

# Impulse XL Post-mix Beverage Dispenser Operator's Manual



Release Date: January 31, 2011 Publication Number: 890519401 Revision Date: N/A Revision: A

Visit the IMI Cornelius web site at www.cornelius.com for all your Literature needs.



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:

> www.cornelius.com 800-238-3600

### **Trademarks and Copyrights:**

This document contains proprietary information and it may not be reproduced in any way without permission from Cornelius.

Printed in U.S.A.

# **TABLE OF CONTENTS**

SAFETY	1
Safety Instructions	1
Read And Follow All Safety Instructions	1
Recognize Safety Alerts	1
Different Types Of Alerts	1
Safety Tips	1
Authorized Service Personnel	2
CO2 (Carbon Dioxide) Warning	2
Shipping And Storage	2
GENERAL INFORMATION	3
General Description	3
Unit Description	3
Specifications	4
Dimensions	4
Part Numbers	4
Capacity	4
Accessories	4
Theory of Operation	5
INSTALLATION	7
Delivery Inspection and Unpacking	7
Inspection	7
Unpacking	7
Installation Requirements	8
Requirements Summary	8
Electrical Requirements	8
Environmental Requirements	8
Installation Procedure	9
Counter-top Installation	9
Connect Syrup, Water, And Carbonated Water Lines	12
Check For Leaks	14
Reinstall Panels	14
Adjust Water-To-Syrup Ratio	15
Adjust Flow Rates	15
Electronic Control Board Function	16
Ice Bank Control	16
Carbonator Control	17
LED Diagnostics	17
OPERATIONS	19
Operations	19
Starting And Stopping The Unit	19
Dispensing Product	19
Replenishing Syrup Supply	19
Adjustments	20
Water-to-syrup Ratio Adjustment	20

Cleaning & Checks	20
Daily Cleaning	20
Daily Checks	20
Sanitizing Syrup Systems	20
Sanitizing Syrup Tank Systems	20
Sanitizing Bag-In-Box Syrup System	21
Double Liquid Check Valve Inspection & Cleaning	22
Condenser Cleaning	22
Service	23
Preventative Maintenance	23
Preventative Maintenance Summary	23
Sanitizing	23
Double Liquid Check Valve Inspection & Cleaning	23
Check For Leaks	23
Check Ratio	23
Clean Condenser	23
Clean BIB Connectors	23
Adjustments	24
CO <sub>2</sub> Connection	24
Primary And Secondary Co2 Regulator Settings	24
Trouble shooting	25
Component Service	33
Carbonator Pump Replacement	33
Pump Motor Replacement	34
Agitator Motor Replacement	35
Controller Board Replacement	36
Condenser Fan Motor Replacement	37
Power Cord Replacement	38
Illustrated Parts List (Intellicarb)	39
Reference Material	44
Wiring Diagram	44
Plumbing Diagram - Internal Carbonator	45



# 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



# **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.

# **A** 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

### 

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.

# **A** 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**.

# 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 615 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.



# **GENERAL INFORMATION**

#### **GENERAL DESCRIPTION**

This manual is a guide for installing, operating, and maintaining this equipment. This section gives the Unit Description, Theory of Operation, and Design Data for Impulse Post-Mix Beverage Over counter Dispenser. This Unit must be installed and serviced by a qualified Service Person. This Unit Contains no User serviceable parts.

## WARRANTY REFERENCE INFORMATION

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

# **UNIT DESCRIPTION**

The Raja over the counter, post-mix, beverage dispenser is large-cooling-capacity, easy-to-maintain, and can be ordered with or without a built-in carbonator. Syrup pump kits are available for the units.

Raja — 6 valve

Raja units may be island mounted or installed on a front or rear counter. The 2/3 H.P. refrigeration deck is easily removed for service and maintenance. Adjustable water flow regulators and syrup flow regulators, located on dispensing valves, are easily accessible.



Removable Drip Tray

(Cornelius)

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

- Syrup pump kit (optional)
- Key-lock switch
- Removable drip tray
- Removable refrigeration deck (s)
- 6 valves on Raja unit
- Built-in carbonator (optional)

### **SPECIFICATIONS**

#### Dimensions

Height	27.6 inches	700 mm
Width	18.3 inches	464 mm
Depth	29.1 inches	740 mm
Shipping Weight (approx.)	176.2 pounds	80(no water) kg
Water Bath Size	15 gal (US)	57 I
Ice Bank Size	40.0 lb	18.0 kg

### **Part Numbers**

50 Hz Model, 230 VAC see nameplate

# Capacity

Assuming: - a 3 oz./sec. (85g / sec.) dispensing rate

- a 90°F (32 °C) ambient temperature
- two 12-oz. (340g) drinks per minute
- drinks dispensed at 40° F (5 °C) or below

Capacities by unit are: Raja unit, 230 volt, 50 Hz, 250 drinks continuously

## **THEORY OF OPERATION**

NOTE: THE UNIT IS FACTORY SET TO DISPENSE NON-CARBONATED WATER AND CARBONATED WATER AS PER CUSTOMER'S REQUIRE-MENT. IT IS AVAILABLE TO DISPENSE AT MOST 3 NON-CARBONATED WATERS WITH CARBONATED WATER DISPENSING FROM THE REMAIN-ING VALVE(S). NON-CARBONATED WATER DISPENSING VALVE(S) MAY BE CONVERTED TO ALSO DISPENSE CARBONATED DRINK(S).

A CO<sub>2</sub> cylinder delivers carbon dioxide (CO<sub>2</sub>) gas through adjustable CO<sub>2</sub> regulators to the applicable syrup tanks or bag-in-box syrup pumps and also the integral (built-in) carbonator. Plain water enters the integral carbonator carbonated water tank and is carbonated by CO<sub>2</sub> gas pressure also entering the water tank. When dispensing valve is opened, CO<sub>2</sub> gas pressure exerted upon the applicable syrup tank contents or bag-in-box syrup pump pushes syrup from the syrup supply, through the Unit syrup cooling coil, and on to the dispensing valve.

Carbonated water is pushed from the integral carbonator carbonated water tank by CO<sub>2</sub> gas head pressure and is pushed through the carbonated water manifold to the dispensing valve. Syrup and carbonated water meet simultaneously at the dispensing valve resulting in a carbonated drink being dispensed. A still (non-carbonated) drink is dispensed in the same manner as the carbonated drink except plain water is substituted for carbonated water.



# NOTE

# INSTALLATION

# Warning

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 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 connection and fixtures directly connected to potable water supply shall be sized, intalled and maintained according to Federal,State and Local laws.

## **DELIVERY INSPECTION AND UNPACKING**

#### Inspection

Upon delivery inspect the unit for damage or irregularities and immediately report problems to the delivering carrier and file a claim with that carrier.

### Unpacking

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

LOOSE PARTS		
Name	Quantity	
Cup rest	1	
Drip tray	1	
Drain hose	1	
Hose clamp	1	
Service Manual	1	

# INSTALLATION REQUIRMENTS

# **Requirements Summary**

Weight.....counter must be level and able to support 510 lbs. (200 kg) Environment...indoor installation only

Temperature...50 ° F to 110° F (10° C - 43° C) ambient temperature

CO<sub>2</sub>..... 75 psi (5 bar)

Syrup..... 60 psi (4 bar)

Water......30~43 psi (2~3 bar) maximum

Electrical......see nameplate on unit for electrical requirements

# **Electrical Requirements**

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



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

FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR DAMAGE TO THE EQUIPMENT.



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

FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR DAMAGE TO THE EQUIPMENT.



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

FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR DAMAGE TO THE EQUIPMENT.

## **Environmental Requirements**

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



**CAUTION** — To avoid overheating and damaging to the unit, and voiding the warranty, there must be at least 8 - inch (0.2 m) of clearance on all sides and 18 - inch (0.45 m) on the top of the unit.



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



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



**CAUTION** — The appliance is not suitable for installation in an area where a water jet could be used.

Never put any liquid vessel or water cup onto the Top Cover , avoid spillage into the top vents.

### **INSTALLATION PROCEDURE**

## **Counter-top Installation**

- 1. Place the unit on a level counter capable of supporting at least 510 pounds ( 200 kg ).
- 2. Remove two mounted screws from the top and Lift Top-cover off.

Remove Two Screws Before Remove Top-cove





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

- 3. Pull water, syrup, and CO lines through counter or wall. To comply with NSF International requirements the unit must be sealed to the counter top and all access holes in the unit base must be sealed, Caulk/seal the unit to the counter using Dow Corning RTV 731 or equivalent approved sealant.
- 4. Fill the water bath with clean water around the carbonator tank or bend back the insulation on the non-carbonated unit until it comes out the overflow tube. Make sure the overflow tube is not blocked or plugged. Use low-mineral tap water, not distilled or deionized water.



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

## GLOBAL ICE BANK CONTROL (GIBO) THEORY OF OPERATION

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

The Unit will continue to operate until ice covers all three stainless-steel pins on the ice bank control probe. The ice bank control module senses this by measuring the difference in electrical resistance between the water and the ice. When the ice on the evaporator coil becomes thick enough, it covers the three stainless-steel pins on the ice bank control probe. The control module senses there is enough ice and turns the refrigeration compressor and the condenser fan motor off.

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

(Grnelius)

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

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

- A. Remove the following:
  - Top cover by removing screws on the top and lifting up
  - key switch wires
- B. First route the new cord up behind the valve panel and through the cutout in the deck. Use the already attached wire tie/fastener on the deck to secure the cord.
- C. Connect cord to the receptacle on the refrigeration deck.
- D. Turn the circuit breaker on and then the units power switch. Check to see that the agitator motor has started. After about three minutes the compressor should start. If the agitator or compressor do not start call Technical Services.



Cord Fastener



Plug cord into Receptacle



# Connect Syrup, Water, and Carbonated Water Lines

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



- **NOTE** -- Water pipe connections and fixtures directly connected to the potable water supply must be sized, installed, and maintained in accordance with NSF Standard 18, as well as Federal, State, and Local laws and regulations.
- **NOTE** -- It is the installer's responsibility to ensure that the water supply is equipped with protection against back flow. This protection can be an air gap as defined by ANSI/ASME A112.1.2-1979, or by an approved vacuum breaker or other approved method.
- **NOTE** -- If water supply pressure to the unit is less than 40 psi, a water pressure booster is required. If water supply pressure to the unit is more than 50 psi, a water pressure regulator must be installed in the supply line.
- **NOTE** -- A water shutoff valve and water filter in the water supply line are recommended.

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



- 3. Connect optional drip tray drain hose (if used). Be sure the knock-out in the drip pan has been removed if drain hose is used.
- 4. If the unit has a built-in carbonator, connect the CO<sub>2</sub> lines. Be sure the water and CO<sub>2</sub> are on. CO<sub>2</sub> should be set at 75 psi (5.25 bar) maximum. Higher CO<sub>2</sub> pressure will result in LOWER carbonation.

Bleed the air out of the carbonator by pulling up on the metal ring on



CO<sub>2</sub> Inlet Carbonator (hold with wrench) Bleed Valve

the bleed valve. Bleed each valve into a bucket until water comes out for 2-3 seconds.

- **NOTE** -- The CO<sub>2</sub> inlet fitting is sealed inside the carbonator with an O-ring. This fitting rotates freely and must be held by a second wrench while securing the CO<sub>2</sub> inlet line.
- 5. If remote carbonator is used, be sure it is on. Bleed each valve into a bucket until carbonated water comes out.
- 6. Be sure that all syrup sources are connected and on. Bleed each valve into a bucket until syrup comes out.
- 7. Reinstall drip tray and position water bath overflow hose in drip tray indent.
- 8. Check the system for gas leaks by pressurizing the system and then turning off the cylinder valve. Wait a couple of minutes and check the cylinder gauge to see if the pressure has dropped.
- 9. Check the system for water and syrup leaks.

### **Check for Leaks**

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

## **Reinstall Panels**

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



# Adjust Water-To-Syrup Ratio

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

place of nozzle.

Water Flow Adjuster on Left



Syrup – Syrup Diversion Adjuster on Tube Right



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

## **Adjusting Flow Rates**

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

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

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

## **Electronic Control Board Function**

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

features of the control board include:

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

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

#### Ice Bank Control

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



#### **Carbonator Control**

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

#### **LED Diagnostics**

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



Functions of the LEDs are:

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

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



# NOTE

# **OPERATIONS**

**OPERATIONS** 

# **Starting And Stopping The Unit**



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

## **Dispensing Product**

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

# **Replenishing Syrup Supply**

Tank System:

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

Bag-In-Box System:

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



## **A**DJUSTMENTS

#### Water-to-Syrup Ratio Adjustment

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

# **CLEANING AND MAINTENANCE INSTRUCTIONS**

These instructions are used on all Cornelius ice drink dispensers.

Some models may have additional cleaning requirements.

Those models will have addition procedures listed later in the manual.

# WARNING:

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

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

# **A** CAUTION:

Do not use metal scrapers, sharp objects or abrasives on the ice storage hopper, top cover, agitator disc or exterior surfaces as damage to the unit may result. Do not use solvents or other cleaning agents as they may attack the material resulting in damage to the unit.

- Soap solution Use a mixture of mild detergent and warm (100° F) potable water.
- Sanitizing Solution Dissolve 2 packets (4 oz) of Stera Sheen Green Label into 2 gallons of warm (80 100° F) potable water to ensure 200 ppm of chlorine.

# DAILY CLEANING:

- 1. Remove cup rest from drip tray and clean with warm soapy water, rinse with clean water and allow to air dry.
- 2. Wipe down the exterior of the unit with warm soapy water, rinse with clean water and allow to air dry.
- 3. Remove valve nozzles and diffusers and wash in warm soapy water, rinse in clean water and allow to air dry.
- 4. Pour warm soapy water down the drains to keep them clean and flowing smoothly.
- 5. Spray the nozzles and diffusers inside and outside with approved sanitizing solution, reinstall them on the valves and allow to air dry.
- 6. Reinstall the cup rest into the drip tray.
- 7. Pour all remaining sanitizer solution down the drains to help keep the drain clear.

# **DAILY MAINTENANCE:**

- 1. Check the temperature, smell and taste of the product.
- 2. Check the water pressure coming to the unit using the pressure gauges on the back room package.
- 3. Check carbonation of the drink
- 4. Check level of CO2 supply to the system.
- 5. Check the date on all of the BIB's (bags in boxes).

Cornelius)

## MONTHLY CLEANING: (IN ADDITION TO DAILY AND WEEKLY PROCEDURES)

- Flush and sanitize all syrup lines as well as all of the syrup connectors. (See the sanitize syrup lines section shown later in this manual).
- Remove ice from hopper and clean and sanitize the hopper. (See the Cleaning the interior surfaces section shown later in this manual).
- While cleaning the hopper use the brush provided with the unit to clean the cold plate surface. To accomplish this, the brush needs to be extended through the opening in the bottom of the hopper.

## YEARLY MAINTENANCE:

- Have the water pump and check valve inspected and cleaned by a qualified service technician.
- Have the CO2 gas check valve inspected and cleaned by a qualified service technician.
- Remove the unit's splash and cold plate cover to clean and sanitize the cold plate surface. (See the cleaning the cold plate section shown later in this manual ).

## **Cleaning Interior Surfaces (Monthly Cleaning)**

# **CAUTION:**

When pouring liquid into the hopper, do not exceed the rate of 1/2 gallon per minute. Pouring more liquid into the hopper could result in an overflow situation may result in injury or damage to the equipment.

- 1. Remove agitator assembly.
- 2. Using a nylon bristle brush or sponge, clean the interior of the hopper, top cover and agitator assembly with soap solution. Thoroughly rinse the hopper, cover and agitator surfaces with clean potable water.
- 3. Reassemble agitator assembly. Take special care to ensure that the thumbscrew is tight.
- 4. Using a mechanical spray bottle filled with sanitizing solution, spray the entire interior and agitator assembly. Allow to air dry.
- 5. Remove merchandiser and ice chute cover from unit.
- 6. With a nylon bristle brush or sponge, clean the inside of the ice chute, gasket, and cover with soap solution and rinse thoroughly to remove all traces of detergent.
- 7. Reassemble ice chute assembly.
- 8. Using a mechanical spray bottle filled with sanitizing solution, spray the inside of the ice chute. Allow to air dry.
- 9. Reinstall merchandiser.

#### **Cold Plate (Yearly Maintenance)**

- 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.

### **Dispensing Valves: (Daily Cleaning)**

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



### Product Tubing (Monthly Cleaning)

# IMPORTANT: Only trained and qualified persons should perform these cleaning and sanitizing procedures.

#### Sanitize Pre-Mix And Post–Mix Tank System

- 1. Remove all the quick disconnects from all the tanks. Fill a suitable pail or bucket with soap solution.
- 2. 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.
- 3. Prepare sanitizing solution and using a mechanical spray bottle, spray the disconnects. Allow to air dry.
- 4. Using a clean, empty tank, prepare five (5) gallons of the sanitizing solution. Rinse the tank disconnects with approximately 9 oz. of the sanitizing solution. Close the tank.
- 5. Prepare cleaning tank by filling clean five (5) gallon tank with a mixture of mild detergent and potable water (120°F).
- 6. Connect a gas disconnect to the tank and then apply one of the product tubes to the cleaning tank. Operate the appropriate valve until liquid dispensed is free of any syrup.
- 7. Disconnect cleaning tank and hook up sanitizing tank to syrup line and CO<sub>2</sub> system.
- 8. Energize beverage faucet until chlorine sanitizing solution is dispensed through the faucet. Flush at least two (2) cups of liquid to ensure that the sanitizing solution has filled the entire length of the syrup tubing.
- 9. Allow sanitizer to remain in lines for fifteen (15) minutes.
- 10. Repeat the step above, applying a different product tube each time until all tubes are filled with the sanitizing solution.
- 11. Remove the nozzle and syrup diffuser and clean them in a mild soap solution. Rinse with clean water and reassemble the nozzle and syrup diffuser on the valve.
- 12. Rinse the parts in clean water, reassemble the valve and reconnect it to the dispenser.
- 13. Discard the tank of sanitizing solution and reconnect the product syrup tanks. Operate the valves until all sanitizer has been flushed from the system and only product syrup is flowing.

#### 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.

# Replenishing CO<sub>2</sub> Supply (As Required)

# NOTE: When indicator on the 1800-psi gage is in the shaded ("change CO<sub>2</sub> cylinder") portion of the dial, CO<sub>2</sub> cylinder is almost empty and should be changed.

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

# WARNING:

To avoid personnel injury and/or property damage, always secure the CO<sub>2</sub> cylinder with a safety chain to prevent it from falling over. Should the valve become accidently damaged or broken off, a CO<sub>2</sub> regulator can cause serious personnel injury or death could occur.

- 4. Position the full CO<sub>2</sub> cylinder and secure with a safety chain.
- 5. Make sure gasket is in place inside the CO<sub>2</sub> regulator assembly coupling nut, then install the regulator assembly on the CO<sub>2</sub> cylinder.
- 6. Open (counterclockwise) the CO<sub>2</sub> 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 CO<sub>2</sub> connections for leaks. Tighten any loose connections.

#### CHECKING CARBONATED WATER TANK RELIEF VALVE (MONTHLY)

The relief value on top of the carbonated water tank under the waterbath cover should be periodically checked for proper operation by briefly pulling up on the relief value ring.

# Double Liquid Check Valve Inspection & Cleaning



**CAUTION** — The carbonator double-liquid check valve must be inspected after any disruptions to the water supply system (plumbing work, earth quakes, etc.) It should also be inspected at least once a year under normal conditions. If particles lodge in the check valve CO<sub>2</sub> gas could back flow into the water system and create a health hazard.



### WARNING

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

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

- 1. Disconnect the water line from the double check valve then remove the check valve.
- 2. Disassemble the check valve. Clean and inspect each part, especially check the ball for damage. Replace damaged or suspicious parts.
- 3. Always install a new seat (p/n 315-250-12).
- 4. Reassemble and install the check valves.
- 5. Turn on the CO<sub>2</sub>, syrup, and water supplies, and reconnect the electrical power.

### **Condenser Cleaning**

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

### 

Water and CO2 to the system must be turned off and the system depressurized prior to performing this service.

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

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

# SERVICE



**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.

# PREVENTATIVE MAINTENANCE Preventative Maintenance Summary

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

#### SANITIZING

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

### **DOUBLE LIQUID CHECK VALVE INSPECTION & CLEANING**

Refer to Section OPERATION (page 22).

#### **CHECK FOR LEAKS**

Refer to Section INSTALLATION (page 14).

### CHECK RATIO

Refer to Section INSTALLATION (page 15). Should be done whenever flavors are changed or any service is preformed.

### **CLEAN CONDENSER**

Refer to Section OPERATION (page 22).

### **CLEAN BIB CONNECTORS**

Refer to Section OPERATION (page 21).

#### ADJUSTMENTS

### **CO<sub>2</sub> Connection**

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



**WARNING** — To avoid personal injury and property damage always secure CO<sub>2</sub> cylinder in upright position with a safety chain to prevent it from falling over.



**WARNING** —  $CO_2$  displaces oxygen. Persons exposed to high concentrations of  $CO_2$  will experience tremors, followed by loss of consciousness and death. It is very important to prevent  $CO_2$  leaks, especially in small unventilated areas. If a  $CO_2$  leak occurs ventilate the area before fixing the leak.

## Primary And secondary CO<sub>2</sub> Regulator Settings

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

**NOTE** -- The Colt dispenser with integral cold carbonator

requires CO<sub>2</sub> supply pressure of 75 psi (5.2 bar).

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

# TROUBLE SHOOTING

**IMPORTANT** -- Only a service person should service internal components or electrical wiring.

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

**IMPORTANT** -- If repairs will be made to the  $CO_2$  or carbonated water systems, disconnect electrical power to the carbonator, shut off  $CO_2$  and water supplies, then bleed systems before proceeding.

# 

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

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

# 

Water and CO2 to the system must be turned off and the system depressurized prior to performing this service.

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

TROUBLESHOOTING POST-MIX SYSTEM			
Trouble	Probable Cause	Remedy	
Adjustment of dis- pensing valve syrup flow regulator does not increase to	<ol> <li>No syrup supply.</li> <li>Syrup supply container not securely connected into system.</li> </ol>	<ol> <li>Replenish syrup supply.</li> <li>Securely connect syrup supply container into syrup system.</li> </ol>	
desired water-to syrup ratio.	<ol> <li>Tanks System-Syrup tanks secondary CO<sub>2</sub> regulator out of adjust- ment.</li> <li>Bag-in-Box System- Primary CO<sub>2</sub> regulator out of adjustment.</li> </ol>	<ul> <li>3. Adjust syrup tanks secondary CO<sub>2</sub> regulator as instructed.</li> <li>Adjust primary CO<sub>2</sub> regulator as instructed.</li> </ul>	
	<ol> <li>Inoperative dispensing valve syrup flow control.</li> <li>Tapered washer inside tube swivel nut connec- tion distorted from being over tightened restricting syrup flow.</li> </ol>	<ol> <li>Repair dispensing valve syrup flow control.</li> <li>Replace tapered gasket. Make sure it seatsproperly.</li> </ol>	

TROUBLESHOOTING POST-MIX SYSTEM			
Trouble	Probable Cause	Remedy	
Adjustment of dispensing	1. Dirty or inoperative	1. Disassemble and clean	
valve syrup flow regulator	dispensing valve syrup	dispensing valve syrup flow	
does not decrease to	flow control.	control.	
desired water-to-syrup			
ratio.			
Dispensed product	1. Primary CO <sub>2</sub> regulator	1. Adjust primary CO <sub>2</sub> regulator.	
carbonation too low.	out of adjustment for	As instructed.	
	existing water conditions		
	or temperature.		
	2. Air in carbonator water	2. Vent air out of carbonator	
	tank.	water tank through relief valve.	
	3. Water, oil, or dirt, in CO <sub>2</sub>	3 .Remove contaminated CO <sub>2</sub> .	
	supply.	Clean CO2 system (lines,	
		regulator, etc.) using a mild	
		detergent. install a clean CO <sub>2</sub>	
		supply.	
Dispersed product someo	1. Oil film or open cours in		
Dispenseu product comes		1. Use clean cups of glasses.	
out of dispensing valve	cups of glasses.		
	2 loo yood for finished	2. Do not use iso directly from	
giass.	z. ice used for infished	2. Do not use ice directly nom	
		"wet" before using (refer to	
		following NOTE)	
<b>NOTE</b> : Crushed ice also causes dispensing problems. When finished drink hits			
sharp edges of ice, carbonation is released from dispensed drink.			

TROUBLESHOOTING POST-MIX SYSTEM			
Trouble	Probable Cause	Remedy	
Dispensed product	1. Recovery rate of refrigeration	1. Allow ice bank to recover.	
produces foam as it	of system exceeded, ice bank		
leaves dispensing	depleted.		
valve.			
	2. Primary CO2 regulator pressure	2. Reduce primary CO <sub>2</sub>	
	too high for existing water condi	regulator pressure	
	tions or temperature.	settings.	
	<ol> <li>Tanks System-Syrup over- carbonated with CO<sub>2</sub> as indicated by bubbles in inlet syrup lines leading to unit.</li> </ol>	<ol> <li>Remove syrup tanks quick disconnects.</li> <li>Relieve tank CO<sub>2</sub> pressure as many times as necessary to remove over-carbonation.</li> </ol>	
	<ol> <li>Dispensing valve restricted or dirty.</li> </ol>	<ol> <li>Sanitize syrup system as instructed in Operation Section.</li> </ol>	
	5. Tapered gasket inside carbonated water line swivel nut connector distorted restricting carbonated water flow.	<ol> <li>Replace tapered gasket. Make sure it is properly seated.</li> </ol>	
	6. Dirty water supply.	<ol> <li>Check water filter. Replace cartridge.</li> </ol>	

TROUBLESHOOTING POST-MIX SYSTEM			
Trouble	Probable Cause	Remedy	
Only syrup dispensed.	<ol> <li>Water inlet supply line shutoff valve closed.</li> <li>Carbonator not operating.</li> <li>Primary CO<sub>2</sub> regulator</li> </ol>	<ol> <li>Open water inlet supply line shutoff valve.</li> <li>Restore carbonator operation.</li> <li>Adjust primary CO<sub>2</sub></li> </ol>	
	not properly adjusted.	regulator as instructed.	
Dispensed product carbonation too low.	<ol> <li>Primary CO<sub>2</sub> regulator out of adjustment for existing water conditions or temperature.</li> </ol>	<ol> <li>Adjust primary CO<sub>2</sub> regulator as instructed.</li> </ol>	
	2. Air in carbonated water tank.	2. Vent air from carbonated water tank by dispensing from No. 1 dispensing valve to make carbonator water pump motor cycle on.	
	3. water, oil or dirt in CO2 supply.	<ol> <li>Have service person remove contaminated CO<sub>2</sub> supply, then clean CO<sub>2</sub> system (lines, regulator, etc.) using a mild detergent. install a clean CO<sub>2</sub> supply.</li> </ol>	

TROUBLESHOOTING CARBONATOR		
Trouble	Probable Cause	Remedy
Carbonator pump	1. CO₂ supply depleted.	1. Replenish CO <sub>2</sub> supply.
	2. Water supply to carbonator disrupted.	<ul> <li>2. Correct water supply problem.</li> <li>LED Flashing = The anti-flood timer has expired, the controller assumes a tube or connector is broken.</li> <li>Power to the carbonator motor is shut off and the unit needs to be shut down to reset.</li> </ul>
	<ol> <li>Carbonated water tank water level probe electrical wiring disconnected.</li> </ol>	3. Connect electrical wiring to water level probe (see note).
	4. Inoperative carbonated water tank water level probe.	4. Replace probe (see note).
	5. Inoperative carbonator pump or motor.	5. Replace pump or motor.
	6. Inoperative control board.	6. Replace control board.

TROUBLESHOOTING REFRIGERATION SYSTEM				
Trouble	Probable Cause		Remedy	
Refrigeration	1.	Ice bank sufficient.	1.	No refrigeration called for.
compressor	2.	No water in water tank.	2.	Fill water tank with water as
does not	3.	Control board power switch on		instructed.
operate.		top of unit in "OFF" position.	3.	Place control board power
				switch in "ON" position
				(will be a built-in 3-minute
				time delay before refrigera-
				tion compressor starts).
	4.	Unit power cord un-plugged, or	4.	Plug in power cord.
		drop-in refrigeration assembly		
		power cord unplugged.		
	5.	Ice sensor electrically	5.	Electrically connect or
		disconnected.		replace inoperable sensor.
	6.	No power source (blown fuse	6.	Replace fuse or reset circuit
		or tripped circuit breaker).		breaker. (Note: Fuse or
				circuit breaker are not part of
				unit).
	7.	Low/high voltage.	7.	Voltage must be 220-
				240 Volts.
	8.	Loose, disconnected, or broken	8.	Tighten connections or
		wiring .		replace broken wiring.
	9.	Overload protector cut out;	9.	Compressor will cool enough
		overheated compressor.		to restart, DO not overdraw
		Condenser fan motor not		cooling capacity of unit.
		operating as required.		
				Refer to "Condenser Fan
				Motor Not Operating " in this section.
	10	. Inoperative overload protector	10.	Replace inoperative part.
		or start relay.		
	11.	Inoperative ice bank probe.	11.	Replace ice bank probe.
	12	. Inoperative control board.	12.	Replace control board.

TROUBLESHOOTING REFRIGERATION SYSTEM					
Trouble	Probable Cause	Remedy			
Compressor will not	1. Ice bank probe location	1. Place probe in proper			
stop after sufficient ice	incorrect.	location.			
bank is produced.	2. Ice temperature sensor	2. Replace ice temperature			
	inoperative.	sensor.			
	3. Control board inoperative.	3. Place power switch in			
		ON position.			
Compressor operates	1. Cooling capacity is exceeded by	1. Reduce amount of			
continuously but does	overdrawing.	drinks drawn per given			
not form sufficient		time.			
bank.	2. Unit located in excessively hot	2. Relocate unit or check			
	area or air circulation through	and if necessary, clean			
	condenser coil is restricted.	condenser coil as			
		instructed.			
Agitator motor not	1. No power source (blown fuse or	1. Replace fuse or reset			
operating.	tripped circuit breaker).	circuit breaker.			
		(NOTE: Fuse or circuit			
		breaker are not part of			
		unit).			
	2. Agitator motor propeller	2. Remove obstruction.			
	obstructed.				
	3. Low Voltage.	3. Voltage must be at			
		220~230VAC			
		unit) at compressor			
		terminals when com-			
		pressor is trying to start.			
	4 Loose disconnected or broken	4 Tighten connections or			
	wiring	replace broken wiring			
	5 Inonerative agitator motor	5 Replace agitator motor			



# NOTE

# **COMPONENT SERVICE**

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

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



Water and CO2 to the system must be turned off and the system depressurized prior to performing this service.

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

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

## **CARBONATOR PUMP REPLACEMENT**

- 1. Disconnect power to the unit.
- 2. Shut off water and CO2 at their sources.
- 3. Remove the following:
- front merchandiser by removing screws on the top and lifting up
- · key switch wires
- hood by removing screws on the top and lifting up and forward.
- Depressurize carbonator by removing the solenoid dust cover from any dispensing valve and push down on the solenoid.

Press Valve Solenoid to Depressurize



5. Disconnect water in and out lines.



Cornelius,

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

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



Water and CO2 to the system must be turned off and the system depressurized prior to performing this service.

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

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



Pump V - Band -

- 7. Install new pump by reversing this procedure.
  - **NOTE** -- Be sure there is anti-seize compound on the pump drive tang.

Pump Tang ~



# PUMP MOTOR REPLACEMENT

- 1. Disconnect power to the unit.
- 2. Remove the following:
- front merchandiser by removing screws on the top and lifting up
- key switch wires
- hood by removing screws on<sup>1</sup>the top and lifting up and forward.

<sup>°</sup> '' ' g motor harness.

n the V - band clamp and remove pump.



Pump V - Band

(Grnelius)

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

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



Water and CO2 to the system must be turned off and the system depressurized prior to performing this service.

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

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



two Bolts in front and two in Back of Motor

- 6. Install new motor by reversing this procedure.
  - **NOTE** -- Be sure there is anti-seize compound on the pump Pump Tang drive tang.

# AGITATOR MOTOR REPLACEMENT

- 1. Disconnect power to the unit.
- 2. Remove the following:
- · front merchandiser by removing screws on the top and lifting up
- key switch wires
- hood by removing screws on the top and lifting up and forward.
- 3. Unplug motor harness.
- 4. Remove mounting screw.
- 5. Slide motor out of retainer slots and lift up.





(Cornelius)

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

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



Water and CO2 to the system must be turned off and the system depressurized prior to performing this service.

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

6. Install new motor by reversing this procedure.

## **CONTROLLER BOARD REPLACEMENT**

- 1. Disconnect power to the unit.
- 2. Remove the following:
- · front merchandiser by removing screws on the top and lifting up
- key switch wires
- hood by removing screws on the top and lifting up and forward.
- Screw on PCB cover
- 3. Push the cover off as arrow direction. Screw
- 4. Unplug all connectors.
- 5. Squeeze all four standoffs and remove the board.

Connector in each Corner



6. Install new controller board by reversing this procedure.

# ARNING

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

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



Water and CO2 to the system must be turned off and the system depressurized prior to performing this service.

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

## **CONDENSER FAN MOTOR REPLACEMENT**

- 1. Disconnect power to the unit.
- 2. Unplug motor harness.
- 3. Remove Four screws on mounting bracket.
- Four Screws



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

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

6. Install new motor by reversing this procedure.



© 2010, IMI Cornelius Inc.

Cornelius,

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

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



Water and CO2 to the system must be turned off and the system depressurized prior to performing this service.

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



**WARNING** -- If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.

# POWER CORD REPLACEMENT

- 1. Disconnect power to the unit.
- 2. Remove the following:
  - Top cover by removing screws on the top and lifting up
  - key switch wires

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

4 A. Route the new power cord along the same path as the old one (removing the old cord as

you go).

Route Cord Up and Behind Valve Panel



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



Cord Fastener

Plug Cord into\_\_\_\_ Receptacle



(Grnelius)







-		
No	Part No.	DESCRIPTION
1		Chasis Rfg. Assy.
2	890511110	CUP REST
3	890517201	TRAY
4	890511108	TRAY BRACKET
5	890511109	6 VALVE PANEL
6	890511105	FRONT PANAL
7	890511107	LID UPPER
8	890511106	LID SIDE
9	890517301	WATER BATH
10	890511104	WRAP
11	310445000	BATH FALL TUBE





No	Part No.	DESCRIPTION
1	890512401~6	SYRUP COIL
2	890516706	COIL BRACKET
3	890512413	
4	890512501	MANIFORM TUBE-1
5	890512407	WATER COIL-1
6	890512503	WATER INLET TUBE
7	890512412	WATER COIL CENTRE
8	890517611	MANIFOLD
9	890512414	CARB-BLOCK TUBE
10	71860230	SAFETY VALVE
11	77068200	T FITTING

No	Part N	No.	DESCRIPTION
12	89051440	)6	PROBE
13	89051230	)1	CO2 TUBE



### FIGURE 4. PUMP AND MOTOR ASSEMBLY

No	Part No.	DESCRIPTION
1	560004940	MOTOR
2	620608773	CHECK VALVE
3	111337000	FITTING
4	60170	PUMP
5	187483000	CLAMP



FIGURE 5. REFRIGERATION ASSEMBLY

No	Part No.	DESCRIPTION
1	890513501	EVAPORATOR ASSY
2	560002114	TRANSFORMER
3	318168002	Agitator Motor
4	449999973	РСВ
5	560002735	Switch
6	3600	Agitator Blade
7	580450066	DRYER
8	890513201	DISCHARGE TUBE
9		STORAGE TANK
10	2RW237A	CAPILLARY
11	890515201	COMPRESSOR

No	Part No.	DESCRIPTION
12	4556	Handle
13	560003860	ICE Bank Probe
14	890511102	SEAT SENSE POLE
15	2RFO96A-AL	CONDENSER
16	856012045	Fan Blade
17	890514101	FAN MOTOR

(Cornelius)

# **REFERENCE MATERIAL**

# WIRING DIAGRAM







CO2

PURE WATER

PLAIN WATER SODA

> SYRUP CO2

ı.

45

ı.



# NOTE

IMI Cornelius Inc. www.cornelius.com