached wire tie/fastener on the deck to secure the cord.



Plug cord into Receptacle

- D. Connect cord to the receptacle on the refrigeration deck.

- E. Turn the circuit breaker on and then the units power switch. Check to see that the agitator motor has started. After about three minutes the compressor should start. If the agitator or compressor do not start call Technical Services.



Power Switch

Figure 6.

CONNECT SYRUP, WATER, AND CARBONATED WATER LINES

1. Route syrup and plain water lines from the back side of the unit and under the unit to the front. Connect them to the appropriate inlet connections.



Figure 7.

WARNING:

It is the responsibility of the installer to ensure that the water supply to the dispensing equipment is provided with protection back flow by an air gap as defined in ANSI A 112.1.2-1979; or an approved vacuum breaker or other such method as proved effective by test and must comply with all federal, state and local codes.

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

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

NOTE: .If water supply pressure to the unit is less than 40 psi, a water pressure booster is required. If water supply pressure to the unit is more than 50 psi, a water pressure regulator must be installed in the supply line.

NOTE: A water shutoff valve and water filter in the water supply line are recommended.

2. If a remote carbonator is used, make the connection behind the splash panel to a marked 3/8 (.375) water tube.

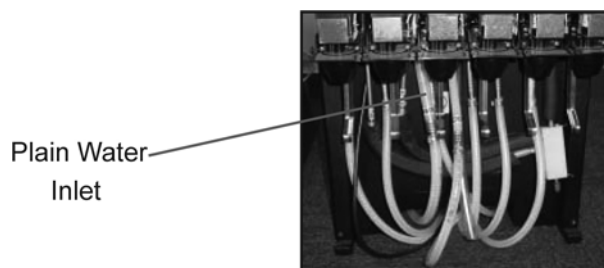


Figure 8.

If the unit has a built-in carbonator, connect the water line to the pump.

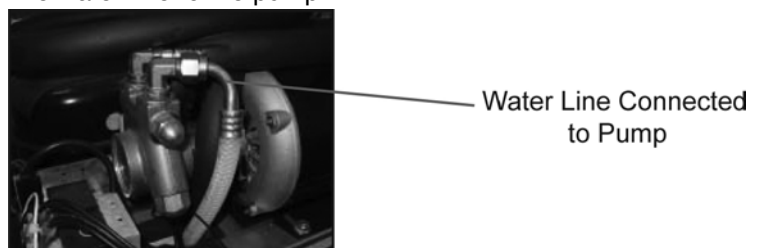


Figure 9.

3. Connect optional drip tray drain hose (if used). Be sure the knock-out in the drip pan has been removed if drain hose is used.
4. If the unit has a built-in carbonator, connect the CO₂ lines. Be sure the water and CO₂ are on CO₂ should be set at 75 psi (5.25 bar) maximum. **Higher CO₂ pressure will result in LOWER carbonation.**

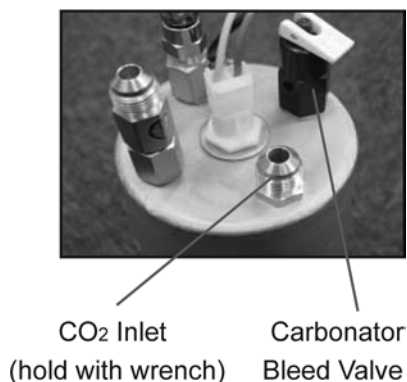


Figure 10.

Bleed the air out of the carbonator by pulling up on the metal ring on the bleed valve. Bleed each valve into a bucket until water comes out for 2-3 seconds.

NOTE: The CO₂ inlet fitting is sealed inside the carbonator with an O-ring. This fitting rotates freely and must be held by a second wrench while securing the CO₂ inlet line.

5. If remote carbonator is used, be sure it is on. Bleed each valve into a bucket until carbonated water comes out.
6. Be sure that all syrup sources are connected and on. Bleed each valve into a bucket until syrup comes out.
7. Reinstall drip tray and position water bath overflow hose in drip tray indent.
8. Check the system for gas leaks by pressurizing the system and then turning off the cylinder valve. Wait a couple of minutes and check the cylinder gauge to see if the pressure has dropped.
9. Check the system for water and syrup leaks.

Check for Leaks

1. Bleed air from the lines by activating dispensing valves.
2. Remove air from carbonator (if unit has built-in carbonator) by opening safety relief valve until water escapes.
3. Check the system for gas leaks by pressurizing the system and then turning off the cylinder valve. Wait a couple of minutes and check the cylinder gauge to see if the pressure has dropped.
4. Check the system for water and syrup leaks.

Reinstall Panels

Reinstall top and front vented panels as well as the front stainless steel panel.

Adjust Water-to-Syrup Ratio

1. Remove valve front cover and install syrup diversion assembly in place of nozzle.

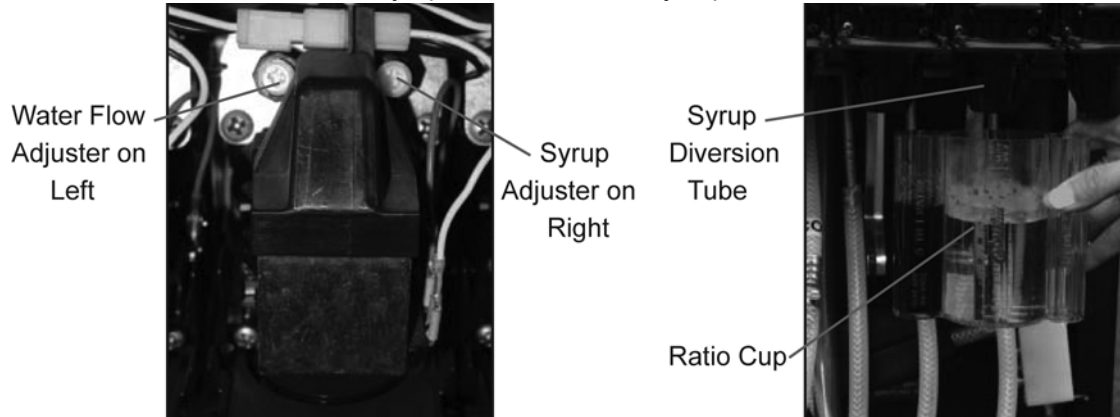


Figure 11.

2. Adjust carbonated water flow to the desired rate (such as 2.50 oz. / sec.) (70g / sec.). Turn the adjuster 1/4 of a turn at a time and recheck the flow. To increase flow turn clockwise.
3. Adjust the syrup-to-water ratio of each valve using the syrup adjuster on the left side of each valve. Hold cup under valve and dispense beverage for a specific time (such as 4 seconds).

Adjusting Flow Rates

Flow rates of the water and syrup are adjusted based on the desired ratio. For example: if the desired ratio is 5:1, then the flow rate of the water is 5 times that of the syrup.

If the desired finished drink flow rate is 3.0 ounces per second, then the water flow rate is 2.5 oz./sec. (70 g / sec.) and the syrup flow rate is 0.5 oz./sec. (14 g / sec.) (The water at 2.5 oz./sec. (70 g / sec.) is five times the 0.5 oz./sec. (14 g / sec.) syrup flow rate.)

Flow Rates Based on 5:1 Ratio		
Finished Drink oz./sec.	Water oz./sec.	Syrup oz./sec.
1.5 (42 g/sec.)	1.25 (35 g/sec.)	.25 (7 g/sec.)
2.0 (56 g/sec.)	1.67 (47 g/sec.)	.33 (9.4 g/sec.)
2.5 (70 g/sec.)	2.08 (60 g/sec.)	.42 (12 g/sec.)
3.0 (85 g/sec.)	2.5 (70 g/sec.)	.50 (14 g/sec.)
3.5 (99 g/sec.)	2.92 (83 g/sec.)	.58 (16.5 g/sec.)
4.0 (113 g/sec.)	3.33 (95 g/sec.)	.67 (19 g/sec.)
4.5 (128 g/sec.)	3.75 (105 g/sec.)	.75 (21 g/sec.)

Electronic Control Board Function

An integrated circuit board and microprocessor are used to control the electrical functions of the Impulse™ beverage dispenser.

Functional features of the control board include:

- Ice bank control with compressor start-up protection
- Carbonator control with continuous run protection
- LED diagnostics

Inputs to the control board include line power, the ice bank position sensor, and carbonator water level sensor. Switched outputs from the circuit board include the compressor, agitator motor, condenser fan motor, and carbonator pump (refer to electrical diagram in reference section).

Ice Bank Control

The ice bank control operates the compressor and condenser fan motor to control the size of the ice bank. The control board will not restart the compressor until after the compressor has been off for at least 3 minutes to allow the refrigeration system pressures to equalize.

Carbonator Control

The carbonator control operates the integral carbonator pump to maintain the water level in the carbonator tank within pre-established limits. A programmed timer shuts down the carbonator pump motor if it operates continuously for more than 3 minutes. This prevents the carbonator from running continuously if there is a water leak or loss of water supply.

LED Diagnostics

LED diagnostic lights are mounted on the control board to assist in trouble shooting. There is one green LED and one red LED.

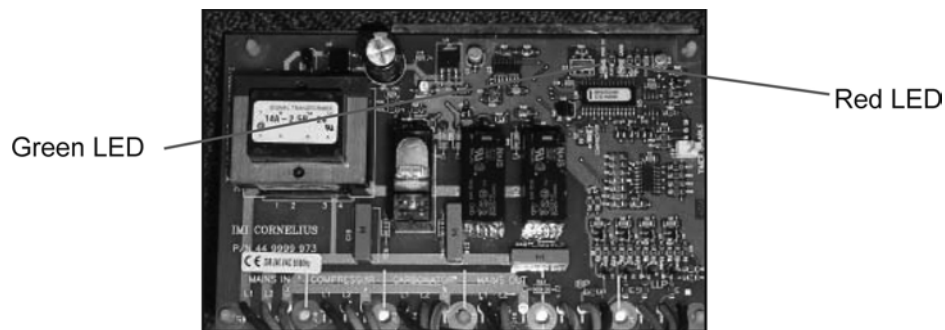


Figure 12.

Functions of the LEDs are:

- Red and Green OFF = no power to the dispenser
- Green ON = line voltage is within acceptable range
- Red ON = a fault condition, including carbonator pump running for more than 3 minutes, ice bank control calling for the compressor within the 3 minute startup delay period.

NOTE: The control board must be reset if the carbonator pump does not run because the 3-minute continuous run period has been exceeded (red LED ON). To reset the control board toggle the main power switch OFF, wait 15 seconds, then toggle to ON.

OPERATIONS

STARTING AND STOPPING THE UNIT



Figure 13.

1. Push power ON/OFF switch to ON to power on the unit.
2. Insert key into key lock and turn to the ON to activate valves (and optional illuminated front merchandiser).

DISPENSING PRODUCT

To dispense beverage press a cup or glass against the lever or push the button on the valve cover.

REPLENISHING SYRUP SUPPLY

Tank System:

1. Remove the empty syrup tank by disconnecting the syrup tube first, then the CO₂ tube.
2. Rinse the disconnects in warm water to remove any syrup residue.
3. Move a full tank into position and connect the CO₂ tube first, then the syrup tube.

Bag-In-Box System:

1. Disconnect the syrup tube from the empty bag-in-box and remove the empty box.
2. Rinse the disconnects in warm water to remove any syrup residue.
3. Install a full bag-in-box and connect the syrup tube.

ADJUSTMENTS

Water-to-Syrup Ratio Adjustment

The ratio adjustment should only be done by a qualified service person.

CLEANING & CHECKS

Daily Cleaning

1. Remove nozzle assembly and rinse with warm (not hot) water. If possible, soak nozzle assembly over night in carbonated water then rinse with warm water.

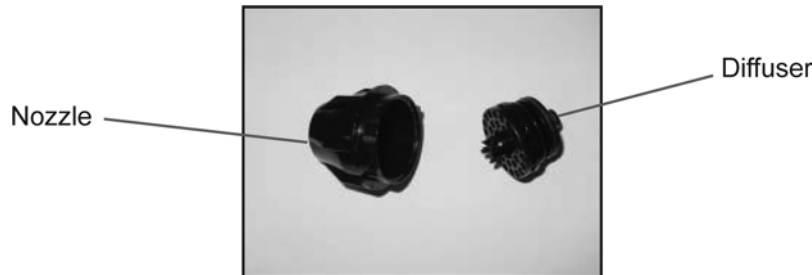


Figure 14.

2. Wash external surfaces with mild soap solution, rinse with clean water, and wipe dry. Remove the drip tray, wash with mild soap solution, rinse and dry.

NOTE: Do not use abrasive or harsh cleaners on the unit.

Daily Checks

1. Check CO₂ supply.
2. Check syrup supply.

SANITIZING SYRUP SYSTEMS

The syrup systems should be sanitized at least every 120-day and before or after storage. Use a non-scented liquid household bleach containing a 5.25% sodium hypo chlorite concentration per the following procedure:

SANITIZING SYRUP TANK SYSTEMS

1. Disconnect Syrup

Remove quick disconnects from syrup tanks and rinse disconnects in potable water.



CAUTION:

To avoid possible personal injury or property damage, **DO NOT** remove the syrup tank cover until CO₂ pressure has been released from the tank.

2. Wash System

- Using a clean empty syrup tank, prepare a washing solution by mixing 1/2 oz. (14 g) liquid dish washing detergent per gallon of 70° F – 100° F (20° C - 38° C) potable water. Shake tank to mix.
- Connect tank containing the solution to one of the syrup circuits
- Place waste container under dispensing valve. Dispense for one minute to purge all syrup from the circuit.
- Repeat this process for each syrup circuit.

3. Flush System

- Connect a tank containing clean potable water to syrup circuit and pressurize to 60 – 80 psi. (4 - 5.5 bar).
- Place waste container under dispensing valve. Dispense from the valve for one minute to flush the circuit.
- Repeat this process for each syrup circuit.

4. Sanitize System

- Using a clean empty syrup tank, prepare a sanitizing solution by mixing 1/2 oz. (14 g) non-scented liquid household bleach per gallon of 70 ° F – 100 ° F (20° C - 38° C) potable water. Shake tank to mix.

NOTE: Use bleach with a 5.25% sodium hypo chlorite solution. The flushing solution must not exceed 200 PPM chlorine.

- Connect the tank containing the solution to syrup circuit and pressurize to 60 – 80 psi. (4 - 5.5 bar).
- Place waste container under dispensing valve. Dispense from the valve for one minute to purge the circuit.
- Repeat this process for each syrup circuit.
- Allow the sanitizing solution to remain in circuits for at least 10 minutes but no more than 15 minutes.



CAUTION:

Flush the system thoroughly — residual sanitizing solution left in the system could create a health hazard.

5. Flush System

- Connect a tank containing clean potable water to the syrup circuit and pressurize to 60 – 80 psi. (4 - 5.5 bar).
- Place waste container under dispensing valve. Dispense from the valve for one minute to flush the circuit.
- Repeat this process for each syrup circuit.

SANITIZING BAG-IN-BOX SYRUP SYSTEM

To sanitize a bag-in-box system follow the same procedure as the tank system described above, with following exceptions:

- Use a clean container (like a 5 gallon (20 l) plastic bucket) to mix solutions and hold flushing water.
- Cut bag valves cut from empty BIB containers. Clean them and connect them to the ends of the syrup lines.
- Place syrup lines with bag valves into the container of solution.

DOUBLE LIQUID CHECK VALVE INSPECTION & CLEANING



CAUTION:

The carbonator double-liquid check valve must be inspected after any disruptions to the water supply system (plumbing work, earth quakes, etc.) It should also be inspected at least once a year under normal conditions. If particles lodge in the check valve CO₂ gas could back flow into the water system and create a health hazard.



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.

1. Shut off CO₂, syrup, and water supplies to the unit.
2. Disconnect the water line from the double check valve then remove the check valve.
3. Disassemble the check valve. Clean and inspect each part, especially check the ball for damage. Replace damaged or suspicious parts.
4. Always install a new seat (P/N 315-250-12).
5. Reassemble and install the check valves.
6. Turn on the CO₂, syrup, and water supplies, and reconnect the electrical power.

Condenser Cleaning

Accumulation of dust and grease on the refrigeration condenser can cause overheating. The condenser should be cleaned as often as necessary to avoid overheating using the following procedure.



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.

1. Remove top panel. Disconnect wires to ON/OFF and Key lock switches.
2. Remove merchandiser (and wires if illuminated).
3. Vacuum or use a soft brush to clean condenser coil. If available, use low pressure compressed air.
4. Clean around top of refrigeration assembly.
5. Reinstall merchandiser, wires to switches and top panel.

GUIDE TO SERVICE

**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.

PREVENTATIVE MAINTENANCE

Preventative Maintenance Summary

Preventative Maintenance Summary	
Procedure	Frequency
Sanitize Unit	3 months
Check Ratio	6 months
Clean Condenser	6 months and as needed
Carbonator Double Liquid Check Valve	Annually
Check for Leaks	Annually
Clean BIB Connectors	Annually

SANITIZING

The syrup systems should be sanitized every 3 months using a non-scented liquid household bleach containing a 5.25% sodium hypo chlorite concentration. See the Service section of this manual for sanitizing procedure.

DOUBLE LIQUID CHECK VALVE INSPECTION & CLEANING

Refer to Section OPERATION (Page No 17).

CHECK FOR LEAKS

Refer to Section INSTALLATION (Page No 12).

CHECK RATIO

Refer to Section INSTALLATION (19).

Should be done whenever flavors are changed or any service is performed.

CLEAN CONDENSER

Refer to Section OPERATION (page 18).

CLEAN BIB CONNECTORS

Refer to Section OPERATION (page 17).

ADJUSTMENTS

CO₂ CONNECTION

1. Unscrew protector cap (with chain attached) from CO₂ cylinder valve. Open CO₂ cylinder valve slightly counterclockwise to blow any dirt or dust from outlet fitting before installing primary CO₂ regulator, then close valve.
2. Remove shipping plug from primary CO₂ regulator assembly coupling nut and make sure gasket is in place inside nut. Install regulator assembly on CO₂ cylinder so gages can be easily read, then tighten coupling.
3. Connect soft drink tanks CO₂ lines to primary CO₂ regulator manifold assembly.
4. Install gas quick disconnects on ends of soft drink tank CO₂ lines.

WARNING:

To avoid personal injury and property damage always secure CO₂ cylinder in upright position with a safety chain to prevent it from falling over.

WARNING:

CO₂ displaces oxygen. Persons exposed to high concentrations of CO₂ will experience tremors, followed by loss of consciousness and death. It is very important to prevent CO₂ leaks, especially in small unventilated areas. If a CO₂ leak occurs ventilate the area before fixing the leak.

PRIMARY AND SECONDARY CO₂ REGULATOR SETTINGS

1. Open CO₂ cylinder valve slightly to allow lines to slowly fill with gas. When lines are fully pressurized open the valve all the way until it back-seats itself (this prevents leaks from the valve).
2. Adjust the cylinder CO₂ regulator to 70 psi (4.8 bar) for bag-in-box applications. 40 psi (2.8 bar) for sugar base tank applications and 10 psi (0.7 bar) for diet base tank applications.

NOTE: The Impulse dispenser with integral cold carbonator requires CO₂ supply pressure of 75 psi (5.2 bar).

3. Bleed air from the lines with the relief valves.
4. Check the system for gas leaks.

TROUBLE SHOOTING

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.

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

IMPORTANT: 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:

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.

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. 5. Tapered washer inside tube swivel nut connection distorted from being over tightened restricting syrup flow. 	<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 flow control. 5. Replace tapered gasket. Make sure it seats properly.
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. 	<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
<p>Dispensed product comes out of dispensing valve clear but foams in cup or glass.</p>	<ol style="list-style-type: none"> 1. Oil film or soap scum in cups or glasses. 2. Ice used for finished drink is sub-cooled. 	<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. 5. Tapered gasket inside carbonated water line swivel nut connector distorted restricting carbonated water flow. 6. Dirty water supply. 	<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 Operation Section. 5. Replace tapered gasket. Make sure it is properly seated. 6. Check water filter. Replace cartridge.
<p>Only syrup dispensed.</p>	<ol style="list-style-type: none"> 1. Water inlet supply line shutoff valve closed. 2. Carbonator not operating. 3. Primary CO₂ regulator not properly adjusted. 	<ol style="list-style-type: none"> 1. Open water inlet supply line shutoff valve. 2. Restore carbonator operation. 3. Adjust primary CO₂ regulator as instructed.

<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 carbonated water tank. 3. Water, oil or dirt in CO₂ supply. 	<ol style="list-style-type: none"> 1. Adjust primary CO₂ regulator as instructed. 2. Vent air from carbonated water tank by dispensing from No. 1 dispensing valve to make carbonator water pump motor cycle on. 3. Have service person remove contaminated CO₂ supply, then clean CO₂ system (lines, regulator, etc.) using a mild detergent. install a clean CO₂ supply.
<p>Carbonator pump not operating.</p>	<ol style="list-style-type: none"> 1. CO₂ supply depleted. 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. Replenish CO₂ supply. 2. Correct water supply problem. LED Flashing = The anti-flood timer has expired, the controller assumes a tube or connector is broken. Power to the carbonator motor is shut off and the unit needs to be shut down to reset. 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>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, or drop-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 switch in "ON" position (will be a built-in 3-minute time delay before refrigeration compressor starts). 4. Plug in power cord. 5. Electrically connect or replace inoperable sensor. 6. Replace fuse or reset circuit breaker. (Note: Fuse or circuit breaker are not part of unit). 7. Voltage must be 198-264 Volts. 8. Tighten connections or replace broken wiring. 9. Compressor will cool enough to restart, DO not overdraw cooling capacity of unit. Refer to "Condenser Fan Motor Not Operating " in this section. 10. Replace inoperative part. 11. Replace ice bank probe. 12. Replace control board.
<p>Compressor will not stop after sufficient ice bank is produced.</p>	<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.
<p>Compressor operates continuously but does not form sufficient bank.</p>	<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.

<p>Agitator motor not operating.</p>	<ol style="list-style-type: none"> 1. No power source (blown fuse or tripped circuit breaker). 2. Agitator motor propeller obstructed. 3. Low Voltage. 4. Loose, disconnected, or broken wiring. 5. Inoperative agitator motor. 	<ol style="list-style-type: none"> 1. Replace fuse or reset circuit breaker. NOTE: (Fuse or circuit breaker are not part of unit). 2. Remove obstruction. 3. Voltage must be at least 103 Volts (115VAC unit) or 208 (230VAC unit) at compressor terminals when compressor is trying to start. 4. Tighten connections or replace broken wiring. 5. Replace agitator motor.
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COMPONENT SERVICE

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

CARBONATOR PUMP REPLACEMENT

1. Shut off water and CO₂ at their sources.
2. Remove the following:
 - front merchandiser by removing screws on the top and lifting up
 - key switch wires
 - hood by removing screws on the top and lifting up and forward.

3. Depressurize carbonator by removing the solenoid dust cover from any dispensing valve and push down on the solenoid.

Press Valve
Solenoid to
Depressurize

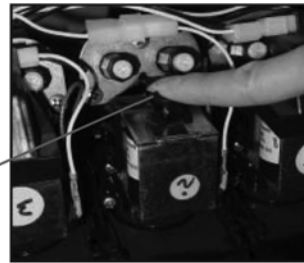


Figure 15.

4. Disconnect water in and out lines.

Pump Water
Connections



Figure 16.

5. Loosen the V - band clamp and remove pump.

Pump V - Band



Figure 17.

6. Install new pump by reversing this procedure.

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

Pump Tang



Figure 18.

PUMP MOTOR REPLACEMENT

1. Remove the following:
 - front merchandiser by removing screws on the top and lifting up
 - key switch wires
 - hood by removing screws on the top and lifting up and forward.
2. Unplug motor harness.

3. Loosen the V - band clamp and remove pump.

Pump V - Band

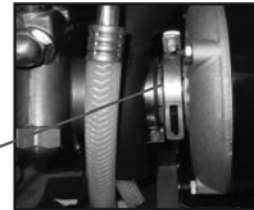
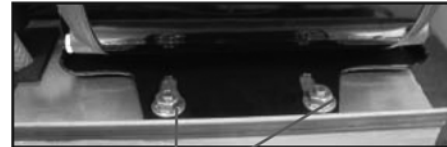


Figure 19.

4. Remove four nuts from bolts and remove the motor.



two Bolts in front and two in Back of Motor

Figure 20.

5. Install new motor by reversing this procedure.

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

Pump Tang



Figure 21.

AGITATOR MOTOR REPLACEMENT

1. Remove the following:
 - front merchandiser by removing screws on the top and lifting up
 - key switch wires
 - hood by removing screws on the top and lifting up and forward.
2. Unplug motor harness.

3. Remove mounting screw.

Mounting
Screw



Figure 22.

4. Slide motor out of retainer slots and lift up.
5. Install new motor by reversing this procedure.

CONTROLLER BOARD REPLACEMENT

1. Remove the following:
 - front merchandiser by removing screws on the top and lifting up
 - key switch wires
 - hood by removing screws on the top and lifting up and forward.
2. Lift off controller cover..

Controller
Cover



Figure 23.

3. Unplug all connectors

4. Squeeze all four standoffs and remove the board.

Connector
in each Corner



Figure 24.

5. Install new controller board by reversing this procedure.

CONDENSER FAN MOTOR REPLACEMENT

1. Unplug motor harness.

2. Remove two screws on mounting bracket.

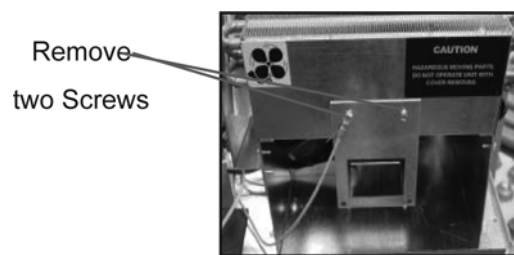


Figure 25.

3. Lift mounting bracket front tab out of slot, then pull motor out from the back.

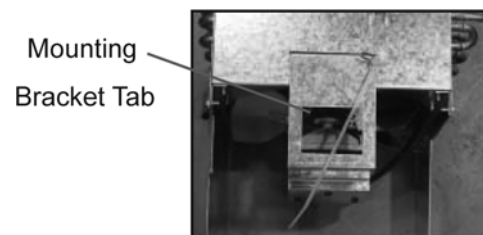


Figure 26.

4. Remove three screws holding motor to bracket and remove motor.

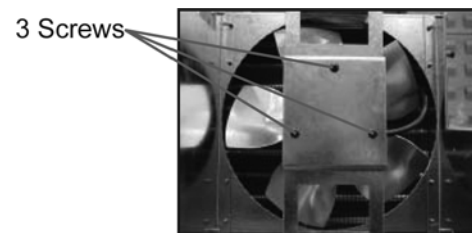


Figure 27.

5. Install new motor by reversing this procedure.

POWER CORD REPLACEMENT

1. Remove the following:
 - front merchandiser by removing screws on the top and lifting up
 - key switch wires
 - hood by removing screws on the top and lifting up and forward.
2. Remove second valve from the left to facilitate routing of the new cord.

3A. Route the new power cord along the same path as the old one (removing the old cord as you go).

Route Cord Up
and Behind
Valve Panel



Figure 28.

3B. First route the new cord up behind the valve panel and through the cutout in the pump deck. Use the already attached wire tie/fastener on the deck to secure the cord.

Cutout in
Pump Deck

Cord Fastener



Figure 29.

3C. Connect cord to the receptacle on the refrigeration deck.

Plug Cord into
Receptacle



Figure 30.

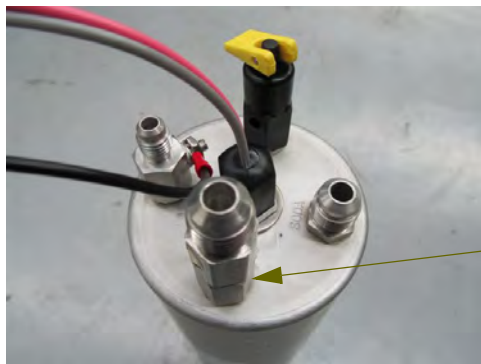
3D. Reattach the two strain reliefs.

ASSE 1022 COMPLIANT VENTED CHECK VALVE OPTION

INSTRUCTION FOR CONVERSION OF CHUDNOW VALVE WITH ANDERSON VALVE

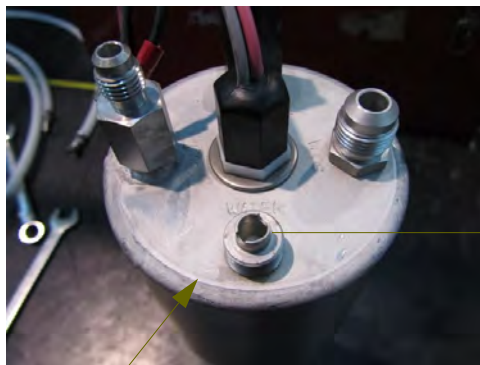
CHANGE 1:

The water inlet fitting of Carb Tank is changed as below picture, and the p/n of Carb Tank is changed from 560007415C to 890516707.

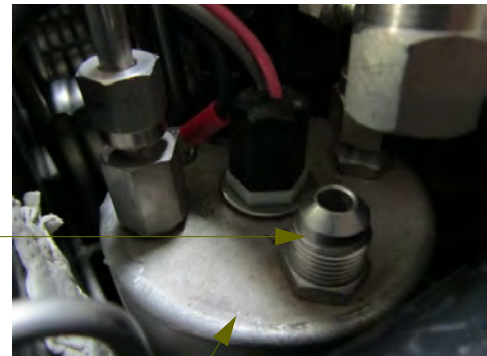


Remove this dual check valve

Figure 31.



Original Carb Tank
560007415C



New Carb Tank
890516707

Figure 32.

CHANGE 2:

The Transformer is moved from the Carb Motor Deck to the Refrigeration Deck as below picture.

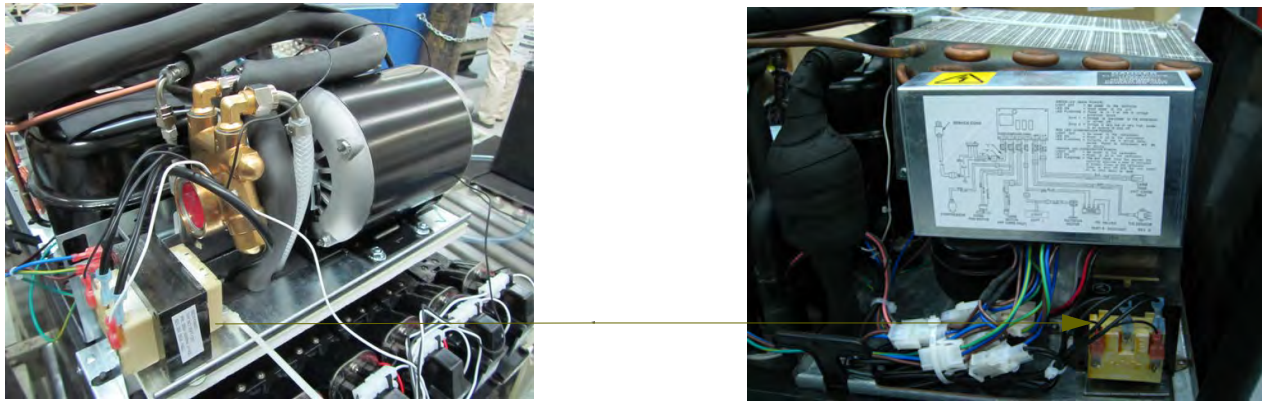


Figure 33.

CHANGE 3:

To assemble the Anderson Check Valve on the Carb pump Outlet as below picture.

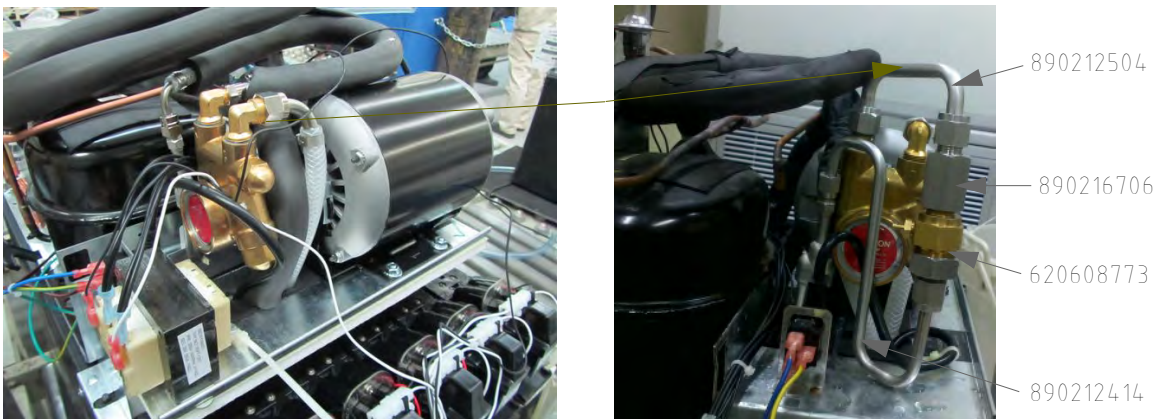


Figure 34.

CHANGED PARTS LIST

Part Number		Description	Qty.	Unit
New Parts Added	620608773	Valve CHK Vent Anderson	1	EA
	890216706	Fitg 3/8MPT 5/8-18NPT	1	EA
	891212504	Coil, Water Outlet Pump to Anderson Valve	1	EA
	890212414	Coil, CHK Valve to main Water Coil	1	EA

NOTE: This option is available for markets which demand the use of ASSE compliant vented double check valves in the system. Based on the local plumbing laws, this option can be made available on customer discretion.

OLYMPUS VENTED DOUBLE CHECK VALVE INSTALLATION

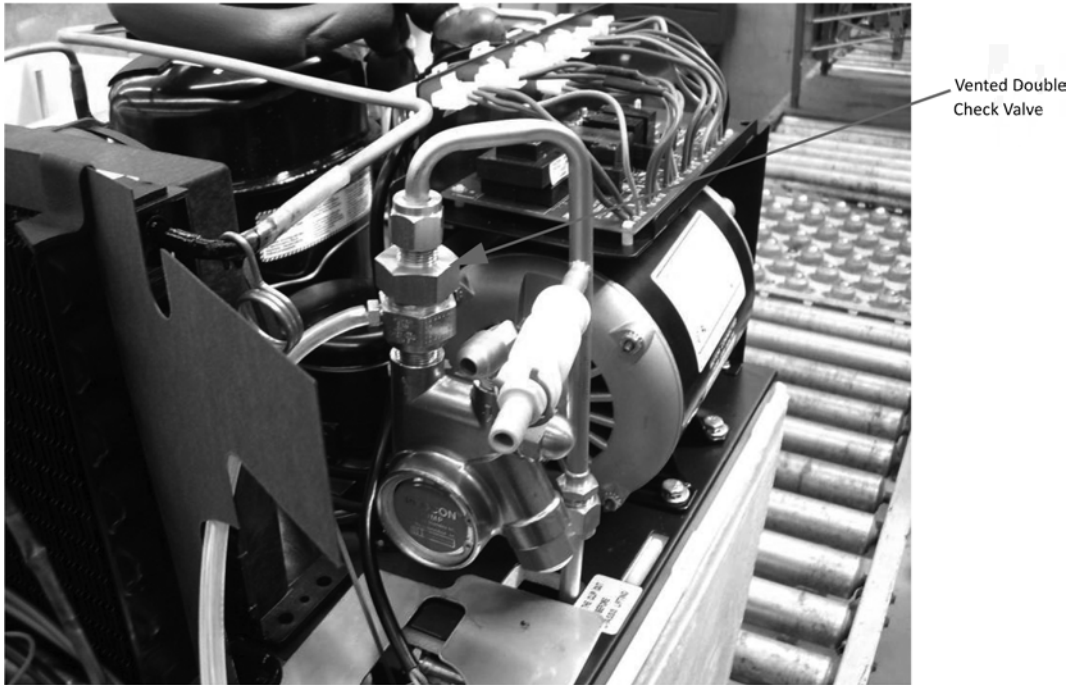


Figure 35. Olympus 6V Installation DCV

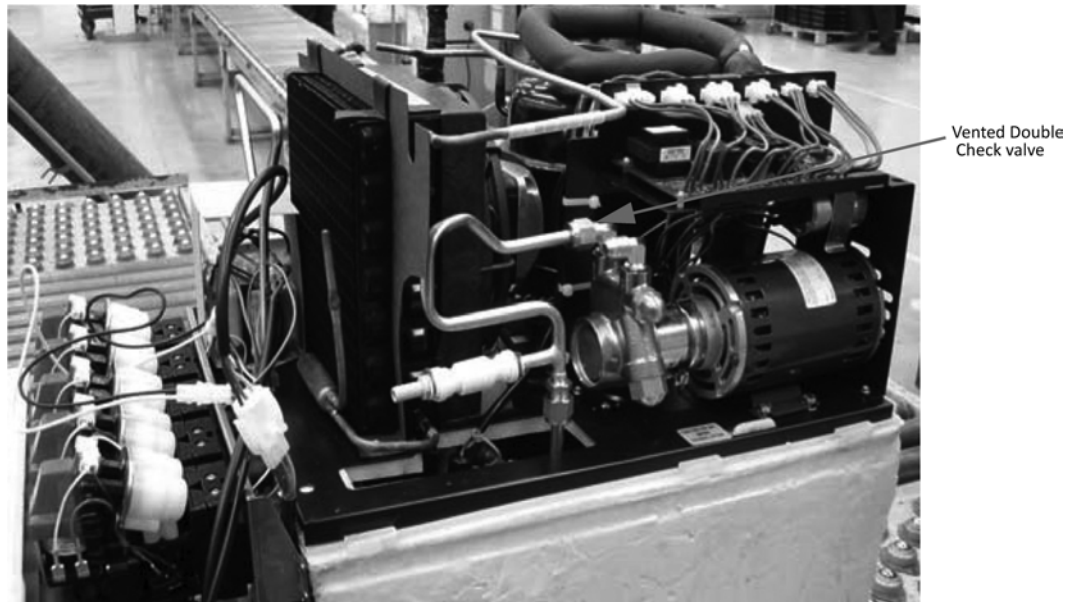


Figure 35. Olympus 5V Installation DCV

ILLUSTRATED PARTS LIST

GENERAL ASSEMBLY

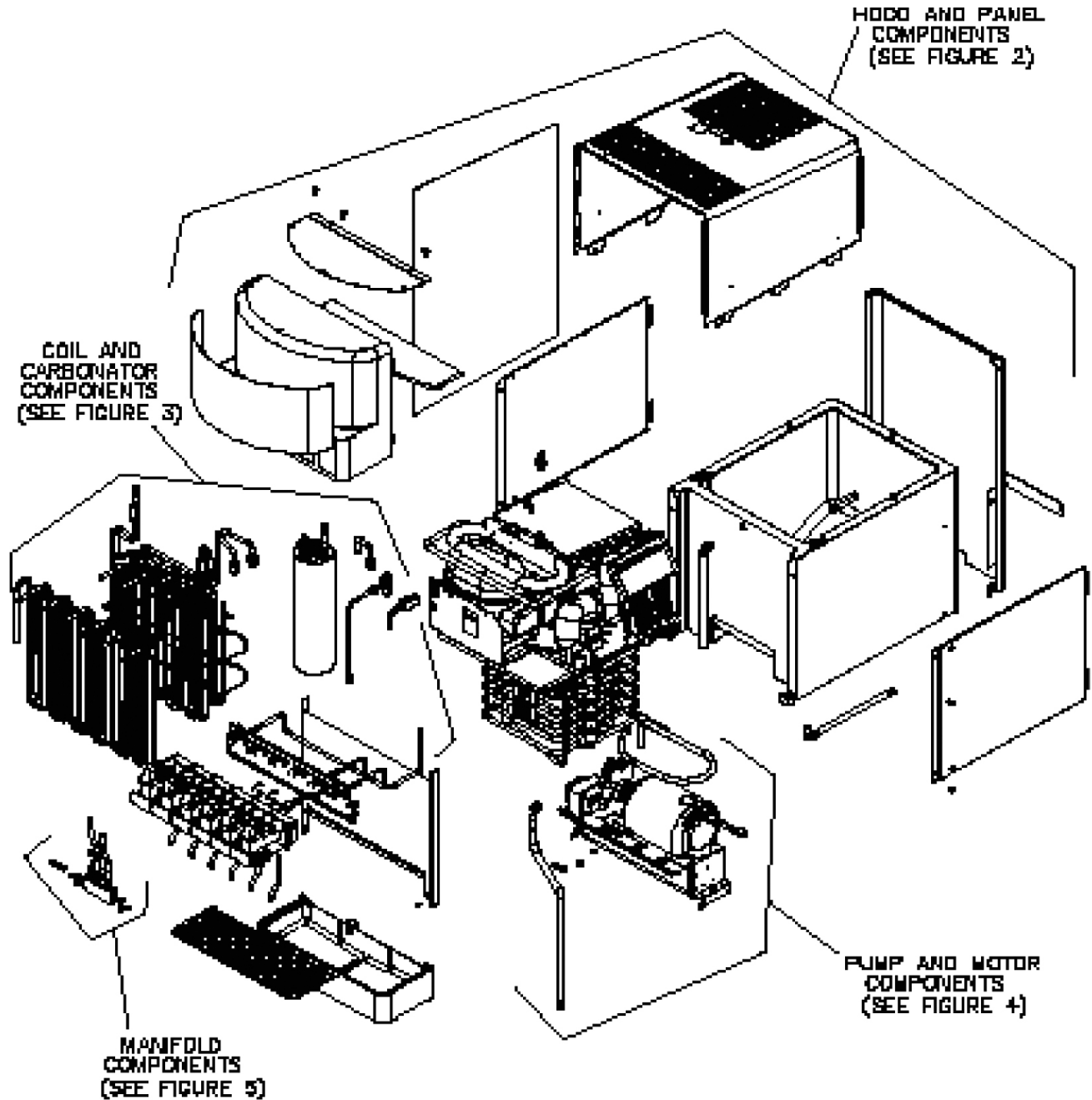


Figure 36.

HOOD AND PANEL COMPONENTS

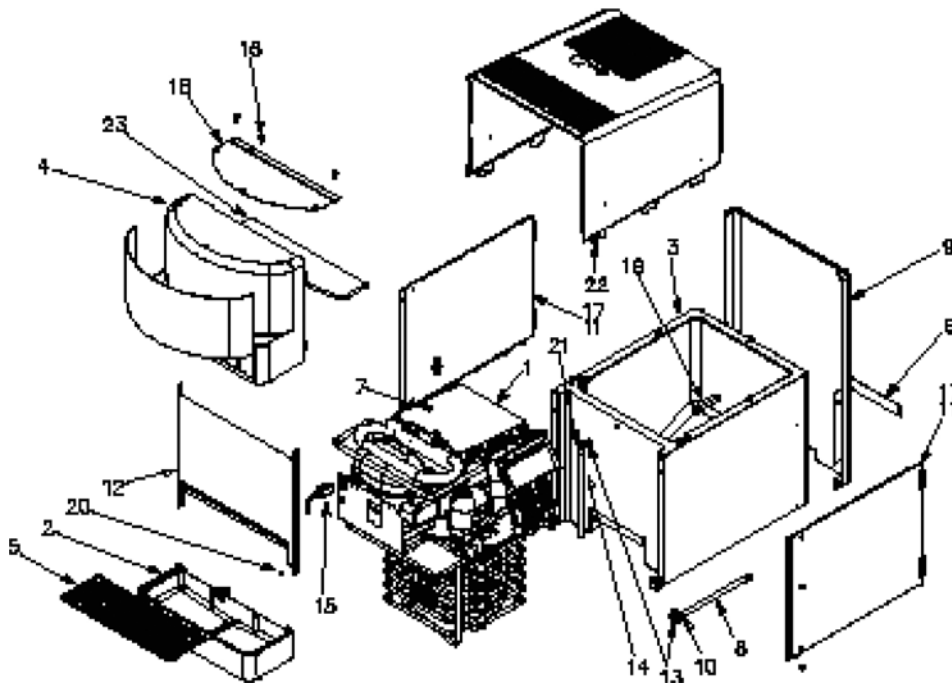


Figure 37.

Table 1. Hood and Panel Components

Item No.	Part No.	Description
1		Chasis Rfg. Assy.
2	850000239	Drip Tray
3	850000157	Housing Foamed
4	850000212	Merchndsr Housing 6FL
	850000223	Merchndsr Housing 5FL
	850000436	Merchndsr for Portion
	850000438	Merchndsr for Push
	859000111	Kit Merchndsr 6FL 120V
	859000118	Kit Merchndsr 5FL 240V
	859000119	Kit Merchndsr 6FL 240V
	859000146	Kit Merchndsr Push 120V
859000147	Kit Merchndsr Push 240V	
5	850000444	Cup Rest
	620708535	Cup Rest
6	850000165	Cover Access
7	319941000	Screw TR 8-32 HXWS 12

Table 1. Hood and Panel Components

Item No.	Part No.	Description
8	113500000	Tube Vnyl.500 I.D.
9	850000233	Panel Back
10	140135000	Clamp Hose
11	850000479	Panel Side
12	850000226	Panel Splash
13	1971	Ftg. L 1/2-Barbx1/4-MPT
14	650094	Tube Vinyl.500I.D.By 13-In.L
	2654	Cord Refrigeration 120V 60HZ
15	4344	Cord Refrigeration 230V 50HZ
	850000317	Panel Top Lighted
17	850000284	Screw SM 8 FLPH 16
18	850000285	Clip
19	850000259	Strip Blockoff
20	188117000	Screw SM 8 TRPH 12
21	319681000	Clamp
22	850000323	Wrap Center
23	850000339	Baffle Air Merch.

COIL AND CARBONATOR COMPONENTS

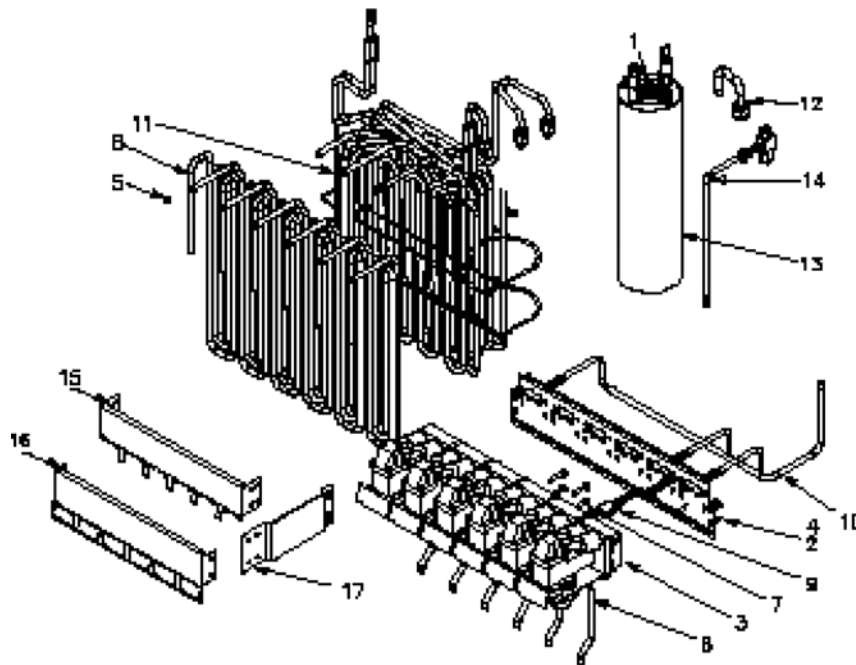


Figure 38.

Table 2. Coil and Carbonator Components

Item No.	Part No.	Description
1	850000288	Harn Wire Liq Level
2	850000134	Panel Val (6FL)
	850000130	Panel Val (5FL)
3	1919	Block Mtg. Assy. UF-1
4	200468012	Screw SM 8 TRPH 24
5	150309000	O-Ring .208 I.D.
6		Val Dispensing Assy.
7	560003072	Screw SM 10 PAPH 32
8	850000126	Coil Syr. Assy.
9	850000289	Harn Wire Val

Table 2. Coil and Carbonator Components

Item No.	Part No.	Description
10	620407758	Manifold (5FL)
	620407750	Manifold (6FL)
11		Coil Carb. Wtr. (See FIG. 6)
13	850000549	Tank Carb. (See FIG. 7)
14	77068200	Fitg-T SWV 5/8-18 x 7/16-20
		Optional PBPC
15	850000507	Panel Val Outer 6FL
16	850000509	Panel Val Inner 6FL
17	850000510	Brkt. Side
18	850000526	Harn Jumper (not shown)

PUMP AND MOTOR ASSEMBLY

Table 3. Pump and Motor Assembly

Item No.	Part No.	Description
		Platform and Pump Assy. (include 1-11)
1	850000524	Platform Fnt
2	560004941	Motor Pump 1/3H.P. (120V 50/60HZ)
	5600004940	Motor Pump 1/3H.P. (230V 50HZ)
3	60170	Pump 125-GPH
4	187483000	Clamp Pump and Mot.
5	361003200	Fitg. L 3/8-MPT x 3/8-Male Flare
6	187502000	Fitg. L 3/8-MPT x 1/4-Male Flare
7	449999999	Transformer 120V 60HZ-24V
	560002114	Transformer 220V 50HZ-24V
8	850000342	Insulation Front Platform
9	850000252	Insulation Platform
10	189429000	Nut Hex 1/4-20
11	319941000	Screw TR 8-32 HXWS 12
12	360174000	Tie Cable
13	850000304	Tube
14	560007501	Tube Conn .375 Flex 18"
15	311304000	Gasket Male Fitg. 5/8
16	178025100	Gasket Male Fitting 7/16

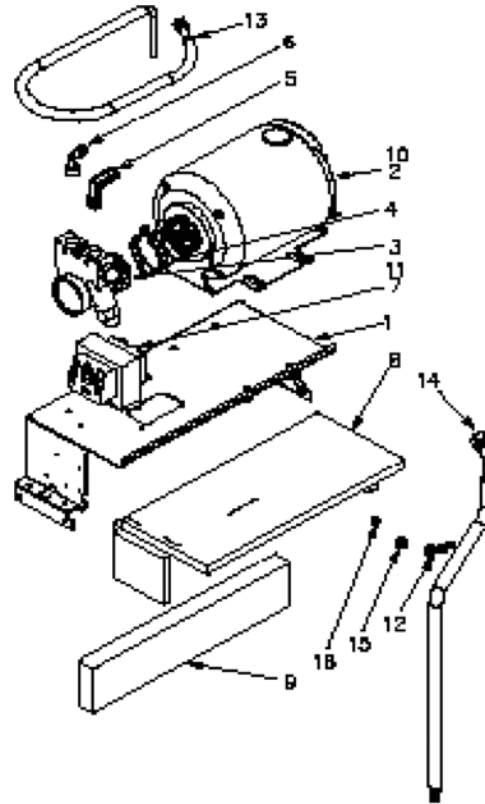


Figure 39.

MANIFOLD COMPONENTS

Table 4. Manifold Components

Item No.	Part No.	Description
		Manifold Components
1	398023208	Screw TC 6-32 PASL 12
2	77050200	Plug Val.
3	77050300	Fitg.Val. 1/4-Barb
4	560006107	Manifold Block
5	40407-T	Retainer
6	850000548	Tube Prod.265I I.D. x 12"

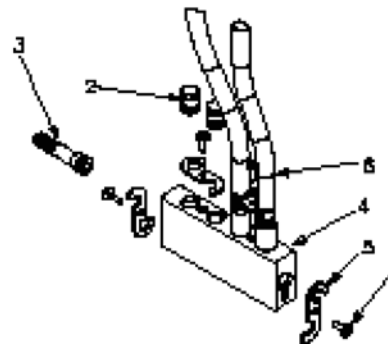


Figure 40.

WATER COIL ASSEMBLY

Table 5. Water Coil Assembly

Item No.	Part No.	Description
		Coil Water Assy.
1	850000155	Rack Coil
2	850000514	Coil Water No.1
3	850000521	Coil Water No.2 (5FL)
	850000535	Coil Water No.2 (6FL)
4	620408243	Coil Water Main
5	620408244	Coil Water Boost

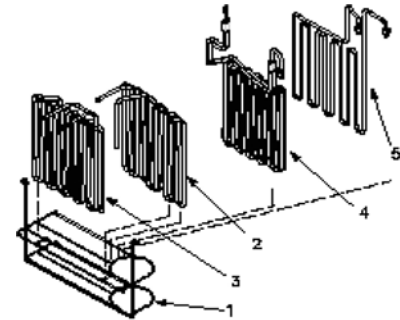


Figure 341.

CARBONATOR TANK ASSEMBLY

Table 6. Carbonator Tank Assembly

Item No.	Part No.	Description
	850000549	Tank Carb. Assy.
1	315250007	O-Ring .488 I.D.
2	398024400	Nut Hex 10-32
3	60011038	Washer Sr .204 I.D.
4	560006103	Valve Check Body
5	560006127	Plate Carb.
6	710660001	Probe Assy.
7	71830230	Valve Press Relief
8	398033002	O-Ring .239 I.D.
9	64686	Sleeve Check Valve
10	64560	Ball .312
11	31525012	31525012 O-Ring .301 I.D.
12	64678	Spring
13	65267001	Valve Dbl. Chk. Assy.
14	750300261	O-Ring .075 I.D.

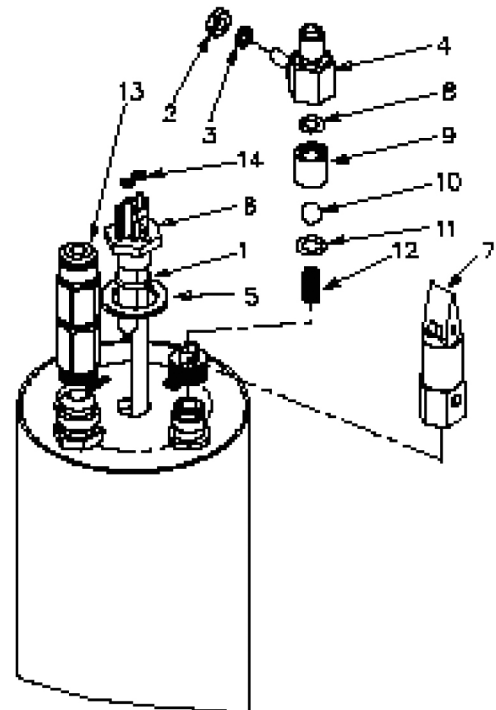


Figure 42.

REFRIGERATION ASSEMBLY

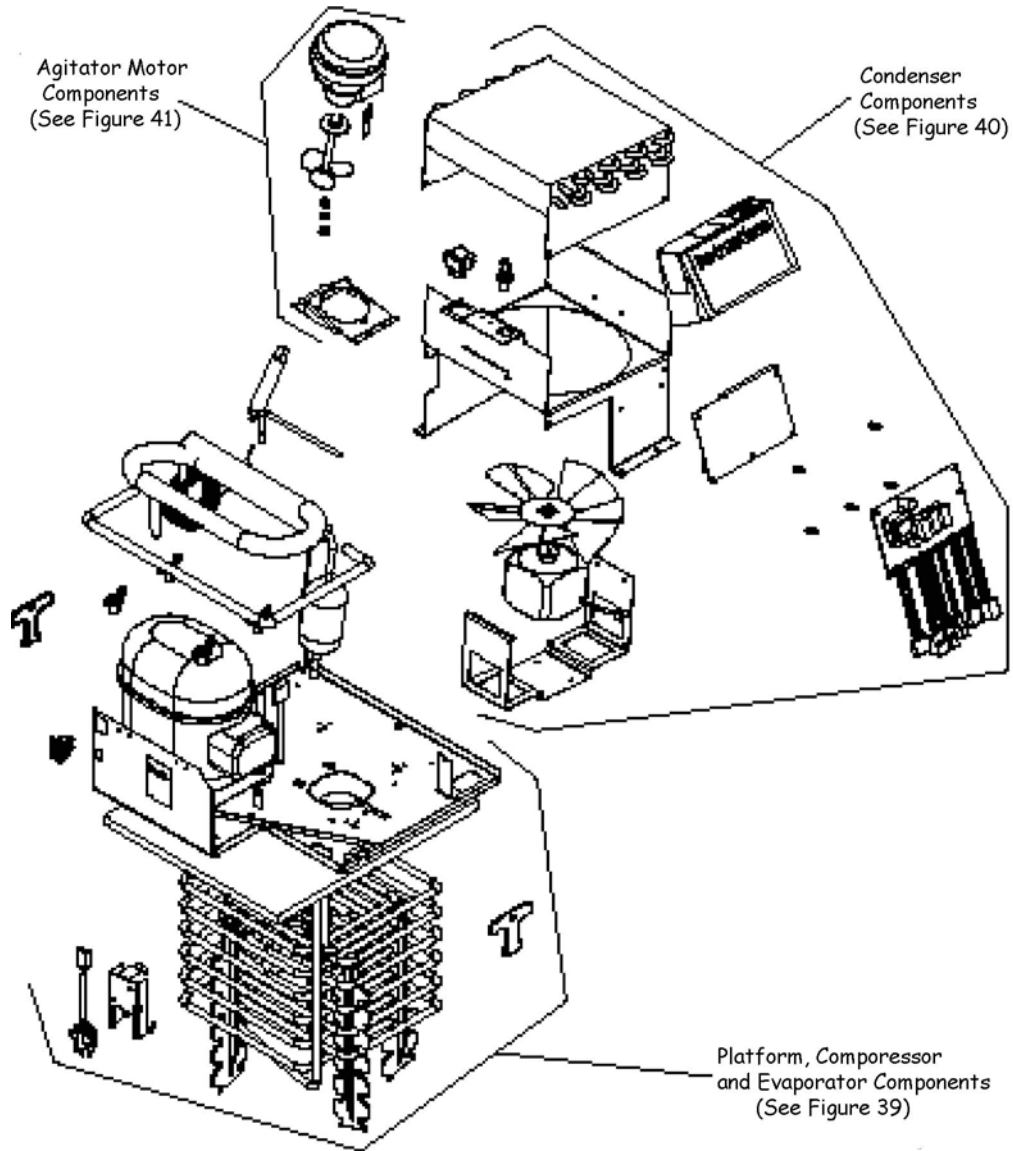


Figure 43.

PLATFORM, COMPRESSOR AND EVAPORATOR COMPONENTS

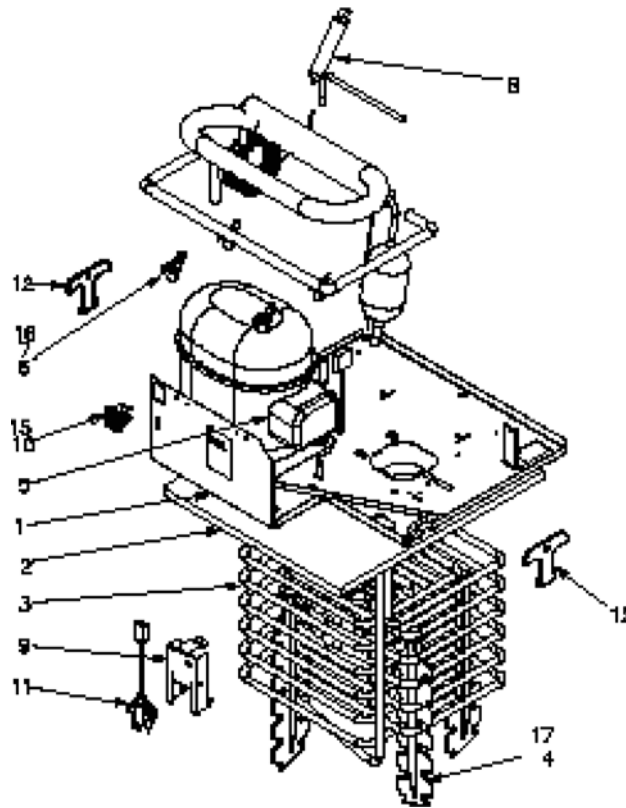


Figure 44.

Table 7. Platform, Compressor and Evaporator Components

Item No.	Part No.	Description
1	850000498	Platform Rfg.
2	850000347	Insulation Platform
3	850000101	Eval. Coil
4	850000473	Spacer Coil Evap.
5	2519KK	Comp. 1/3 H.P. 230V 50HZ
	890215202	Start Capacitor
	890215203	Start Capacitor Kits
	KME660-8/C	Overload Protector
	KME684-3	Relay Starter
6	317781000	Bushing Split
7	398034400	Pin Hitch
8	850000361	Dryer
9	850000163	Holder Probe

Table 7. Platform, Compressor and Evaporator Components

Item No.	Part No.	Description
10	4345	Peceptacle push
11	560003860	Probe Ice Bank
12	4556	Handle
13	850000286	Harn Wire Main (not shown)
14	850000287	Harn Wire Transformer (not shown)
15	200498003	Nut Hex 8-32
16	189723000	Grommet
17	0010	Screw TT 10-14 PAPH 20

CONDENSER COMPONENTS

Table 8. Condenser Components

Item No.	Part No.	Description
1	319941000	Screw TR 8-32 HXWS 12
2	560002735	Swt. Rocker On-Off
3	850000283	Screw MS PAPH 8
4	449999972	Control Ice Bank 120V 60HZ
	449999973	Control Ice Bank 230V 50/60HZ
5	560003439	Motor Fan 9W 120V 60HZ
	560003440	Motor Fan 9W 230V 50/60HZ
6	850000103	Cond. Coil
7	850000138	Shroud Cond.
8	890216601	Fan 5-Blade
9	850000241	Bracket Motor Fan
10	850000281	Bracket Elec. Board Mnt.
11	850000280	Cover Elec. Box
12	560001586	Support P.C. Board
13	71827615	Switch Key Lock

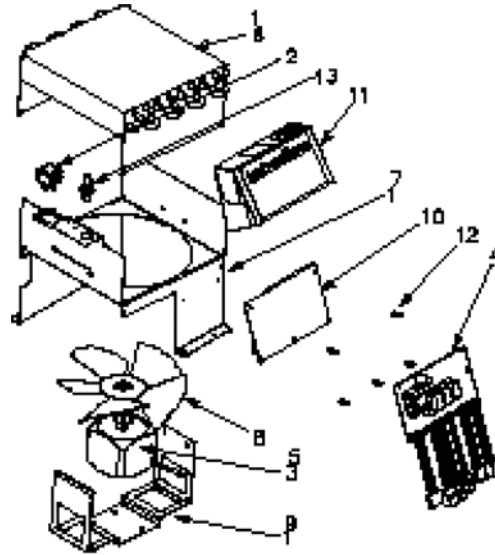


Figure 45.

AGITATOR MOTOR COMPONENTS

Table 9. Agitator Motor Components

Item No.	Part No.	Description
1	319941000	Screw TR 8-32 HXWS 12
2	186116000	Nut Hex 1/4-20
3	186216000	Blade Agit. 3-Blade
4	186294000	Washer LK.262 I.D.
5	186599000	Slinger Water
6	850000238	Bracket Motor Agitator
7	3454	Motor Agit. 15W 120V 60HZ
	560002354	Motor Agit. 230V 50/60HZ

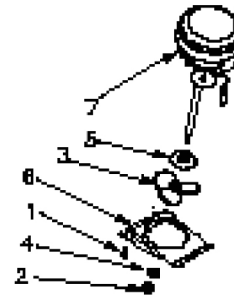


Figure 46.

OPTIONAL LIGHT KIT

Table 10. Optional Light Kit

Item No.	Part No.	Description
1	850000305	Bracket Light
	300836000	Ballast Circlin 120V 60HZ
	850000419	Ballast Circlin 230V 60HZ
2	850000357	Ballast Circlin 230V 50HZ
	319941000	Screw TR 8-32 HXWS 12
3	319941000	Screw TR 8-32 HXWS 12
4	3738	Switch Rotary On/Off
5	2098	Clip
6	2107	Bulb Fluor.

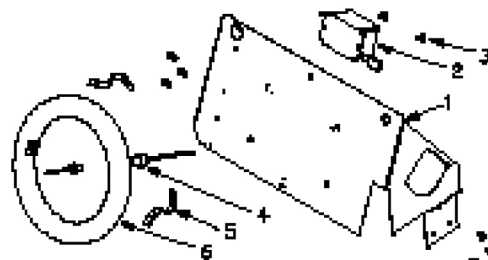


Figure 47.

REFERENCE MATERIAL

WIRING DIAGRAM

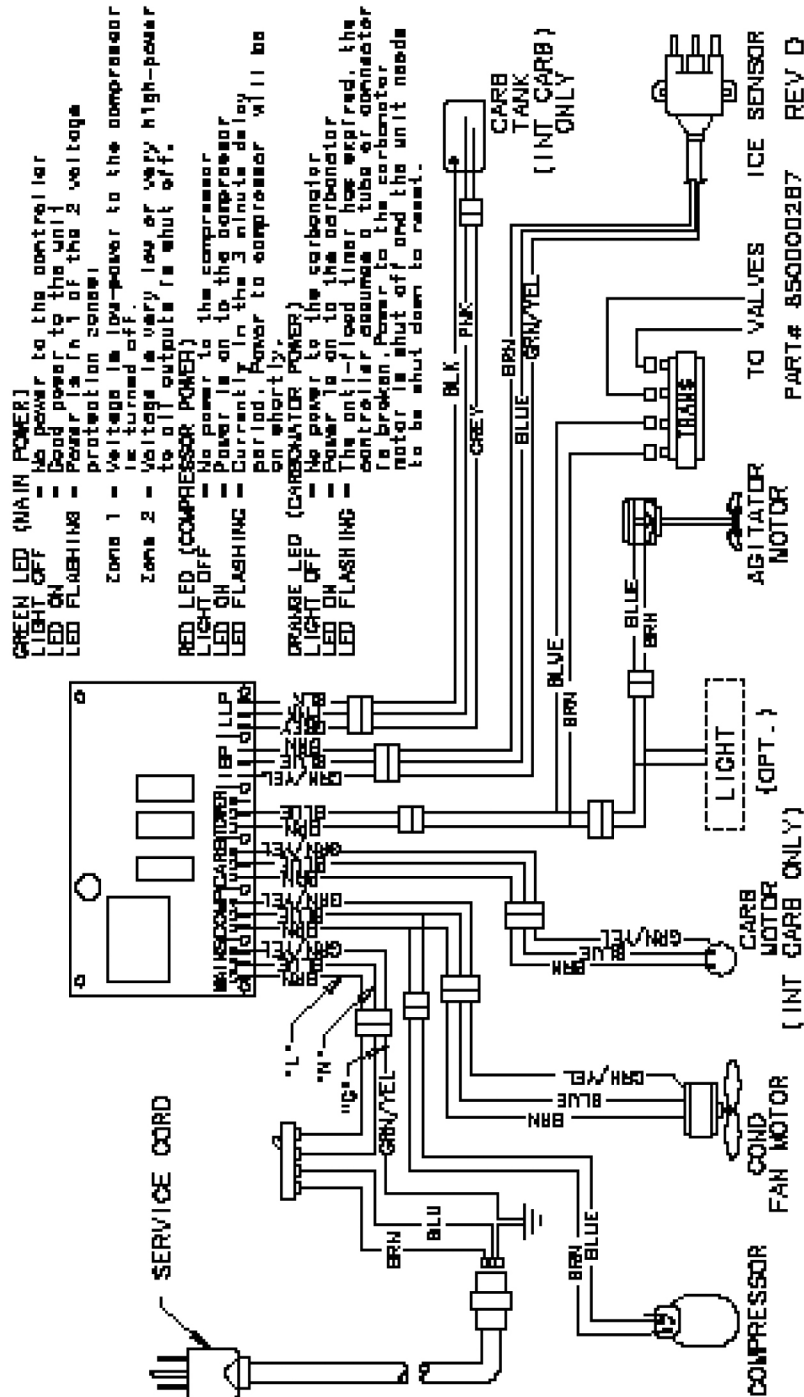


Figure 48.

PLUMBING DIAGRAM — INTERNAL CARBONATOR

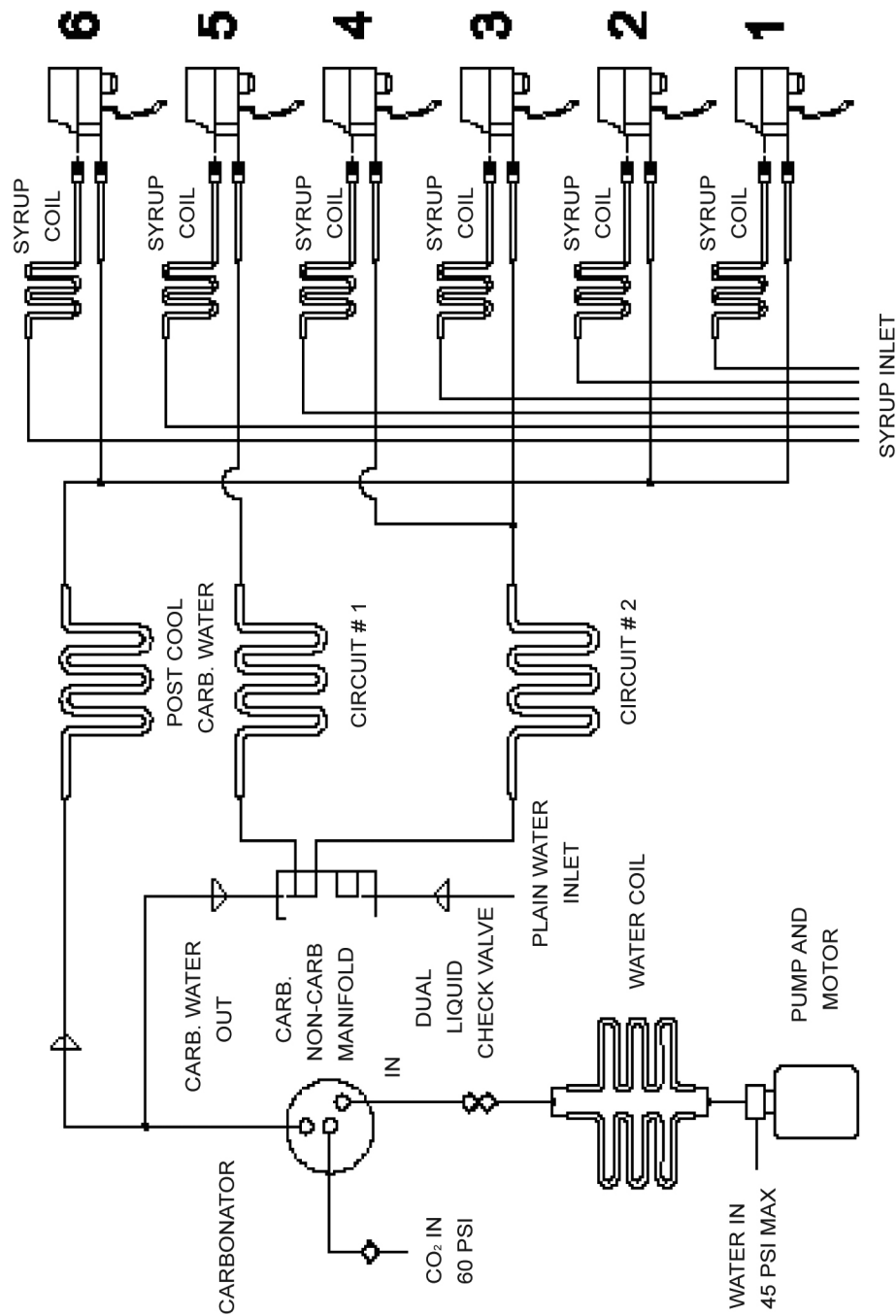


Figure 49.

PLUMBING DIAGRAM — EXTERNAL CARBONATOR

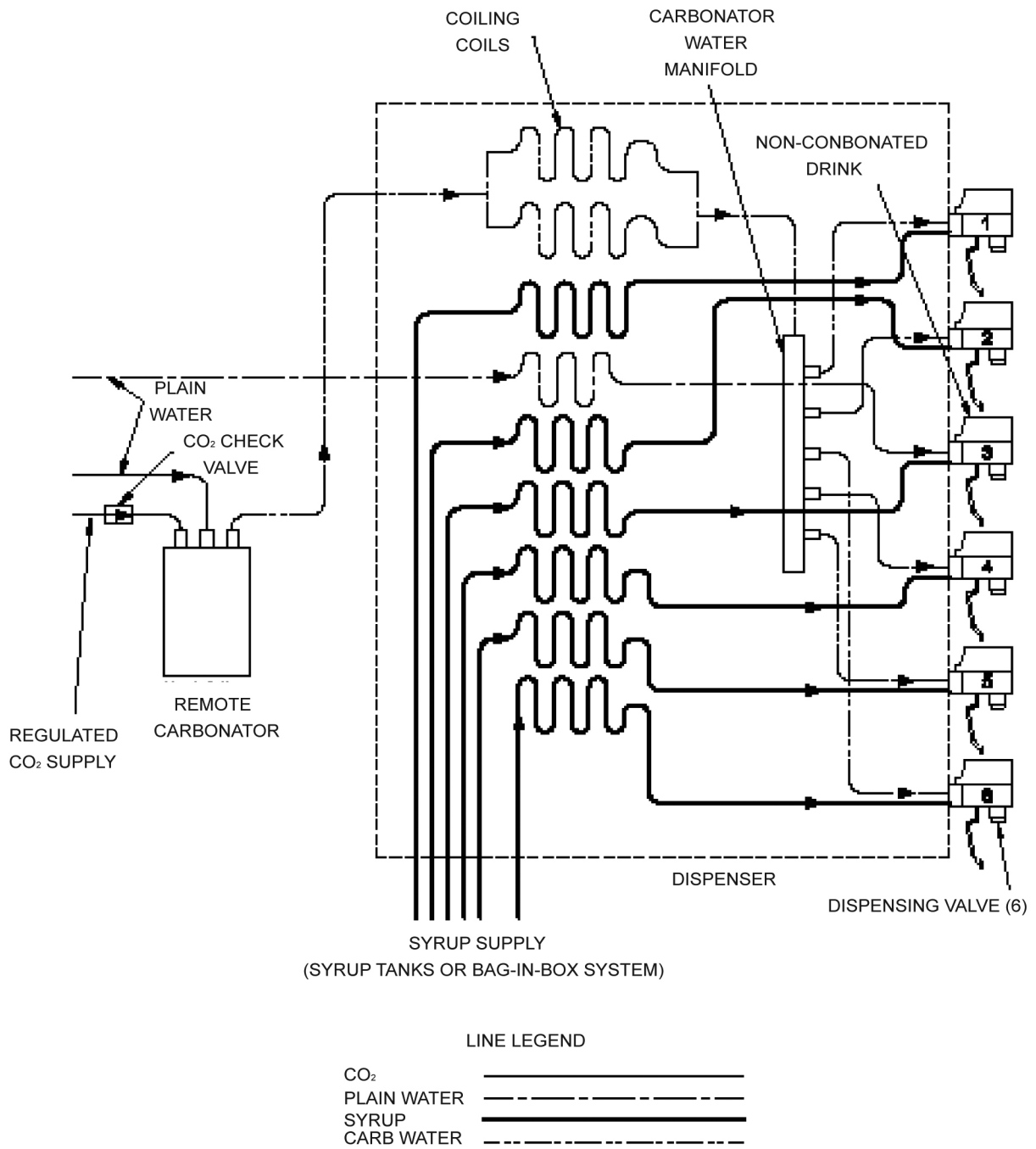


Figure 50.



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