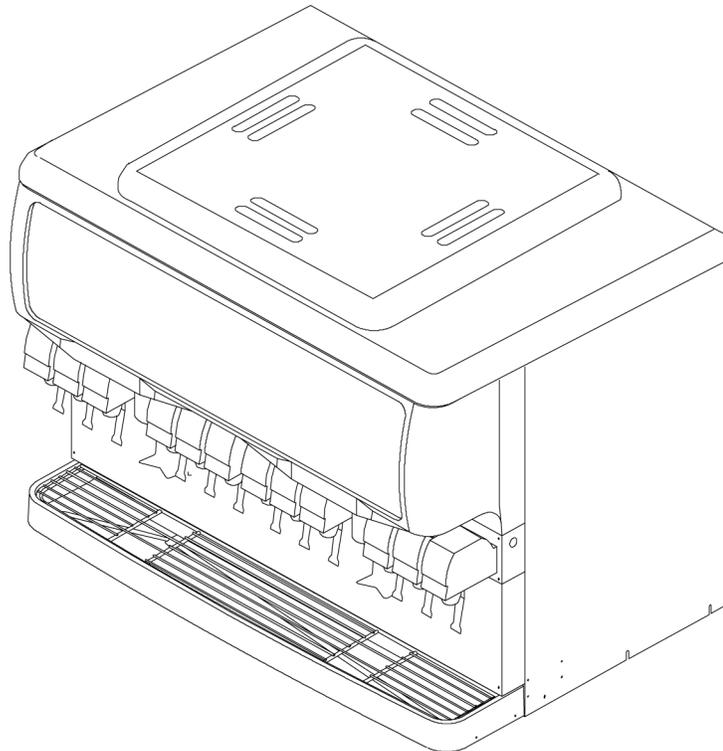


INSTALLATION MANUAL

ICE/BEVERAGE DISPENSER

Model: Enduro-300 IntelliCarb



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Revision: H

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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 Warranty applicable to this Product and is subject to all of the restrictions and limitations contained in the Commercial Warranty.

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Contact Information:

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

**www.cornelius.com
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This document contains the original instructions for the unit described.

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SAFETY INSTRUCTIONS

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

Safety Overview

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

Recognition

Recognize Safety Alerts



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

DIFFERENT TYPES OF ALERTS



DANGER:

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



WARNING:

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



CAUTION:

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

SAFETY TIPS

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

QUALIFIED SERVICE PERSONNEL



WARNING:

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

SAFETY PRECAUTIONS

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

WARNING:

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

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

CAUTION:

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

SHIPPING AND STORAGE

CAUTION:

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

CO₂ (CARBON DIOXIDE) WARNING

DANGER:

CO₂ displaces oxygen. Strict attention **MUST** be observed in the prevention of CO₂ gas leaks in the entire CO₂ and soft drink system. If a CO₂ gas leak is suspected, particularly in a small area, **IMMEDIATELY** ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentrations of CO₂ gas experience tremors which are followed rapidly by loss of consciousness and **DEATH**.

POWER CORD

If the power cord is damaged, it must be replaced by a special cord available from the manufacturer or its service agent.

UNIT LOCATION

THIS UNIT IS NOT DESIGNED FOR USE IN OUTDOOR LOCATIONS.

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 730 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 additional equipment is used you must check with the equipment manufacturer to determine the additional weight the counter will need to support to ensure a safe installation.



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:	ED300 B= (Beverage) C= (Coldplate) F= (Flavor Option) H= (Internal Carb) Z= (No Drip)
Ice Storage:	300 Pounds
Maximum Number of Faucets Available:	12
Built-in Cold Plate:	Yes
Dimensions:	Width 44-3/8 inches Deep 31--1/2 inches High 37 inches Z--Models Width 44-3/8 inches Deep 23--1/16 inch High 37 inches
CO2 Operating Pressure:	75--psig (max)
Electrical:	120/1/60, 4.0 Amps Total Unit Draw 230/1/50, 3.0 Amps Total Unit Draw

INSTALLATION INSTRUCTIONS

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.

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 counter.

2. 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.
3. The beverage tubes, drain tube and power cord are routed through the large opening in the bottom of the unit. See the MOUNTING TEMPLATE (Figure 3) for locating the required clearance opening in the counter for these utility lines.
4. 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: 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 100--GALLONS PER HOUR. If flow rate is less than 100--gallons per hour, starving of 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 100--gallons per hour. INCOMING PLAIN WATER INLET SUPPLY LINE WATER TO PUMP PRESSURE MUST REMAIN A MINIMUM OF 10--PSI BELOW THE CARBONATOR CO2 OPERATING PRESSURE. (Example: Carbonator CO2 operating pressure is 75--PSI and the maximum water pressure can be no more than 65--psi, etc.). Water over pressure (higher than CO2 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 (P/N 310150000) or equivalent 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 (P/N 315664000) or equivalent.

5. Locate the carbonator pump assembly and connect probe wires from Ice/Drink Unit and pump. Connect inlet water to pump and pump outlet to Ice/Drink Unit using 3/8--inch food--grade tubing.
6. Connect the beverage system product tubes as indicated in applicable Flow Diagram Figure 6. This work should be done by a qualified service person.

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

7. Clean the hopper interior (see CLEANING INSTRUCTIONS in Owner's Manual).
8. Connect the 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.
9. Maximum and minimum ambient temperatures rating for correct operation is 40 to 105F.
10. The unit is not suitable for installation in an area where a water jet could be used.
11. The unit has to be placed in a horizontal position.
12. If the supply cord is damaged, it must be replaced by the manufacturer, it's service agent or similarly qualified person in order to avoid a hazard.

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.

13. 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).
14. The carbonator CO2 regulator is fixed at a nominal 75--psi.
15. 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 CO2 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.

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

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)

NOTE: water and syrup must be cold before checking the ratios.

3. 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. Increases reading turn clockwise.
4. Set a syrup flow adjuster to get the desired ration.
5. Test the valve and adjust until a consistent ratio is delivered three consecutive times.
6. Repeat procedure for other valves.

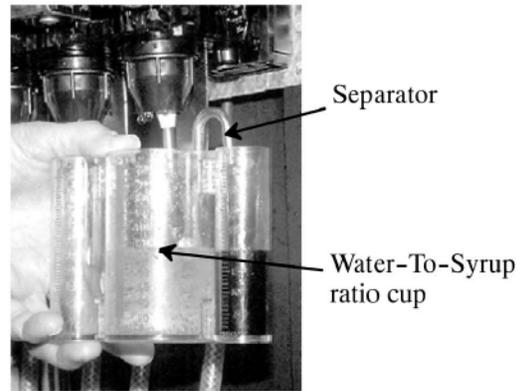


Figure 1

GATE RESTRICTOR PLATE

**CAUTION:**

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

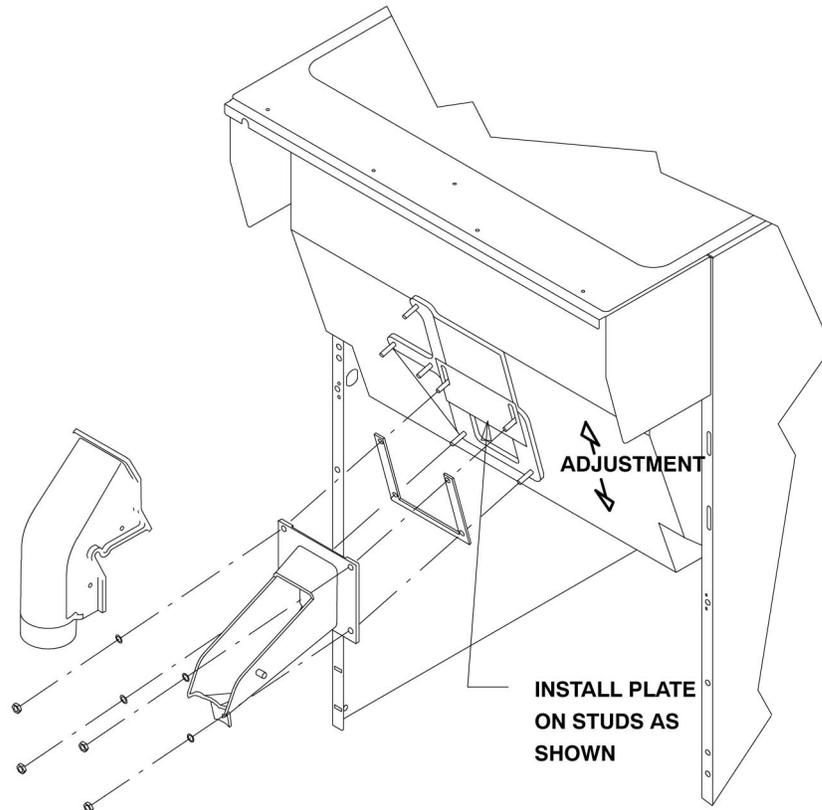


Figure 2. Gate Restrictor Plate

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.

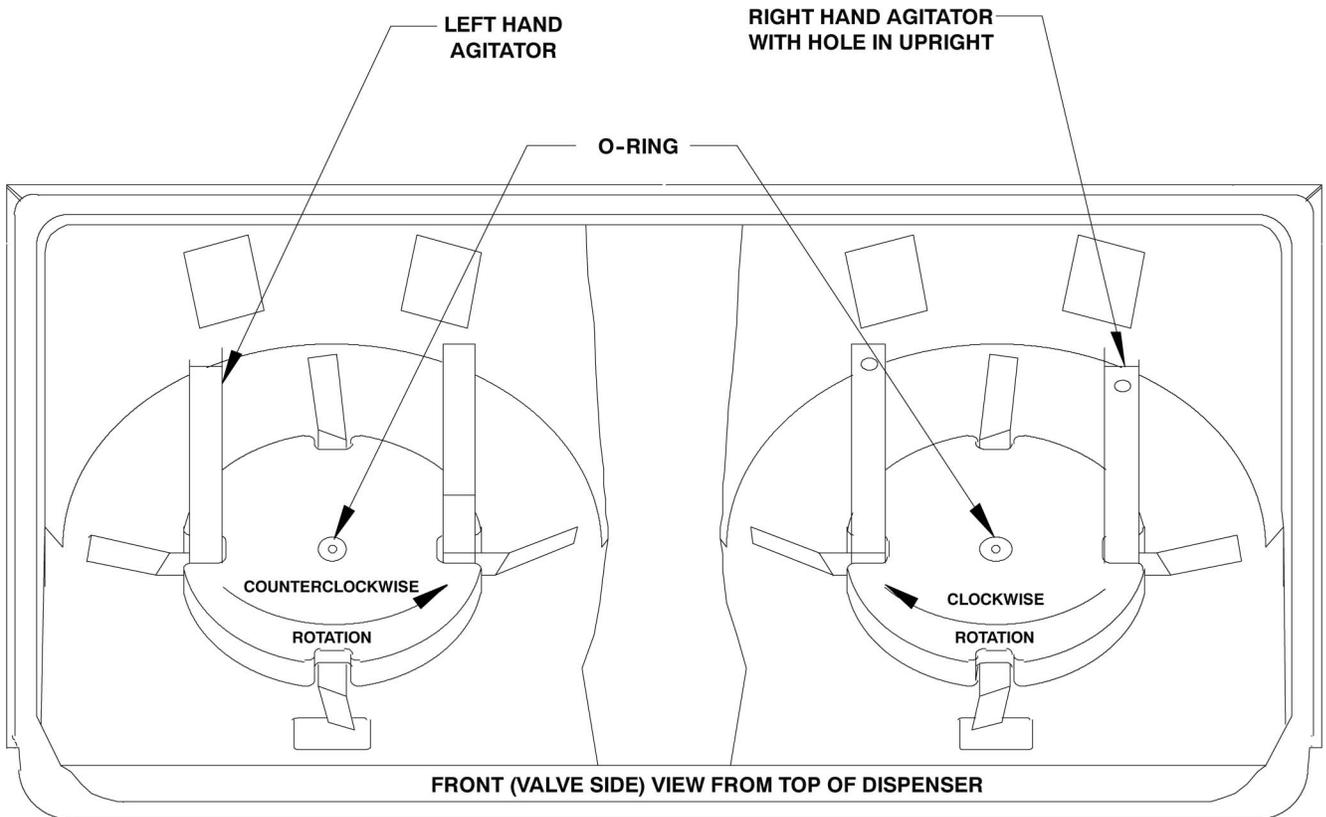


Figure 4. Agitators Removal and Replacement

To Remove Agitators For Cleaning

(see Figure 4)

1. Lift agitator and disc from unit.
2. Remove O-Ring starting at notch. Warm the O-Ring with water to ease removal.
3. Lift the plastic agitator disc off of the stainless-steel agitator.
4. Replace by reversing steps.

NOTE: Refer to Sanitize Procedure in the Owners Instruction for complete cleaning and sanitizing instructions.

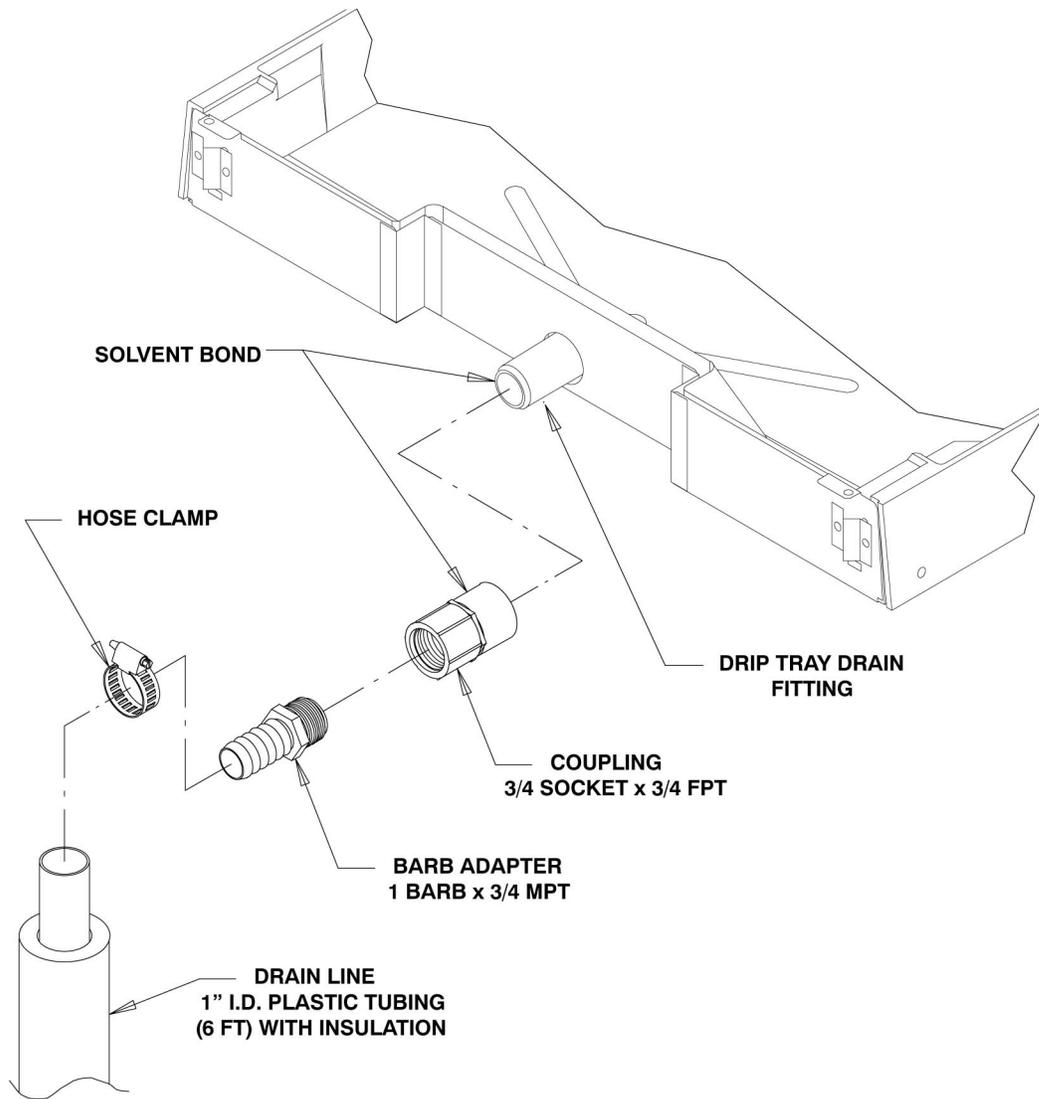


Figure 5. Drip Tray Drain Assembly

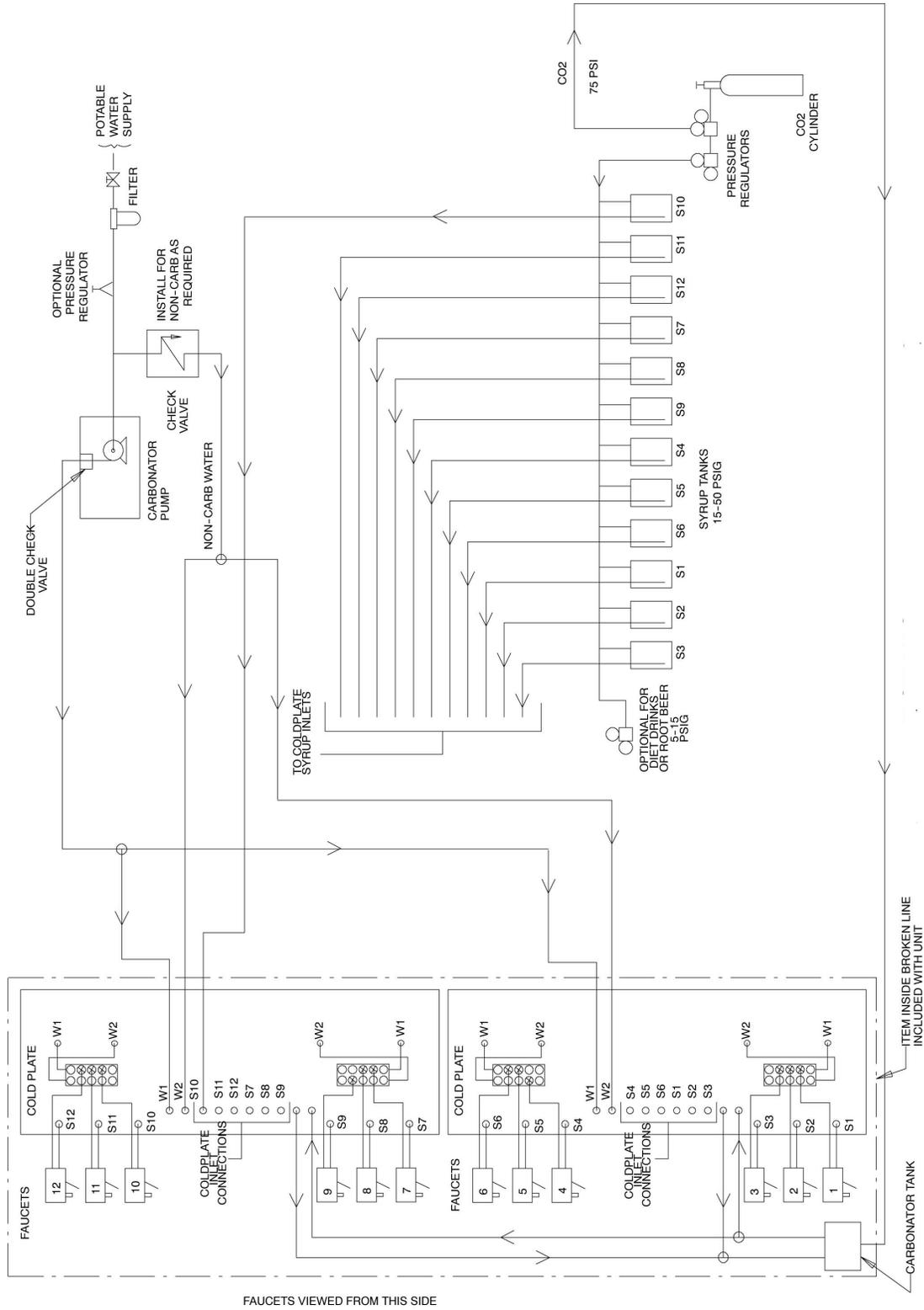


Figure 6. Flow Diagram (Twelve Flavor Unit)

SERVICE INFORMATION

DANGER! ELECTRIC SHOCK HAZARD. DISCONNECT POWER BEFORE SERVICING UNIT.

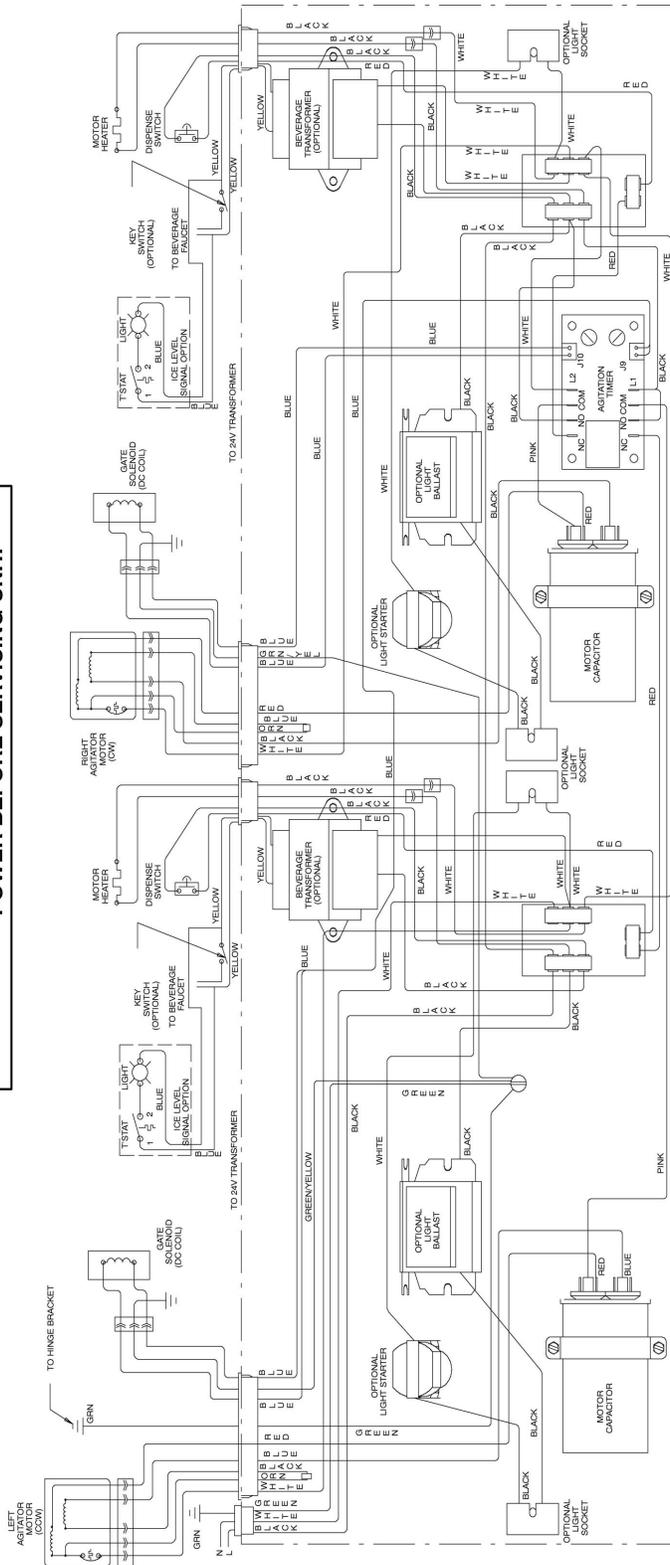


Figure 7. Wiring Diagram (120V Models)

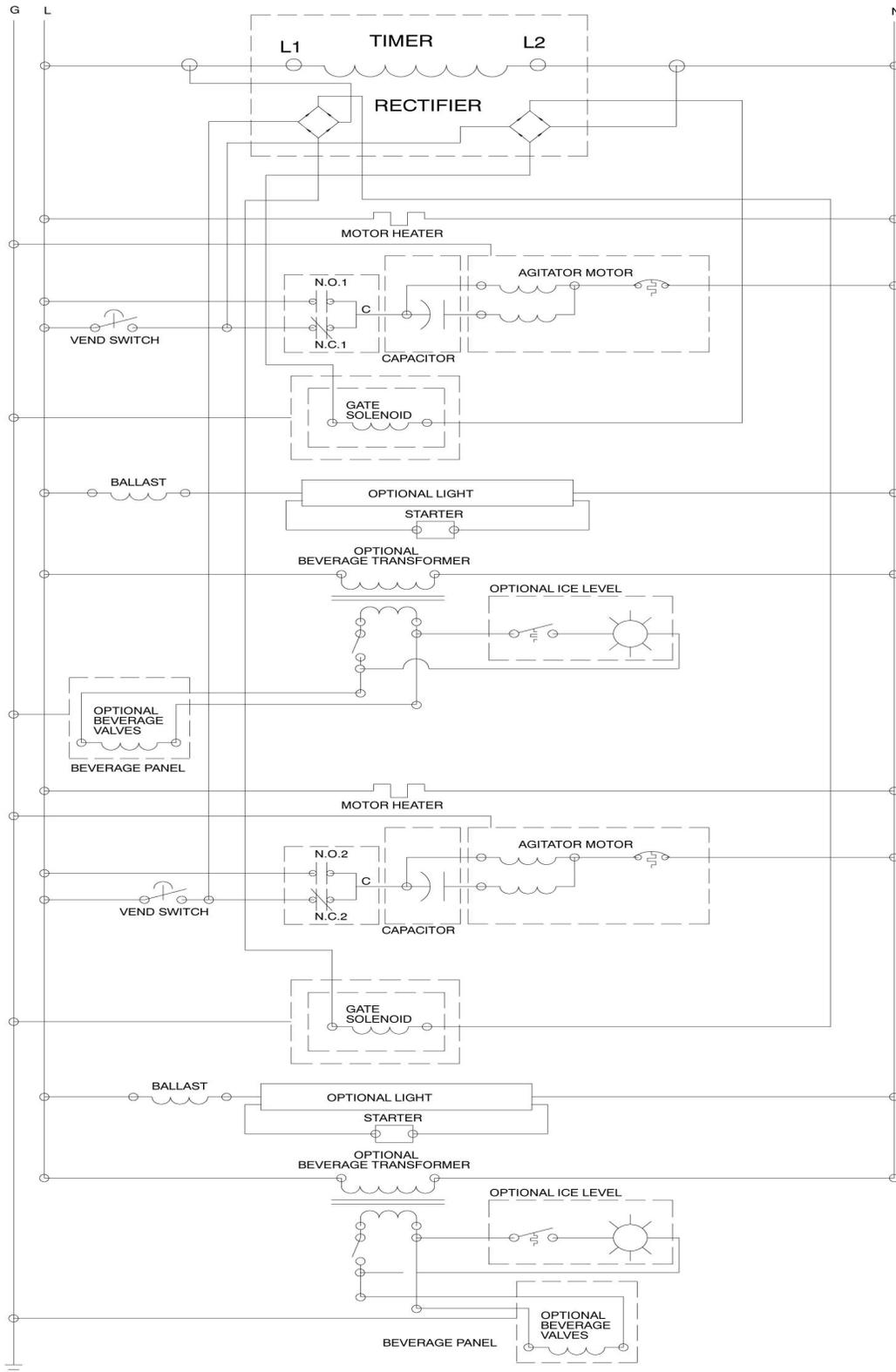


Figure 8. Schematic (120 V Models)

SERVICE INFORMATION

DANGER ELECTRIC SHOCK HAZARD. DISCONNECT POWER BEFORE SERVICING UNIT.

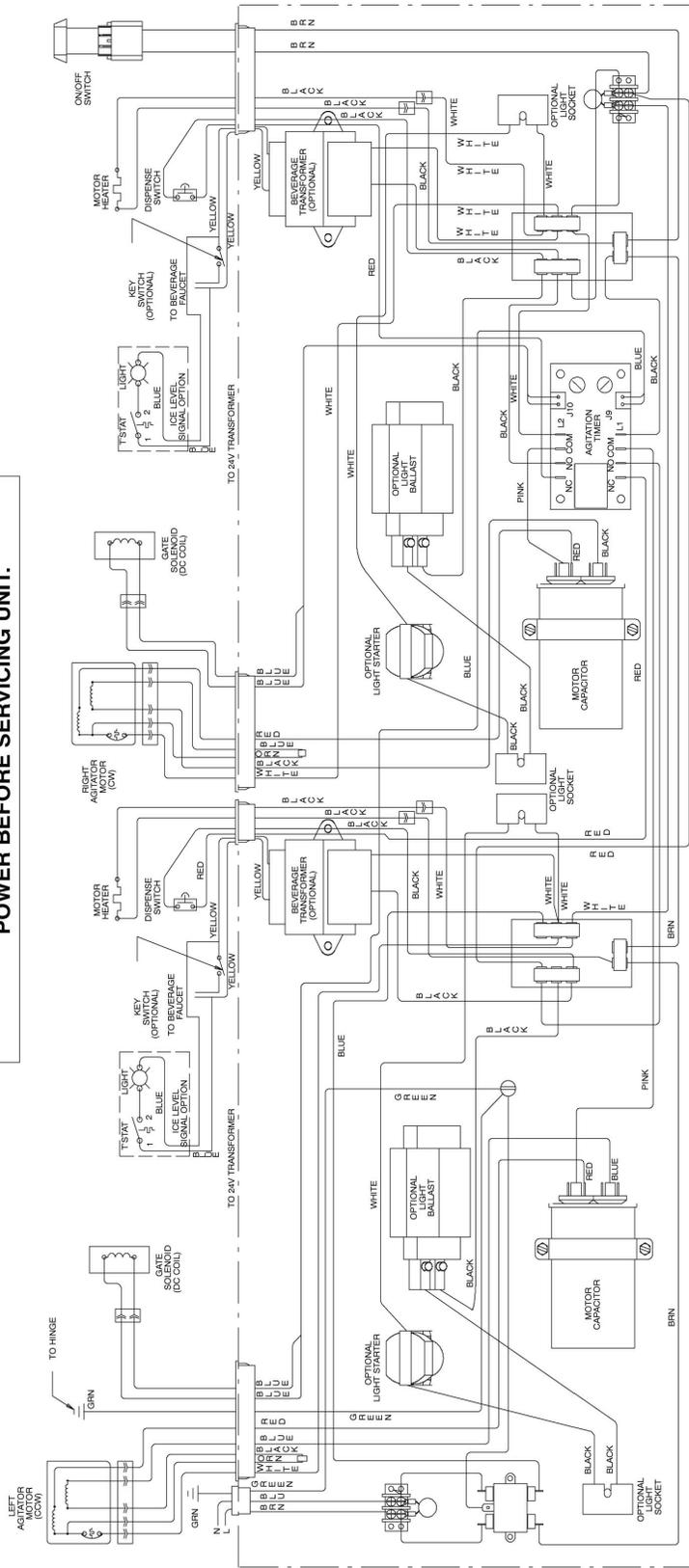


Figure 9. Wiring Diagram (220/240 V Models)

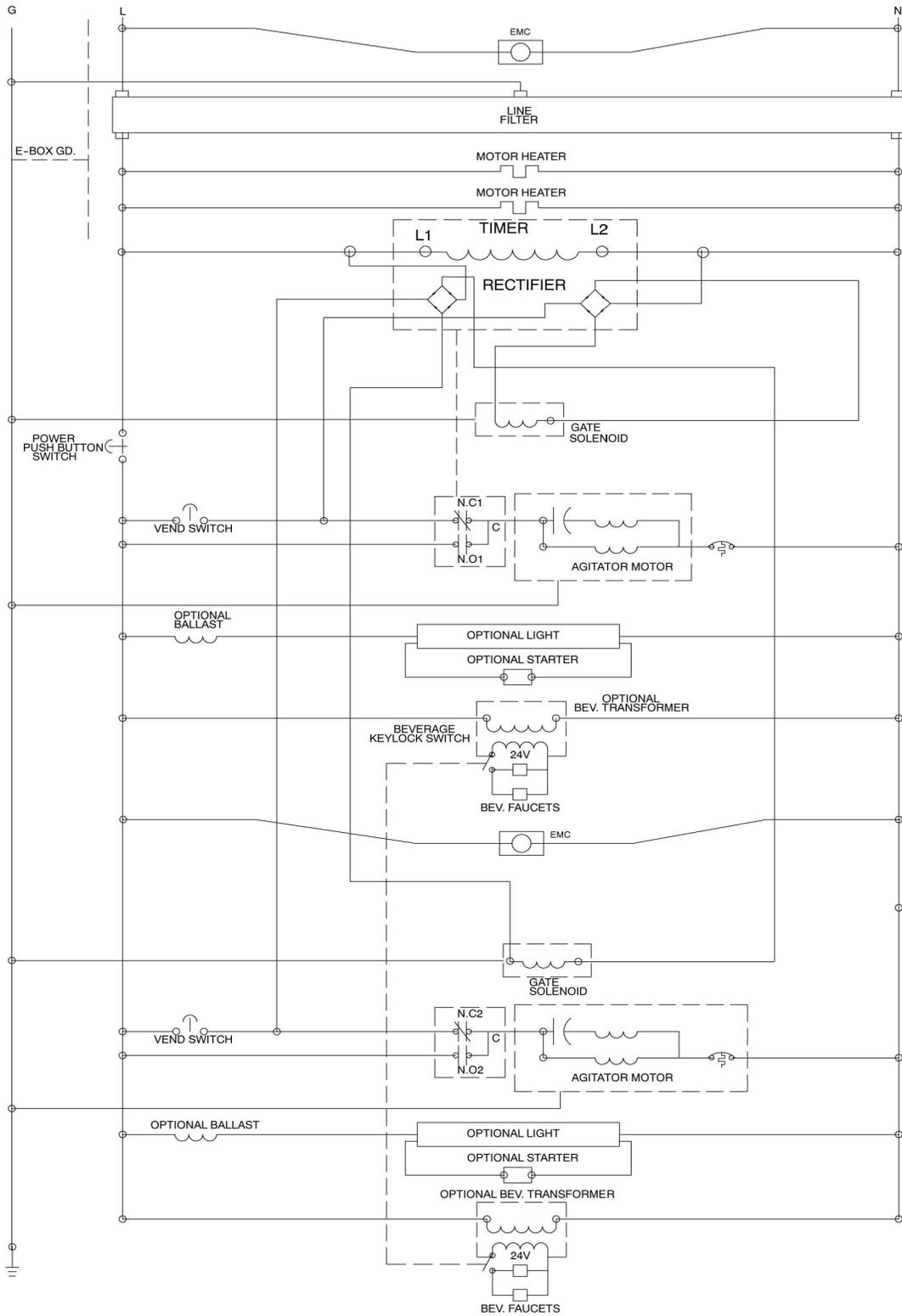


Figure 10. Schematic (220/240 V Models)



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