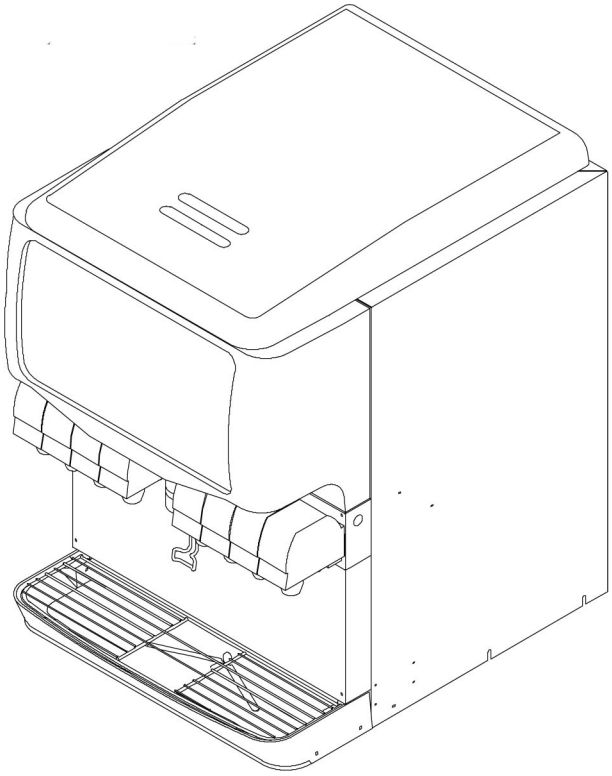
Installation Manual

ICE/BEVERAGE DISPENSER
Model: Enduro-1xx Intelli Carb



Release Date: December 11, 2001

Publication Number: 620919503

Revision Date: August 3, 2010

Revision: F

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

This Product is warranted only as provided in Cornelius' Commercial Warrant applicable to this Product and is subject to all of the restrictions and limitations contained in the Commercial Warranty.

Cornelius will not be responsible for any repair, replacement or other service required by or loss or damage resulting from any of the following occurrences, including but not limited to, (1) other than normal and proper use and normal service conditions with respect to the Product, (2) improper voltage, (3) inadequate wiring, (4) abuse, (5) accident, (6) alteration, (7) misuse, (8) neglect, (9) unauthorized repair or the failure to utilize suitably qualified and trained persons to perform service and/or repair of the Product, (10) improper cleaning, (11) failure to follow installation, operating, cleaning or maintenance instructions, (12) use of "non-authorized" parts (i.e., parts that are not 100% compatible with the Product) which use voids the entire warranty, (13) Product parts in contact with water or the product dispensed which are adversely impacted by changes in liquid scale or chemical composition.

Contact Information:

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

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READ AND FOLLOW ALL SAFETY INSTRUCTIONS

Safety Overview

- Read and follow **ALL SAFETY INSTRUCTIONS** in this manual and any warning/caution labels on the unit (decals, labels or laminated cards).
- Read and understand ALL applicable OSHA (Occupational Safety and Health Administration) safety regulations before operating this unit.

Recognition

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

DIFFERENT TYPES OF ALERTS

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

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

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

SAFETY TIPS

- Carefully read and follow all safety messages in this manual and safety signs on the unit.
- Keep safety signs in good condition and replace missing or damaged items.
- Learn how to operate the unit and how to use the controls properly.
- **Do not** let anyone operate the unit without proper training. This appliance is **not** intended for use by very young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance.
- Keep your unit in proper working condition and do not allow unauthorized modifications to the unit.

QUALIFIED SERVICE PERSONNEL

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

Safety Precautions

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

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

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

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

Shipping And Storage

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

CO_2 (CO_2 Carbon Dioxide) Warning

DANGER:
CO_2 displaces oxygen. Strict attention **MUST** be observed in the prevention of CO_2 gas leaks in the entire CO_2 and soft drink system. If a CO_2 gas leak is suspected, particularly in a small area, **IMMEDIATELY** ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentrations of CO_2 gas experience tremors which are followed rapidly by loss of consciousness and **DEATH**.

Mounting in or on a Counter

WARNING:
When installing the unit in or on a counter top, the counter must be able to support a weight in excess of **415** 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.

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DESCRIPTION

The “ENDURO INTELLI CARB” series of ice dispensers solves your ice and beverage service needs in a sanitary, space saving, economical way. Designed to be manually filled with ice from any remote ice-making source, these dispensers will dispense cubes (up to 1-1/4 inch in size), cubelets, and hard-chipped or cracked ice. In addition, the units include beverage faucets, a cold plate, an internal carbonator tank and an external pump for the carbonator, and are designed to be supplied direct from syrup tanks with no additional cooling required.

SPECIFICATIONS

Model Descriptions:	ED150 B= (Beverage) C=(Coldplate) F= (Flavor Option) H=(Internal Carb) Z=(No Drip)	ED 175 B= (Beverage) C=(Coldplate) F= (Flavor Option) H=(Internal Carb) Z=(No DripTray)
Ice Storage:	150 Pounds	175 Pounds
Maximum Number of Faucets Available:	6	8
Built-in Cold Plate:	Yes	Yes
Electrical:	120/1/60, 3.0 Amps Total Unit D raw	
Dimensions:	Width 22--inch Deep 30--11/16 inch High 35--5/8 inch Z--Models Width 22--inch Deep 23--1/16 inch High 35--5/8 inch	24.5 inch 30--11/16 inch 35--5/8 inch 24--1/2 inch 23--1/16 inch 35--5/8 inch
CO2 Operating Pressure	75--psig (max)	75--psig (max)

INSTALLATION INSTRUCTIONS

INSTALLATION

WARNING:
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 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.

1. Locate the dispenser indoors on a level counter top.
   A. LEG OPTION
      Unpack the four (4) legs and install them into the threaded holes provided in the bottom of the unit. The installer must provide flexibility in the product and utility supply to permit shifting the position of the dispenser sufficiently to clean the area beneath it. The dispenser **MUST** be placed in a horizontal position.
   B. COUNTER MOUNTING
      The ice dispenser must be sealed to the counter. The template drawing (see Figure 3) indicates where openings can be cut in the counter. Locate the desired position for the dispenser, then mark the outline dimensions on the counter using the template drawings. Cut openings in the counter.

Apply a continuous bead of *NSF International* (NSF) silastic sealant (Dow 732 or equal) approximately 1/4-inch inside of the unit outline dimensions and around all openings. Then, position the unit on the counter within the outline dimensions. All excess sealant must be wiped away immediately.

2. The beverage tubes, drain tube and power cord are routed through the large opening in the bottom of the unit. See the MOUNTING TEMPLATE (See Figure 3 or Figure 4) for locating the required clearance opening in the counter for these utility lines.
3. DRIP TRAY DRAIN ASSEMBLY (see Figure 5): Route the drain tube to an open drain with the end of the tube above the “flood” level of the drain. Use the tubing, fittings, clamps, and insulation provided with the Dispenser to assemble the drain. The completed drain line *must* pitch continuously downward and contain no “traps” or improper drainage will result.

NOTE:IMI Cornelius Inc. recommends that a water shutoff valve and water filter be installed in the plain water inlet supply line. A Cornelius Water Filter (P/N 313860000) and QUICK DISCONNECT SET (P/N 313867000) are recommended.

CAUTION: Check the minimum flow rate and the maximum pressure of the plain water inlet supply line. MINIMUM FLOW RATE MUST BE AT LEAST 125-GALLONS PER HOUR. If flow rate is less than 125-gallons per hour, starving off the carbonator water pump will occur. Starving will allow the carbonator water pump to overheat causing the safety thermostat on the pump outlet to stop the water pump motor. Overheating could occur if the plain water supply line flow rate drops below 125-gallons per hour. INCOMING PLAIN WATER INLET SUPPLY LINE WATER TO PUMP PRESSURE MUST REMAIN A MINIMUM OF 10 psi BELOW THE CARBONATED CO_2 OPERATING PRESSURE. (Example: Carbonator CO_2 operating pressure is 75 psi and the maximum water pressure can be no more than 65 psi, etc.). Water over pressure (higher CO_2 operating pressure) can cause carbonator flooding, malfunction, and leakage through the carbonator relief valve. If water is exceeding maximum pressure specifications, a Water Pressure Regulator Kit must be installed in the plain water inlet supply line. If fitting connector is not available, tap into the plain water supply line with a 3/8 flare saddle valve.

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4. Locate the carbonator pump assembly and connect to power cord from the Ice/Drink Unit to the pump. The cord is connected to the unit's electrical box and has an electrical connector on the end that plugs into a receptacle in the junction box at the carbonator pump assembly. Connect inlet water to pump and pump outlet to Ice/Drink Unit using 3/8-inch food-grade tubing. Disable the pump from operating by switching the switch in the carbonator pump assembly junction box to the OFF position.
5. Connect the beverage system product tubes as indicated in applicable Flow Diagram or . This work should be done by a qualified service person.

NOTE:See applicable Flow Diagram (see Figure 6 or Figure 7) or Decal on the lower front of the unit for the location of syrup and water connections.

6. Clean the hopper interior (see CLEANING INSTRUCTIONS in Owner's Manual).
7. Connect the unit power cord to a 120 volt, 60 cycle, 3-wire grounded receptacle. For 220-240 Volt International Units, a 3-wire power cord is provided. An adapter plug for the particular country will need to be provided by the Installer.

ADJUST CARBONATOR CO2 REGULATOR AND TURN WATER INLET SUPPLY LINE ON

CAUTION:
Before connecting the CO2 regulator assembly to a CO2 cylinder, turn the regulator adjusting screw to the left (counterclockwise) until all tension is relieved from the adjusting screw spring.

1. Open (counterclockwise) CO2 cylinder valve slightly to allow lines to slowly fill with gas, then open the valve fully to back--seat the valve. (Back--seating the valve prevents leakage around the valve shaft).
2. The carbonator CO2 regulator is fixed at a nominal 75--psi.
3. Open one of the post--mix dispensing valves to exhaust trapped air inside the carbonator tank.

CAUTION:
Never operate the carbonator with the water inlet supply line shutoff valve closed. "Dry running" the water pump will burn out the pump. A pump damaged in this manner is not covered by warranty.

4. Open the water inlet supply line shutoff valve.

UNIT OPERATION

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.

Failure to ground the unit could result in serious Injury, Death or Damage to the Equipment.

1. Connect electrical power to the Unit.
2. Check for water and CO_2 leaks and tighten any loose connections.
3. Enable the carbonator pump by turning the switch ON. The switch is located on the junction box of the carbonator pump. The water pump will start and fill the carbonator tank with carbonated water. The water pump will stop when the carbonator tank is full. The carbonator pump will now cycle on whenever a drink is dispensed and the liquid level in the carbonator tank drops below the low level probe (approximately 22 oz).
4. Dispense a drink until the carbonator pump cycles on. The refill time should be about 5 - 7 seconds.
5. If the carbonator pump appears to be short-cycling where the refill time is 1 - 2 seconds, refer to the Troubleshooting section.

NOTE: The dispenser is not designed for a wash down environment and must not be placed in an area where a water jet could be used.

ADJUST WATER-TO-SYRUP RATIO

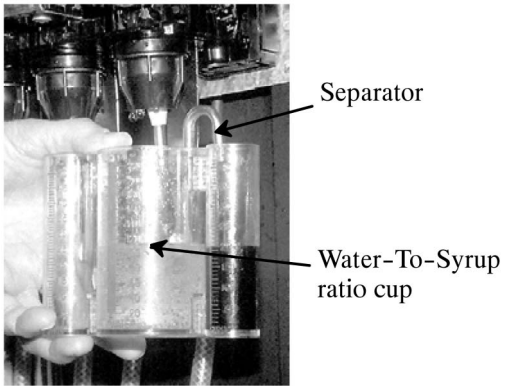

Figure 1

1. Remove the valve cover and install syrup separator over the diffuser and through the nozzle.
2. Hold cup under the valve and beverage for a specific time (i.e. 2 seconds)
3. NOTE: water and syrup must be cold before checking the ratios.
4. Adjust carbonated water flow to the desired rate (such as 90 to 110 ml(3 to 3.75 oz) per second). Turn the flow adjuster 1/4 of a turn at a time and recheck the flow. Increase reading turn clockwise.
5. Set a syrup flow adjuster to get the desired ration.
6. Test the valve and adjust until a consistent ratio is delivered three consecutive times.
7. Repeat procedure for other valves.

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GATE RESTRICTOR PLATE

CAUTION:
Disconnect power to dispenser before installing, removing or adjusting restrictor. See safety section of this Manual.

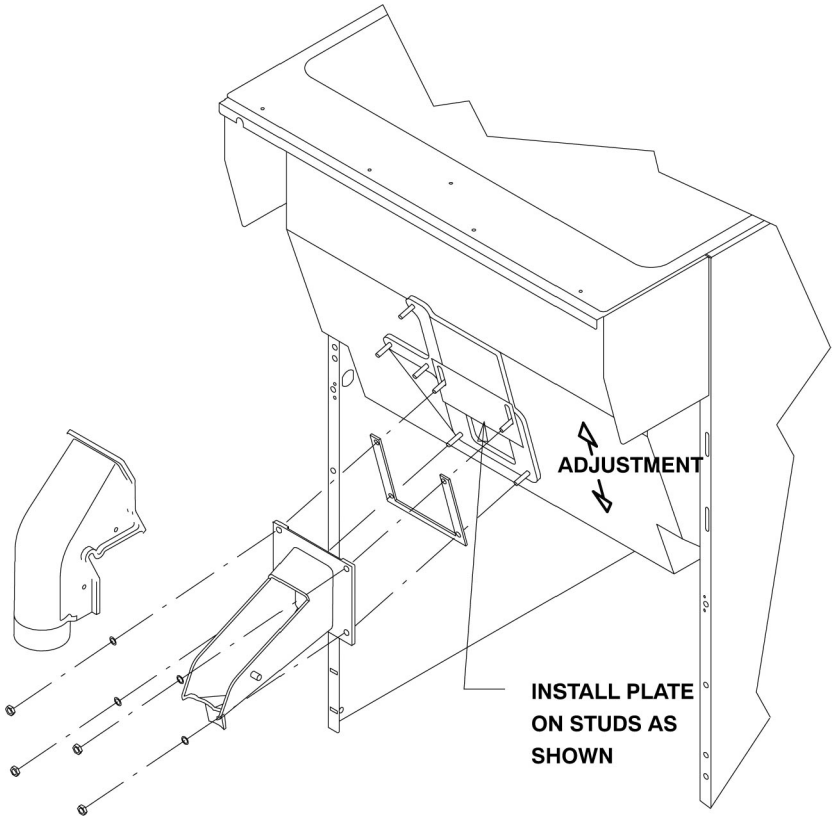
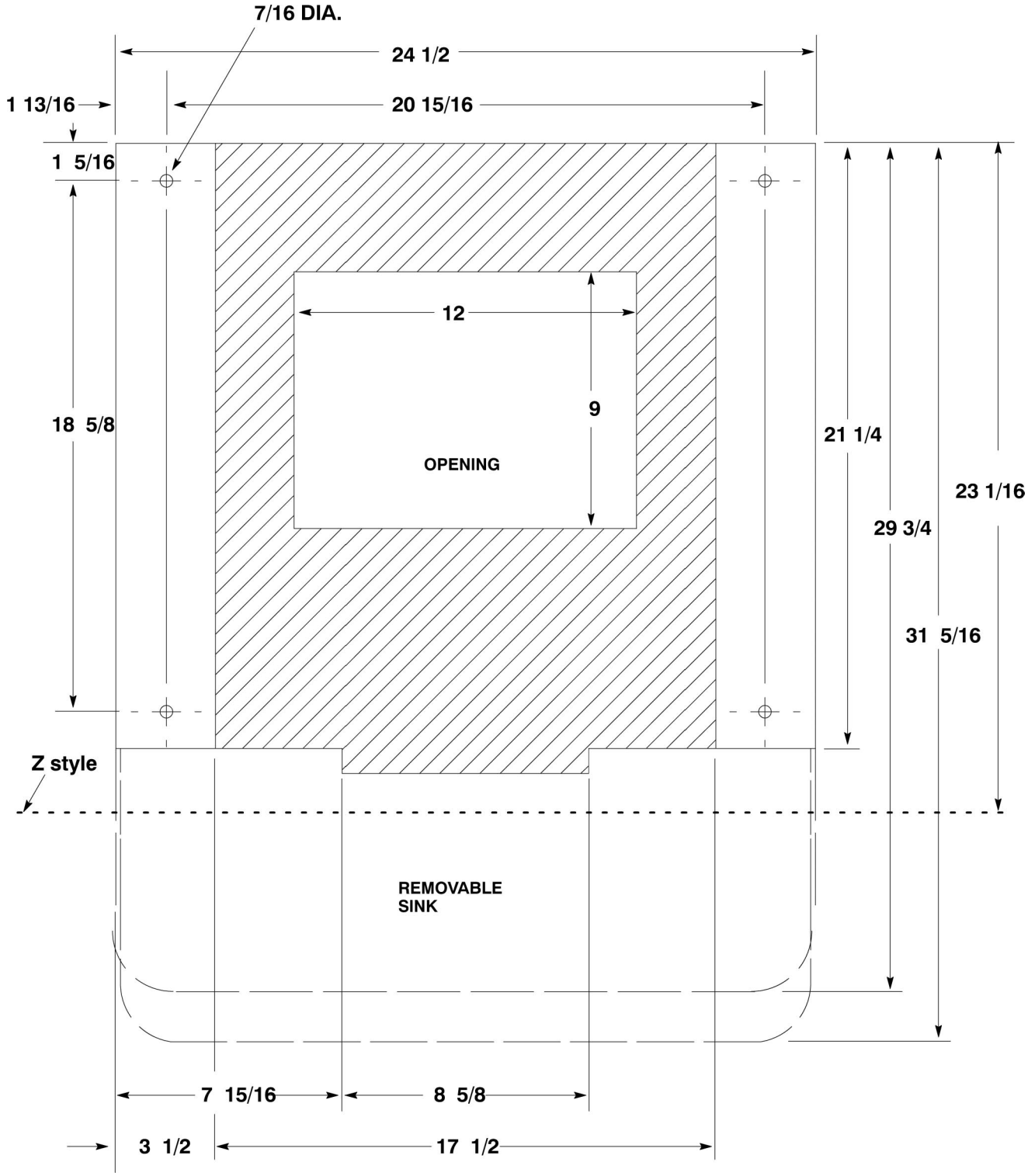


Figure 2. Gate Restrictor Plate

ADJUSTMENT

This plate may be adjusted as shown to reduce or increase the dispensing rate of ice, especially desirable when using glasses or other containers with small openings. Adjustment can be made by sliding up or down with nuts loosened, to obtain the desired amount of restriction.



COMMENDED COUNTER OPENING SIZE
9” X 12” FOR UTILITIES AND BEVERAGE
TUBING. OPENING CAN BE LOCATED ANYWHERE
WITHIN THE SHADED AREA.

Figure 3. ED175 Mounting Template

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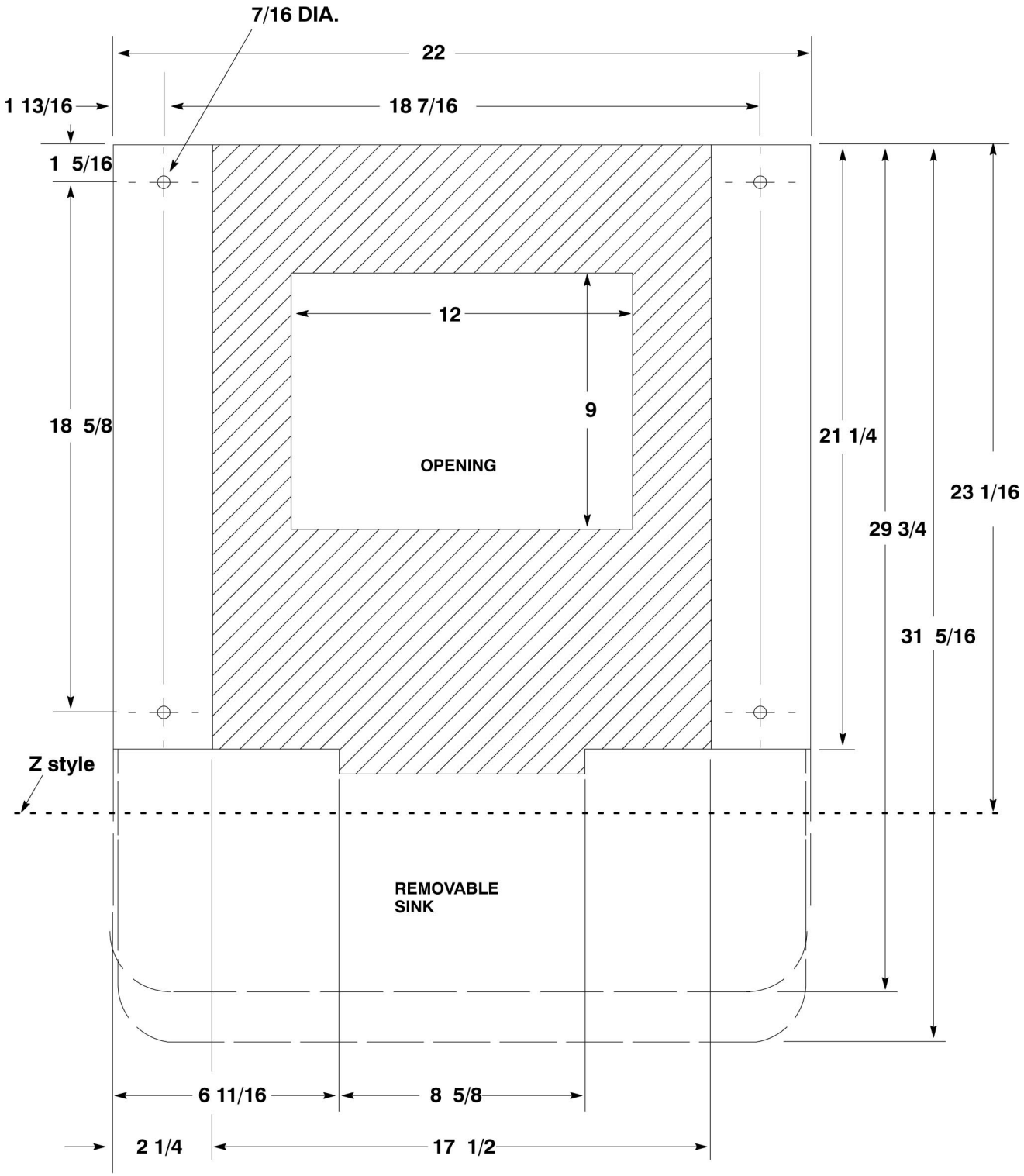


Figure 4. ED150 Mounting Template

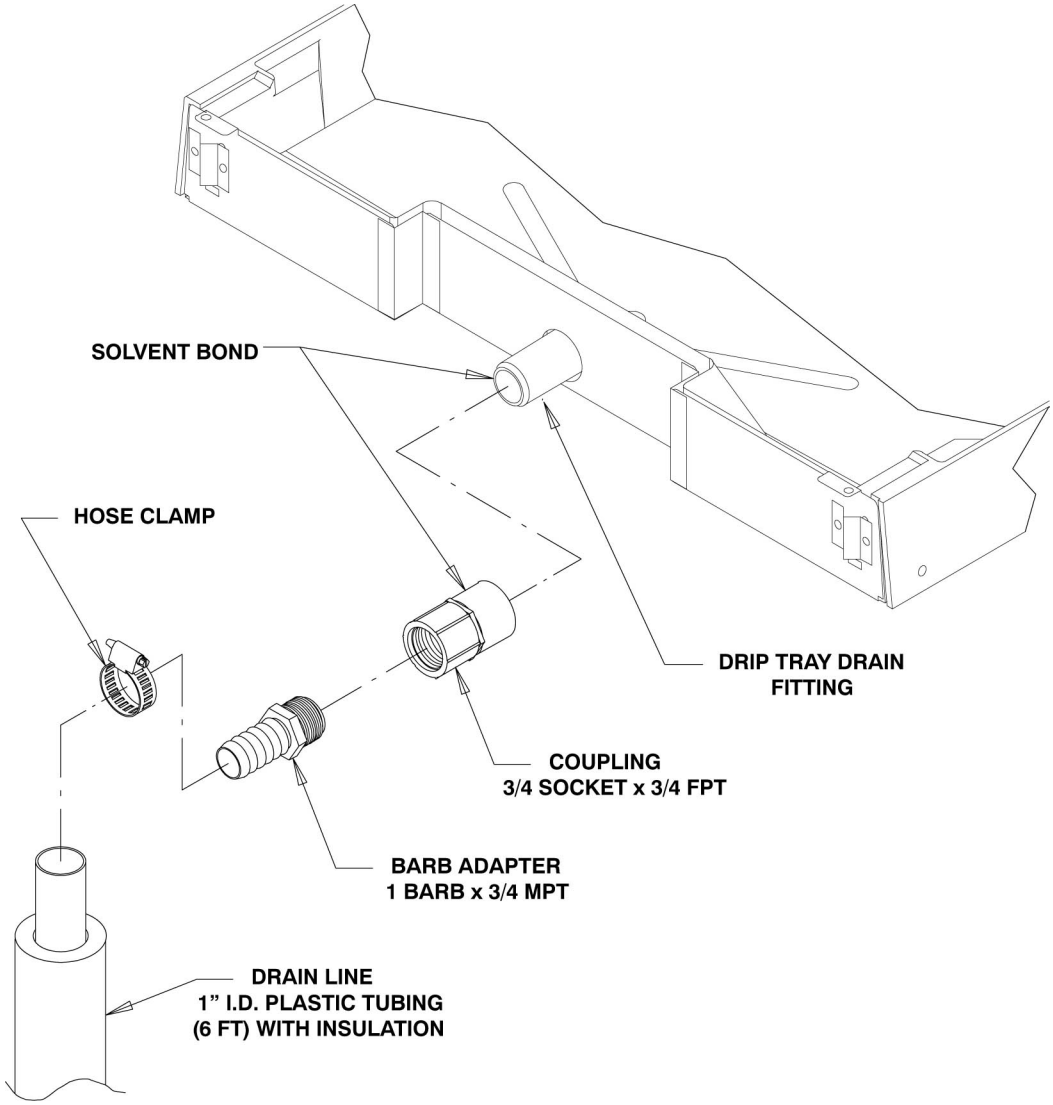
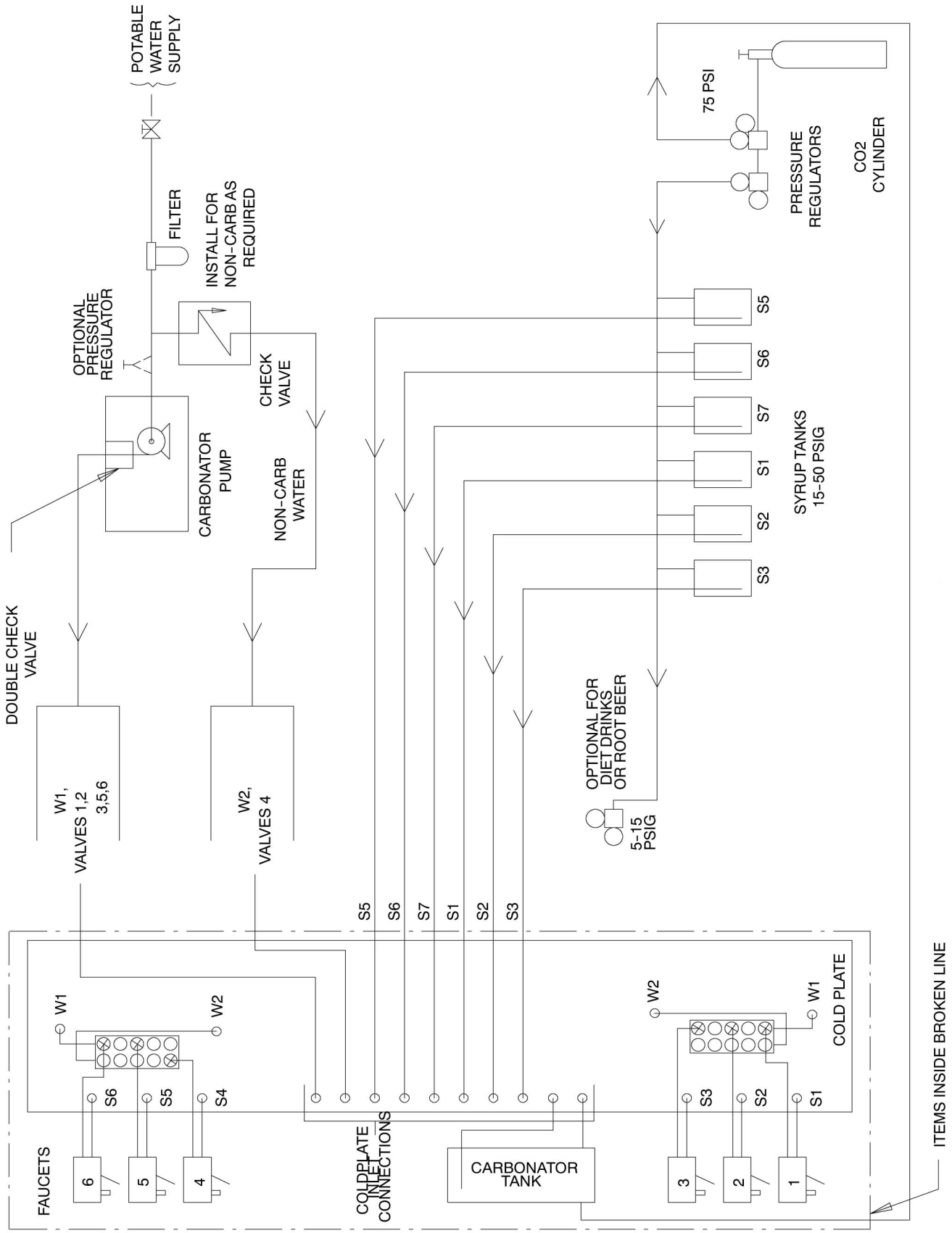


Figure 5. Drip Tray Drain Assembly



FAUCETS VIEWED FROM THIS SIDE

Figure 6. Flow Diagram (Six Flavor Unit)

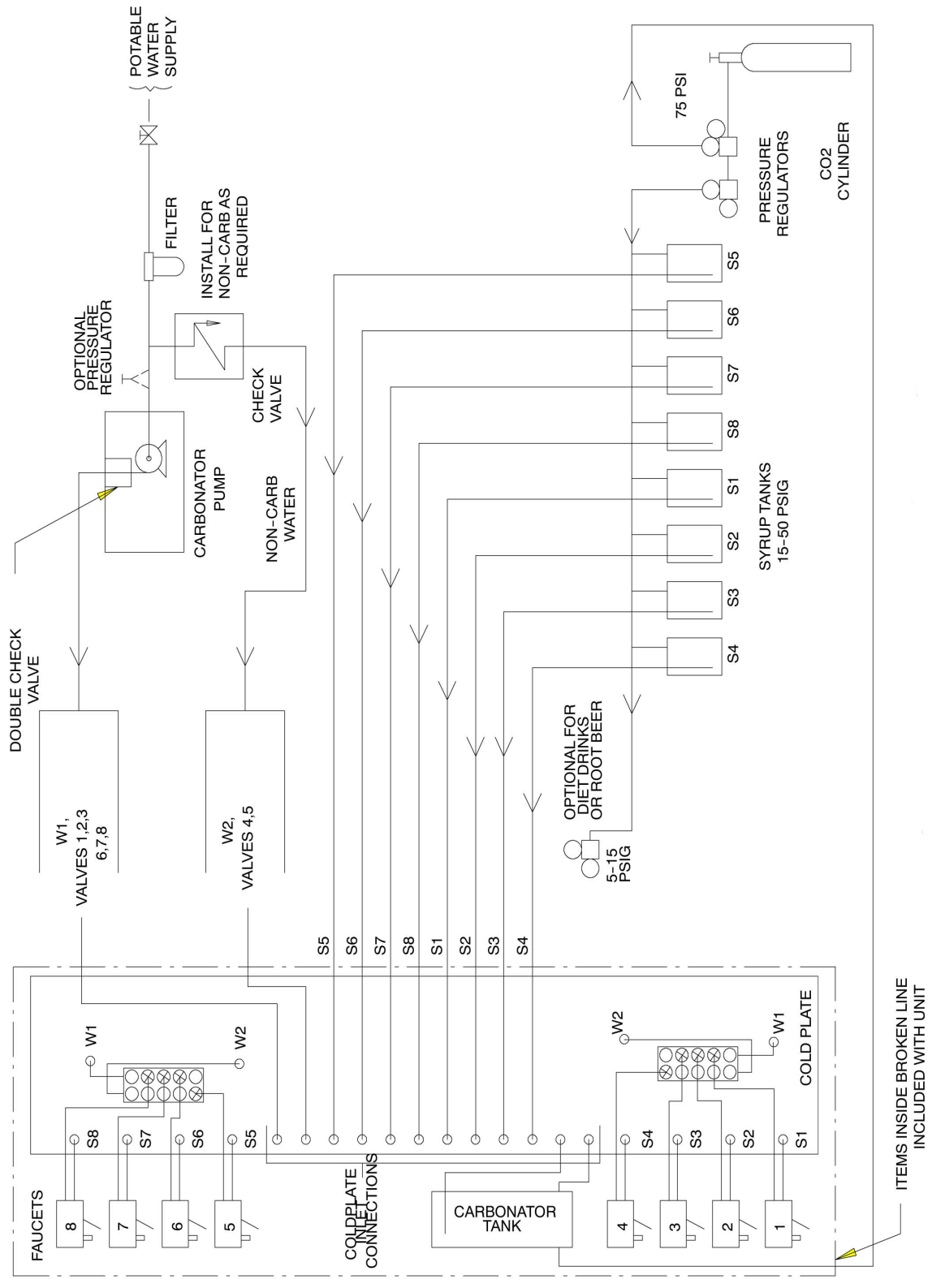


Figure 7. Flow Diagram (Eight Flavor Unit)

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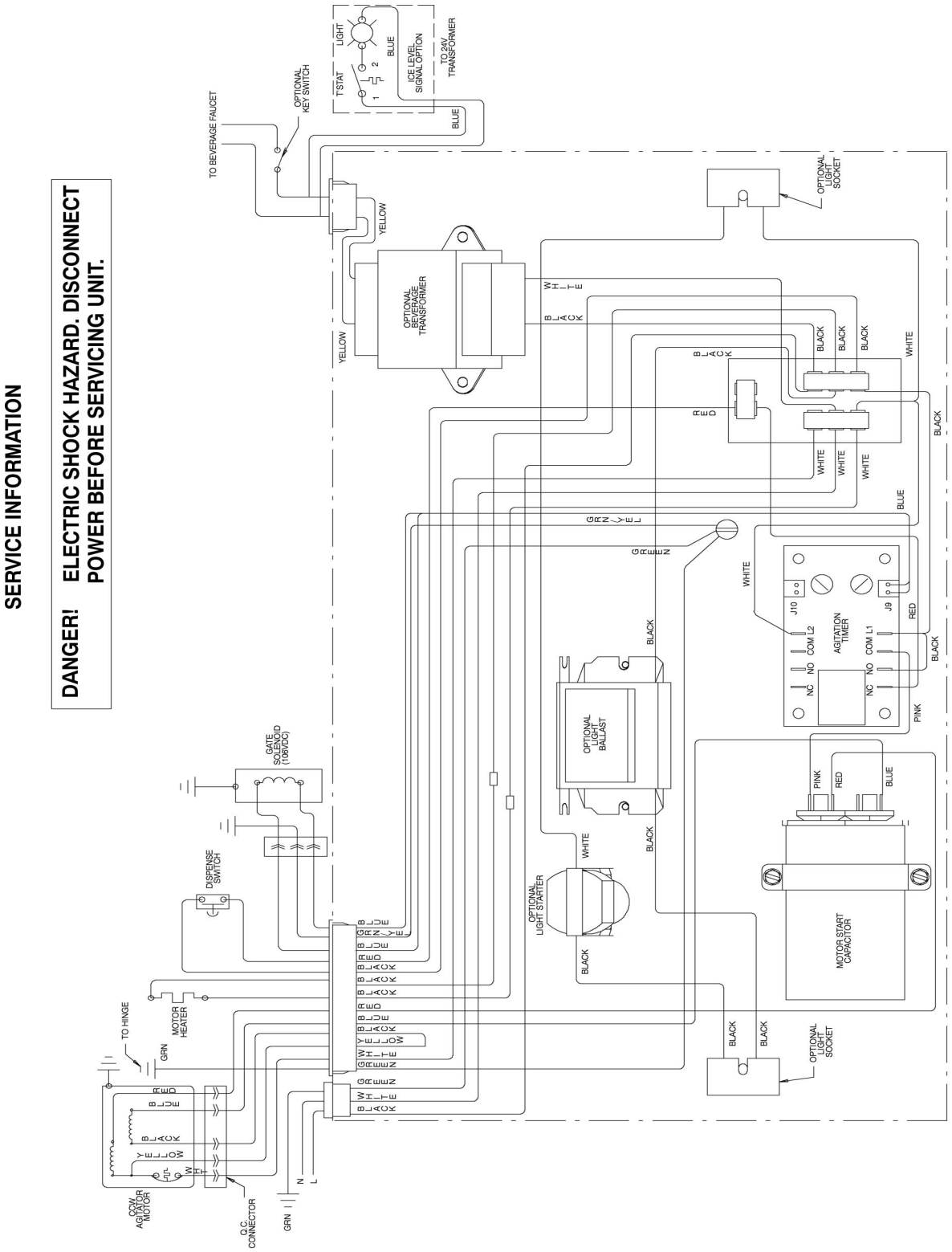

Figure 8. Wiring Diagram (120V)

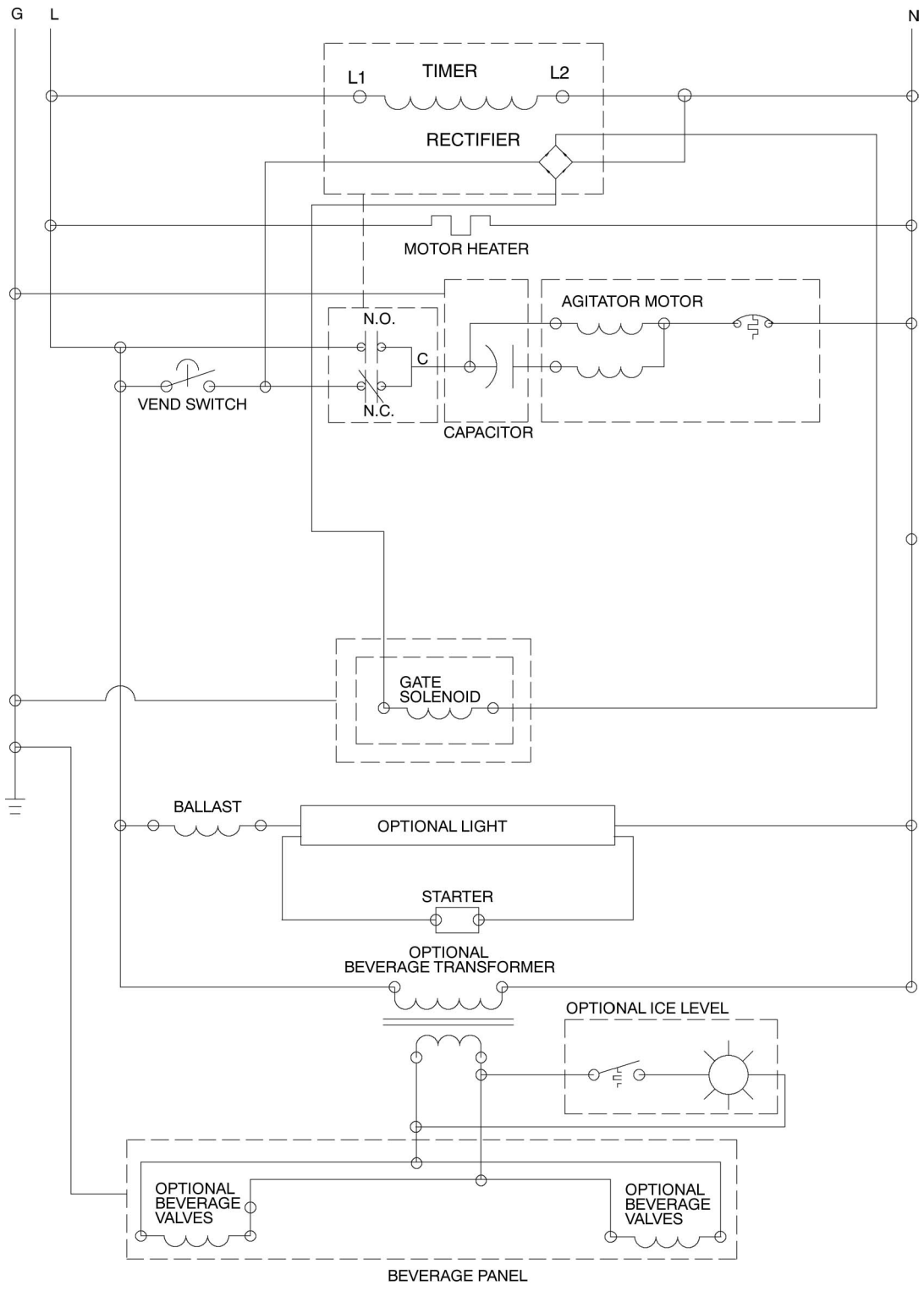

Figure 9. Wiring Schematic

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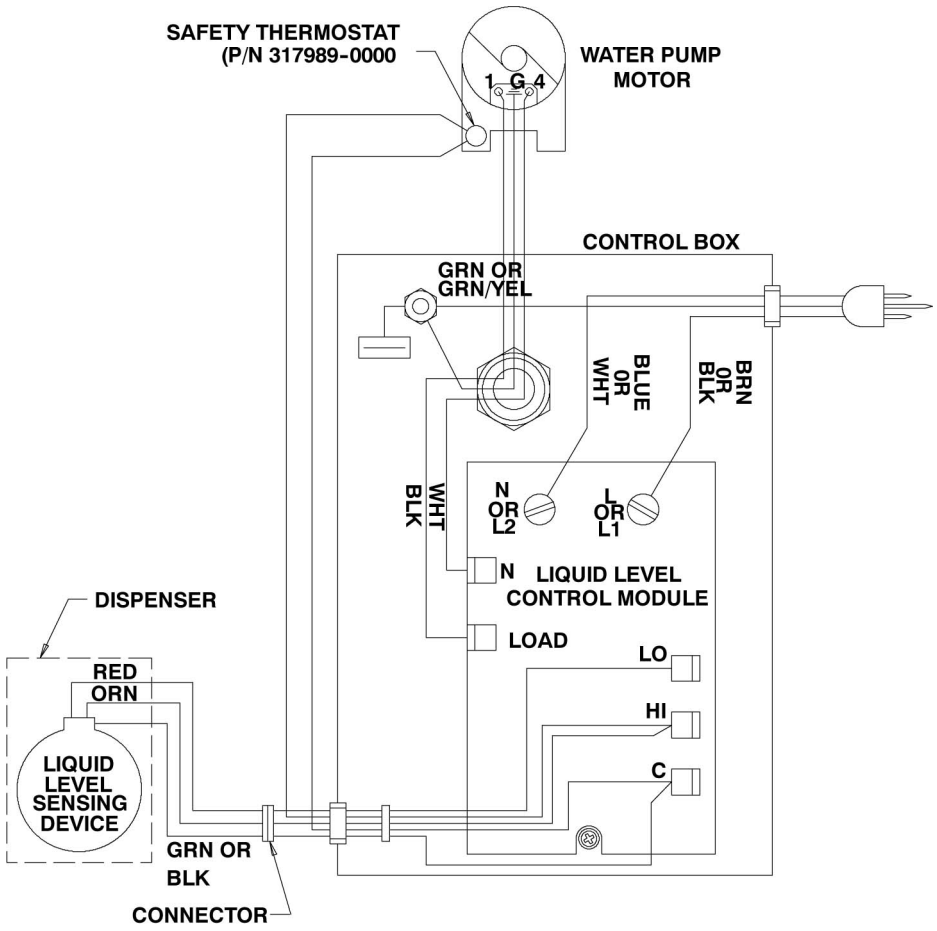

Figure 10. Wiring Diagram

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 CO2 system, stop dispensing, shut off the CO2 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.

NOTE: should your unit fail to operate properly, check that there is power to the unit and that the hopper contains ice. If the unit does not dispense, check the following chart under the appropriate symptoms(s) to aid in locating the defect.

Trouble	Probable Cause	
BLOWN FUSE OR CIRCUIT BREAKER.	A. Short circuit in wiring (115V Circuit) B. Defective agitator motor.	A. Replace defective wiring. B. Replace agitator motor.
SLUSHY ICE. WATER IN HOPPER	A. Blocked drain. B. Unit not level. C. Poor ice quality due to water quality or ice maker problems. D. Improper use of flaked ice	A. Open--up/flush out drain. B. Level unit. C. Install water filter system. For Icemaker problems, consult icemaker manual. D. Replaced flaked ice with “cube style ice (see page 2, Unit Description).
BEVERAGES DO NOT DISPENSE.	A. No 24 volt power to faucets. B. No CO2 pressure.	A. Check that beverage switch is “on”. Check 24V transformers. B. Check CO2 regulator. Check CO2 tank pressure.
BEVERAGES TOO SWEET.	A. Carbonator not working. B. No CO2 pressure in carbonator. C. Faucet brix requires adjusting.	A. Check carbonator B. Check CO2 regulator. Check CO2 tank pressure. C. Brix Faucet.
BEVERAGE NOT SWEET ENOUGH.	A. Empty syrup tank. B. Faucet brix requires adjusting.	A. Refill syrup tank. B. Brix Faucet.
BEVERAGES NOT COLD (UNITS WITH BUILT-IN COLD PLATE).	A. Unit standing with no ice in hopper -- no ice in cold plate cabinet.	A. Refill hopper with ice.

NOTE: Contact your local syrup or beverage equipment distributor for additional information and trouble shooting of beverage system.

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NO ICE DISPENSED FROM ICE PORTION CONTROLLER	A. Insufficient ice supply in ice bin.	A. Replenish ice supply as required.
	B. Ice in ice bin bridged (stuck together).	B. Gently tap on ice to break it loose.
	C. No electrical power to dispenser.	C. Plug in dispenser power cord, or check fuse or circuit breaker.
	D. Insufficient or no CO2 supply to dispenser.	D. Restore CO2 supply to dispenser.
	E. Ice chute cover not properly Installed.	E. Make sure that cover is “snapped” into place.
	F. Defective ice chute interlock switch.	F. Replace interlock switch.
	G. Defective interlock relay.	G. Replace relay.
	H. Defective 24V transformer.	H. Replace transformer.
	I. Defective portion controller.	I. Replace controller
	J. Defective ice gate cylinder	J. Replace cylinder.
	K. Defective ice gate solenoid valve.	K. Replace solenoid valve.
	L. Agitation relay wiring incorrect	L. Red wire should be connected to “+” terminal (no. 3) of relay coil.
	M. Defective agitation relay.	M. Replace relay.
	N. Defective agitator motor or start capacitor or start relay.	N. Replace defective component
NO ICE DISPENSED FROM MANUAL ICE DISPENSE PUSHBUTTON SWITCH	A. Manual/Auto toggle switch in “Auto” position.	A. Move toggle switch to “Manual” position.
	B. Insufficient or no CO2 supply to dispenser.	B. Restore CO2 supply to dispenser.
	C. Defective 24V transformer.	C. Replace transformer.
	D. Defective manual override solenoid valve.	D. Replace valve
	E. Defective manual ice dispense pushbutton switch.	E. Replace switch.
	F. Defective agitator motor or start capacitor or start relay.	F. Replace defective component.
	G. Defective ice gate cylinder.	G. Replace cylinder
ICE DISPENSING DURING AUTOMATIC AGITATION	A. Manual/Auto toggle switch in “manual” position.	A. Move toggle switch to “auto”position.
	B. Defective ice gate cylinder.	B. Replace cylinder.
	C. Defective ice gate solenoid valve.	C. Replace valve.
	D. Defective portion controller.	D. Replace controller.

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