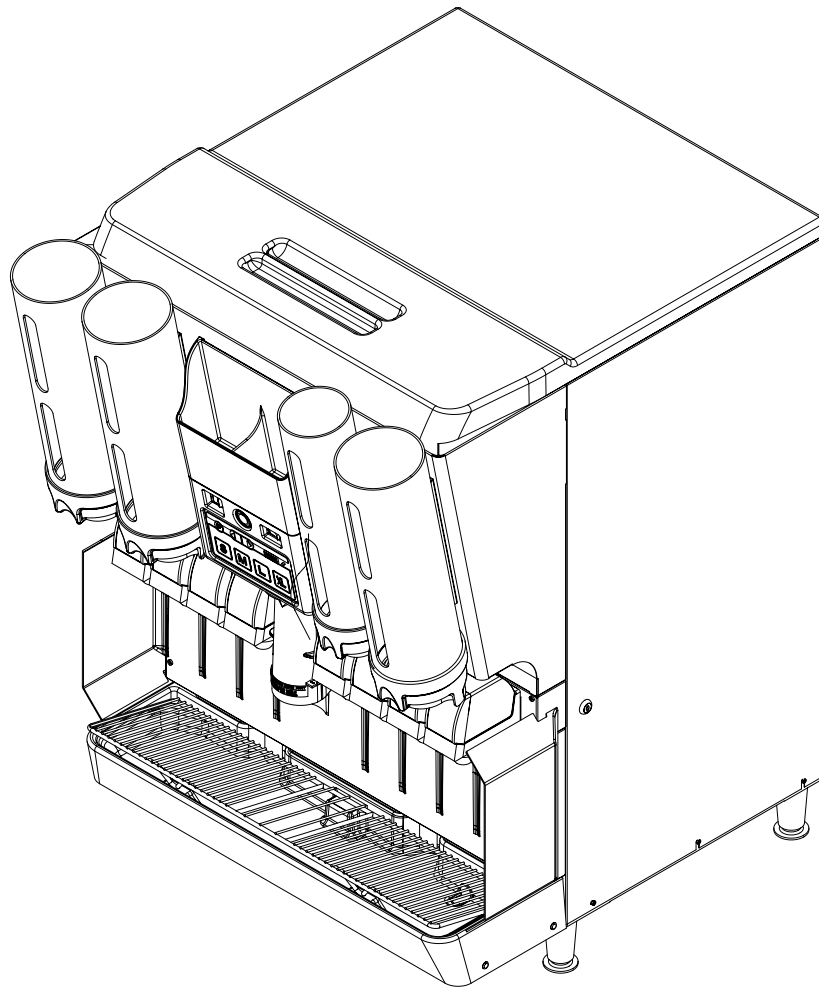


IDC 255 PROGATE DRIVE THRU

Service Manual



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IDC 255 PROGATE DRIVE THRU SERVICE MANUAL

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

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SAFETY INSTRUCTIONS

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

Read and follow all safety instructions in this manual and on the machine (decals, labels, and laminated cards). Read and understand all applicable OSHA (Occupation Safety and Health Administration) safety regulations before operating the machine.

Recognize Safety Alerts



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

Different Types of Alerts

There are 3 types of safety 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 all safety messages in this manual and safety signs on the machine.
- Keep safety signs in good condition and 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 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 machine in proper working condition and do not allow unauthorized modifications to the machine.

Qualified Service Personnel



CAUTION — Only trained and certified electrical, plumbing and refrigeration technicians should service this unit. **ALL WIRING AND PLUMBING MUST CONFORM TO NATIONAL AND LOCAL CODES.**

CO₂ (Carbon Dioxide) Warning



WARNING — 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 concentration of CO₂ gas will experience tremors which are followed rapidly by loss of consciousness.

Shipping And Storage



CAUTION — Before shipping, storing, or relocating the Unit, syrup systems must be sanitized and all sanitizing solution must be purged from the syrup systems. All liquids, after sanitizing, must be purged from the unit. A freezing ambient environment will cause residual sanitizing solution or water remaining inside the Unit to freeze resulting in damage to the internal components.

UNIT SPECIFICATION

DESCRIPTION

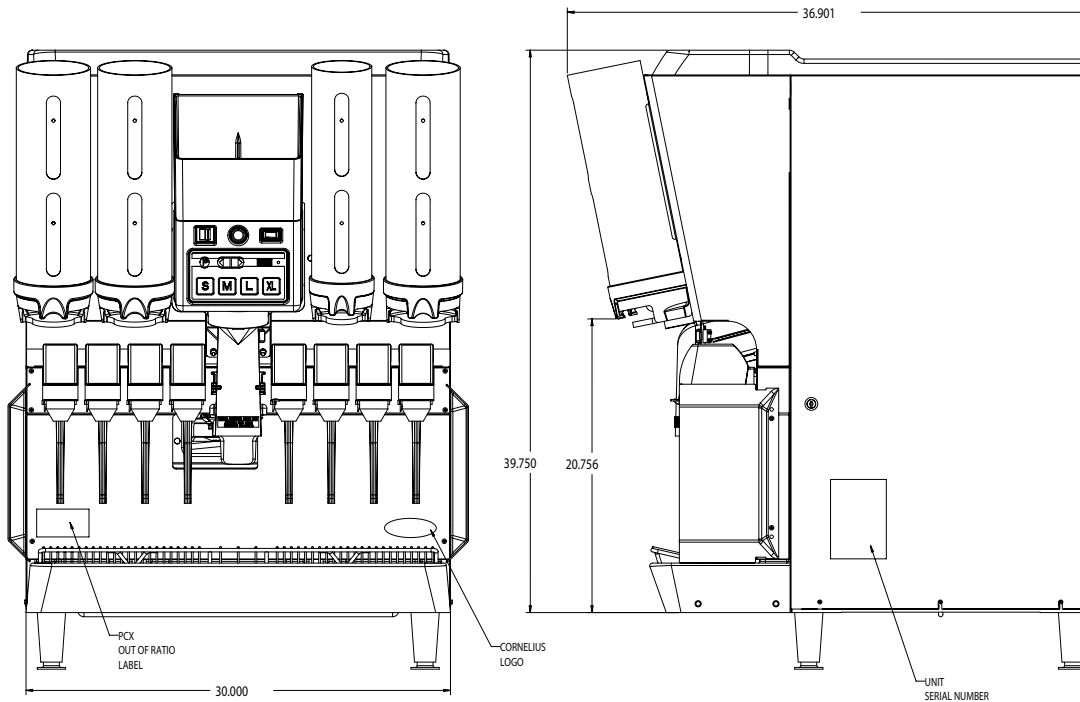
The Ice Drink Cornelius (IDC) series of dispensers solves your ice and beverage service needs in a sanitary, space saving, economical way. Designed to be manually filled with ice from any remote ice-making source, these dispensers will dispense cubes (up to 1–1/4 inch in size), cubelets, and compressed (not flaked). 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.

VALVE CONFIGURATIONS

- IDC 255 Progate Drive Thru Unit with 7 Intelli Valves and 1 Variety Valve
- IDC 255 Progate Drive Thru Unit with 8 Intelli Valves
- IDC 255 Progate Drive Thru Unit with 8 UFB-1 Valves

SPECIFICATION

Model Descriptions	IDC 255 B=Beverage C=Coldplate H=Internal Carb P=Progate Z=No Drip Tray
Unit Weight	368 Pounds
Ice Storage	255 Pounds
Maximum Number of Faucets	10
Built in Cold Plate	Yes
Electrical	120/1/60 9.3 Amps of Total Unit Draw OR 220/1/50 4.7 Amps of Total Unit Draw
Dimensions	Width 29.90 inch (.76 m) Height 39.75 inch (1.0 m) Depth 36.90 inch (.94 m)
CO2 Operating Pressure	75-psig (max)
Water	100 psi (7 bar) maximum static pressure. 40 psi (2.8 bar) minimum dynamic pressure. 3/8" minimum water line recommended.


FIGURE 1

Electrical Connections: 6 ft long power cord with 3-prong plug attached to dispenser.

Power Requirements: 9.3 amps at 120 volts dedicated power supply.

Water Supply Requirements: 100 psi (7 bar) maximum static pressure 40 psi (28 bar) minimum dynamic pressure. 3/8" minimum water line recommended.

CO2 Requirements: 100 psi max to unit regulated to 35 psi (2.4 bar) to Progate 2 ice gate system, 75 psi (5.2 bar) carbonator.

Progate 2 Features

Progate Portion Ice Control Features

- 4 Programmable ice dispense sizes
- Automatic/Manual Ice Dispense Modes
- Unit Power On/Off Switch
- Programmable Agitation Time

Lid Dispenser

- 4 lid dispenser locations on the unit
- 3 Separate removable lid dispensers for small/medium, large, and extra large lids

Straw Holder

- Holds up to 140 regular sleeved straws

LID DISPENSER MAINTENANCE

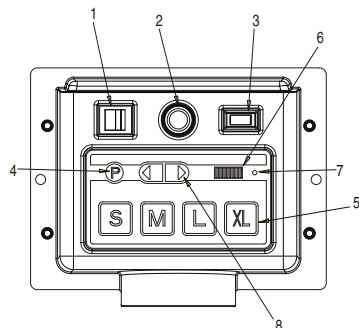
The lid dispensers are manufactured out of materials that can survive chlorine-based cleaners and warm water <100°F. Ensure that the parts are thoroughly dried before refilling with lids.

NOTE: Lid dispenser parts should not be soaked in the powersoak washing machine as this will result in the parts getting scratched. Instead the dispenser parts should be rinsed in warm soap water and then dried.

PROGATE 2 CONTROL BOX OPERATION

Portion Control Box Functions

The portion control box on the PROGATE 2 has several functions including dispensing 4 programmed ice portions for 4 cup sizes, programming and a manual dispense mode.



1. MAIN POWER ON/OFF
2. AGITATOR PUSH ON
3. MODE SWITCH MANUAL/PROGATE
4. PROGRAM BUTTON
5. ICE PORTION DISPENSE BUTTONS
6. ICE PORTION BAR
7. PROGATE ON LIGHT
8. PORTION SIZE UP/DOWN KEYS

1. **Main Power ON OFF:** Turns power to the entire machine off. Lights Orange when ON.
2. **Agitator Push ON:** Turns on agitator and opens ice gate allowing continuous dispense. This button will turn green in the manual mode and be off in PROGATE automatic. This button will also agitate in the automatic mode but not dispense ice.
3. **Mode Switch Manual/Progate:** Turns on agitator and opens ice gate allowing unlimited ice portion.
4. **Program Button:** The programming button is used with cup size button enabling the user to enter the portion programming mode to adjust the ice portions. The programming button is used with the directional arrow buttons to adjust the agitation time.
5. **Ice Portion Dispense Buttons:** Used to dispense the appropriate ice portion. Can also be used in conjunction with the program button to program a portion size.
6. **Ice Size Program Bar:** The program bar is only active in the program mode as a visual aid in setting the portion size.
7. **Light:** On start up of the unit or during a mode change (Manual to Progate) this light turns orange to inform the user that the unit is going through a self diagnostic test. On completion of this test the light turns green to inform the user that the machine is ready to dispense. If the light remains solid on red and the unit is not dispensing any ice when an ice portion is pressed this should generate a service call. During ice dispense if there is insufficient ice in the ice chute then the light turns red instantaneously to inform the user that there is insufficient ice. Once the user releases the portioned button then the red light goes out.
8. **Portion Up/Down Buttons:** The program bar is only active in the program mode to change the ice dispense program size.

Programming (Changing) the Ice Portion

To change the size of any of the four ice dispense sizes follow the steps below.

1. To enter the program mode press the **Program Button**  and **Desired Size** button  at the same time and hold for 5 seconds.
2. The Ice Portion Bar will come on 
3. Press the UP ARROW button  to increase the amount of dispensed ice. The LED will move towards the right indicating the Ice Portion has been increased.
4. Press the DOWN ARROW button  to decrease the amount of dispensed ice. The LED will move towards the left indicating the Ice Portion has been decreased.
5. To exit the program mode press the Desired Size button  or wait 10 seconds and the control will return to the dispense mode.
6. Place a cup under the ice chute and press the just programmed dispense size button  If amount dispense amount is not the desired amount repeat the process.

Agitation Time

The software coding for the progate system involves a direct relationship between the dispense time and the agitation time.

Dispense Time (mS)	Agitation Ratio	Agitation Time (mS)
50	10	500
70	10	700
90	10	900
110	10	1100
130	10	1300
150	10	1500
170	10	1700
190	10	1900
210	10	2100
230	10	2300

Dispense Time (mS)	Agitation Ratio	Agitation Time (mS)
50	16	800
70	16	1120
90	16	1440
110	16	1760
130	16	2080
150	16	2400
170	16	2720
190	16	3040
210	16	3360
230	16	3680

Dispense Time (mS)	Agitation Ratio	Agitation Time (mS)
50	28	1400
70	28	1960
90	28	2520
110	28	3080
130	28	3640
150	28	4200
170	28	4760
190	28	5320
210	28	5880
230	28	6440

The relationship is expressed below.

$$\text{Agitation Time (A}_T\text{)} = \text{Dispense Time (D}_T\text{)} \times \text{Agitation Ratio}^2 \text{ (R}_A\text{)}$$

The agitation time equals the dispense time multiplied by the agitation ratio. The user is given the flexibility to change the agitation ratio thereby altering the agitation time in order to ensure that the ice chute is always filled with ice for all the different ice types.

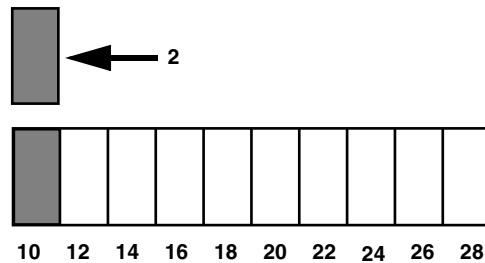


FIGURE 2

Programming (Changing) the Agitation Time

1. Simultaneously Press and hold for 3 seconds, the  button and also both direction arrow buttons   to enter the programming mode.
2. The LED meter turns ON once the programming mode is entered. Visual feedback of ratio/agitation time is obtained from the visual programming LED . The LED meter shows the existing agitation ratio enabling the user to.
3. Vary the agitation time using the directional arrow buttons. Left to decrease and right direction arrow button to increase.

Ice Portion Bar

The portion bar is used to determine the amount of time programmed for each size button. Each button has a minimum and maximum amount of time that can be programmed. If a button cannot be adjusted to the size desired use another button to get the desired results.

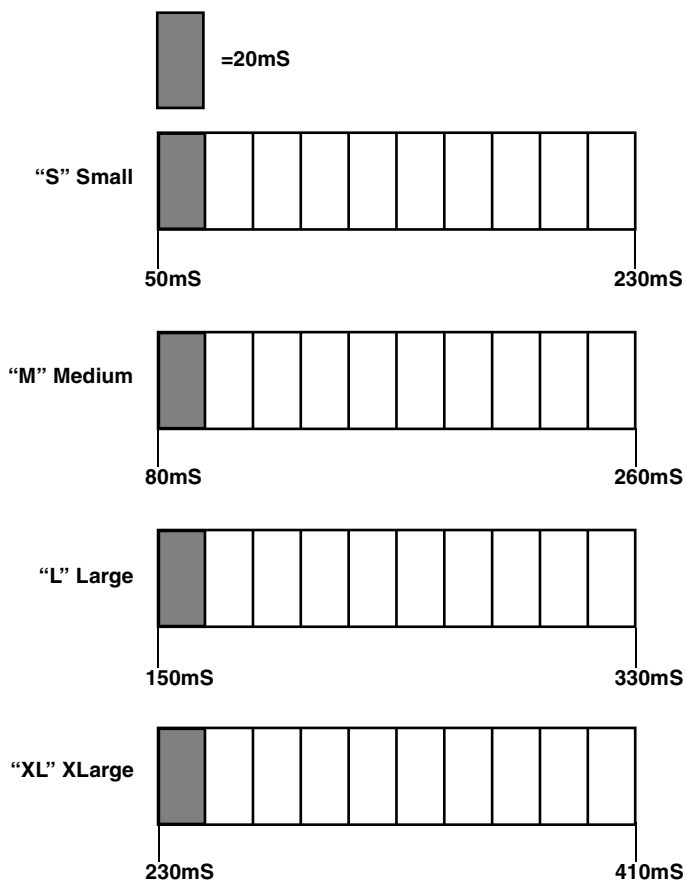


FIGURE 3

DIAGRAMS

COLD PLATE

The beverage assembly for the unit comprises of 7 Intelli Valves and 1 Variety valve, 8 Intelli Valves, or 8 UFB-1 valves. Attached are the cold plate diagrams showing the each of the connections.

7 Intelli Valves and 1 Variety Valve

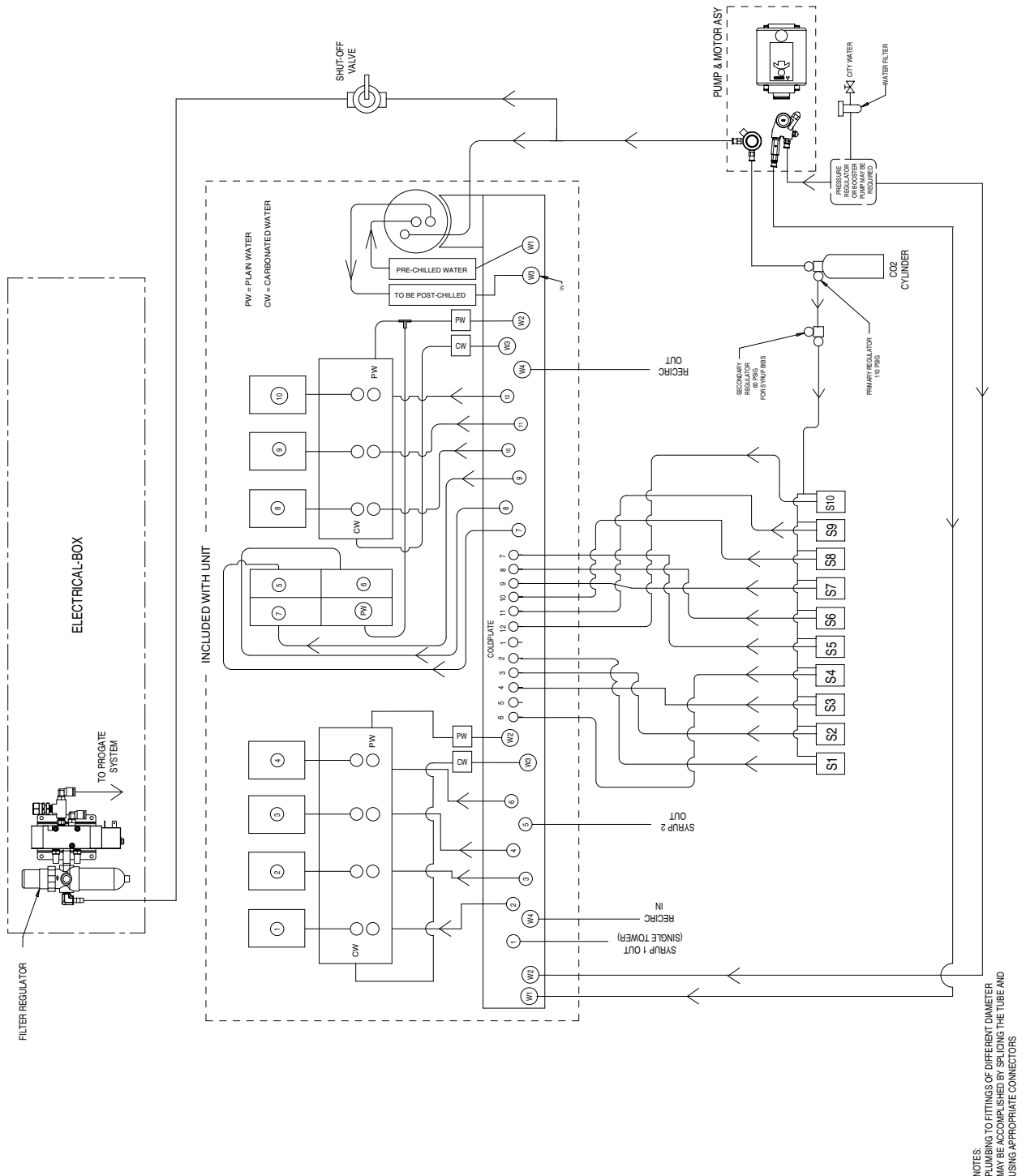


FIGURE 4

8 Intelli Valves or 8 UFB-1 Valves

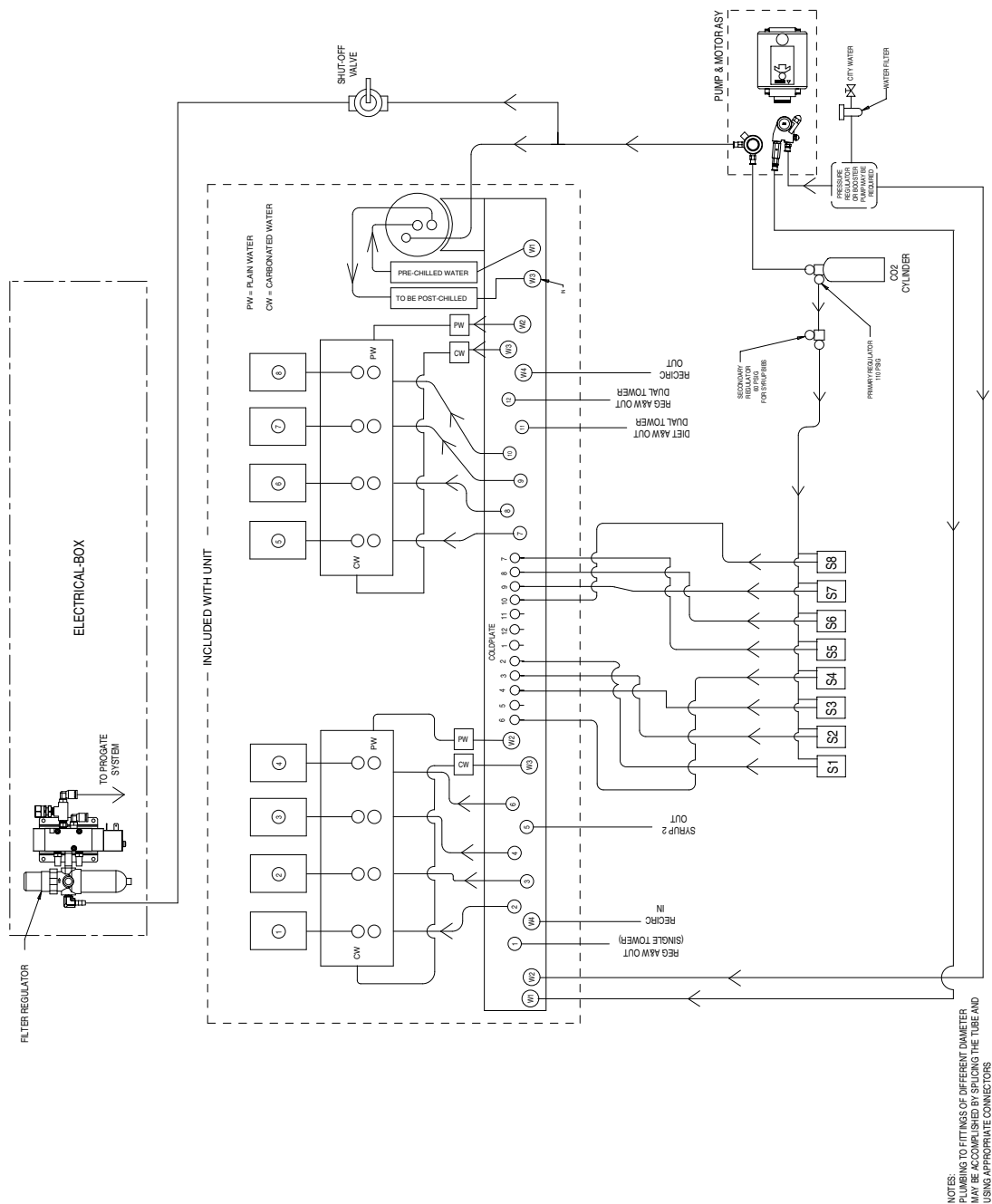


FIGURE 5

E – BOARD OFF CYCLE AGITATION ADJUSTMENTS

When Ice is not being dispensed from the machine such as during off hours it is essential to move or agitate the ice to keep it from clumping and to replenish the ice in the cold plate. The amount of time the agitator runs and the time between the agitation cycles can be adjusted depending on ice type or application. The settings for this function are located on the E-Board found in the E-BOX. To access the board to be adjusted refer to sections 5.1 and 5.3. Using a screwdriver follow the diagram below and set the agitator for the desired settings.

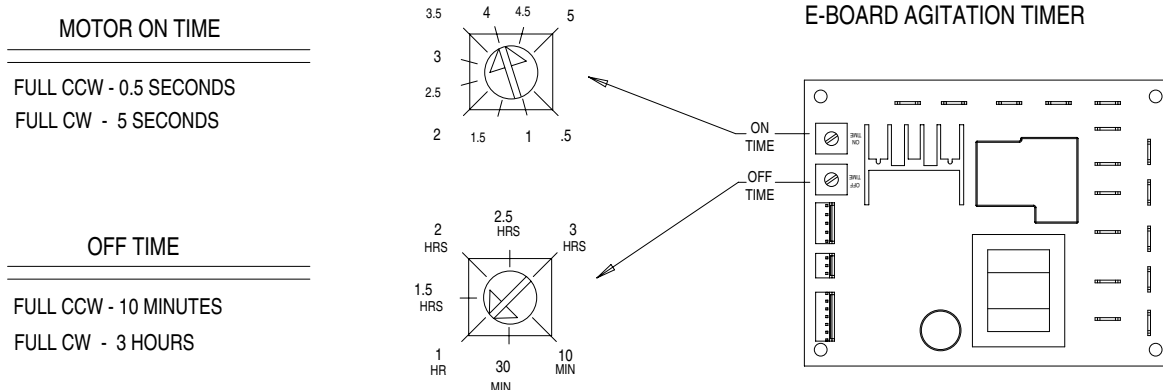


FIGURE 6

Manufacturer Recommended Agitation Settings			
Model	Ice Fill/Ice Type	Motor ON Time	Motor OFF time
175, 215, &255, 300, B, BC	Manual/Hard Ice (Cube)	4 Seconds	1 Hour
	Automatic (Top-Mount Ice Maker/Hard Ice (Cube)	0.5 Seconds	20 Minutes
	Manual & Automatic/ Cornelius Chunklet, Scotsman & Hoshizaki Compressed Ice	0.5 Seconds	3 Hours
B - Beverage C-Coldplate		*NO FLAKED ICE*	

[illegible]

INTERCONNECT SCHEMATIC

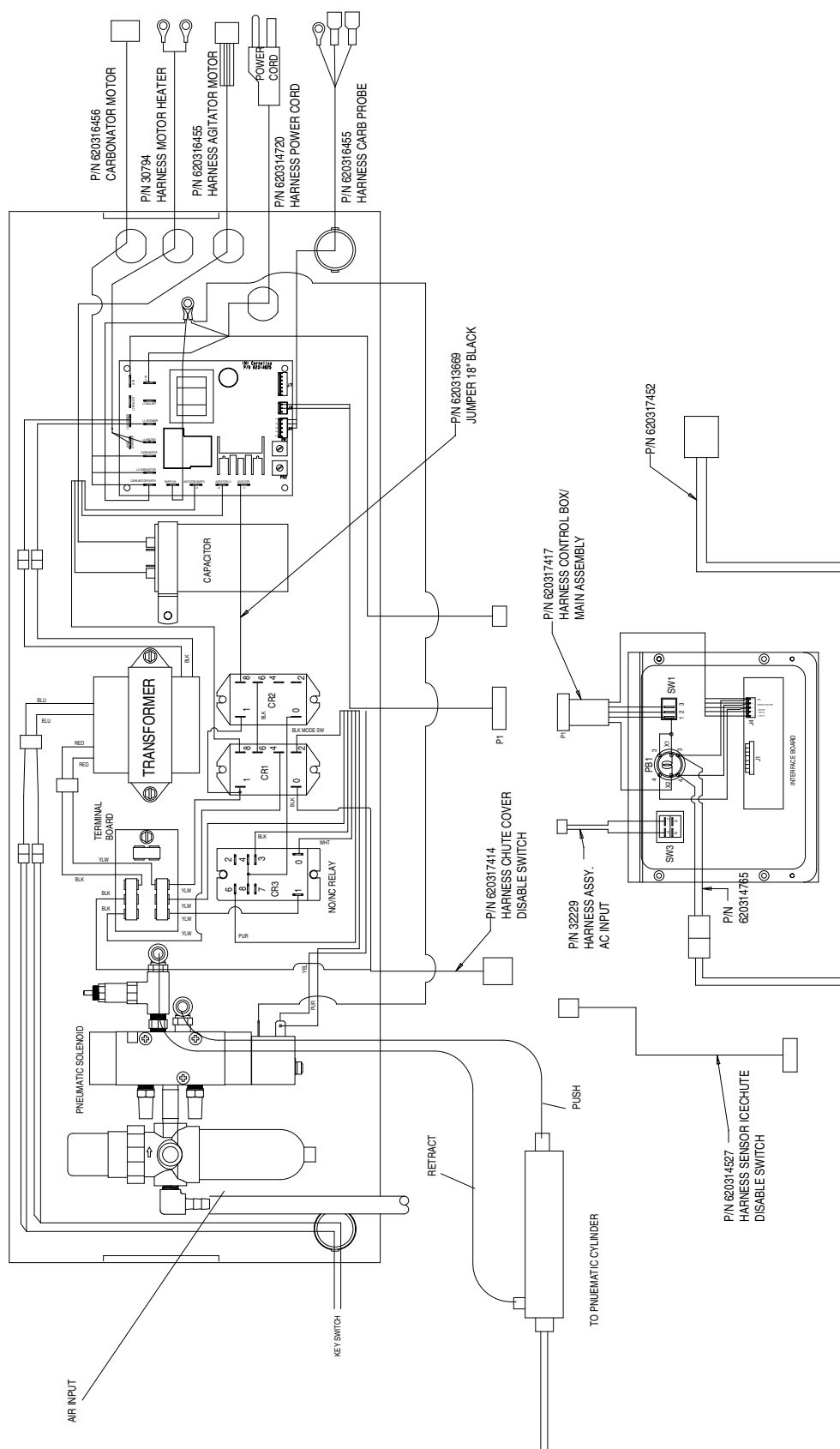


FIGURE 7

MAINTENANCE

The following dispenser maintenance should be performed at the intervals indicated:

DAILY (OR AS REQUIRED)

Remove foreign material from vending area drip tray to prevent drain blockage.

Clean vending area. Check for proper water drainage from the vending area drip tray.

Checking CO₂ Supply

Make sure CO₂ cylinder regulator assembly 1800-psi gage indicator is not in shaded ("change CO₂ cylinder") portion of the dial. If so, the CO₂ cylinder is almost empty and must be replaced.

Replenishing CO₂ Supply

NOTE: When indicator on the 1800-psi gage is in the shaded ("change CO₂ cylinder") portion of the dial, CO₂ cylinder is almost empty and should be changed.

1. Fully close (clockwise) the CO₂ cylinder valve.
2. Slowly loosen the CO₂ regulator assembly coupling nut allowing CO₂ pressure to escape, then remove the regulator assembly from the empty CO₂ cylinder.
3. Unfasten safety chain and remove the empty CO₂ cylinder.



WARNING: To avoid personnel injury and/or property damage, always secure the CO₂ cylinder with a safety chain to prevent it from falling over. Should the valve become accidentally damaged or broken off, a CO₂ regulator can cause serious personnel injury.

4. Position the full CO₂ cylinder and secure with a safety chain.
5. Make sure gasket is in place inside the CO₂ regulator assembly coupling nut, then install the regulator assembly on the CO₂ cylinder.
6. Open (counterclockwise) the CO₂ cylinder valve slightly to allow the lines to slowly fill with gas, then open the valve fully to back-seat the valve (back-seating the valve prevents gas leakage around the valve shaft).
7. Check CO₂ connections for leaks. Tighten any loose connections.

Checking for CO₂ and water leak

Check the Unit for CO₂ and water leaks and if found, call a qualified Service Person to repair as necessary.

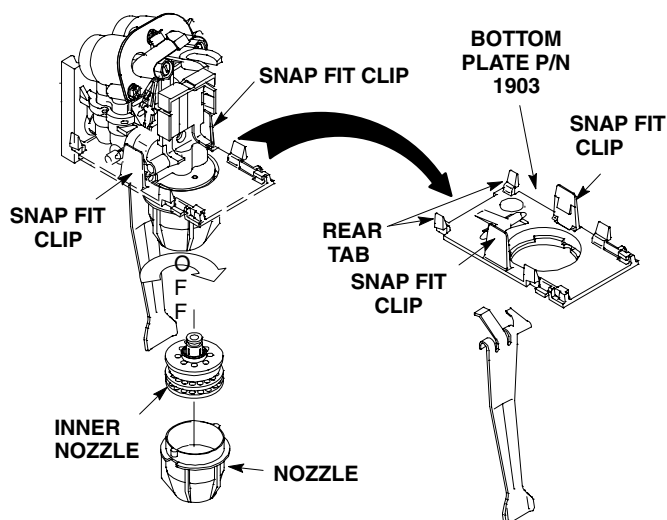
Dispensing Valves

Refer to addendum supplied with the unit that is applicable to the manufacturer of the valves installed on the unit.

Cleaning Dispensing Valve

1. Remove nozzle assembly (contains Inner Nozzle) from dispensing valve. Separate the inner nozzle from the nozzle and wash the two parts in warm water.
2. Remove the bottom plate by releasing the two snap-fit clips. Remove the lever from the bottom plate and wash the bottom plate and the lever in warm water.
3. Reassemble the lever into the bottom plate and return the bottom plate to the valve. Be sure the rear tabs are properly secured.

- Return the inner nozzle to the nozzle and replace the assembly to the valve.



MONTHLY

Clean and sanitize the hopper interior and beverage system, if applicable (see CLEANING INSTRUCTIONS).

BEVERAGE SYSTEM (IF APPLICABLE)



WARNING: Disconnect Power Before Cleaning! Do not use metal scrapers, sharp objects, or abrasives on the ice storage hopper, top cover and the agitator disk, as damage may result. Do not use solvents or other cleaning agents, as they may attack the plastic material.

- Soap solution – Use a mixture of mild detergent and warm (100°F) potable water.
- Sanitizing solution – Dissolve 2 packets (4 oz.) Stera Sheen Green Label into 2 gallons of warm (80-100°F) water to ensure 200 ppm of available chlorine.
- Cleaning tank – Fill clean, empty tank with a mixture of mild detergent and five (5) gallons of warm potable water (120°F).



CAUTION: When pouring liquid into the hopper, do not exceed the rate of 1/2 gallon per minute.

Cold Plate

1. Remove splash panel.
2. Remove or move the plastic cold plate cover to expose the cold plate.
3. Locate and remove any debris from the drain trough. Check that the drain holes are not clogged.
4. Pour small amount of soap solution through cold plate openings in hopper.
5. Using a cloth, wash down the surfaces of the cold plate and plastic cover with soap solution.
6. Install and properly position the access covers on the cold plate.
7. Install the splash panel in the reverse order it was removed.
8. Rinse cold plate surface by pouring potable water through hopper openings.

Sanitize syrup lines, B-I-B Systems

1. Remove all the quick disconnects from all the B-I-B containers.
2. Fill a suitable pail or bucket with soap solution.
3. Submerge all disconnects (gas and liquid) in the soap solution and then clean them using a nylon bristle brush. (**Do not use a wire brush**). Rinse with clean water.

4. Using a plastic pail, prepare approximately five (5) gallons of sanitizing solution.
5. Rinse the B-I-B disconnects in the sanitizing solution.
6. Sanitizing fittings must be attached to each B-I-B disconnect. If these fittings are not available, the fittings from empty B-I-B bags can be cut from the bags and used. These fittings open the disconnect so the sanitizing solution can be drawn through the disconnect.
7. Place all the B-I-B disconnects into the pail of sanitizing solution. Operate all the valves until the sanitizing solution is flowing from the valve. Allow sanitizer to remain in lines for fifteen (15) minutes.
8. Remove the nozzle and syrup diffuser from each valve and clean them in a soap solution. Rinse with clean water and reassemble the nozzle and syrup diffuser to the valve.
9. Remove the sanitizing fittings from the B-I-B disconnects and connect the disconnects to the appropriate B-I-B container. Operate the valves until all sanitizer has been flushed from the system and syrup is flowing freely.

YEARLY

Water Pump Maintenance (or after water system disruption)

The water pump water strainer screen and the liquid dual 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.). Call a qualified Service Person to inspect and clean the strainer screen and the liquid dual check valve.

Cleaning CO₂ Gas Check Valve

The CO₂ gas check valve, located on the carbonated water tank, must be inspected and serviced at least once a year under normal conditions and after any CO₂ system servicing disruption. Call a qualified Service Person to inspect and clean the CO₂ gas check valve.

SERVICE

MERCHANDISER REMOVAL

1. Remove all lid holders and straw dispenser.



FIGURE 8



FIGURE 9

2. Remove screws holding merchandiser to control box.



FIGURE 10

3. Grab panel by sides, lift up to disengage locking tabs and rotate forward past.



FIGURE 11



FIGURE 12

CONTROL BOX REMOVAL

1. With cover removed locate and remove 4 screws from Control box flange.
2. Pull box forward exposing control board, wiring and switches.



FIGURE 13



FIGURE 14

MAIN ELECTRICAL BOX ACCESS

1. Remove screw-locking cover to electrical box.
2. Lift cover up and then rotate forward.



FIGURE 15



FIGURE 16

ICE CHUTE REMOVAL

1. Remove 4 nuts attaching ice chute to hopper.



FIGURE 17

2. Disconnect ice chute switch harness located behind the control box.



FIGURE 18



FIGURE 19

3. Pull assembly away from hopper. Do not loose or damage gasket. If damaged or missing replace.
4. Pull ice chute assembly out of splash panel and disconnect the CO2 lines.

NOTE: Mark the CO2 lines to avoid improper assembly.



FIGURE 20

5. View of underside of ice chute assembly showing gate and pneumatic cylinder.



FIGURE 21

MOTOR REMOVAL

NOTE: Apply anti seizing lubricant to the threads of mounting bolts when service is required.

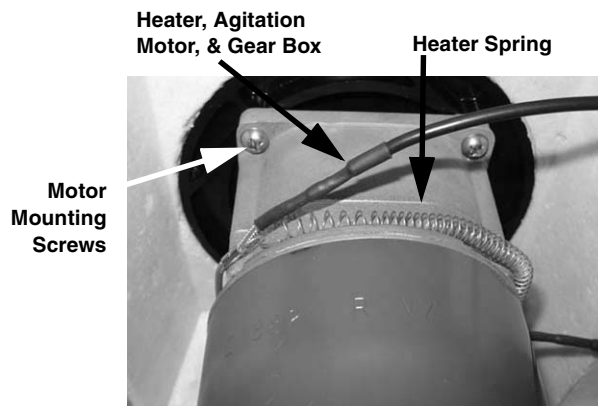
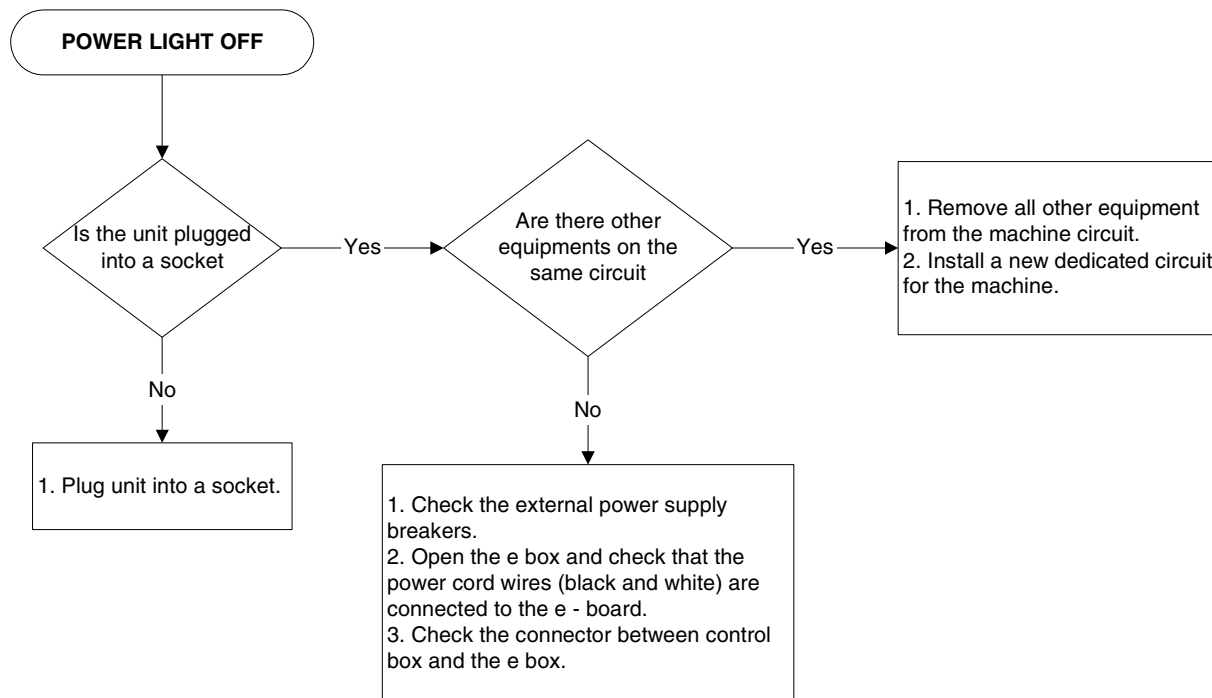


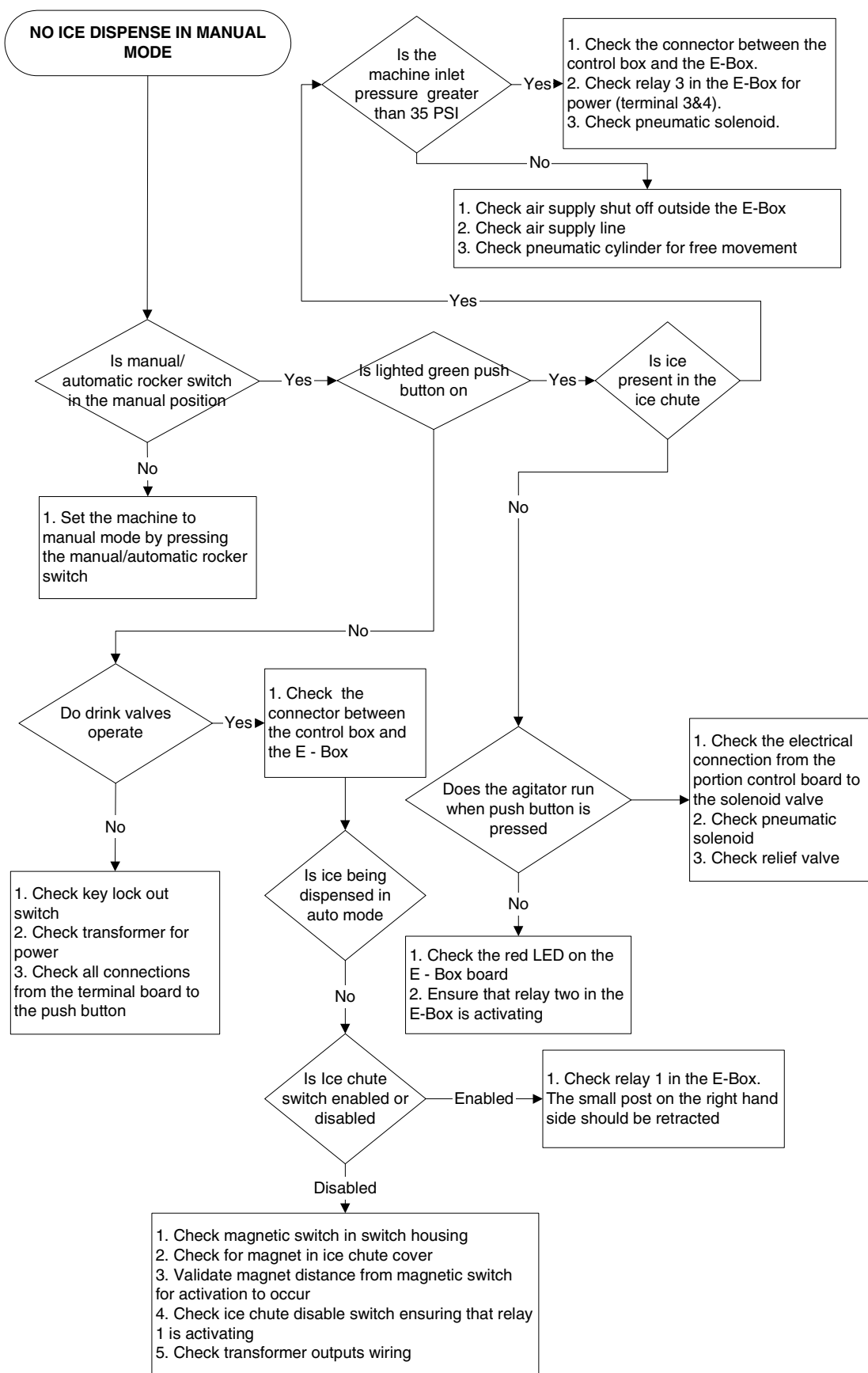
FIGURE 22

TROUBLESHOOTING

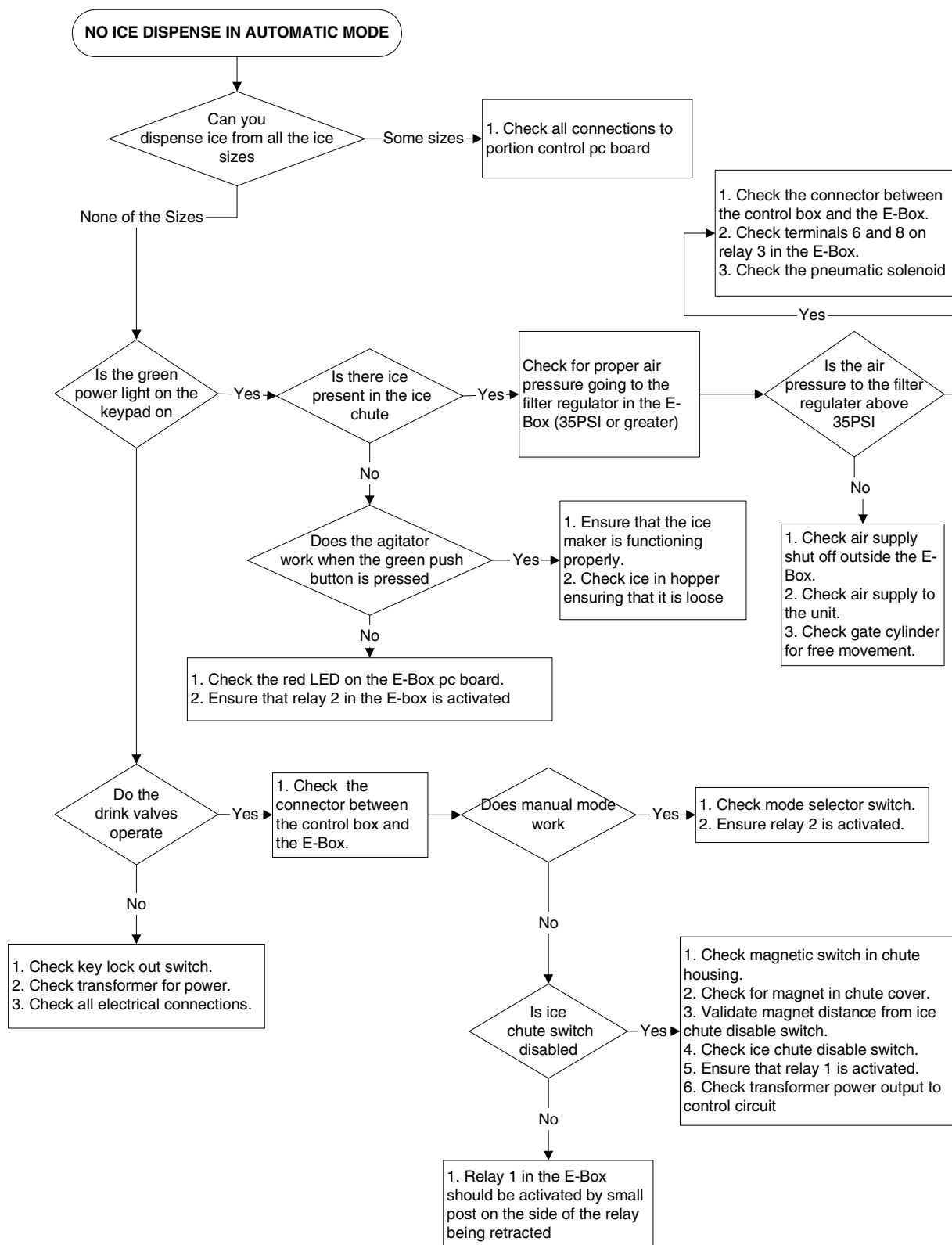
POWER LIGHT OFF



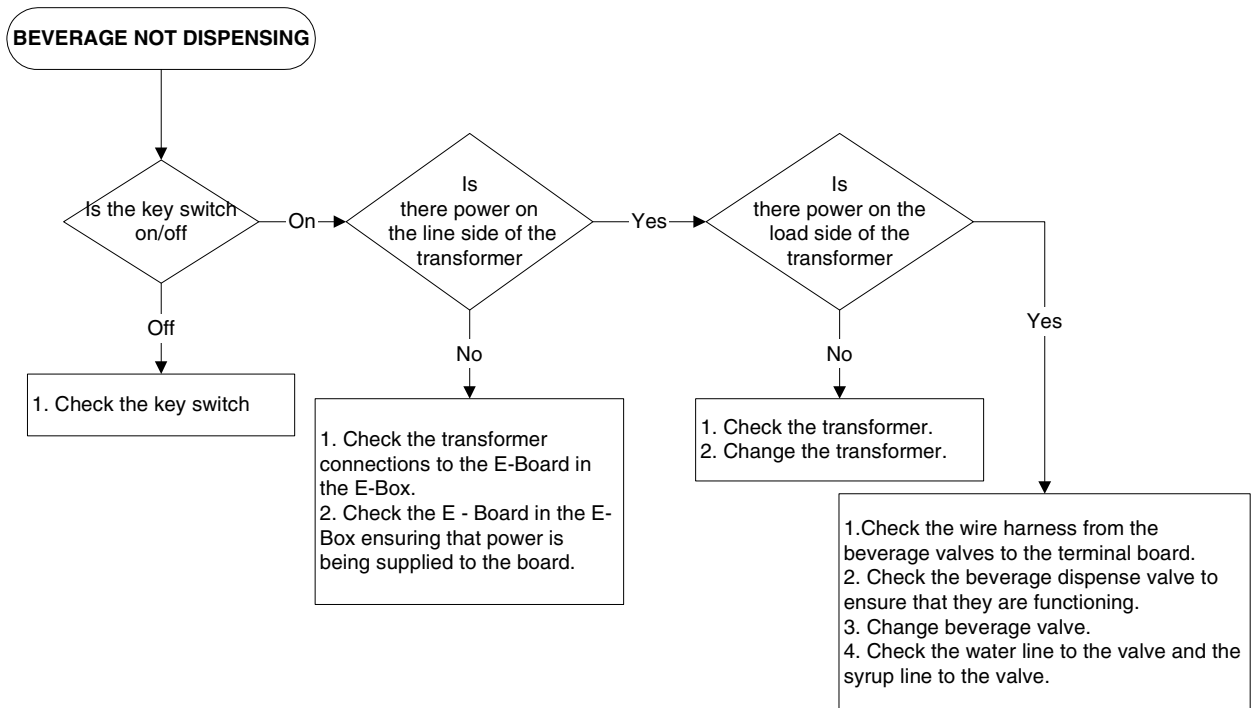
No Ice Dispense in Manual Mode



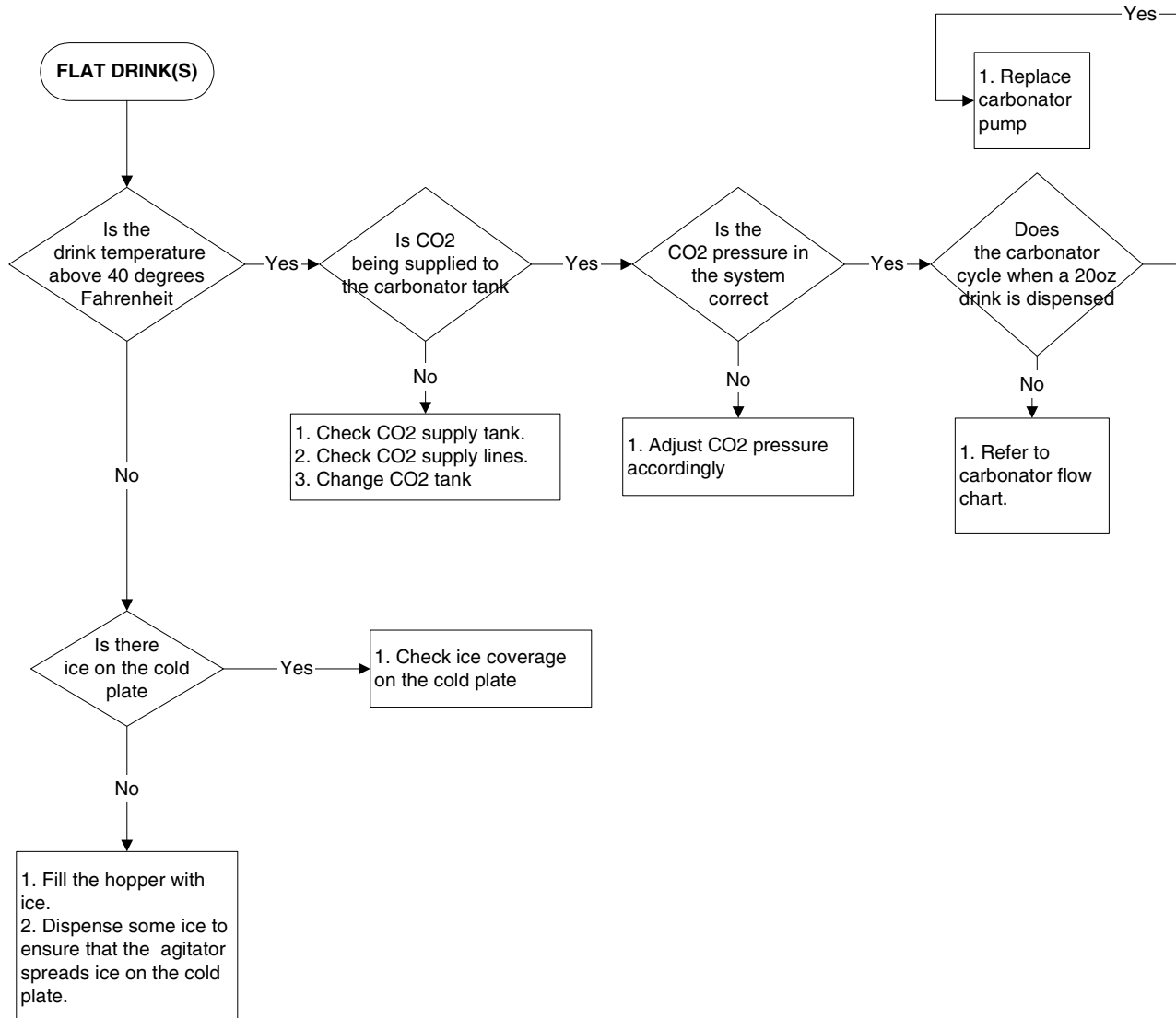
No ICE DISPENSE IN AUTOMATIC MODE



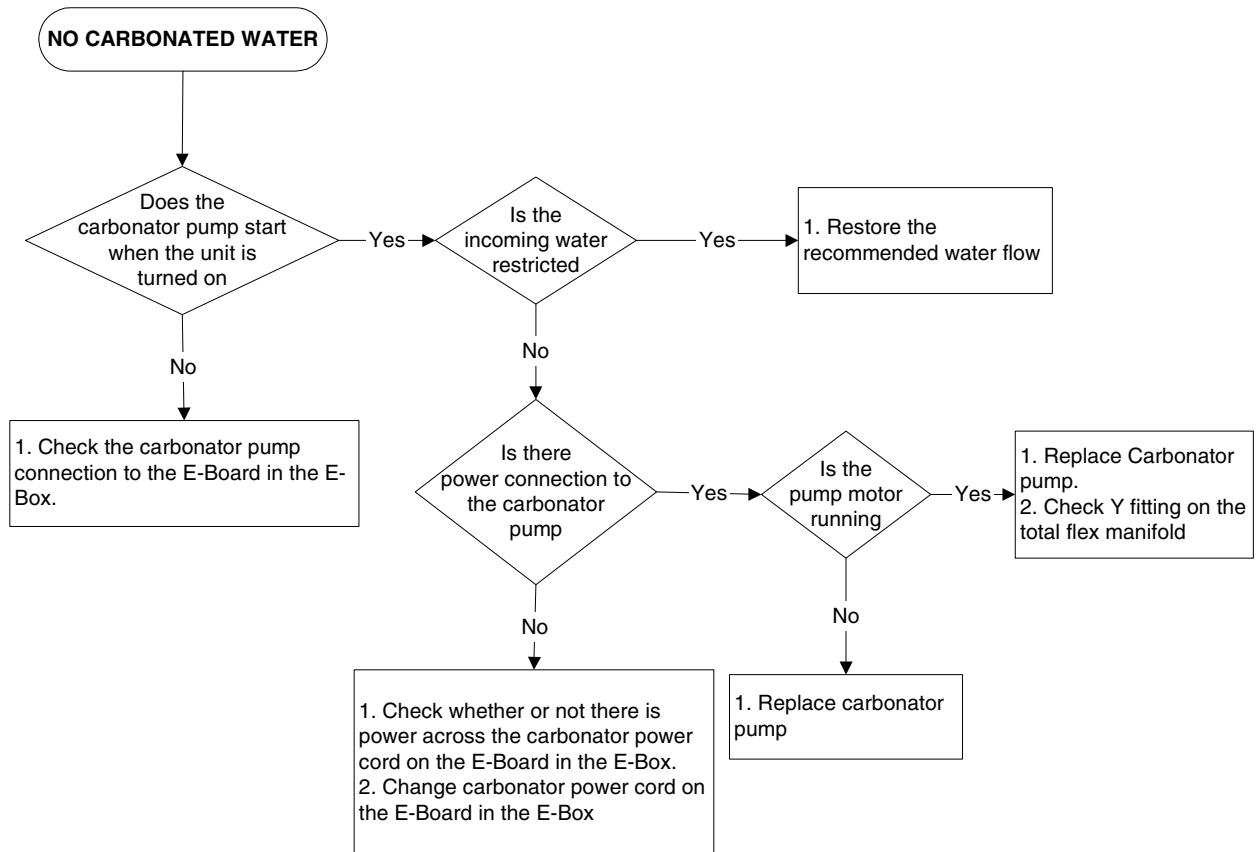
BEVERAGE NOT DISPENSING



FLAT DRINKS



No CARBONATED WATER





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