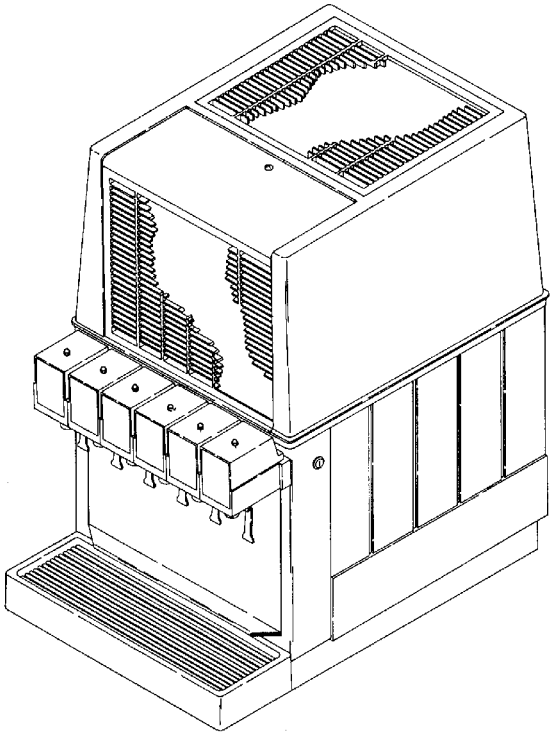
VENTURE

CARBONATED & NONCARBONATED

POST-MIX DISPENSERS

Installation Manual



IMPORTANT:

TO THE INSTALLER.

It is the responsibility of the Installer to ensure that the water supply to the dispensing equipment is provided with protection against backflow by an air gap as defined in ANSI/ASME A112. 1.2-1979; or an approved vacuum breaker or other such method as proved effective by test.

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.

Part No. 318832000
September 22, 1981
Revised: February 17, 1997
Control Code B

THIS DOCUMENT CONTAINS IMPORTANT INFORMATION

This Manual must be read and understood before installing or operating this equipment

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SAFETY INFORMATION

Recognize Safety Information

This is the safety-alert symbol. When you see this symbol on our machine or in this manual, be alert to the potentially of personal injury.

Follow recommended precautions and safe operating practices.

Understand Signal Words

A signal word - ***DANGER, WARNING,*** *OR* ***CAUTION*** is used with the safety-alert symbol. ***DANGER*** identifies the most serious hazards.

Safety signs with signal word ***DANGER*** or ***WARNING*** are typically near specific hazards.

General precautions are listed on ***CAUTION*** safety signs. ***CAUTION*** also calls attention to safety messages in this manual.

Follow Safety Instructions

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Learn how to operate the machine and how to use the controls properly. Do not let anyone operate the machine without instructions. Keep your machine in proper working condition. Unauthorized modifications to the machine may impair function and/or safety and affect the machine life.

CO_2 (Carbon Dioxide) Warning

CO_2 Displaces Oxygen. Strict Attention *must* be observed in the prevention of CO_2 (carbon dioxide) gas leaks in the entire CO_2 and soft drink system. If a CO_2 gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO_2 gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

Shipping, Storing, Or Relocating Unit

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 temperature will cause residual water remaining inside the Unit to freeze resulting in damage to internal components of the Unit.

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GENERAL INFORMATION

IMPORTANT: *To the user of this manual* - This manual is a guide for installing, operating, and maintaining this equipment. Refer to the Table of Contents for page location for detailed information pertaining to questions that arise during installation, operation, service, or maintenance of this equipment.

GENERAL DESCRIPTION

This section gives the Unit description, theory of operation, and design data for the four-, five-, and six-flavor Venture Post-Mix Dispensers (hereafter referred to as Units).

This Unit must be installed and serviced by a qualified Service Person. This Unit contains no User serviceable parts.

UNIT DESCRIPTION

The Units are compact with high-impact and corrosion-resistant moulded lower housings and may be island-mounted or installed on a front or rear counter. Their refrigeration assemblies are the drop-in type that can be removed for service and maintenance. Adjustable syrup flow regulators, located on dispensing valves, are easily accessible to control Water-To-Syrup "Ratio" of dispensed product. All Units have electric dispensing valves.

NOTE: Optional 4-inch Legs (P/N 314744000) that will elevate the Unit 4-inches above the countertop are available. When ordering legs, order a quantity of four.

STANDARD UNIT (REQUIRES CONNECTION TO A REMOTE CARBONATOR)

This Unit (see Figure 2) is equipped with a 1/3 H.P. refrigeration assembly and requires connection to a remote carbonator. Installation of Unit on a countertop, installation of LOOSE-SHIPPED PARTS, connection of remote carbonator and plain water and syrup supplies, adjustment of CO_2 regulators, filling water tank with water, and plugging Unit power cord into an electrical outlet is all that is required for operation.

UNIT WITH BUILT-IN COLD CARBONATOR

This Unit (see Figure 3) is equipped with a 1/4 H.P. refrigeration assembly and has a built-in cold carbonator located inside the water tank. Installation of Unit on a countertop, installation of LOOSE-SHIPPED PARTS, connection of plain water and syrup supplies, adjustment of CO_2 regulators, filling water tank with water, and plugging Unit power cord into an electrical outlet is all that is required for operation.

NONCARBONATED UNIT

This Unit (see Figure 4) is equipped with a 1/3 H.P. refrigeration assembly and dispenses all noncarbonated (still) drinks. Installation of Unit on a countertop, installation of LOOSE-SHIPPED parts, connection of plain water and syrup supplies, adjustment of CO_2 regulators, filling water tank with water, and plugging Unit power cord into an electrical outlet is all that is required for operation.

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.

WARRANTY REFERENCE INFORMATION

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

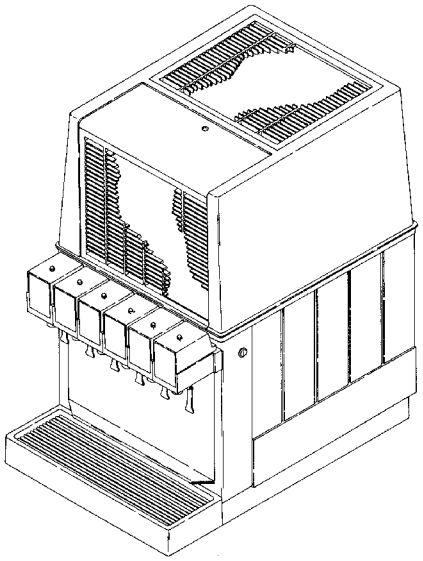


FIGURE 1. VENTURE SIX-FLAVOR POST-MIX DISPENSER

Table 1. Design Data	
CARBONATED UNITS:	
60 HZ Unit:	
1/3 HP refrigeration 115 V, 60 HZ (Requires a Remote Carbonator)	
Four Flavor	417354XXX
Five Flavor	417351XXX
	417355XXX
	417365XXX
	418355XXX
	427355XXX
Six Flavor	417356XXX
	417366XXX
1/4 HP refrigeration 115V 60 HZ w/built-in Cold Carbonator	
Five Flavor	417405XXX
Six Flavor	417406XXX

Table 1. Design Data (cont'd)	
50 HZ Unit:	
1/3 HP refrigeration 230V, 50 HZ (Requires a Remote Carbonator)	
Four Flavor	497354XXX
Five Flavor	497355XXX
	497400XXX
	498355XXX
	498400XXX
Six Flavor	497356XXX
	497401XXX
	498356XXX
1/4 HP refrigeration 230V 50 Hz w/built-in Carbonator	
Four Flavor	497404XXX
Five Flavor	497405XXX
Six Flavor	497416XXX
NONCARBONATED CARBONATED UNITS:	
60 HZ Unit:	
1/3 HP refrigeration 115 V, 60 HZ	
Five Flavor	412155XXX
	412165XXX
Six Flavor	412156XXX
	412166XXX
Overall Dimensions:	
Width	16 1/4 inches
Height	27 5/8 inches
Depth	24 1/2 inches
Weight: Four, Five or Six-Flavor Standard and NonCarbonated Unit with 1/3 HP refrigeration.	
Shipping (one carton) approx.	124 Pounds
Dry Weight (approx.)	115 Pounds
Ice Bank Weight	31 Pounds
Drop in Refrigeration Assembly	58 Pounds
Weight: Four, Five, or Six Flavor Unit with 1/4 HP refrigeration and built-in cold carbonator.	
Shipping (one carton) approx.	130 Pounds
Dry Weight (approx.)	125 Pounds
Ice Bank Weight	24 Pounds
Drop in Refrigeration Ass'y	71.6 Pounds
Water Tank Capacity (no ice bank approximate)	
Four, Five, or Six-Flavor	9 3/4 Gallons
1/3 H.P. Refrigeration Ass'y	
Standard Unit 1/3 HP Refrigeration Five, or Six-Flavor Unit with built-in Cold Carbonator and 1/4 HP Refrigeration	9 1/4 Gallons
Refrigerant Requirement	See Unit Nameplate
Ambient Operating Temperature	40°F to 100°F

Table 1. Design Data (cont'd)	
Unit Water Inlet Pressure	25-30 PSI
Unit Electrical Requirements	See Unit Nameplate

No. of Dispensing Valves	No. of 12 Oz Drinks/ Min.	No. of Drinks 40°F Or Below (see **NOTE**)
5	4	1/3 HP=650 1/4 HP=252
6	4	1/3HP =520 1/4HP = 248

NOTE: Number of 12-oz drinks dispensed 40°F or below @ 75°F syrup and water inlet temperature and 75°F ambient.

THEORY OF OPERATION

WARNING: CO_2 displaces oxygen. Strict attention *must* be observed in the prevention of CO_2 (carbon dioxide) gas leaks in the entire CO_2 and soft drink system. If a CO_2 gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO_2 gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

CARBONATED UNITS

Standard Units (Requires Connection To a Remote Carbonator).

(see Figure 2)

The Unit was set up at the factory to dispense a still (non-carbonated) drink from No. 3 dispensing valve and carbonated drinks from the remaining dispensing valves. No. 3 dispensing valve may be converted to also dispense a carbonated drink. Refer to TABLE OF CONTENTS for conversion instructions.

A CO_2 cylinder delivers carbon dioxide (CO_2) gas through adjustable CO_2 regulators to the applicable syrup tanks or bag-in-box syrup pumps and also to a remote carbonator. Plain water enters the remote carbonator carbonated water tank and is carbonated by regulated CO_2 gas pressure also entering the tank.When dispensing valve is opened, CO_2 gas pressure exerted upon the syrup tank or on the bag-in-box system syrup pump, pushes syrup through the Unit syrup cooling coil, and on to the dispensing valve.

Carbonated water is propelled by CO_2 gas pressure which pushes carbonated water from the carbonated water tank, through the Unit cooling coils, and on 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 from No. 3 dispensing valve in the same manner as the carbonated drink except plain water is substituted for carbonated water.

Units With Built-In Cold Carbonators.

(see Figure 3)

The Unit was set up at the factory to dispense a still (noncarbonated) drink from No. 3 dispensing valve and carbonated drinks from the remaining dispensing valves. No. 3 dispensing valve may be converted to also dispense a carbonated drink. Refer to TABLE OF CONTENTS for conversion instructions.

A CO_2 cylinder delivers carbon dioxide (CO_2) gas through adjustable CO_2 regulators to the applicable syrup tanks or bag-in-box syrup pumps and to a built-in carbonator located inside the Unit. Plain water is pumped into the carbonator carbonated water tank by a water pump and is carbonated by regulated CO_2 gas pressure also entering the tank. When dispensing valve is opened, CO_2 gas pressure exerted upon the syrup tank or on the bag-in-box system syrup pump, pushes syrup through the Unit syrup cooling coil, and on to the dispensing valve. Carbonated water is pushed by CO_2 gas pressure from the carbonated water tank, through the Unit carbonated water cooling coils, and on to the dispensing valve.

Syrup and carbonated water meet simultaneously at the dispensing valve resulting in a carbonated drink being dispensed. A still (noncarbonated) drink is dispensed from the No. 3 dispensing valve in the same manner as the carbonated drink except plain water is substituted for carbonated water.

The carbonated water tank is replenished when the carbonated water level inside the tank drops, which in turn automatically starts the carbonator water pump. When the carbonated water level inside the tank has been replenished, the carbonator water pump will stop.

NONCARBONATED UNITS

(see Figure 4)

A CO_2 cylinder delivers carbon dioxide (CO_2) gas through adjustable CO_2 gas regulators to the applicable syrup tanks or bag-in-box syrup pumps. When dispensing valve is opened, CO_2 gas pressure exerted upon the syrup tank or on the bag-in-box system syrup pump, pushes syrup through the Unit syrup cooling coils, and on to the dispensing valve. Plain water enters the Unit and passes through the Unit plain water cooling coils on the way to the dispensing valve. Syrup and plain water meet at the same time at the dispensing valve resulting in a still (noncarbonated) drink being dispensed.

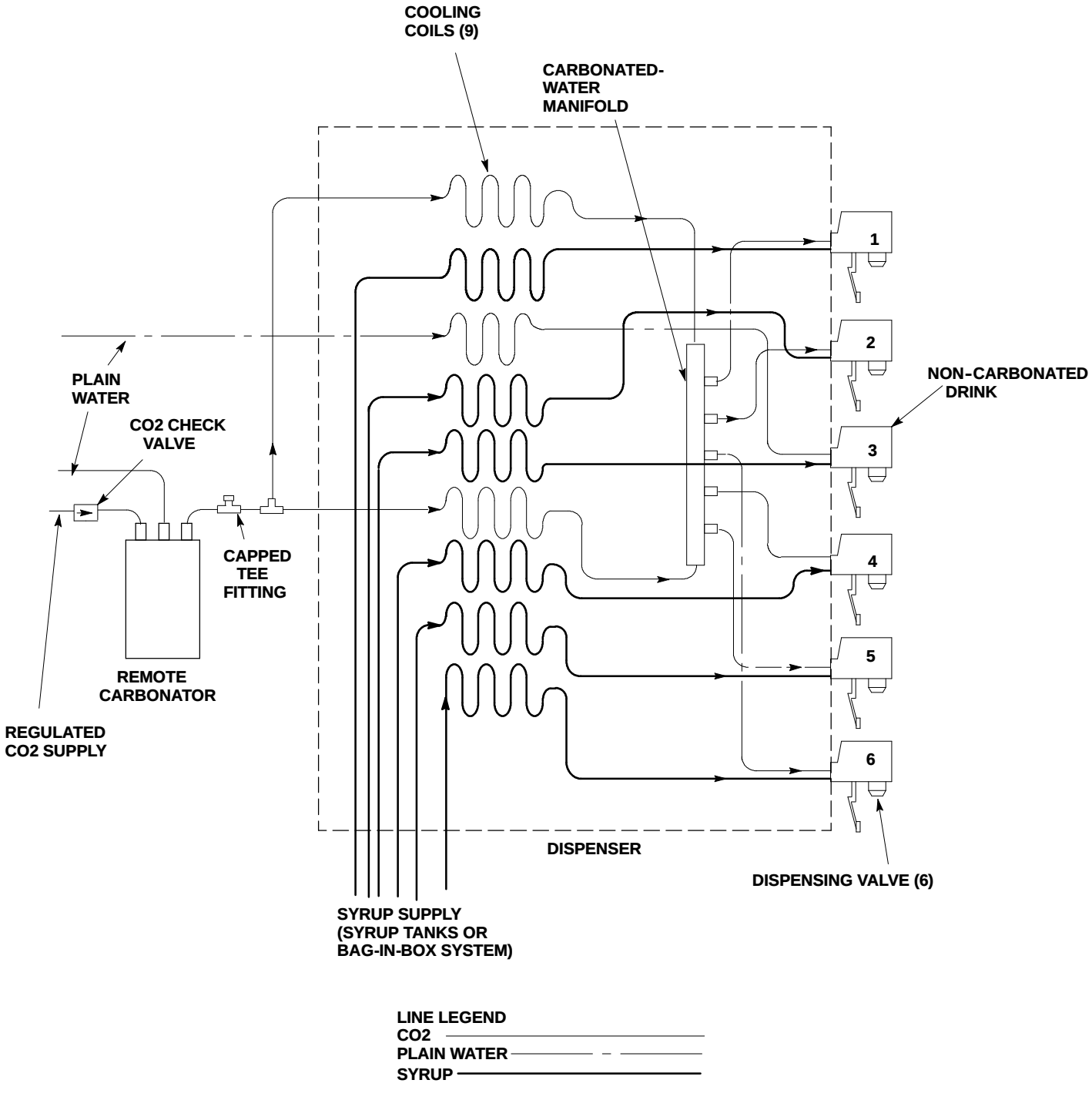


FIGURE 2. FLOW DIAGRAM (SIX FLAVOR UNIT REQUIRING CONNECTION TO A REMOTE CARBONATOR)

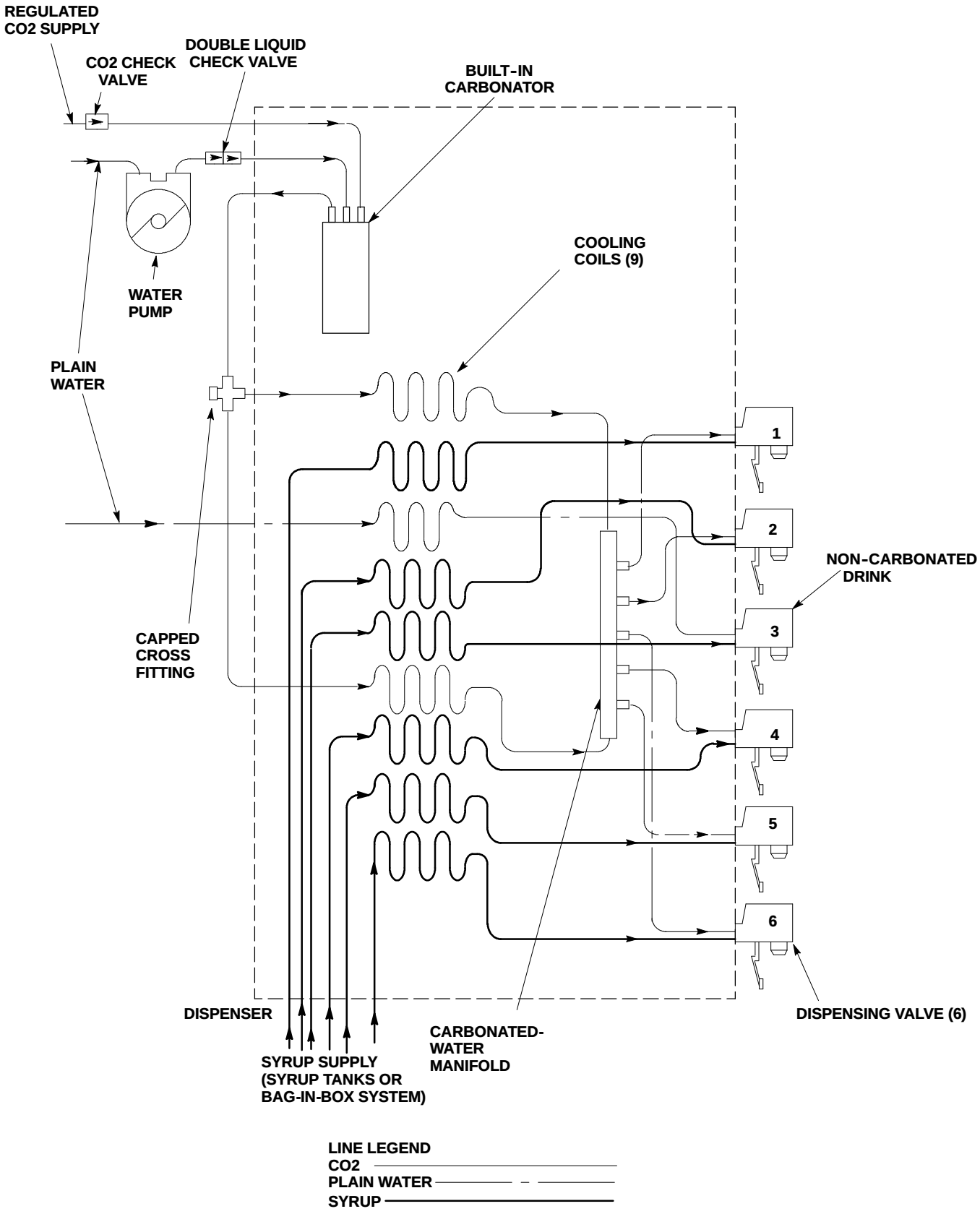


FIGURE 3. FLOW DIAGRAM (SIX-FLAVOR UNIT BUILT-IN COLD CARBONATOR)

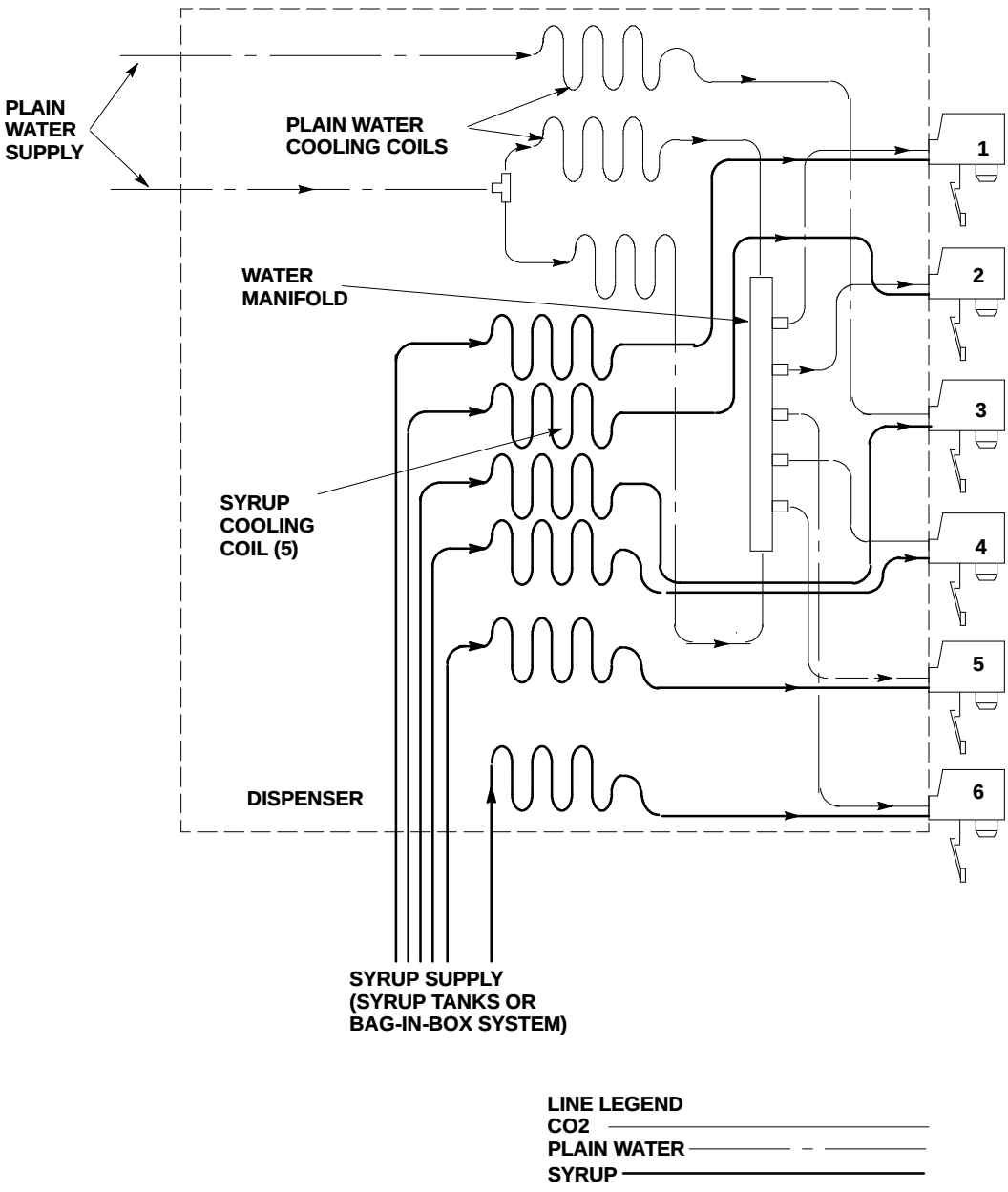


FIGURE 4. FLOW DIAGRAM (SIX-FLAVOR NON-CARBONATED UNIT)

INSTALLATION

This section covers unpacking and inspection, selecting location, installing Unit, preparing for operation, and operation.

UNPACKING AND INSPECTION

NOTE: The Unit was thoroughly inspected before leaving the factory and the carrier has accepted and signed for it. Any damage or irregularities should be noted at the time of delivery (or not later than 15 days from date of delivery) and immediately reported to the delivering carrier. Request a written inspection report from Claims Inspector to substantiate any necessary claim. File claim with the delivering carrier, *not* with IMI Cornelius Inc.

1. After Unit has been unpacked, remove shipping tape and other packing material.
2. Lift hood straight up and off Unit.
3. Remove four shipping nuts that secure drop-in refrigeration assembly in Unit.
4. Remove two screws (if applicable) securing front access panel to Unit, then remove panel.
5. Unpack LOOSE-SHIPPED PARTS. Make sure all items are present and in good condition.

CARBONATED UNITS WITH 1/3 H.P. REFRIGERATION
(REQUIRES CONNECTION TO A REMOTE CARBONATOR)

Table 2. Loose-Shipped Parts

Item No.	Part No.	Name	4-FL	5-FL	6-FL
1	317659039	Drip Tray	1	1	1
2	317660000	Cup Rest	1	1	1
3	317792000	Line Outlet Plug	1	1	1
4	176193000	Fitting, 7/16-20 (2)	5	6	7

NONCARBONATED UNITS WITH 1/3 H.P. REFRIGERATION

Item No.	Part No.	Name	5-FL	6-FL
1	317659039	Drip Tray	1	1
2	317660000	Cup Rest	1	1
3	317792000	Line Outlet Plug	1	1
4	176193000	Fitting, 7/16-20 (2)	6	7
5	318523088	Test Baffle Ass'y, Dispensing Valve (see **Note** below)	1	1
NOTE: Temporarily used to adjust dispensing valves for Water-To-Syrup "Ratio" of dispensed product.				

UNITS WITH 1/4 H.P. REFRIGERATION AND BUILT-IN COLD CARBONATOR

Item No.	Part No.	Name	4FL	5FL	6FL
1	317659039	Drip Tray	1	1	1
2	317660000	Cup Rest	1	1	1
3	317792000	Line Outlet Plug	1	1	1
4	77070402	Fitting, Stainless Steel, 5/8-18 (2)	1	1	1
5	176017000	Swivel Nut, 7/16-20	1	1	1
6	311304000	Tapered Gasket, Black	3	3	3
7	77010400	Nipple, 7/16 Nut (for .265 Tube)	1	1	1
8	300200000	Tubing Clamp	1	1	1

SELECTING LOCATION

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.

This Unit may be island-mounted or installed on a front or rear counter. Locate the Unit so the following requirements are satisfied:

WARNING: To avoid possible fatal electrical shock or serious injury to the operator, it is *highly recommended* that a GFCI (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

1. The Unit *must* be installed near a properly grounded electrical outlet with proper electrical requirements.The electrical circuit *must* be properly fused (slow-blow type fuse) or the 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 equipment should be connected to this circuit. *REFER TO UNIT NAMEPLATE FOR THE REQUIRED POWER CIRCUIT OPERATING VOLTAGE, HZ, AND THE MINIMUM CIRCUIT AMPACITY OF THE UNIT. ALL ELECTRICAL WIRING MUST CONFORM TO NATIONAL AND LOCAL ELECTRICAL CODES.*

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

2. A minimum of 15-inches clearance *must* be maintained above the Unit to the nearest obstruction (shelf, cupboard, ceiling, etc.) and 6-inches clearance between back-side of the Unit and the wall. The front grille of the Unit *must* be unobstructed to allow air to enter the hood.

3. Close to a permanent drain to route drip tray drain hose and water tank drain hose.

4. The top of the unit is to remain free of all objects. Do not place anything on top of unit.

PLACING UNIT IN OPERATING POSITION

NOTE: Some of the Units are manufactured with water and syrup inlet lines that are to be routed to outside of the Unit and be connected to water and syrup source lines. Some Units are also assembled at the factory not equipped with water and syrup inlet lines and require water and syrup source lines to be routed to inside of the Unit and be connected to labeled stainless-steel inlet tubes on front of the Unit. For Units not equipped with factory installed water and syrup inlet lines, the water and syrup source lines may be routed in through Unit back access hole or up through hole cut in the countertop to inside of the Unit to be connected to labeled stainless-steel inlet tubes on front of the Unit.

Proceed as follows to place Unit manufactured with water and syrup inlet lines in operating position.

The Unit inlet supply lines, power cord, water tank drain hose, and drip tray drain hose *must* either be routed out Unit base back access hole, under drip tray at front of the Unit, or if island-mounted, through hole cut in countertop under the Unit. Proceed to applicable installation procedure.

1. *Unit Base Access Panel*- Place Unit in location on the countertop. Route Unit inlet supply lines, power cord, water tank drain hose, and drip tray drain hose out base back access hole. Area around inlet supply lines at flanged hole behind front access panel must be closed and sealed.

   Under Drip Tray At Front Of Unit- Place Unit in location on the countertop with drip tray extended over the edge of the countertop approximately one inch. Route Unit inlet supply lines, power cord, water tank drain hose. and drip tray drain hose out back access hole. Area around inlet supply lines at flanged hole behind front access panel must be closed and sealed. Install LINE OUTLET PLUG, provided with the Unit, in Unit base back access hole.

   Island-Mounted- Place Unit in location on the countertop flush with the countertop edge. Mark Unit center line on edge of the countertop, then move Unit off to one side. Starting at center line mark on edge of the countertop, measure back 12-inches for location of 2-inch hole to be cut in the countertop. Cut a 2-inch hole in countertop where indicated. Place Unit in position over the hole. Route Unit inlet supply lines, power cord, water tank drain hose, and drip tray drain hose down through hole in countertop. Install LINE OUTLET PLUG, provided with the Unit, in Unit base back access hole. Area around inlet supply lines at flanged hole behind front access panel must be closed and sealed.

2. To comply with NSF International (NSF) requirements within the United States, Unit base *must* be sealed to countertop and all access holes to base *must* be sealed. Proceed as follows to seal Unit base.

NOTE: An alternate arrangement to avoid sealing the Unit base to the countertop as described, would be to install four 4-inch Legs (Leg P/N 314744000).

A. Tilt Unit up to expose bottom of base.

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

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

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

D. Apply additional sealant around bottom of base. Seal must have a minimum radius of 1/2-inch to prevent crevices and to ensure a complete seal.

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

FILL WATER TANK AND START REFRIGERATION SYSTEM

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

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

2. Remove plug from drop-in refrigeration assembly platform water fill hole. Fill water tank with clean water to top of stainless steel coils located in coil basket.

3. Install plug in water fill hole.

4. 60 HZ Units

   Place Unit power switch (if applicable) in "OFF" Position. *ON UNIT WITH BUILT-IN COLD CARBONATOR,* MAKE *SURE CARBONATOR WATER PUMP MOTOR SWITCH, LOCATED ON REFRIGERATION ASSEMBLY CONTROL BOX, IS IN "OFF" POSITION.*

   50 HZ Units

   On Units with built-in cold carbonator (see Figure 8) make sure carbonator water pump motor switch, located on refrigeration assembly control box, is in "OFF" position.

WARNING: The Unit must be electrically grounded to avoid possible fatal electrical shock or serious injury to the operator. The Unit 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. 60 HZ Units

   A. Plug Unit power cord into an accessible properly grounded electrical outlet with GFCI (ground fault circuit interrupt).

   B. Place Unit power switch (if applicable) in "ON" position. Compressor, condenser fan motor, and agitator motor will start and begin forming an ice bank. When full ice bank has been formed, compressor and condenser fan motor will stop but agitator motor will continue to operate circulating ice water bath in water tank. *ON UNIT WITH BUILT-IN COLD CARBONATOR (see Figure 8), DO NOT PLACE CARBONATOR WATER PUMP MOTOR SWITCH IN "ON" POSITION AT THIS TIME.*

   50 HZ Units

   C. Plug Unit power cord into an accessible properly grounded electrical outlet with ELCB (earth leakage circuit breaker).

   D. Compressor, condenser fan motor, and agitator motor will start and begin forming an ice bank. When full ice bank has been formed, compressor and condenser fan motor will stop but agitator motor will continue to operate circulating ice water bath in water tank. *ON UNIT WITH BUILT-IN COLD CARBONATOR (see Figure 8), DO NOT PLACE CARBONATOR WATER PUMP MOTOR SWITCH IN "ON" POSITION AT THIS TIME.*

INSTALLATION

CONNECTING DRIP TRAY DRAIN HOSE

NOTE: Connection of the drip tray drain hose to a permanent drain is recommended. Drip tray drain hose routed to waste container *is not* recommended due to sanitation and cleaning problems.

1. Route lower end of drip tray drain hose to and connect to a permanent drain.
2. Install DRIP TRAY in position on the Unit, then place CUP REST in drip tray.

CONNECTING PLAIN WATER SOURCE LINE(S) TO UNIT

NOTE: IMI Cornelius Inc. recommends that a water shutoff valve and water filter be installed in plain water inlet supply line. A Cornelius Water Filter (P/N 313860000) and Quick Disconnect Set (P/N 313867000) are recommended. The plain water source to the equipment shall be installed with adequate backflow protection to comply with applicable Fereral, State, and local codes.

CAUTION: Check the minimum flow rate and maximum pressure of plain water inlet supply line. MINIMUM FLOW RATE MUST BE AT LEAST 100-GALLONS PER HOUR. If flow rate is less than 100-gallons per hour, starving of carbonator water pump will occur. Starving will allow water pump to overheat and will damage the pump. Overheating could occur if plain water inlet supply line flow rate drops below 100-gallons per hour. CARBONATOR CO_2 OPERATING PRESSURE MUST EXCEED WATER PRESSURE BY 10-PSI. (Example: CO_2 operating pressure is 80-psi, maximum water pressure can be no more than 70-psi, etc.) Water over pressure (higher than CO_2 operating pressure) can cause carbonator flooding, malfunction, and leakage through carbonator relief valve. If water is exceeding maximum pressure specifications, a Water Pressure Regulator Kit (P/N 317589000) or equivalent must be installed in plain water inlet supply line.

Standard Unit Requiring Connection to a Remote Carbonator. (see Figure 2)

1. Install ADAPTOR FITTING, provided with the Unit, in end of Unit labeled plain water inlet line.
2. Connect plain water source supply line to Unit labeled plain water inlet line.

Unit With Built-In Cold Carbonator. (see Figure 3)

Connect plain water source line to Unit labeled plain water inlet lines.

NonCarbonated Unit. (see Figure 4)

(see Figure 4)

Connect plain water source lines to Unit labeled plain water inlet lines.

CONNECTING CARBONATED WATER SOURCE LINE TO UNIT

Standard Unit Requiring Connection to a Remote Carbonator. (see Figure 2)

Connect carbonated water source line from remote carbonator to labeled Unit carbonated water inlet line.

CONNECTING CO_2 SOURCE LINE TO UNIT

Unit With Built-In Cold Carbonator. (see Figure 3)

Connect CO_2 source line to Unit labeled CO_2 inlet line.

CONNECTING SYRUP SOURCE LINES TO UNIT

(see applicable Figure 2, 3, or 4)

Connect syrup source lines to Unit labeled syrup inlet lines.

PREPARATION FOR OPERATION

CAUTION: Before opening CO_2 cylinder shutoff valve, turn secondary CO_2 regulators adjusting screws to the left (counterclockwise) until all tension is relieved from adjusting screws springs.

WARNING: CO_2 displaces oxygen. Strict attention *must* be observed in the prevention of CO_2 (carbon dioxide) gas leaks in the entire CO_2 and soft drink system. If a CO_2 gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO_2 gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

STANDARD UNIT REQUIRING CONNECTION TO A REMOTE CARBONATOR

(see Figure 2)

1. Open (counterclockwise) CO_2 cylinder shutoff valve slightly to allow lines to slowly fill with gas, then open valve fully to back-seat valve. (back-seating valve prevents leakage around valve shaft). Check for CO_2 leaks.
2. Adjust primary CO_2 regulator (regulator controls carbonator CO_2 pressure) as instructed in manual provided with the carbonator. Check for CO_2 leaks.
3. Open plain water inlet supply line shutoff valve. Check for water leaks and tighten any loose connections.
4. Plug remote carbonator power cord into electrical outlet. Carbonator will start and continue to operate until carbonated water tank is full.
5. Adjust syrup tanks system or bag-in-box syrup system syrup pumps secondary CO_2 regulator as instructed in SERVICE AND MAINTENANCE section of this manual.
6. Sanitize all syrup systems as instructed in SERVICE AND MAINTENANCE section of this manual.
7. Install syrup tanks or bag-in-boxes containing syrup into syrup systems.

UNIT WITH BUILT-IN COLD CARBONATOR

(see Figure 3)

1. Open (counterclockwise) CO_2 cylinder shutoff valve slightly to allow lines to slowly fill with gas, then open valve fully to back-seat valve. (back-seating valve prevents leakage around valve shaft). Check for CO_2 leaks.
2. Adjust primary CO_2 regulator (regulator controls Unit built-in cold carbonator CO_2 pressure) as instructed in SERVICE AND MAINTENANCE section of this manual. Check for CO_2 leaks.
3. Open plain water inlet supply line shutoff valve. Check for water leaks and tighten any loose connections.
4. Flip carbonator water pump motor power switch (located on refrigeration assembly control box) to "ON" position. Carbonator water pump will start and continue to operate until carbonator tank has been filled, then pump motor will stop. Check for CO_2, plain water, and carbonated water leaks and tighten any loose connections.
5. Adjust syrup tanks system or bag-in-box syrup system syrup pumps secondary CO_2 regulator as instructed in SERVICE AND MAINTENANCE section of this manual.
6. Sanitize all syrup systems as instructed in SERVICE AND MAINTENANCE section of this manual.
7. Install syrup tanks or bag-in-boxes containing syrup into syrup systems.

NONCARBONATED UNIT

(see Figure 4)

1. Open plain water inlet supply line shutoff valve. Check for water leaks and tighten any loose connections.

2. Adjust syrup tanks system or bag-in-box syrup system syrup pumps secondary CO_2 regulator as instructed in SERVICE AND MAINTENANCE section of this manual.

3. Sanitize all syrup systems as instructed in SERVICE AND MAINTENANCE section of this manual.

4. Install syrup tanks or bag-in-boxes containing syrup into syrup systems

UNIT OPERATION

BLEEDING SYRUP AND APPLICABLE PLAIN OR CARBONATED WATER SYSTEMS

1. Make sure Unit keyed lock-out switch is in "ON" (vertical) position.

2. Dispense from each dispensing valve until air is bled from systems and until syrup and applicable plain or carbonated water are dispensed.

3. Check for syrup and water leaks and tighten any loose connections.

4. Install Unit hood and secure with screw.

ADJUST WATER-TO-SYRUP "RATIO" OF DISPENSED PRODUCT

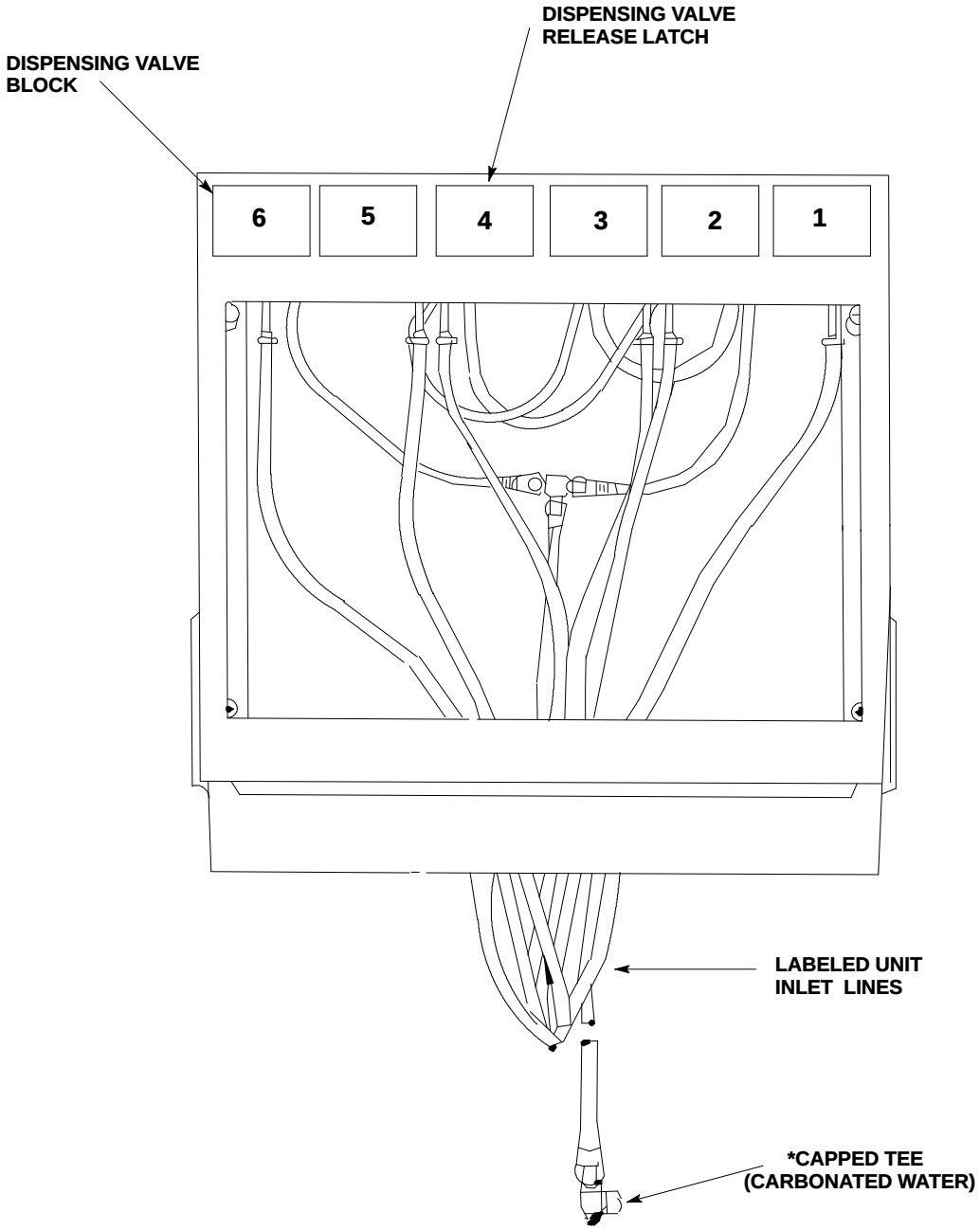
1. On dispensing valves equipped with adjustable water flow regulators, adjust for water flow rate as instructed in SERVICE AND MAINTENANCE section of this manual.

2. Adjust dispensing valves for Water-to-Syrup "Ratio" of dispensed drinks as instructed in SERVICE AND MAINTENANCE section of this manual.

3. Install Unit front access panel.

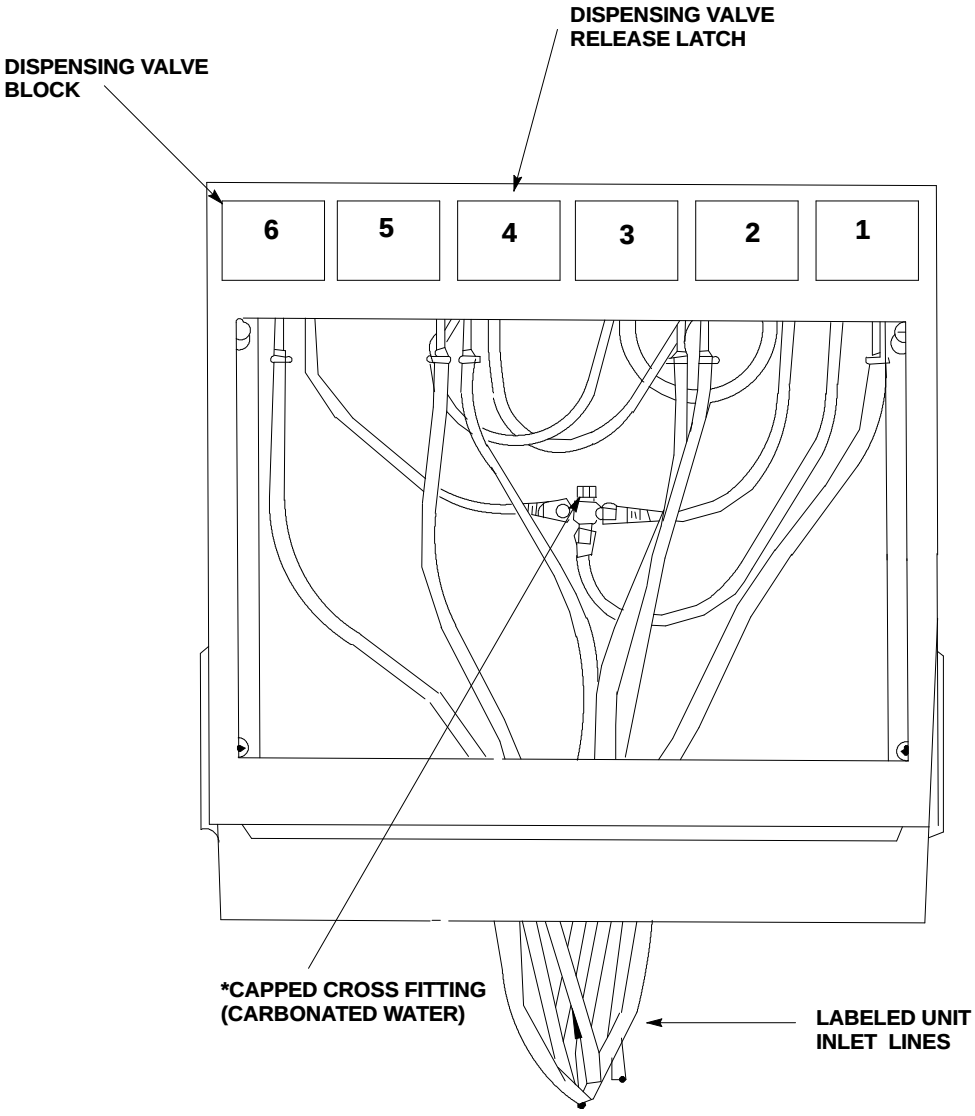
INSTALL DECALS

Install DECALS (provided with Unit) on dispensing valve covers.



*** This CAPPED TEE is used when converting No. 3 dispensing valve from a still (noncarbonated) to a carbonated drink. Refer to TABLE OF CONTENTS for conversion instructions.**

FIGURE 5. INLET SUPPLY LINE CONNECTIONS (STANDARD UNIT)



*** This CAPPED CROSS FITTING is used when converting No. 3 dispensing valve from a still (noncarbonated) to a carbonated drink. Refer to TABLE OF CONTENTS for conversion instructions.**

FIGURE 6. INLET SUPPLY LINE CONNECTIONS (UNIT WITH BUILT-IN COLD CARBONATOR)

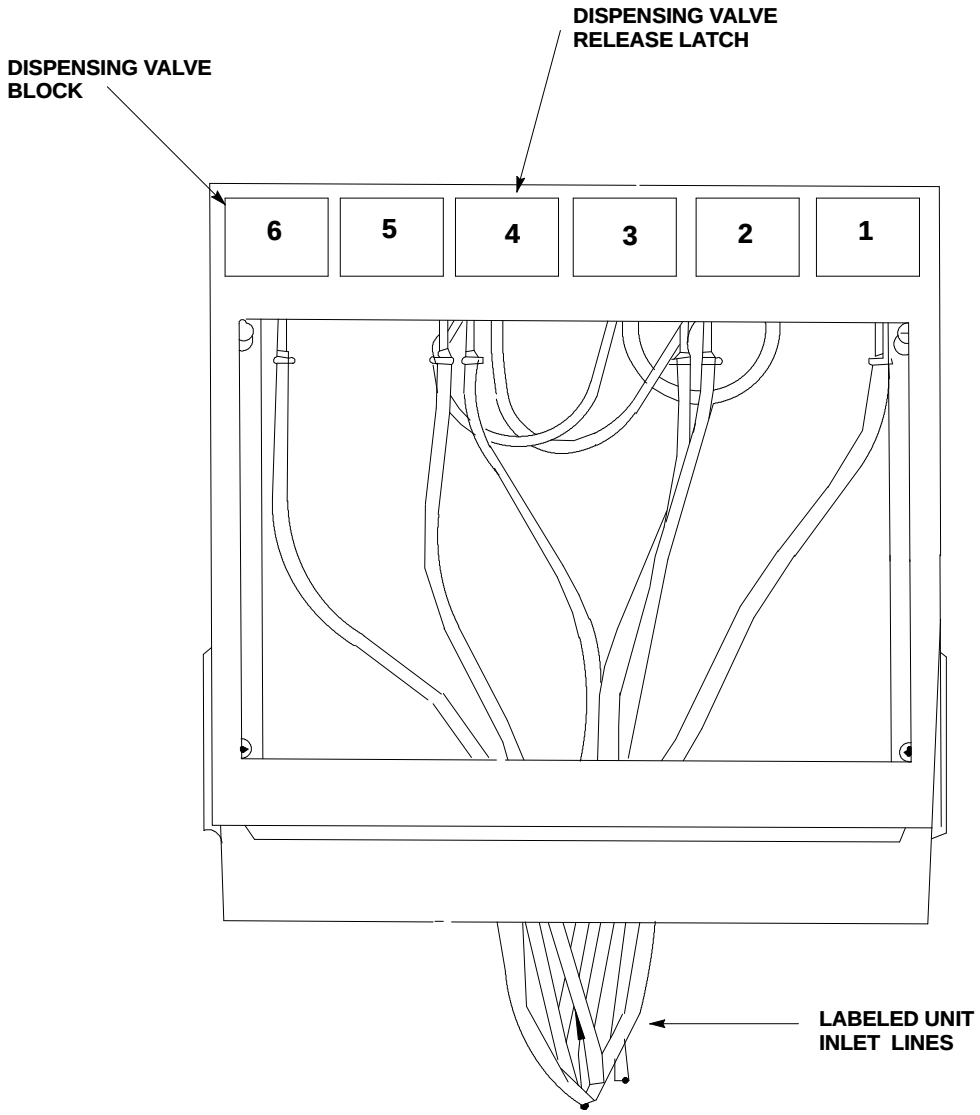


FIGURE 7. INLET SUPPLY LINE CONNECTIONS (NONCARBONATED UNIT)

OPERATOR'S INSTRUCTIONS

This section covers operating controls, daily pre-operation check, Unit operation, adjustments, replenishing CO_2 and syrup supplies, cleaning and sanitizing, checking drop-in refrigeration assembly condenser coil for restrictions, checking ice water bath, water pump yearly maintenance on Unit with built-in carbonator and periodic cleaning of CO_2 gas check valves.

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 the Unit.

OPERATING CONTROLS

(see Figure 8)

DISPENSING VALVE LEVER

The dispensing valve lever, located on bottom of the valve, needs only to be pressed with a cup or glass to dispense product.

DISPENSING VALVE WITH WATER LEVER

The water lever, located on the side of No. 3 dispensing valve cover, will dispense only plain water when actuated.

DISPENSING VALVES KEYED LOCK-OUT SWITCH

The dispensing valves keyed lock-out switch, *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.

UNIT POWER SWITCH (IF APPLICABLE)

The Unit power switch (if applicable) *must* be in the "ON" position before the Unit will operate.

CARBONATOR WATER PUMP MOTOR POWER SWITCH (UNIT WITH BUILT-IN COLD CARBONATOR)

The carbonator water pump motor power switch (see Figure NO TAG) *must* be in the "ON" position before the carbonator water pump motor will operate. The purpose of the switch is to turn off the carbonator water pump motor for service and maintenance. *THE WATER SUPPLY TO THE CARBONATOR WATER PUMP MUST BE TURNED ON BEFORE RESTARTING. STARVING WATER PUMP OF WATER WILL DAMAGE THE PUMP.*

DAILY PRE-OPERATION CHECK

1. Check CO_2 cylinder regulator assembly 1800-psi gage and if gage indicator is in shaded ("change CO_2 cylinder") portion of dial, CO_2 cylinder is almost empty and must be replaced.

2. Make sure there is a sufficient syrup supply. If not, replenish syrup supply as instructed.

3. Make sure the drip tray and the cup rest are clean and are properly installed on the Unit.

UNIT OPERATION

1. Make sure the Unit dispensing valves keyed lock-out switch is in the "ON" (vertical) position.

2. Press a cup or glass against the dispensing valve lever and dispense until the cup or glass is full of product, then release the lever.

3. If water only is desired, hold a cup or glass under the dispensing valve with a lever on it's side, then actuate the lever to dispense water.

REPLENISHING CO_2 SUPPLY

WARNING: CO_2 displaces oxygen. Strict attention *must* be observed in the prevention of CO_2 (carbon dioxide) gas leaks in the entire CO_2 and soft drink system. If a CO_2 gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO_2 gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

CO_2 supply should be checked daily and replenished if necessary. Refer to SERVICE AND MAINTENANCE section of this manual for instructions.

REPLENISHING SYRUP SUPPLY

Syrup supply should be checked daily and replenished if necessary. Refer to SERVICE AND MAINTENANCE section of this manual for instructions.

CLEANING AND SANITIZING

DAILY CLEANING OF UNIT

Daily cleaning procedure for Unit should be performed at end of daily operation. Refer to SERVICE AND MAINTENANCE section of this manual for instructions.

SANITIZING SYRUP SYSTEMS

Syrup systems should be sanitized as instructed every 90-days. Refer to SERVICE AND MAINTENANCE section of this manual for instructions.

CHECKING DROP-IN REFRIGERATION ASSEMBLY CONDENSER COIL FOR RESTRICTIONS

NOTE: Circulating air required to cool the refrigeration assembly condenser coil is drawn in through grille on front and is exhausted through grille on top of hood. Restricting air in or out of Unit will decrease its cooling efficiency.

Area on top of the hood must be kept free of obstructions at all times. Make sure nothing is stored on top of the hood. The refrigeration assembly condenser coil *must* be cleaned every 30-days as instructed in the 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 to the tank for maximum product cooling. Water should be added to the water tank as instructed in the SERVICE AND MAINTENANCE section of this manual. This procedure should be performed by a qualified Service Person.

CARBONATOR WATER PUMP YEARLY MAINTENANCE OR AFTER WATER SYSTEM DISRUPTIONS

UNIT REQUIRING CONNECTION TO A REMOTE CARBONATOR (STANDARD UNIT)

The remote carbonator water pump water inlet strainer screen and the double liquid 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 remote carbonator for the double liquid check valve inspection and cleaning procedure.

UNIT WITH BUILT-IN COLD CARBONATOR

The water pump water strainer screen and double liquid check valve *must* be inspected and cleaned as instructed 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 SERVICE AND MAINTENANCE section of this manual for inspection and cleaning procedure.

CLEANING CO_2 GAS CHECK VALVES

The CO_2 gas check valves *must* be inspected and serviced as instructed at least once a year under normal conditions and after any CO_2 system servicing or disruption. Servicing of CO_2 gas check valves should be performed by qualified Service Personnel. Refer to SERVICE AND MAINTENANCE section in this manual for inspection and servicing procedures.

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SERVICE AND MAINTENANCE

This section describes service and maintenance procedures to be performed on the Unit.

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

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.

PREPARING UNIT FOR SHIPPING, STORING, 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 PANEL REMOVAL

(see Figure 8)

HOOD REMOVAL

CAUTION: *<u>Do not</u>* place or store anything on top of the Unit.

Loosen screw on top of hood, then lift hood straight up and off the Unit.

FRONT ACCESS PANEL REMOVAL

Remove two screws (if applicable) securing front access panel to Unit, then remove panel..

PERIODIC INSPECTION

1. Clean the drop-in refrigeration assembly condenser coil every 30-days 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 or out of the Unit hood will cause the refrigeration system to overheat.*
2. Check dispensing valves for dripping that indicates leaking and repair as necessary.
3. Periodically, pull up on carbonated water tank relief valve momentarily on units with built in carbonators.

ADJUSTMENTS

CO_2 REGULATORS ADJUSTMENTS

WARNING: CO_2 displaces oxygen. Strict attention *must* be observed in the prevention of CO_2 (carbon dioxide) gas leaks in the entire CO_2 and soft drink system. If a CO_2 gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO_2 gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

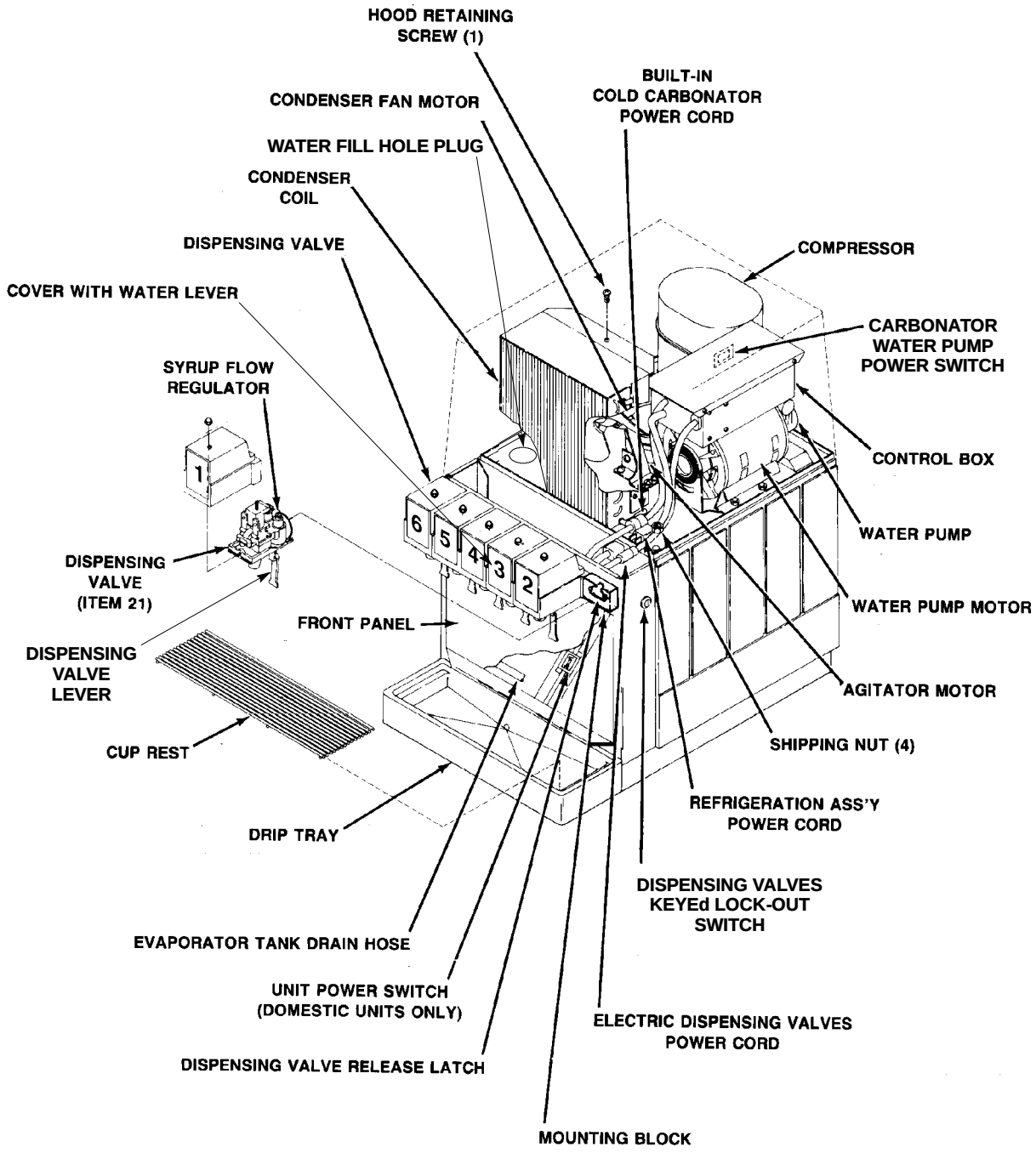


FIGURE 8. DISPENSER COMPONENTS (UNIT WITH BUILT-IN CARBONATOR SHOWN)

NOTE: To readjust CO_2 regulator to a lower setting, loosen adjusting screw lock nut, then turn screw to the left (counterclockwise) until pressure gage reads 5-psi lower than new setting will be. Turn adjusting screw to the right (clockwise) until gage registers new setting, then tighten lock nut.

Adjusting Carbonator CO_2 Regulator

UNIT REQUIRING CONNECTION TO A REMOTE CARBONATOR (see Figure 2)

Refer to manual provided with remote carbonator and adjust CO_2 regulator operating pressure as instructed.

UNIT WITH INTEGRAL (BUILT-IN) CARBONATOR (see Figure 3)

Adjust CO_2 regulator for integral carbonator to nominal 80-psig. *INLET CO_2 PRESSURE TO CARBONATOR MUST NOT EXCEED 125-PSIG.*

Adjusting Syrup Supplies CO_2 Regulator

SUGAR SYRUP TANKS CO_2 REGULATOR

Adjust sugar syrup tanks CO_2 regulator to a minimum of 45-psi.

LOW-CALORIE (DIET) SYRUP TANK CO_2 REGULATOR

Adjust low-calorie (diet) syrup tank secondary CO_2 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 CO_2 pressure may cause low-calorie syrup carbonation resulting in foam.

SYRUP PUMPS (BAG-IN-BOX SYSTEM) CO_2 REGULATOR

Adjust the syrup pumps CO_2 regulator to 70-psi. *DO NOT EXCEED MAXIMUM CO_2 PRESSURE SPECIFIED ON THE SYRUP PUMPS.*

ADJUSTING DISPENSING VALVE WATER FLOW RATE

The dispensing valves adjustable water flow regulators are factory adjusted and should require no futher 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.

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.

STEP 1. WASH SYRUP SYSTEMS

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 CO_2 pressure setting on the syrup tanks CO_2 regulator, then re-adjust CO_2 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 syrup systems.

   Bag-in Box Syrup Systems.

   C. Install bag valves, cut from empty bag-in-box syrup containers, on ends of syrup containers syrup outlet tubes connectors.

   D. 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.

STEP 2. 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.

STEP 3. 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) to100° 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 steps13 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.

STEP 4. 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.

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.

STEP 5. PURGE WATER OUT OF SYRUP SYSTEMS (RESTORE OPERATION)

23. Syrup Tank Systems.

A. Noting syrup tanks CO_2 regulator pressure setting observed in step 4 preceding, readjust CO_2 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 CO_2 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

(see Figure 8)

Excessive accumulation of dust, lint, and grease on the drop-in refrigeration assembly condenser coil will restrict air flow through the coil and cause a loss of cooling. Perform the following procedure to clean the condenser coil.

1. Unplug Unit power cord from electrical outlet.
2. Remove hood by loosening screw on top of hood, then lift hood straight up off Unit.
3. Vacuum or use a soft brush to clean condenser coil. If available, use low-pressure compressed air.
4. Clean dust and dirt from around top of refrigeration assembly.
5. Install hood on Unit and secure with screw.
6. Plug Unit power cord into electrical outlet.

CHECKING ICE WATER BATH

A "gurgle" heard from Unit indicates water level in the water tank is low and more water should be added to the tank for maximum cooling. Before adding more water, ice water bath and ice bank should be checked for cleanliness and water tank coils checked for excessive mineral deposit build-up.

1. Unplug Unit power cord from electrical outlet.

2. Remove Unit hood by loosening screw on top of hood, then lift hood straight up off Unit.
3. Remove plug from drop-in refrigeration assembly platform water fill hole (see Figure 8).
4. Using a flashlight, inspect ice water bath and ice bank for cleanliness. Ice water bath should be clear and ice bank free of foreign particles.
5. If cleaning of water tank is necessary, refer to CLEANING WATER TANK in this section.
6. Fill water tank with clean water to top of stainless steel coils located in coil basket. *USE LOW-MINERAL-CONTENT WATER WHERE A LOCAL WATER PROBLEM EXISTS.*
7. Install plug in water fill hole.
8. Install Unit hood and secure with screw.
9. Plug Unit power cord into electrical outlet.

CLEANING WATER TANK

1. Unplug Unit power cord from electrical outlet.
2. Remove two screws (if applicable) securing Unit front access panel, then remove panel.
3. Route water tank drain hose to a drain. Remove plug from end of drain hose and allow water tank to drain.
4. Remove Unit hood by loosening screw on top of hood, then lift hood straight up off Unit.
5. Unplug drop-in refrigeration assembly power cord and electric dispensing valves power cord.

Unit Equipped with Built-in Cold Carbonator.

A. Disconnect built-in cold carbonator power cord (see Figures 8 and 9).

B. Loosen screw on water pump-to-motor coupling (see Figure 10), then slide water pump off motor shaft. Lay water pump, with attached lines, off to one side.

6. Lift drop-in refrigeration assembly up and out of Unit.

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

7. Allow ice bank to melt. Hot water may be used to speed melting.
8. Use fiber brush and carefully clean mineral deposit build-up from agitator motor shaft and ice bank sensing bulb.
9. Wash inside of water tank and drop-in refrigeration assembly evaporator coils, then rinse with clean water.
10. Install plug in end of water tank drain hose.
11. Install drop-in refrigeration assembly in Unit by reversing removal procedure.

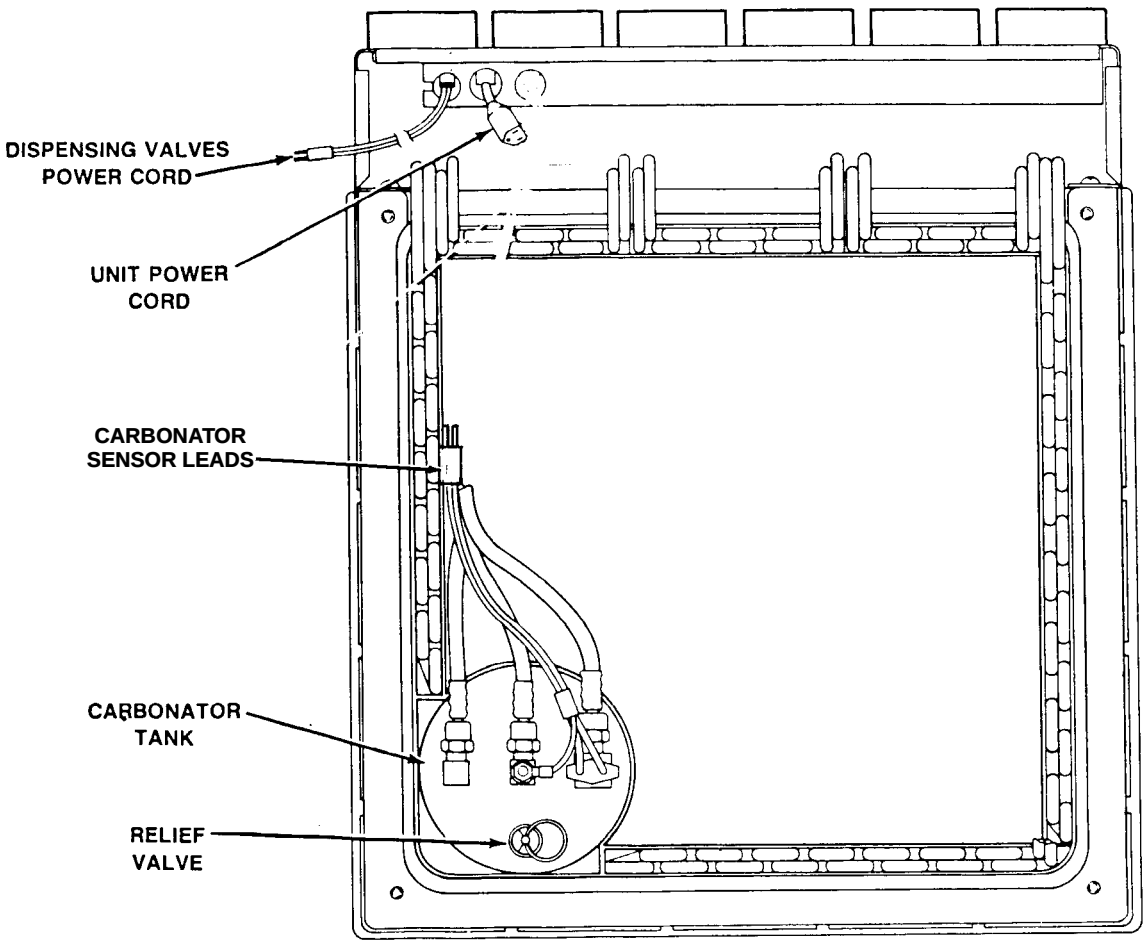


FIGURE 9. WATER TANK (UNIT WITH BUILT-IN COLD CARBONATOR SHOWN)

12. Remove plug from drop-in refrigeration assembly platform water fill hole.
13. Fill water tank with clean water to top of stainless steel coils located in coil basket. *USE LOW-MINERAL-CONTENT WATER WHERE A LOCAL WATER PROBLEM EXISTS.*
14. Install access plug in water fill hole.
15. Install hood on Unit by reversing removal procedure.
16. Install Unit front access panel by reversing removal procedure.
17. Plug Unit power cord into electrical outlet.

CARBONATOR WATER PUMP YEARLY MAINTENANCE OR AFTER WATER SYSTEM DISRUPTIONS

WARNING: 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 disruptions (plumbing work, earthquake, etc.) to the water supply system that might cause turbulent (erratic) flow of water through the system. A carbonator water pump with no screen or a defective screen in the strainer would allow foreign particles to foul the double liquid check valve. CO_2 gas could then back flow into the water system and create a health hazard.

UNIT CONNECTED TO REMOTE CARBONATOR (STANDARD UNIT)

The remote 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.). Refer to manual provided with the remote carbonator for servicing procedure.

UNIT WITH BUILT-IN COLD CARBONATOR

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.).

Servicing Water Pump Water Inlet Strainer Screen

(see Figures 3 and 10)

1. Unplug unit power cord from electrical outlet.
2. Remove Unit hood by loosening screw on top of hood, then lift hood up and off Unit.
3. Close water inlet supply line shutoff valve.
4. Note pressure setting on primary CO_2 regulator, then turn regulator adjusting screw to the left (counter-clockwise) until gage reads 0-psig.
5. Pull up on carbonator tank relief valve until carbonator tank CO_2 pressure has been released, then release valve.
6. Loosen screen retainer, then pull screen retainer and strainer screen from the water pump.
7. Pull screen from screen retainer. Clean any sediment from screen retainer and the water pump screen retainer port.
8. Inspect screen for holes, restrictions, corrosion, and other damage. Discard damaged screen.
9. Check O-Ring on screen retainer. Replace worn or damaged O-Ring (P/N 315349000).

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

10. Install screen (P/N 315348000) in screen retainer, then screw retainer into water pump and tighten securely.
11. Service double liquid check valve, (refer to next paragraph, *Servicing Double Liquid Check Valve)* as instructed.

Servicing Double Liquid Check Valve.

(see Figures 3 and 10)

1. Service water inlet strainer screen as instructed in previous paragraph before servicing double liquid check valve.
2. Disconnect water line from double liquid check valve, then remove double check valve from water pump outlet.

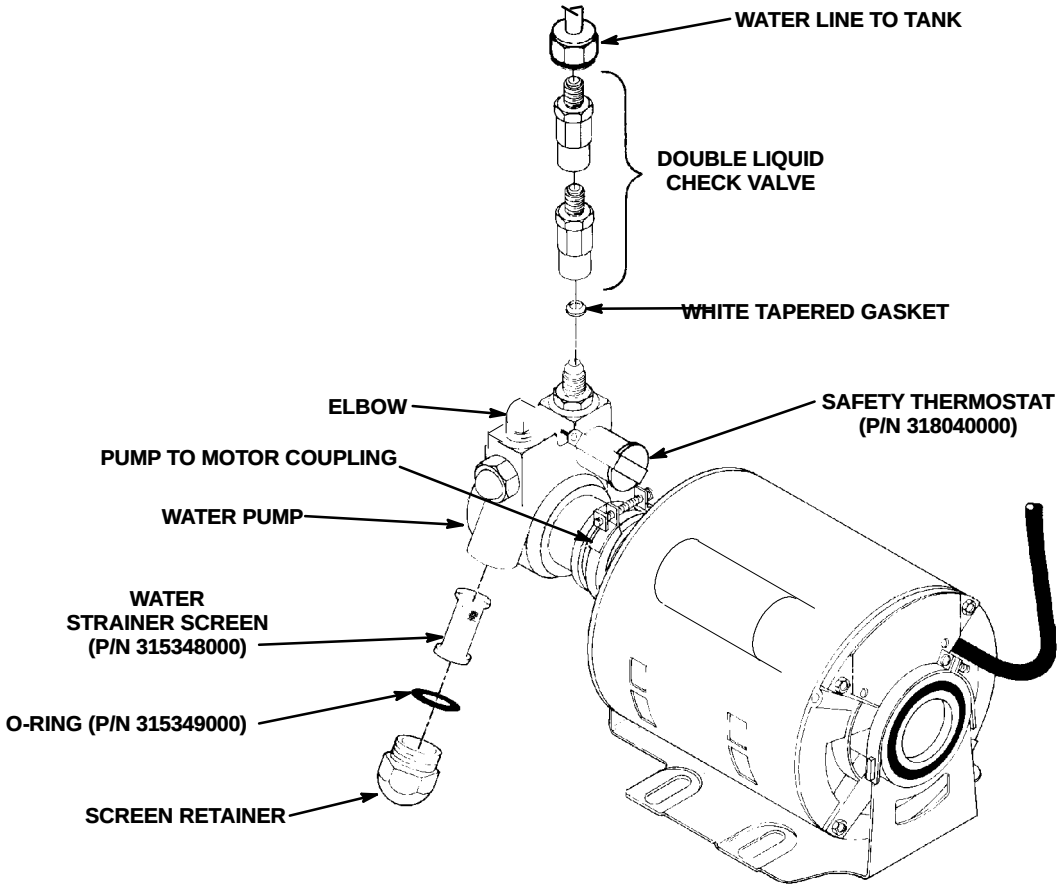
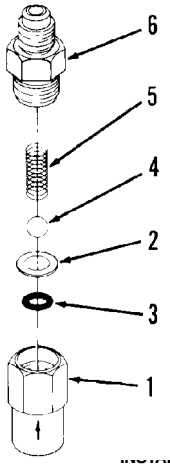


FIGURE 10. WATER STRAINER SCREEN AND DOUBLE LIQUID CHECK VALVE



...L NEW BALL SEAT AT EACH SERVICING

INDEX NO.	PART NO.	DUAL CHECK VALVE P/N 311765000 SINGLE CHECK VALVE P/N 311764000
1	317963000	Housing
2	312415000	Flat Washer, Stainless Steel
3	*312418000	Ball Seat (quad ring)
4	312419000	Ball
5	312196000	Spring
6	317965000	Retainer

FIGURE 11. LIQUID CHECK VALVE ASSEMBLY

3. Disassemble each check valve as shown in Figure 11.

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.

5. Reassemble check valves as shown in Figure 11. *ALWAYS INSTALL NEW BALL SEAT (QUAD RING) P/N 312418-000.*

NOTE: Make sure when assembling check valves together, check valve female end with white tapered gasket inside is on inlet side of double liquid check valve assembly.

6. Assemble check valves together as shown in Figure 11.

7. Make sure white tapered gasket is in place inside female end of double check valve, then install double check valve on water pump outlet.

8. Connect water line to double check valve.

9. Turn primary CO_2 regulator adjusting screw to the right (clockwise) until gage indicates pressure setting noted in step NO TAG of *Servicing Water Pump Water Inlet Strainer Screen.*

10. Open water inlet supply line shutoff valve.

11. Install Unit hood and secure with screw.

12. Plug Unit power cord into electrical outlet.

13. Test dispense Unit for proper operation.

14. Activate relief valve momentarily.

NO. 3 DISPENSING VALVE CONVERSION FROM STILL TO CARBONATED DRINK

STANDARD UNIT

(see Figure 2 and Figure 5)

Unit New Installation.

The Unit plain water inlet line is intended for connection to a plain water source to dispense a still (non-carbonated) drink from No. 3 dispensing valve as shown in Figure 2. To dispense a carbonated drink from No. 3 dispensing valve, the Unit plain water inlet line must be connected to the capped tee fitting on the Unit carbonated water inlet line.

Unit Already in Service.

1. Unplug remote carbonator power cord from electrical outlet.

2. Close remote carbonator water inlet supply and CO_2 source shutoff valves.

3. Relieve CO_2 gas pressure on carbonated water system by pulling up on carbonator tank relief valve.

4. Disconnect Unit plain water inlet line (No. 3 dispensing valve) from plain water source. Cap plain water source where line was disconnected.

5. Connect Unit plain water inlet line (No. 3 dispensing valve) to capped tee fitting on the Unit carbonated water inlet line (see Figures 2 and 5).

6. Open remote carbonator CO_2 source shutoff valve, then open remote carbonator water inlet supply line shutoff valve.

7. Plug remote carbonator power cord into electrical outlet.
8. Open No. 3 dispensing valve and dispense until carbonated water is dispensed.

UNIT WITH BUILT-IN COLD CARBONATOR

One of the Unit plain water inlet lines is intended for connection to a plain water source to dispense a still (non-carbonated) drink from No. 3 dispensing valve as shown in Figure 3. To dispense a carbonated drink from No. 3 dispensing valve, it's plain water inlet line must be connected to the capped cross fitting (carbonated water) located behind the Unit front access panel as shown in Figure 6.

Unit New Installation.

1. Remove two screws (if applicable) securing front access panel to Unit, then remove panel.
2. Locate the No. 3 dispensing valve plain water inlet line that was intended for connection to a plain water source.
3. Install SWIVEL NUT and NIPPLE on the plain water line and secure with TUBING CLAMP.
4. Remove cap from the cross fitting in the carbonated water line (see Figure 6), then connect plain water line to the cross fitting. The No. 3 dispensing valve will now be capable of dispensing a carbonated drink.
5. Install Unit front access panel.

Unit Already in Service.

1. Unplug Unit power cord from electrical outlet.
2. Remove two screws (if applicable) securing front access panel on Unit, then remove panel.
3. Shut off CO_2 and water inlet supply line sources.
4. Relieve CO_2 gas pressure on carbonated water system by pulling up on carbonator tank relief valve.
5. Disconnect No. 3 dispensing valve plain water inlet line from the plain water source.
6. Extend plain water inlet line to capped cross fitting, in carbonated water line behind the front access panel (see Figure 6), then cut off the plain water line.
7. Install SWIVEL NUT and NIPPLE on plain water line and secure with TUBING CLAMP.
8. Remove cap from cross fitting in the carbonated water line, then connect No. 3 dispensing valve plain water inlet line to the cross fitting.
9. Cap off plain water source line.
10. Open CO_2 shutoff valve, then open water inlet supply line shutoff valve.
11. Plug Unit power cord into electrical outlet.
12. Open No. 3 dispensing valve and dispense until carbonated water is dispensed.
13. Install Unit front access panel.

REPLENISHING CO_2 SUPPLY

WARNING: CO_2 displaces oxygen. Strict attention *must* be observed in the prevention of CO_2 (carbon dioxide) gas leaks in the entire CO_2 and soft drink system. If a CO_2 gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO_2 gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

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

1. Fully close (clockwise) CO_2 cylinder main shutoff valve.

2. Slowly loosen primary CO_2 regulator assembly coupling nut allowing CO_2 pressure to escape, then remove regulator assembly from empty CO_2 cylinder.

3. Unfasten safety chain and remove empty CO_2 cylinder.

WARNING: To avoid personal injury and/or property damage, always secure CO_2 cylinder in upright position with safety chain to prevent it from falling over. Should valve become accidentally damaged or broken off, CO_2 cylinder can cause serious personal injury.

4. Position full CO_2 cylinder and secure with safety chain.

5. Make sure gasket is in place inside primary CO_2 regulator coupling nut, then install regulator on CO_2 cylinder.

6. Open (counterclockwise) CO_2 cylinder main shutoff valve slightly to allow lines to slowly fill with gas, then open valve fully to back-seat valve. (Back-seating valve prevents leakage around valve shaft).

REPLENISHING SYRUP SUPPLY

NOTE: The following instructions are applicable only when replenishing same flavor syrup. Refer to SYRUP FLAVOR CHANGE when changing syrup flavor.

SYRUP TANK SYSTEM

1. Disconnect empty syrup tank from syrup system.

2. Check syrup drink quick disconnects for sticky or restricted operation. Wash disconnects in warm water.

3. Connect full tank of syrup into syrup system.

BAG-IN-BOX SYRUP SYSTEM

1. Disconnect empty bag-in-box container from syrup system.

2. Check bag-in-box connecter for sticky or restricted operation. Wash bag-in-box connecter in warm water.

3. Connect full bag-in-box container into syrup system.

SYRUP FLAVOR CHANGE

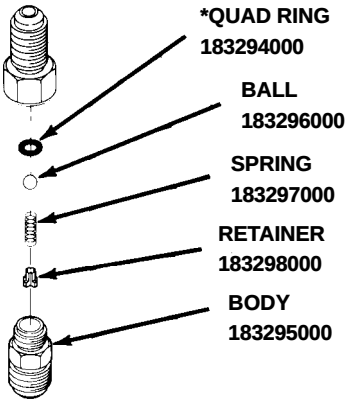
1. Perform sanitizing procedure (as instructed in this section of the manual) on syrup system syrup flavor change will be made on.

2. Connect new flavor syrup into the syrup system.

CLEANING CO_2 SYSTEM CO_2 GAS CHECK VALVES

(see applicable Figure 2, 3, or 4)

The CO_2 regulators and CO_2 manifold CO_2 gas check valves must be inspected and serviced at least once a year under normal conditions and after any servicing or disruption of the CO_2 system. ALWAYS REPLACE BALL SEAT (QUAD RING SEAL) EACH TIME GAS CHECK VALVES ARE SERVICED.



***Quad ring seal *must* be replaced each time check valve is serviced.**

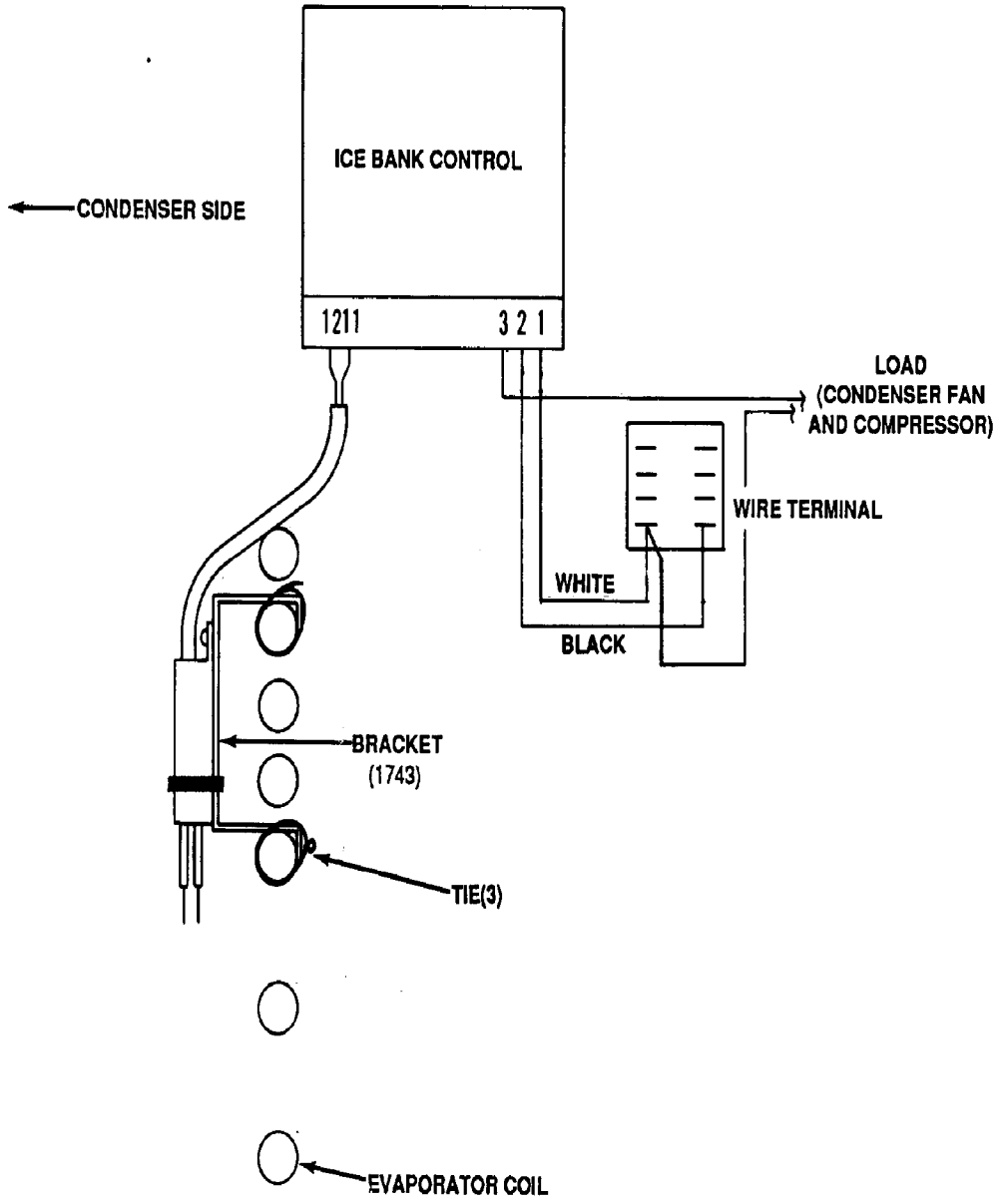


FIGURE 13. WIRING SCHEMATIC FOR GERMAN ICE BANK CONTROL (OPTIONAL)

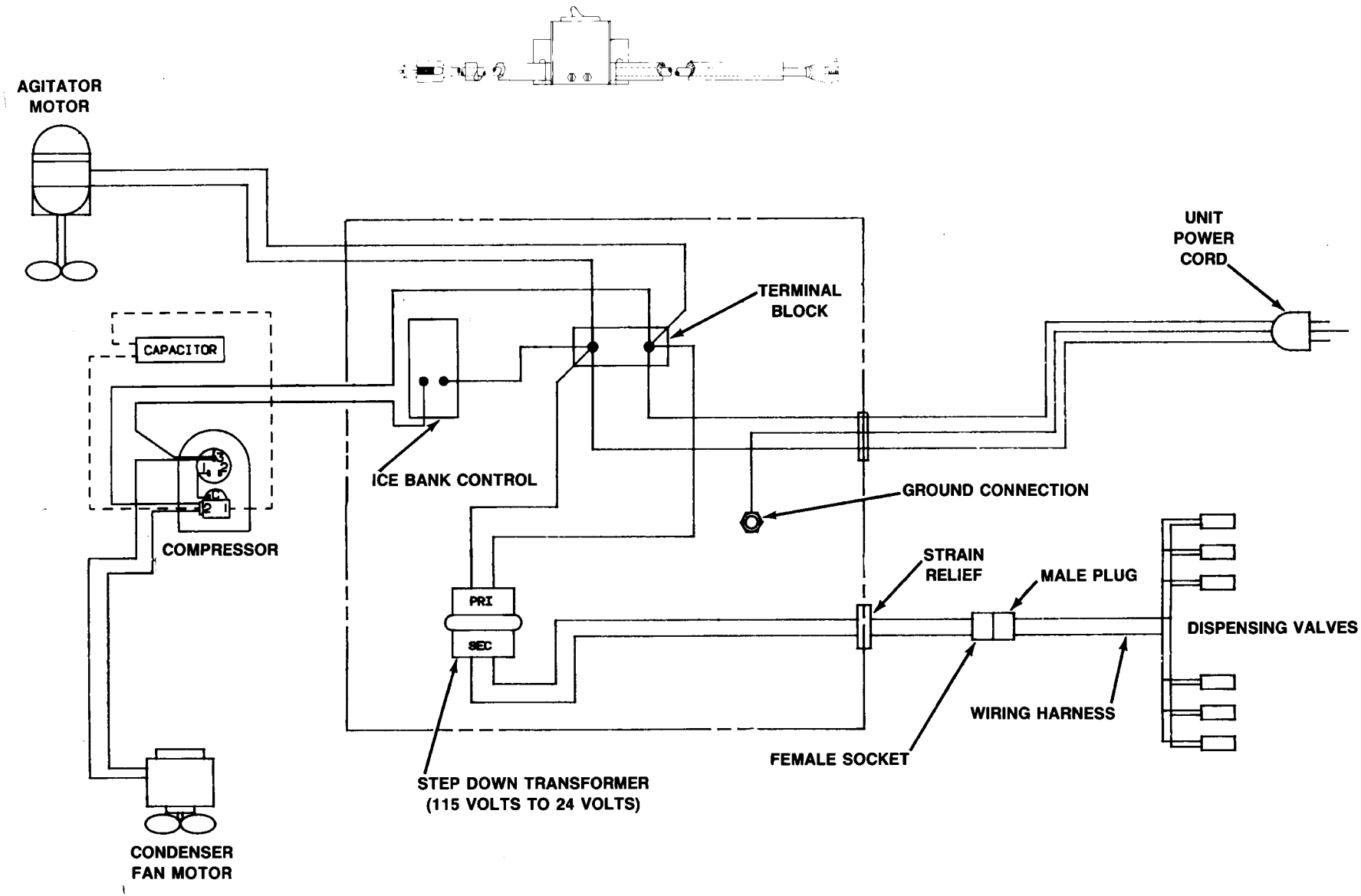


FIGURE 14. WIRING DIAGRAM (60 HZ UNIT WITH 1/3 H.P. REFRIGERATION ASSEMBLY)

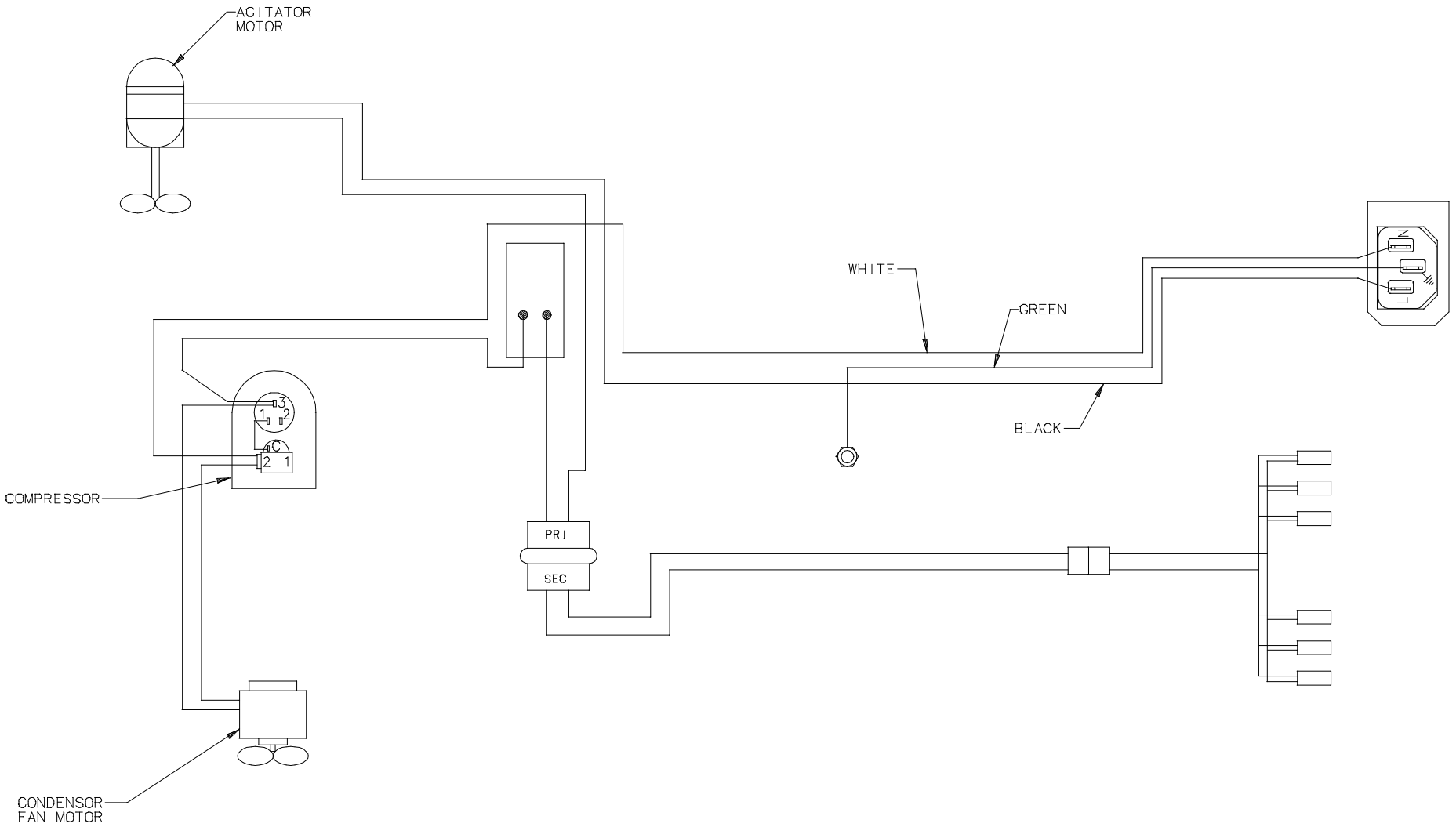


FIGURE 15. WIRING DIAGRAM (50 HZ UNIT WITH 1/3 H.P. REFRIGERATION ASSEMBLY)

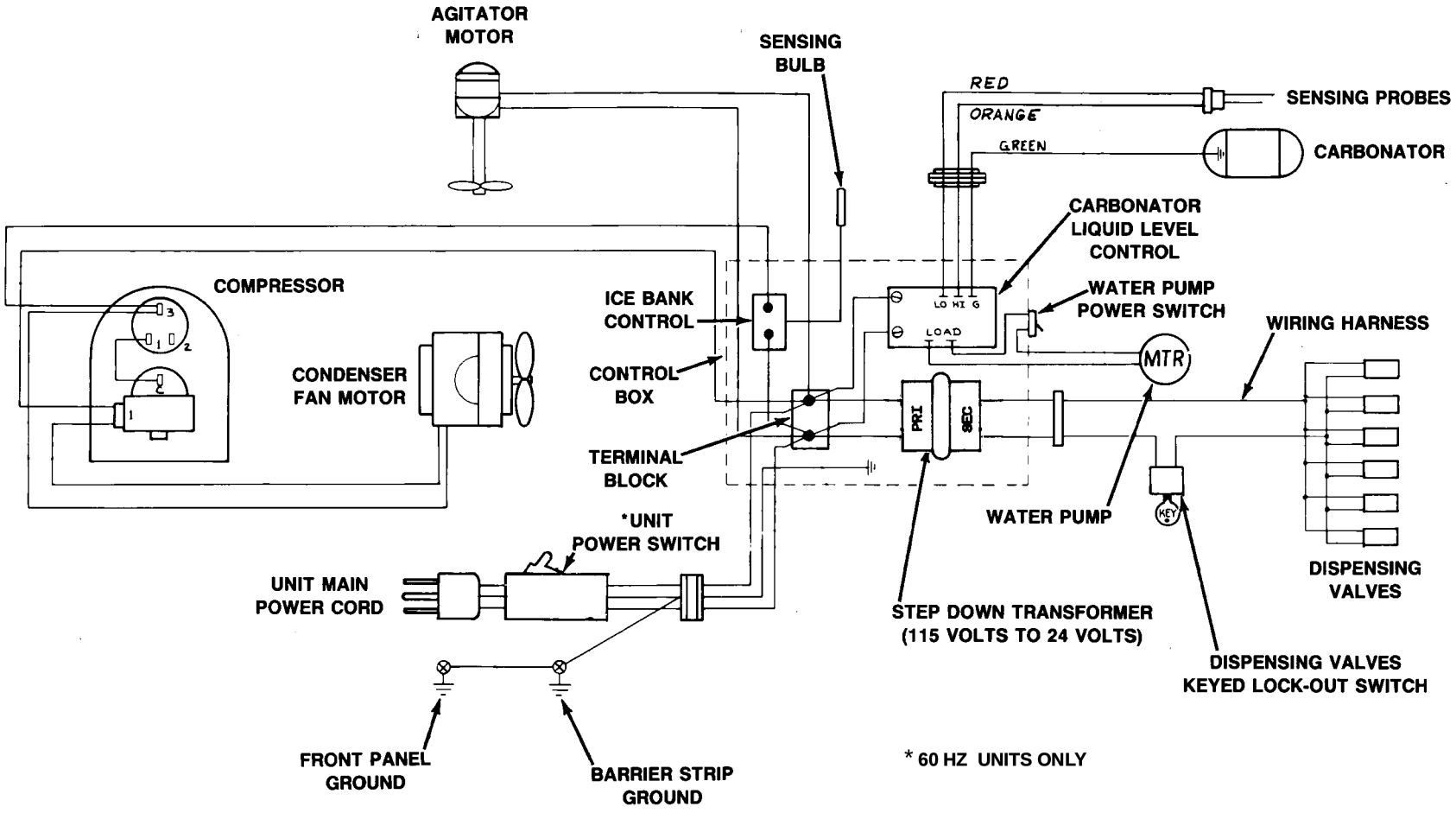


FIGURE 16. WIRING DIAGRAM (60 HZ UNIT WITH 1/4 H.P. REFRIGERATION ASSEMBLY AND BUILT-IN COLD CARBONATOR)

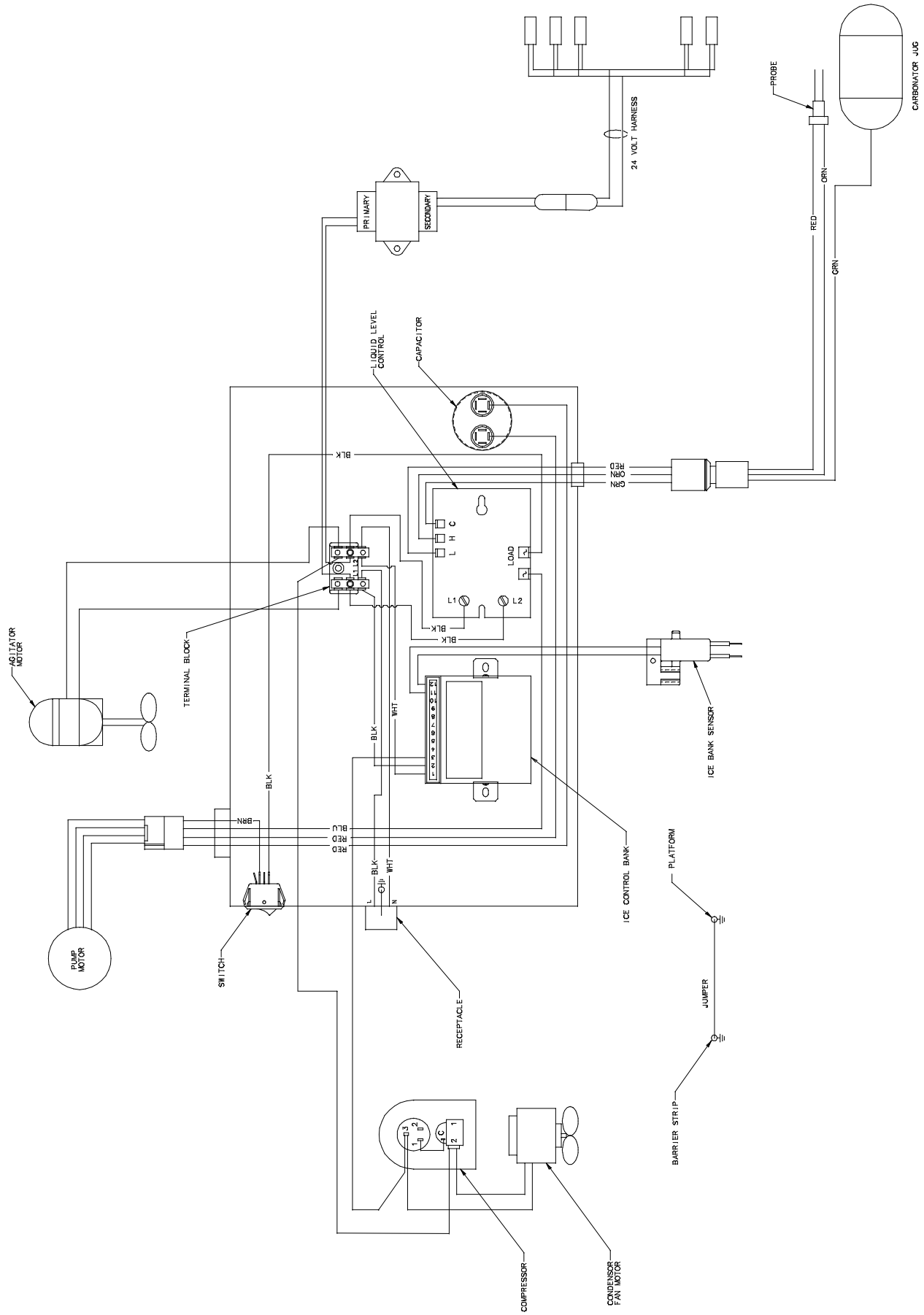


FIGURE 17. WIRING DIAGRAM (50 HZ UNIT WITH 1/4 H.P. REFRIGERATION ASSEMBLY AND BUILT-IN COLD CARBONATOR)

TROUBLESHOOTING

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

WARNING: If repairs are to be made to a product system, remove quick disconnects from the applicable product tank, then relieve the system pressure before proceeding. If repairs are to be made to the CO_2 system, stop dispensing, shut off the CO_2 supply, then relieve the system pressure before proceeding. If repairs are to be made to the refrigeration system, make sure electrical power is disconnected from the unit.

STANDARD UNIT (REQUIRES CONNECTION TO A REMOTE CARBONATOR)

Trouble	Probable Cause	Remedy
WATER-TO-SYRUP "RATIO" TOO LOW OR TOO HIGH	A. Dispensing valve syrup flow control not properly adjusted.	A. Adjust Water-to-Syrup "Ratio" as instructed.
	B. **Syrup Tanks System.** CO_2 gas pressure to syrup tanks insufficient to push syrup out of tanks	B. Adjust syrup tanks CO_2 regulator as instructed.
	Bag-in-Box System. CO_2 gas pressure to syrup pumps insufficient to operate pumps.	Adjust syrup pumps CO_2 regulator as instructed.
ADJUSTMENT OF DISPENSING VALVE SYRUP FLOW CONTROL DOES NOT INCREASE TO DESIRED WATER-TO-SYRUP "RATIO".	A. No syrup supply.	A. Replenish syrup supply as instructed.
	B. **Syrup Tanks System.** Syrup tanks CO_2 regulator out of adjustment.	B. Adjust CO_2 regulator for syrup tanks as instructed.
	Syrup Bag-in-Box System. Syrup pumps CO_2 regulator out of adjustment.	Adjust syrup pumps CO_2 regulator as instructed.
	C. Dispensing valve syrup flow control or syrup line restricted.	C. Sanitize syrup system as instructed.
	D. Improper Baume of syrup.	D. Replace syrup supply.
	E. Inoperative dispensing valve syrup flow control.	E. Repair dispensing valve syrup flow control.
	F. Tapered washer inside tube swivel nut connection distorted from being overtightened restricting syrup flow.	F. Replace tapered gasket. Make sure it seats properly.

STANDARD UNIT (REQUIRES CONNECTION TO A REMOTE CARBONATOR) CONT'D

Trouble	Probable Cause	Remedy
ADJUSTMENT OF DISPENSING VALVE SYRUP FLOW CONTROL DOES NOT DECREASE TO DESIRED WATER-TO-SYRUP "RATIO".	A. Dirty or inoperative dispensing valve syrup flow control.	A. Disassemble and clean dispensing valve syrup flow control.
DISPENSED PRODUCT CARBONATION TOO LOW.	A. Carbonator CO_2 regulator out of adjustment for existing water conditions or temperature.	A. Adjust carbonator CO_2 regulator as instructed.
	B. Air in carbonator tank.	B. Vent air out of carbonator tank through relief valve. Open dispensing valve to make carbonator pump cycle on.
	C. Water, oil, or dirt, in CO_2 supply.	C. Remove contaminated CO_2. Clean CO_2 system (lines, regulator, etc.) using a mild detergent. Install a clean CO_2 supply.
DISPENSED PRODUCT COMES OUT OF DISPENSING VALVE CLEAR BUT FOAMS IN CUP OR GLASS.	A. Oil film or soap scum in cups or glasses.	A. Use clean cups or glasses.
	B. Ice used for finished drink is subcooled.	B. Do not use ice directly from freezer. Allow ice to become "wet" before using. (Refer to following **NOTE**)
	NOTE: Crushed ice also causes dispensing problems. When dispensed drink hits sharp edges of ice, carbonation is released from drink.	
DISPENSED PRODUCT PRODUCES FOAM AS IT LEAVES DISPENSING VALVE.	A. Recovery rate of refrigeration unit exceeded, ice bank depleted.	A. Allow ice bank to recover.
	CAUTION: The drop-in refrigeration assembly condenser coil *must* be cleaned every 30-days. Excessive accumulation of dust, lint, and grease on coil will restrict cooling air flow through coil and cause refrigeration system to overheat.	
	B. Carbonator CO_2 regulator pressure adjusted too high for existing water conditions or temperature.	B. Reduce Carbonator CO_2 regulator pressure settings.
	C. .Condenser coil plugged.	C. Clean condenser coil as instructed..
	D. Dispensing valve restricted or dirty.	D. Sanitize syrup system as instructed.

STANDARD UNIT (REMOTE REQUIRES CONNECTION TO A REMOTE CARBONATOR) CONT'D

Trouble	Probable Cause	Remedy
DISPENSED PRODUCT PRODUCES FOAM AS IT LEAVES DISPENSING VALVE. (cont'd)	E. Tapered gasket inside carbonated water line swivel nut connector distorted restricting carbonated water flow.	E. Replace tapered gasket. Make sure it is properly seated.
	F. Dirty water supply.	F. Check water filter. Replace cartridge (see **NOTE**).
	NOTE: If water supply is dirty, be sure to flush lines and carbonator completely. It may be necessary to remove lines to carbonator tank, invert tank, and flush tank and all inlet lines to remove any foreign particles or dirt.	
NO PRODUCT DISPENSED.	A. Dispensing valves keyed lock-out switch in "OFF" position.	A. Place keyed lock-out switch in "ON" position.
	B. No electrical power to Unit.	B. Plug in Unit power cord or check for blown power fuse or tripped circuit breaker.
	C. Disconnected dispensing valves power cord.	C. Connect dispensing valves power cord.
	D. Disconnected or broken wiring to dispensing valve.	D. Connect or replace wiring.
	E. Inoperative transformer or valve solenoids.	E. Replace inoperative part.
ONLY CARBONATED WATER DISPENSED.	A. Out of syrup.	A. Replenish syrup supply as instructed.
	B. Inoperable dispensing valve.	B. Repair dispensing valve.
	C. Dispensing valve syrup flow control not properly adjusted.	C. Adjust dispensing valve syrup flow control (Water-to-Syrup "Ratio") as instructed.
	D. Dispensing valve syrup flow control or syrup lines restricted.	D. Sanitize syrup system as instructed.
ONLY SYRUP DISPENSED.	A. Water inlet supply line shutoff valve closed.	A. Open water inlet supply line shutoff valve.
	B. Carbonator power cord unplugged from electrical outlet.	B. Plug carbonator power cord into electrical outlet.
	C. Carbonator CO_2 regulator not properly adjusted.	C. Adjust carbonator CO_2 regulator as instructed.

UNIT WITH BUILT-IN COLD CARBONATOR

Trouble	Probable Cause	Remedy
WATER-TO-SYRUP "RATIO" TOO LOW OR TOO HIGH	A. Dispensing valve syrup flow control not properly adjusted.	A. Adjust Water-to-Syrup "Ratio" as instructed.
	B. **Syrup Tanks System.** CO_2 gas pressure to syrup tanks insufficient to push syrup out of tanks.	B. Adjust CO_2 regulator for syrup tanks as instructed.
	Bag-in-Box Syrup System. CO_2 gas pressure to syrup pumps insufficient to operate pumps.	Adjust syrup pumps CO_2 regulator as instructed.
ADJUSTMENT OF DISPENSING VALVE SYRUP FLOW CONTROL DOES NOT INCREASE TO DESIRED WATER-TO-SYRUP "RATIO".	A. No syrup supply.	A. Replenish syrup supply as instructed.
	B. **Syrup Tanks System.** Syrup tanks CO_2 regulator out of adjustment.	B. Adjust syrup tanks CO_2 regulator as instructed.
	Syrup Bag-in-Box System. Syrup pumps CO_2 regulator out of adjustment.	Adjust syrup pumps CO_2 regulator as instructed.
	C. Dispensing valve syrup flow control, or syrup line restricted.	C. Sanitize syrup system as instructed.
	D. Improper syrup Baume.	D. Replace syrup supply as instructed.
	E. Inoperative dispensing valve syrup flow control.	E. Repair dispensing valve syrup flow control.
	F. Tapered gasket inside tube swivel nut connection distorted from being overtightened restricting syrup flow.	F. Replace tapered gasket. Make sure it is properly seated.
ADJUSTMENT OF DISPENSING VALVE SYRUP FLOW CONTROL DOES NOT DECREASE TO DESIRED WATER-TO-SYRUP "RATIO".	A. Dirty dispensing valve syrup flow control.	A. Disassemble and clean dispensing valve syrup flow control.
DISPENSED PRODUCT CARBONATION TOO LOW.	A. Carbonator CO_2 regulator out of adjustment for existing water conditions or temperature.	A. Adjust carbonator CO_2 regulator as instructed.
	B. Air in carbonator tank.	B. Vent air from carbonator tank by dispensing from dispensing valve to make carbonator pump motor cycle on.
	C. Water, oil, or dirt in CO_2 supply.	C. Remove contaminated CO_2. Clean CO_2 system (lines, regulators, etc.) using mild detergent. Install clean CO_2 supply.

UNIT WITH BUILT-IN COLD CARBONATOR (CONT'D)

Trouble	Probable Cause	Remedy
DISPENSED PRODUCT COMES OUT OF DISPENSING VALVE CLEAR BUT FOAMS IN CUP OR GLASS.	A. Oil film or soap scum in cups or glasses.	A. Use clean cups or glasses.
	B. Ice used for finished drink is subcooled.	B. Do not use ice directly from freezer. Allow ice to become "wet" before using. (Refer to following NOTE.)
	NOTE: Crushed ice also causes dispensing problems. When dispensed drink hits sharp edges of ice, carbonation is released from drink.	
DISPENSED PRODUCT PRODUCES FOAM AS IT LEAVES DISPENSING VALVE.	A. Recovery rate of refrigeration unit exceeded, ice bank depleted.	A. Allow ice bank to recover.
	CAUTION: The drop-in refrigeration assembly condenser coil *must* be cleaned every 30-days. Excessive accumulation of dust, lint, and grease on coil will restrict cooling air flow through coil and cause refrigeration system to overheat.	
	B. Condenser coil plugged.	B. Clean condenser coil as instructed.
	C. Carbonator CO_2 regulator pressure adjusted too high for existing water conditions or temperature.	C. Adjust carbonator CO_2 regulator pressure as instructed.
	D. Dispensing valve restricted or dirty.	D. Sanitize syrup system as instructed.
	E. Tapered gasket inside carbonated water line swivel nut connector distorted restricting carbonated water flow.	E. Replace tapered gasket. Make sure gasket is properly seated.
	F. Dirty water supply.	F. Check water filter. Replace cartridge (see NOTE).
	NOTE: If water supply is dirty, be sure to flush lines and carbonator completely. It may be necessary to remove lines to carbonator tank, invert tank, and flush the tank and all inlet lines to remove any foreign particles or dirt.	
NO PRODUCT DISPENSED FROM ALL DISPENSING VALVES.	A. Dispensing valves keyed lock-out switch in "OFF" position.	A. Place keyed lock-out switch in "ON" position.
	B. Power switch (if applicable) in "OFF" position.	B. Place power switch in "ON" position.

UNIT WITH BUILT-IN COLD CARBONATOR (CONT'D)

Trouble	Probable Cause	Remedy
NO PRODUCT DISPENSED FROM ALL DISPENSING VALVES. (cont'd)	C. No electrical power to Unit.	C. Plug in Unit power cord or check for blown power fuse or tripped circuit breaker.
	D. Inoperative power switch (if applicable).	D. Replace power switch.
	E. Dispensing valves power cord disconnected.	E. Connect dispensing valves power cord.
	F. Disconnected or broken wiring to dispensing valve.	F. Connect or replace wiring.
	G. Inoperative transformer or valve solenoids.	G. Replace inoperative part.
ONLY CARBONATED WATER DISPENSED.	A. Out of syrup.	A. Replenish syrup supply as instructed.
	B. Inoperable dispensing valve.	B. Repair dispensing valve.
	C. Dispensing valve syrup flow control not properly adjusted.	C. Adjust dispensing valve syrup flow control as instructed.
	D. Dispensing valve syrup flow control or syrup lines restricted.	D. Sanitize syrup system as instructed.
ONLY SYRUP DISPENSED.	A. Water inlet supply line shutoff valve closed.	A. Open water inlet supply line shutoff valve.
	B. Carbonator power cord (under hood) unplugged.	B. Remove hood and plug in carbonator power cord.
	C. Carbonator CO_2 regulator not properly adjusted.	C. Adjust carbonator CO_2 regulator as instructed.
	D. Inoperative carbonator liquid level control assembly.	D. Replace carbonator liquid level control assembly.
	E. Inoperative water pump, water pump motor, or water pump power switch.	E. Replace inoperative component.

NONCARBONATED UNIT

Trouble	Probable Cause	Remedy
WATER-TO-SYRUP "RATIO" TOO LOW OR TOO HIGH	A. Dispensing valve syrup flow control not properly adjusted.	A. Adjust Water-to-Syrup "Ratio" as instructed.
	B. **Syrup Tanks System.** CO_2 gas pressure to syrup tanks insufficient to push syrup out of tanks.	B. Adjust syrup tanks CO_2 regulator as instructed.
	Bag-in-Box Syrup System. CO_2 gas pressure to syrup pumps insufficient to operate pumps.	Adjust syrup pumps CO_2 regulator as instructed.
ADJUSTMENT OF DISPENSING VALVE SYRUP FLOW CONTROL DOES NOT INCREASE TO DESIRED WATER-TO-SYRUP "RATIO".	A. No syrup supply.	A. Replenish syrup supply as instructed.
	B. **Syrup Tanks System.** Syrup tanks CO_2 regulator out of adjustment.	B. Adjust syrup tanks CO_2 regulator as instructed.
	Syrup Bag-in-Box System. Syrup pumps CO_2 regulator out of adjustment.	Adjust syrup pumps CO_2 regulator as instructed.
	C. Dispensing valve syrup flow control or syrup line restricted.	C. Sanitize syrup system as instructed.
	D. Dirty or inoperative dispensing valve syrup flow control.	D. Disassemble and clean syrup flow control.
	E. Tapered washer inside tube swivel nut connection distorted from being overtightened restricting syrup flow.	E. Replace tapered gasket. Make sure it seats properly.
ADJUSTMENT OF DISPENSING VALVE SYRUP FLOW CONTROL DOES NOT DECREASE TO DESIRED WATER-TO-SYRUP "RATIO".	A. Dirty dispensing valve syrup flow control.	A. Disassemble and clean dispensing valve syrup flow control.
DISPENSED PRODUCT COMES OUT OF DISPENSING VALVE CLEAR BUT FOAMS IN CUP OR GLASS.	A. Oil film or soap scum in cups or glasses.	A. Use clean cups or glasses.
	B. Ice used for finished drink is subcooled.	B. Do not use ice directly from freezer. Allow ice to become "wet" before using. (Refer to following **NOTE**.)
	NOTE: Crushed ice also causes dispensing problems. When dispensed drink hits sharp edges of ice, carbonation is released from drink.	

NON-CARBONATED UNIT (CONT'D)

Trouble	Probable Cause	Remedy
DISPENSED PRODUCT PRODUCES FOAM AS IT LEAVES DISPENSING VALVE.	A. Recovery rate of refrigeration unit exceeded, ice bank depleted.	A. Allow ice bank to recover.
	CAUTION: The drop-in refrigeration assembly condenser coil *must* be periodically cleaned. Excessive accumulation of dust, lint, and grease on coil will restrict cooling air flow through coil and cause refrigeration system to overheat.	
	B. Dispensing valve restricted or dirty.	B. Sanitize syrup system as instructed.
	C. Tapered gasket inside carbonated water line swivel nut connector distorted restricting carbonated water flow.	C. Replace tapered gasket. Make sure gasket is properly seated.
NO PRODUCT DISPENSED FROM ALL DISPENSING VALVES.	A. Dispensing valves keyed lock-out switch in "OFF" position.	A. Place keyed lock-out switch in "ON" position.
	B. No electrical power to Unit.	B. Plug in Unit power cord or check for blown power fuse or tripped circuit breaker.
	C. Disconnected dispensing valves power cord.	C. Connect dispensing valves power cord.
	D. Disconnected or broken wiring to dispensing valve.	D. Connect or replace wiring.
	E. Inoperative transformer or valve solenoids.	E. Replace inoperative part.
ONLY PLAIN WATER DISPENSED.	A. Out of syrup.	A. Replenish syrup supply as instructed.
	B. Inoperable dispensing valve.	B. Repair dispensing valve.
	C. Dispensing valve syrup flow control not properly adjusted.	C. Adjust dispensing valve syrup flow control (Water-to-Syrup "Ratio") as instructed.
	D. Dispensing valve syrup flow control or syrup lines restricted.	D. Sanitize syrup system as instructed.
ONLY SYRUP DISPENSED.	A. Water inlet supply line shutoff valve closed.	A. Open water inlet supply line shutoff valve.

REFRIGERATION SYSTEM

Trouble	Probable Cause	Remedy
COMPRESSOR DOES NOT OPERATE.	A. Ice bank sufficient.	A. Refrigeration not called for.
	B. Unit power cord unplugged, power switch (if applicable) in "OFF" position, or drop-in refrigeration assembly power cord unplugged.	B. Plug in power cord(s) or place Unit power switch (located behind front panel) in "ON" position.

REFRIGERATION SYSTEM (CONT'D)

Trouble	Probable Cause	Remedy
COMPRESSOR DOES NOT OPERATE. (cont'd)	C. No power source (blown fuse or tripped circuit breaker).	C. Replace fuse or reset circuit breaker. (**NOTE**: Fuse or circuit breaker are not part of unit).
	D. Inoperative Unit power switch (if applicable) or power cord unplugged.	D. Replace power switch or plug Unit power cord into electrical outlet.
	E. Low voltage.	E. Voltage must be at least 103 volts (115 VAC unit) or 208 (230 VAC unit) at compressor terminal when compressor is trying to start.
	F. Loose, disconnected, or broken wiring.	F. Tighten connections or replace broken wiring.
	G. Overload protector cut out; overheated compressor. Condenser fan motor not operating as required.	G. Compressor will cool enough to restart. Do not overdraw cooling capacity of Unit. Refer to "CONDENSER FAN MOTOR NOT OPERATING" in this section.
	H. Inoperative overload protector or start relay.	H. Replace inoperative part.
	I. Inoperative ice bank control probe.	I. Replace ice bank control.
	J. Inoperative compressor.	J. Call service person.
COMPRESSOR WILL NOT STOP AFTER SUFFICIENT ICE BANK IS PRODUCED. (NOTE: ICE BANK SHOULD JUST COVER CONTROL BULB).	A. Ice bank control cap tube kinked or broken.	A. Replace ice bank control.
	B. Ice bank control stuck in closed position.	B. Replace ice bank control.
COMPRESSOR OPERATES CONTINUOUSLY BUT DOES NOT FORM SUFFICIENT ICE BANK.	A. Cooling capacity is exceeded by over-drawing.	A. Reduce amount of drinks drawn per given time.
	B. Unit located in excessively hot area or air circulation through condenser coil is restricted.	B. Relocate unit or check and if necessary, clean condenser coil as instructed.
	NOTE: Ice bank freezes from bottom of evaporator upward. A refrigerant leak or insufficient charge might show an ice bank at bottom and not at top of evaporator.	
AGITATOR MOTOR NOT OPERATING.	A. Power switch (if applicable) in "OFF" position.	A. Place power switch in "ON" position.
	B. Unit power cord or refrigeration assembly power cord unplugged.	B. Connect power cord(s).

REFRIGERATION SYSTEM (CONT'D)

Trouble	Probable Cause	Remedy
AGITATOR MOTOR NOT OPERATING. (cont'd)	C. No power source (blown fuse or tripped circuit breaker).	C. Replace fuse or reset circuit breaker. (NOTE: Fuse or circuit breaker are not part of Unit).
	D. Agitator motor propeller obstructed.	D. Remove obstruction.
	E. Low voltage.	E. Voltage must be at least 103 volts (115 VAC unit) or 208 (230 VAC unit) at compressor terminals when compressor is trying to start.
	F. Loose, disconnected, or broken wiring.	F. Tighten connections or replace broken wiring.
	G. Inoperative agitator motor.	G. Replace agitator motor.

WARRANTY

IMI Cornelius Inc. warrants that all equipment and parts are free from defects in material and workmanship under normal use and service. For a copy of the warranty applicable to your Cornelius, Remcor or Wilshire product, in your country, please write, fax or telephone the IMI Cornelius office nearest you. Please provide the equipment model number, serial number and the date of purchase.

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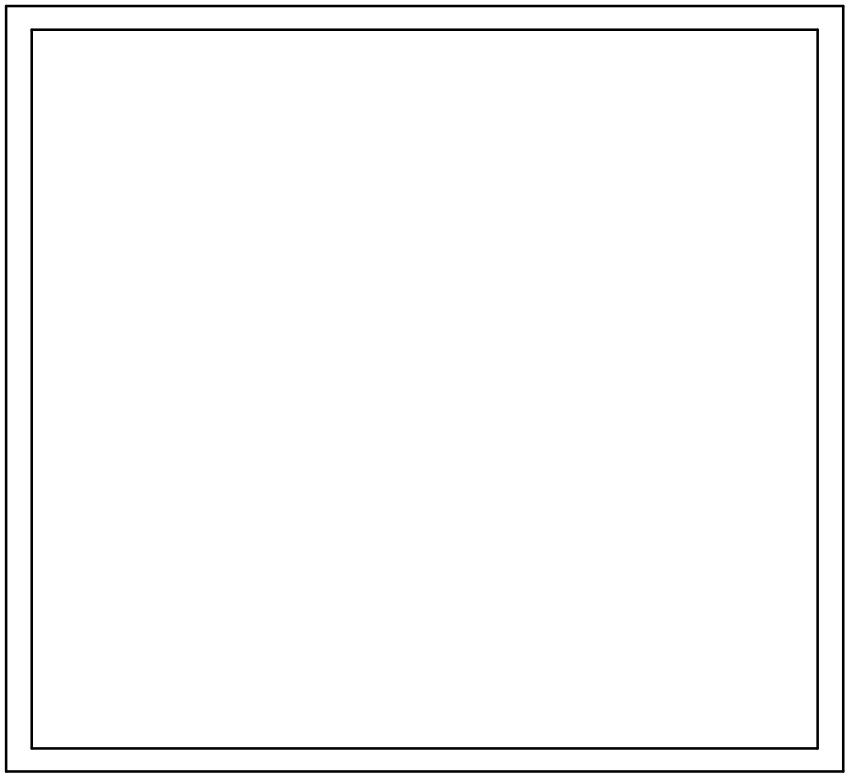

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