变 更 记 录

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Titan R290

POST-MIX BEVERAGE DISPENSER
Installation, Operation & Service Manual

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Revision: A

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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 con- struction 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 sub- ject 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 con- tact:

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This document contains the original instructions for the unit described.

CORNELIUS INC

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Tianjin, PRC 300457

Correct Disposal of this Product

This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling

TABLE OF CONTENTS

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.
- **Must wear gloves when the technicians start to service or maintain .**

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

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.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- 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.**

Unit contains flammable refrigerant. Care to be taken while handling, moving and use of the unit to avoid either damaging the refrigerant tubing or increasing the risk of a leak.

SAFETY PRECAUTIONS

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

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

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

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

SHIPPING AND STORAGE

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

CO_2 (CARBON DIOXIDE) WARNING

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

POWER CORD

If the power cord is damaged, it must be replaced by a special cord available from the manufacturer or its service agent. Detachable cord sets should meet the below requirements:

- Cord type should be H05VV-F or stronger, with earthing conductor;
- Cord section should be minimum nominal cross-sectional area of 1.0mm^2;
- Plug should also be earthing type and obtain approval with above cord.

SOUND LEVEL

The A-weighted sound power level has been determined to be below 65dBA.

UNIT LOCATION

This unit is not designed for use in outdoor locations.

CAUTION:
Appliance is not suitable for installation in an area where a water jet could be used.

CAUTION:
The appliance must be placed in a horizontal position.

GENERAL INSTRUCTIONS

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 Titan 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 Titan over the counter, post-mix, beverage dispenser is compact, lightweight, and can be ordered with or without a built-in carbonator. Syrup pump kits are available for the units.

Titan -6valves

Titan units may be island mounted or installed on a front or rear counter. The 1/3 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.

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

- Key-lock switch
- Circuit breaker
- Lighted merchandiser
- Built-in carbonator
- Syrup pump kit (optional)
- Removable refrigeration deck (s)
- Removable drip tray

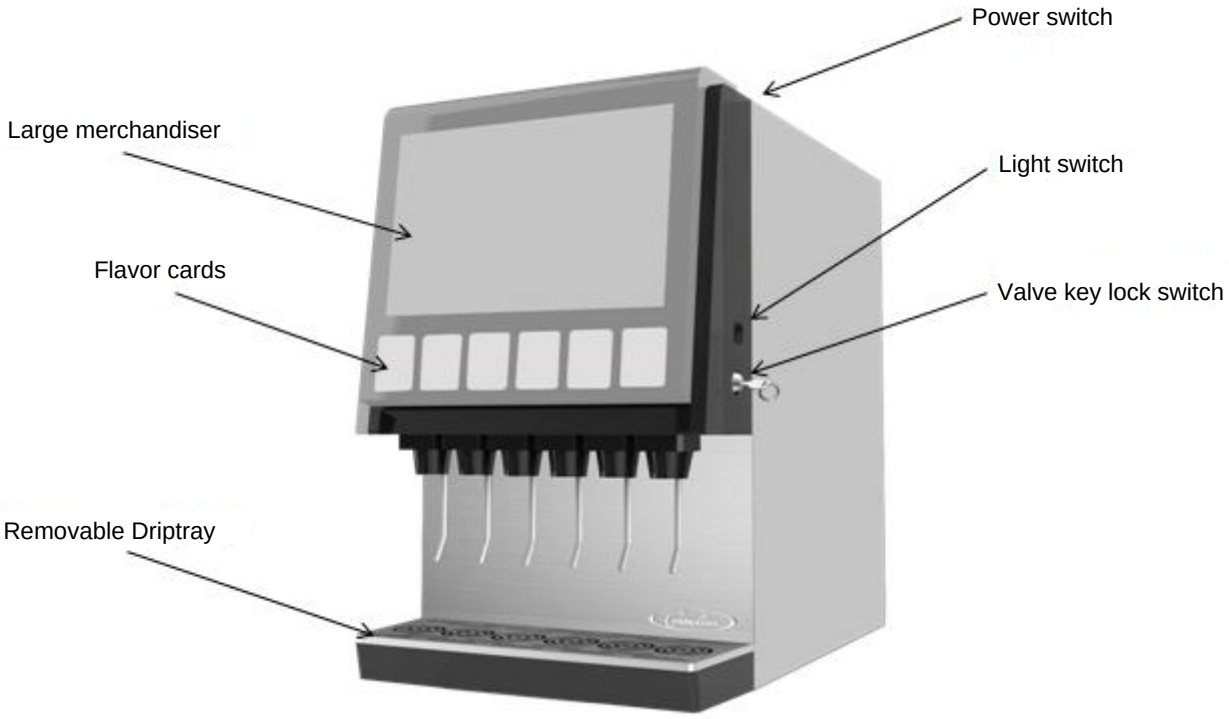


Figure 1

UNIT SPECIFICATION

The Titan is an over counter Ice bank system beverage dispenser. It contains six valves for drink dispense. Valve number 3,4 and 5 can be converted from carbonated drink to non-carbonated drink dispense.

Table1

Height	33 inches	843mm
Width	18 inches	460mm
Depth	29 inches	743mm
Shipping weight(approx)	142Pounds	65Kg
Water Bath Size	13 gal (US)	48L
Ice Bank Weight	26.5lb	12Kg

Part Numbers

60 Hz Model, 120 VAC see nameplate
60 Hz Model, 220 VAC see nameplate
50 Hz Model, 230 VAC see nameplate

CAPACITY

Assuming:

- 3 oz./sec. (85g / sec.) dispensing rate
- 105° F (40° C) ambient temperature
- Two 12-oz. (340g) drinks per minute
- Drink temperature ≤40°F (4.4°C) for CSD and NCB

Draw Capacity:

50 cups at 12OZ/cup per minute at 105° F(40° C) ambient
126 cups at 12OZ/cup per minute at 90° F(32.2° C) ambient

Miscellaneous Information

Refrigerant.....R290
Compressor HP.....1/3+
Design Valve Flow Rate.....85 g/sec (128 max) (3.0 oz./sec <4.5 max>)
Standard Valve.....SFV,LEV,LVV...
Cup Clearance.....250 mm (9.8 inches)
Safety Approvals.....CE,UL
Sanitary Approvals.....ETL Sanitation (NSF 18)
Electronic Controls.....Electronic ice bank and liquid level control

Accessories

Legs (optional), order 4 ea. — P/No 70970

THEORY OF OPERATION

NOTE: The unit is factory set to dispense carbonated water as per customer's requirement. it is available to dispense at most 3 non-carbonated waters with carbonated water dispensing from the remaining valve(s). Non-carbonated water dispensing valve(s) may be converted to also dispense carbonated drink(s).

A CO_2 cylinder delivers carbon dioxide (CO_2) gas through adjustable CO_2 regulators to the applicable syrup tanks or bag-in-box syrup pumps and also the integral (built-in) carbonator. Plain water enters the integral carbonator carbonated water tank and is carbonated by CO_2 gas pressure also entering the water tank. When dispensing valve is activated, CO_2 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_2 gas head pressure and is pushed through the carbonated water manifold to the dispensing valve. Syrup and carbonated water meet simultaneous 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.

Notes

INSTALLATION

CAUTION:
Only trained and certified electrical, plumbing and refrigeration technicians should service this unit.

CAUTION:
This appliance is for indoor use only.The appliance is only to be installed in locations where its use and maintenance is restricted to trained personnel.

ALL WIRING AND PLUMBING MUST CONFORM TO NATIONAL AND LOCAL CODES.

WARNING:
It is the responsibility of the installer to ensure that the water supply to the dispensing equipment is provided with protection back flow by an air gap as defined in ANSI A 112.1.2-1979; 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.

DELIVERY INSPECTION AND UNPACKING

Each unit is completely tested thoroughly and inspected before shipment. Upon receiving the units from shipment carrier, carefully inspect the unit for visible indication of damage. If any damages exist, file a claim with the shipment carrier.

Table2

Accessories	Part No.	Quantity
Cup rest	890531197	1
Power cord		1
Drain Hose	50119	1
Clamps	70339	2
Decals	Varies with dispenser	1 set
Manual	890539401	1

DIMENSIONS

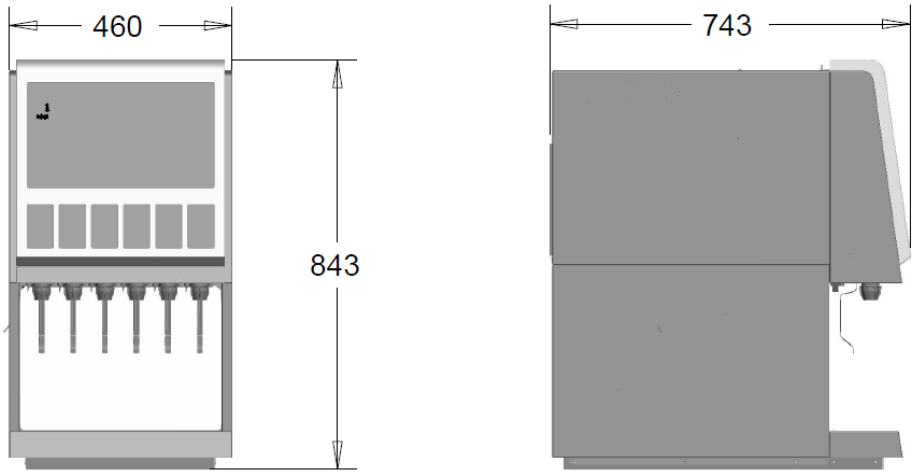


Figure 2

INSTALLATION REQUIREMENTS

Table3

Weight	Front or rear counter must be level and able to support 400 lbs.(180Kg)
Environment	Indoor installation only
Temperature	39 to 110° F (4to 43℃)ambient temperature
Clearance	18-inches(450mm) above and 6-inches(150mm) beside
CO2	75 psig (5.25 bar) at unit with internal carbonator
Syrup	60 psig(4.5bar)
Water	20~65 psig(1.4~4.5bar)
Electrical	See nameplate on unit for electrical requirements

ELECTRICAL REQUIREMENTS

WARNING:

Before connecting electrical power to the unit refer to nameplate to verify power requirements. To avoid possible serious injury or death the ELCB (earth leakage circuit breaker) must be installed in electrical circuit of all 50 Hz units.

WARNING:

To avoid possible electrical shock the unit must be electrically grounded using the green grounding screw provided inside the electrical contractor box.

CAUTION:

The wiring must be properly grounded and connected through a 15-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.

ELECTRICAL 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 6 - inch (0.15 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 — Avoid spillage into the top vents.

INSTALLATION PROCEDURE

Counter-top Installation

NOTE: Optional 4-inch legs (P/N 70970) will elevate the unit 4 inches above the counter (order 4 legs).If the unit is installed without legs, the gaps must be sealed with RTV.

WARNING:
The unit is heavy and extreme care should be taken when moving or lifting the unit. Do not attempt to lift the unit manually.

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

Counter-top Installation

1. Place the unit on a level counter capable of supporting at least 400 pounds (180 kg).

2. Remove drip tray and front access panel.(push up and pull out the splash panel)

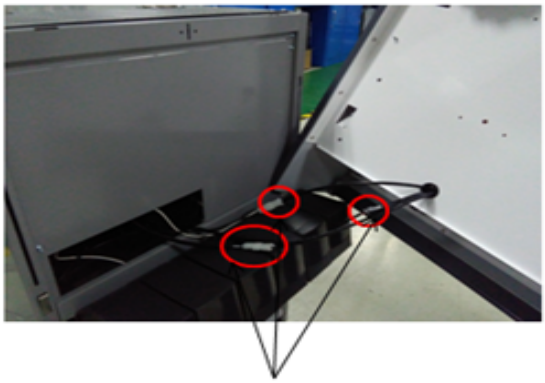
Figure 3 Remove the Drip tray

Figure 4 Remove the Splash panel

3. Do not insert the power cord plug before installation. Remove front merchandiser, disconnect wires to valve key lock switch, and light switch.

Move up the merchandiser

The clamp popup and support the merchandiser



Disconnect the Light power,valve power inlet and valve harness housing

Figure 5

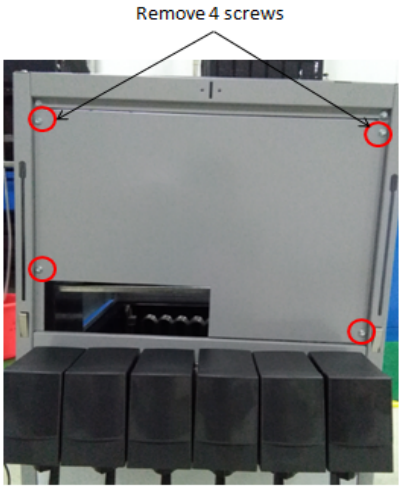


Figure 6

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

4. Pull water, syrup, and CO2 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, or the unit can be installed using the optional 4-inch legs (P/N 70970). Caulk/seal the unit to the counter using Dow Corning RTV 731 or equivalent approved sealant.

5. 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.

Figure 7

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

6.Re-install the red cap ,screws on the panel .
7.Connect the light ,valve harness and install the merchandiser.

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.

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.

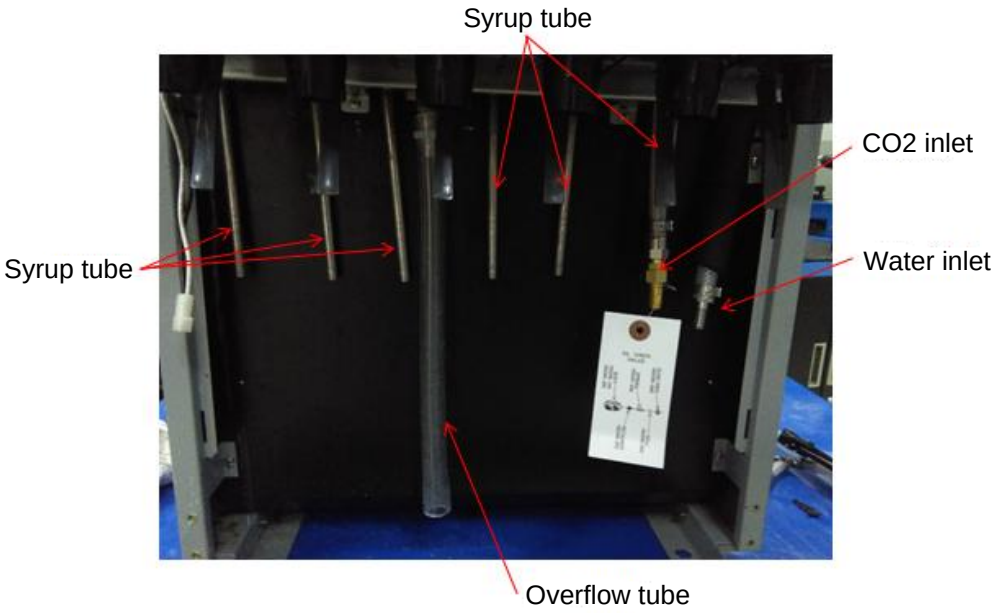


Figure 8

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 supplyis 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 20 psi, a water pressure booster is required. If water supply pressure to the unit is more than 65 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.

NOTE-- Connect the CO2 lines. Be sure the water and CO2 are on. CO2 should be set to 75 psig (5.25 bar) maxi- mum. Higher CO2 pressure will result in lower carbonation.

2. Connect optional drip tray drain hose (if used). Be sure remove the black cap if the drain hose is used.
3. Connect the CO2 lines. Be sure the water and CO2 are on.

CO2 should be set at 75 psi (5.25 bar) maximum. Higher CO2 pressure will result in LOWER carbonation.

CO2 Inlet Carbonator.

Bleed the air out of the carbonator (hold with wrench) Bleed Valve by pulling up on the metal ring on the bleed valve. Bleed each valve into a bucket until water comes out for 2-3 seconds.

NOTE: The CO_2 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_2 inlet line.

4. Be sure that all syrup sources are connected and on. Bleed each valve into a bucket until syrup comes out.
5. Reinstall drip tray and position water bath overflow hose in drip tray indent.
6. 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.

7. Check the system for water and syrup leaks.

Primary and Secondary CO_2 Regulator Settings

1. Open CO_2 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).
2. Adjust the cylinder CO_2 regulator to 5.2 bar (75 psi) for bag-in-box applications, 2.8 bar (40 psi) for sugar base tank applications and 0.69 bar (10 psi) for diet base tank applications.
3. The Blu-CE dispenser with integral cold carbonator requires CO_2 supply pressures of 5.2 bar (75 psi).
4. Bleed air from the lines with the carbonator tank relief valve.
5. Check the system for gas leaks.

Connect Electrical Power

NOTE: Before connecting electrical power to the dispenser, refer to nameplate to verify the power requirements.

1. Make sure that the electrical power circuit breaker is switched off or the fuse removed.
2. Plug the dispenser into the power receptacle.

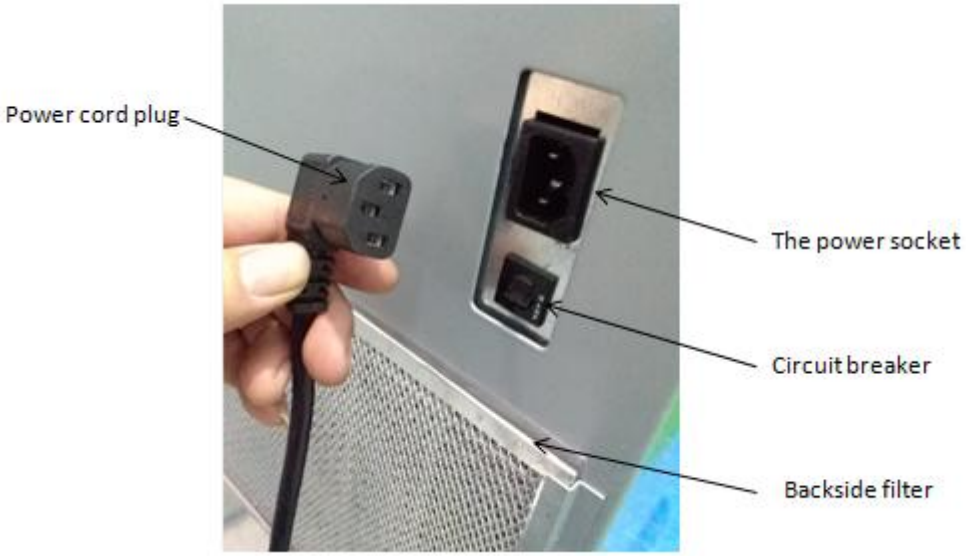


Figure 9

3. Turn electrical power ON

Check for Leaks

1. Bleed air from the lines by activating dispensing valves.
2. Remove air from carbonator (if dispenser has built-in carbonator) by opening carbonator relief valve until water escapes.
3. Check the system for CO_2 leaks by pressurizing and then turning off the cylinder valve. Wait at least two minutes and check the cylinder pressure gauge (1800 psi gauge) to see if the pressure has dropped.
4. Check the system for water and syrup leaks.

Reinstall Panels

1. Shut the power off at the circuit breaker or fuse. Then reinstall top panel, close front merchandiser panel, and front splash panel.

2. Turn power ON.
3. Check to see that the refrigeration system started after the built-in 3 minute delay.
4. Allow dispenser to form an ice bank before dispensing beverages. This will take 3-6 hours.

Adjust Water-To-Syrup Ratio

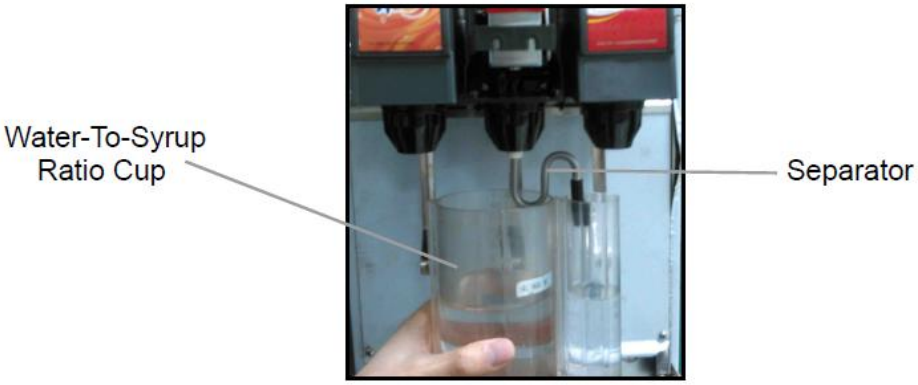


Figure 10

1. Remove valve cover and install syrup separator in place of nozzle.
2. Hold cup under valve and dispense beverage for a specific time (such as 4 seconds).
3. NOTE: Water and syrup must be cold before checking ratios.
4. Adjust carbonated water flow to the desired rate (such as 74 ml (2.5 oz) per second).
   Turn the flow adjuster 1/4 of a turn at a time and recheck the flow.To increase reading turn clockwise.
5. Next set syrup flow adjuster to get the desired ratio.
6. Test the valve and adjust until a consistent ratio is delivered three consecutive times.
7. Repeat procedure for other valves.

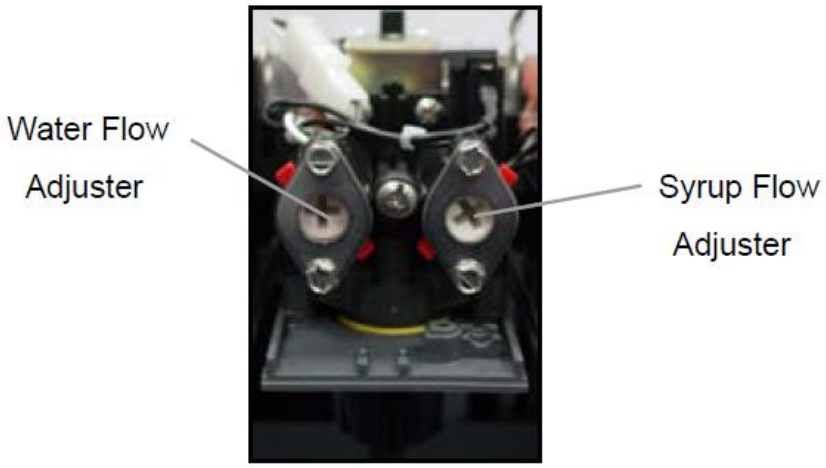


Figure 11

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. and the syrup flow rate is 0.5 Oz./sec (The water at 2.5 Oz./sec. is five times the 0.5 Oz./sec. syrup flow rate).

Table 4. Flow Rates Oz./sec. Based on 5:1 Ratio

Finished Drink Oz./Sec.	Water Oz./Sec.	Syrup Oz./Sec.
1.5	1.25	0.25
2.0	1.67	0.33
2.5	2.08	0.42
3.0	2.5	0.50

Electronic Control Board Function

An inte grated circuit board and microprocessor are used to control the electrical functions of the 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

Input s 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.

Voltage Cutout Protection

The control board monitors the input line for high and low voltage conditions. If the voltage is outside of the acceptable range, the control will not allow certain operations (to protect motors from damage).

LED Diagnostics

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

Figure 12

Functions of the LEDs are:

• Red and Green OFF = no power to the dispenser
• Green ON = line voltage is within acceptable range•
Red LED 1 ON = The pump is working ,when the led flash means that working time more than 3min.
Red LED 2 ON = The compressor is working after 3min startup delay period.
The LED has been flashed in 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 1 Flash). To reset the control board toggle the main power switch OFF, wait 15 seconds, then toggle to ON.

OPERATION

INSTRUCTIONS

Push power ON/OFF switch to ON to power on the unit.

Dispensing Product

To dispense beverage press drink container 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_2 tube.
2. Rinse the disconnects in warm water to remove any syrup residue.
3. Move a full tank into position and connect the CO_2 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.

ADJUSTMENTS

Water-to-Syrup Ratio Adjustment

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

CLEANING AND CHECKS

Daily Cleaning

1. Remove nozzle assembly and rinse with warm (not hot) water. It is recommended to soak nozzle assembly over night in carbonated water then rinse with warm water.
2. Wash external surfaces with mild soap solution, rinse with clean water, and wipe dry. Remove the drip tray, wash with mild soap solution, rinse and dry.

NOTE: Do not use abrasive or harsh cleaners on the unit.

Daily Checks

1. Check CO2 supply.
2. Check syrup supply.

Sanitizing Syrup Systems

The syrup systems should be sanitized at least every 120-day and before or after storage. Prepare the sanitizer and detergent solutions as per the instructions below.

Sanitizer solution: Using a clean empty syrup tank, mix a non-scented liquid household bleach containing a 5.25% sodium hypo chlorite concentration in one gallon of 70°F - 100°F (20°C - 38°C) potable water.

Detergent solution: Using a clean empty syrup tank, mix 1/2 oz. (14 g) liquid dish washing detergent per gallon of 70°F - 100°F (20°C - 38°C) potable water. Shake tank to mix.

Sanitizing Syrup Tank Systems

CAUTION:

To avoid possible personal injury or property damage, DO NOT remove the syrup tank cover until CO2 pressure has been released from the tank.

1. **Disconnect Syrup:** Remove quick disconnects from syrup tanks and rinse in potable water.

2. **Wash System**
   A. Connect the tank containing the detergent solution to one of the syrup circuits.
   B. Place the waste water container under dispensing valve. Dispense for one minute to purge all syrup from the circuit.
   C. Repeat this process for each syrup circuit.
3. **Flush System**
   A. Connect a tank containing clean potable water to syrup circuit and pressurize to 60-80 psi. (4-5.5 bar).
   B. Place the waste container under dispensing valve. Dispense from the valve for one minute to flush the circuit.
   C. Repeat this process for each syrup circuit.
4. **Sanitize System**
   A. Connect the tank containing the sanitizer solution to syrup circuit and pressurize to 60-80 psi. (4-5.5 bar).
   B. Place the waste container under dispensing valve. Dispense from the valve for till the sanitizing solution is dispensed for 30 seconds.
   C. Allow the sanitizing solution to remain in circuits for at least 10 minutes but no more than 15 minutes.
   D. Dispense from the valve until the whole sanitization solution is used up.
   E. Repeat this process for each syrup circuit.
5. **Flush System**

   IMPORTANT: The flushing solution must not exceed 200 PPM chlorine.
   A. Connect a tank containing clean potable water to the syrup circuit and pressurize to 60-80 psi. (4-5.5 bar).
   B. Place waste container under dispensing valve. Dispense from the valve for one minute to flush the circuit.
   C. Repeat this process for each syrup circuit.

CAUTION:

Flush the system thoroughly, residual sanitizing solution left in the system could create a health hazard.

Sanitizing Bag-In-Box Syrup System

To sanitize a Bag-in-Box system follow the same procedure as the tank system described above, with following exceptions:

1. Use a clean container (like a 5 gallon (20 l) plastic bucket) to mix solutions and hold flushing water.
2. Cut bag valves from empty BIB containers. Clean them and connect them to the ends of the syrup lines.
3. Place syrup lines with bag valves into the container of solution.

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 CO2 gas could back flow into the water system and create a health hazard.

1. Shut off CO2, syrup, and water supplies to the unit.
2. Disconnect the water line from the double check valve then remove the check valve.
3. Disassemble the check valve. Clean and inspect each part, especially check the ball for damage. Replace damaged or worn out parts.
4. Always install a new seat (P/N 315-250-12).
5. Re-assemble and install the check valves.

6. Turn on the CO2, 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.

1. Unlock and Lift the merchandiser
2. Vacuum or use a soft brush to clean condenser coil. If available, use low pressure compressed air.
3. Clean around top of refrigeration assembly.
4. Close the merchandiser and lock it.

Clean Air Filter

CAUTION:

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

1. Disconnect electrical power to the dispenser.
2. Remove the air filter through the cut out on top panel.
3. Vacuum and use soft brush to clean the filter.
4. Place the cleaned filter back in position.

Sanitizing by Diversol CX

Melt the Ice bank on the evaporator and Discharge the water in the water bath before starting the following sanitation solution.

1. Mix Diversol CX with 40~50℃water (150g/10L) to make sanitation solution.
2. Sanitizing syrup and water system by below steps:
   1) Use water to clean the system continuously by 10 minutes.
   2) Sanitizing by sanitation solution, and keep the solution in all position of system for 60 minutes.
   3) Use sanitation solution to clean the system continuously by 10 minutes.
   4) Sanitizing by sanitation solution, and keep the solution in all position of system for 60 minutes.
3. Use water to clean syrup and water system continuously by below steps:
   1) Step1. Clean continuous by 3 minutes and pause for 5 minutes.
   2) Step2. Repeat the first step 10 times.
4. Drop first 3 cups of drinking.

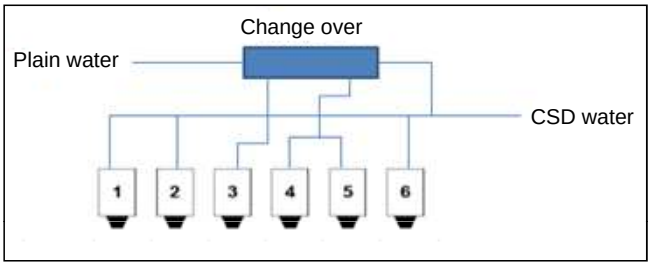
CSD/NCB conversion(optional configuration)

The Titan unit has 2 kinds of configuration:

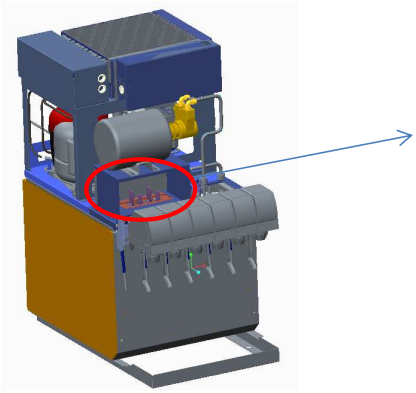
1.All CSD version.

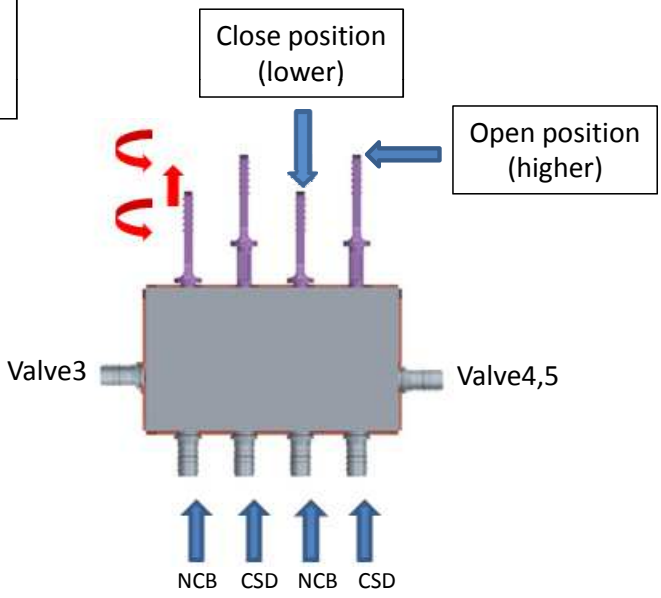
2.Flexible version (The default setting is all CSD)

Face to the merchandiser , The valve 1,2 and valve 6 is fixed CSD, the Valve 3,4,5 are NCB/CSD conversion valve (and the valve4,5 are in the same water circuit)



Change over introduction：





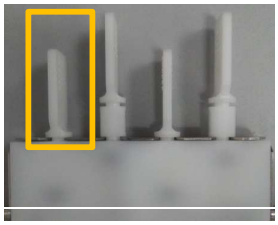
How to convert CSD/NCB(example: Valve3 CSD convert to NCB)

WARNING :

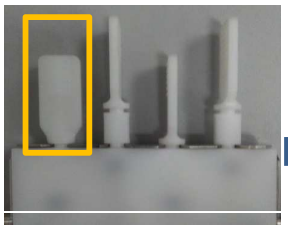
The conversion operation must be done by qualified technician.

The delivery system pressure must be relieved before starting the operation.

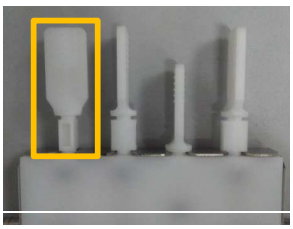
The default setting :
All CSD



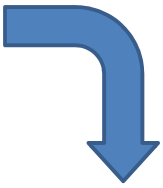
Step1: Turn 1st piston
CCW 90°



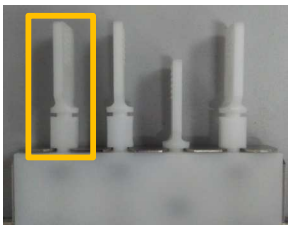
Step2: Move up 1st piston



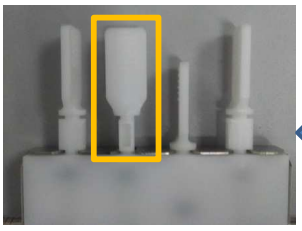
[CCW : Counter Clockwise]



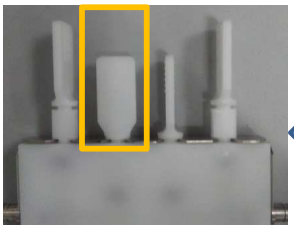
Step3: Turn 1st piston
CCW 90°



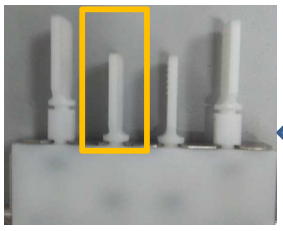
Step4: Turn 2nd piston
CCW 90°



Step5: Move down
2nd piston

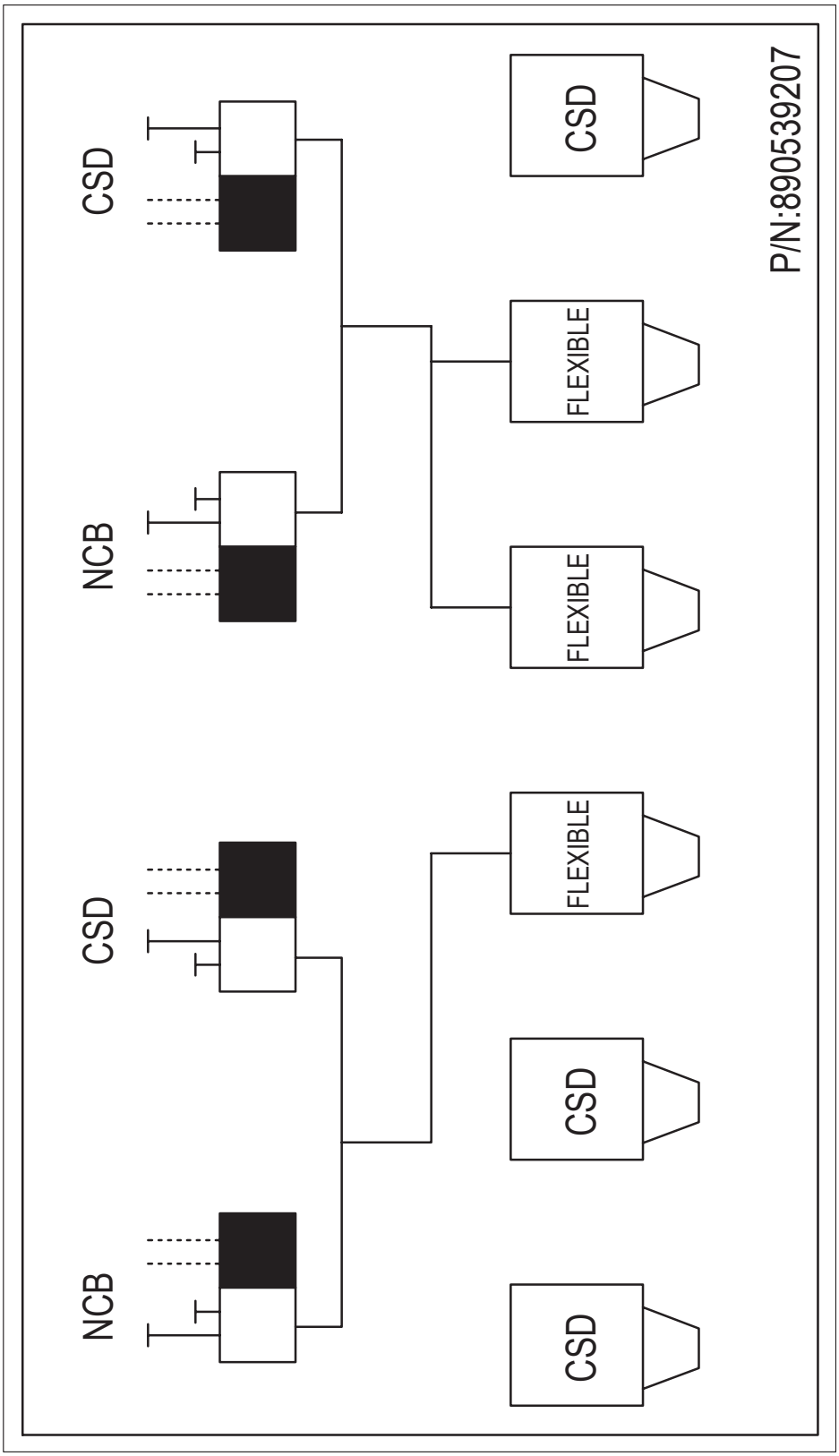


Step6: Turn 2nd piston
CCW 90°



Notes：Must complete the 6 steps for a correct conversion!
And The Narrow side of the pistons hander must be front like the picture in any configuration.

Nylon block installation diagram



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

Table5

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
Clean air Filter	As needed

Sanitizing

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

Double Liquid Check Valve Inspection & Cleaning

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_2 gas could back flow into the water system and create a health hazard.

1. Disconnect electrical power to the dispenser.
2. Shut off CO_2, syrup, and water supplies to the dispenser.
3. Check seat and O-rings. Replace if necessary.

Check for Leaks

Periodically check syrup, water, CO_2, and drain for leaks.

Check Ratio

Should be done whenever flavors are changed or any service is performed.

Clean Condenser

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.

1. Disconnect electrical power to the dispenser.
2. Remove the condenser filter from top accessible slot.
3. Lift the merchandiser up.
3. Remove top panel and side cladding.
4. Vacuum or use a soft brush to clean condenser coil. If available, use low pressure compressed air.
5. Clean around top of refrigeration assembly.
6. Reinstall side panels and top panel and close the merchandiser.

Clean BIB Connectors

See the Operation section of this manual.

Clean Air Filter

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

1. Disconnect electrical power to the dispenser.
2. Remove the condenser filter from top accessible slot.
3. Take out the filter and clean it with water.

ADJUSTMENTS

CO2 Connection

1. Unscrew protector cap (with chain attached) from CO_2 cylinder valve. Open CO_2 cylinder valve slightly counter clockwise to blow any dirt or dust from outlet fitting before installing primary CO_2 regulator, then close valve.
2. Remove shipping plug from primary CO_2 regulator assembly coupling nut and make sure gasket is in place inside nut. Install regulator assembly on CO_2 cylinder so gages can be easily read, then tighten coupling.
3. Connect soft drink tanks CO_2 lines to primary CO_2 regulator manifold assembly.
4. Install gas quick disconnects on ends of soft drink tank CO_2 lines.

CAUTION:

To avoid personal injury and property damage. Always secure CO_2 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 CO2 Regulator Settings

1. Open CO_2 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).
2. Adjust the cylinder CO_2 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.
3. The Blu-CE dispenser with integral cold carbonator requires CO_2 supply pressure of 75 psi (5.2 bar).
4. Bleed air from the lines with the relief valves.
5. Check the system for gas leaks.

LIFTING THE REFRIGERATION DECK

Handles are provided at the either sides of the refrigeration deck to aid in safe lifting and handling of the deck during service. To access these handles remove the side panels.

CAUTION:

Ensure that only these handles are used to lift the deck. Do not hold to any other components or structures.

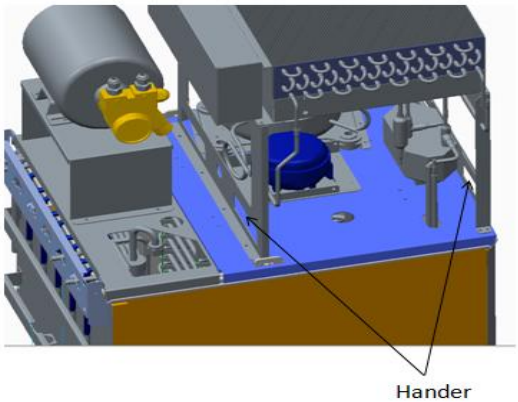


Figure 13

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

COMPONENT SERVICE

The following are procedures for replacing the major components of the Blu-CE dispenser.

CARBONATOR PUMP REPLACEMENT

1. Disconnect power to the unit.
2. Shut off water and CO_2 at their sources.
3. Remove top panel and side cladding.
4. Depressurize carbonator by removing the solenoid dust cover from any dispensing valve and press valve lever to release the pressure.
5. Disconnect water in and out lines.
6. Loosen the V-band clamp and remove pump.
7. Install new pump.

PUMP MOTOR REPLACEMENT

1. Disconnect power to the unit.
2. Remove top panel and side cladding.
3. Unplug motor harness.
4. Loosen the V - band clamp and remove pump.
5. Remove bolts and remove the motor.
6. Install new motor by reversing this procedure.

AGITATOR MOTOR REPLACEMENT

1. Disconnect power to the unit.
2. Remove top panel and side cladding.
3. Unplug motor harness.
4. Remove mounting screw.
5. Install new motor by reversing this procedure.

CONTROLLER BOARD REPLACEMENT

1. Disconnect power to the unit.
2. Remove top panel and side cladding.
   - Lift up controller cover.
   - Remove mounting screw.
   - Push back controller cover.
3. Unplug all connectors.
4. Squeeze all four standoffs and remove the board.
5. Install new controller board by reversing this procedure.

CONDENSER FAN MOTOR REPLACEMENT

1. Disconnect power to the unit.
2. Remove top panel, side panels and back panel.
3. Unplug motor harness.
4. Remove fan mounting Screw
5. Lift up fan Motor Assembly.
6. Remove fan motor.
7. Install new motor by reversing this procedure.

TROUBLE SHOOTING

WARNING:
Only an authorized service person should service internal components or electrical components.

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

WARNING:
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.

WARNING:
To avoid personal injury disconnect electrical power to the unit before attempting any electrical repairs or working on the internal parts of the unit.

Table 2. Troubleshooting Post-mix System

Trouble	Probable Cause	Remedy
Adjustment of dispensing valve syrup flow regulator does not increase to desired water-to syrup ratio.	1. No syrup supply. 2. Syrup supply container not securely connected into system. 3. Tanks System-Syrup tanks secondary CO_2 regulator out of adjustment. Bag-in-Box System- Primary CO_2 regulator out of adjustment. 4. Inoperative dispensing valve syrup flow control. 5. Tapered washer inside tube swivel nut connection distorted from being over tightened restricting syrup flow. 6. Pressure to BIB/Syrup tank is too low.	1. Replenish syrup supply. 2. Securely connect syrup supply container into syrup system. 3. Adjust syrup tanks secondary CO_2 regulator as instructed. Adjust primary CO_2 regulator as instructed. 4. Repair dispensing valve syrup flow control. 5. Replace tapered gasket. Make sure it seats properly. 6. Adjust the pressure as per the specifications.
Adjustment of dispensing valve syrup flow regulator does not decrease to desired water-to-syrup ratio.	1. Dirty or inoperative dispensing valve syrup flow control.	1. Disassemble and clean dispensing valve syrup flow control/
Dispensed product carbonation too low.	1. Primary CO_2 regulator out of adjustment for existing water conditions or temperature. 2. Air in carbonator water tank. 3. Water, oil, or dirt, in CO_2 supply. 4. CO_2 supply depleted.	1. Adjust primary CO_2 regulator. As instructed. 2. Vent air out of carbonator water tank through relief valve. 3. Remove contaminated CO_2. Clean CO_2 system (lines, regulator, etc.) using a mild detergent. Install a clean CO_2 supply. 4. Replenish CO_2 supply.
Dispensed product comes out of dispensing valve clear but foams in cup or glass.		1. Use clean cups or glasses. 2. Do not use ice directly from freezer. Allow ice to become “wet” before using. (refer to following NOTE).

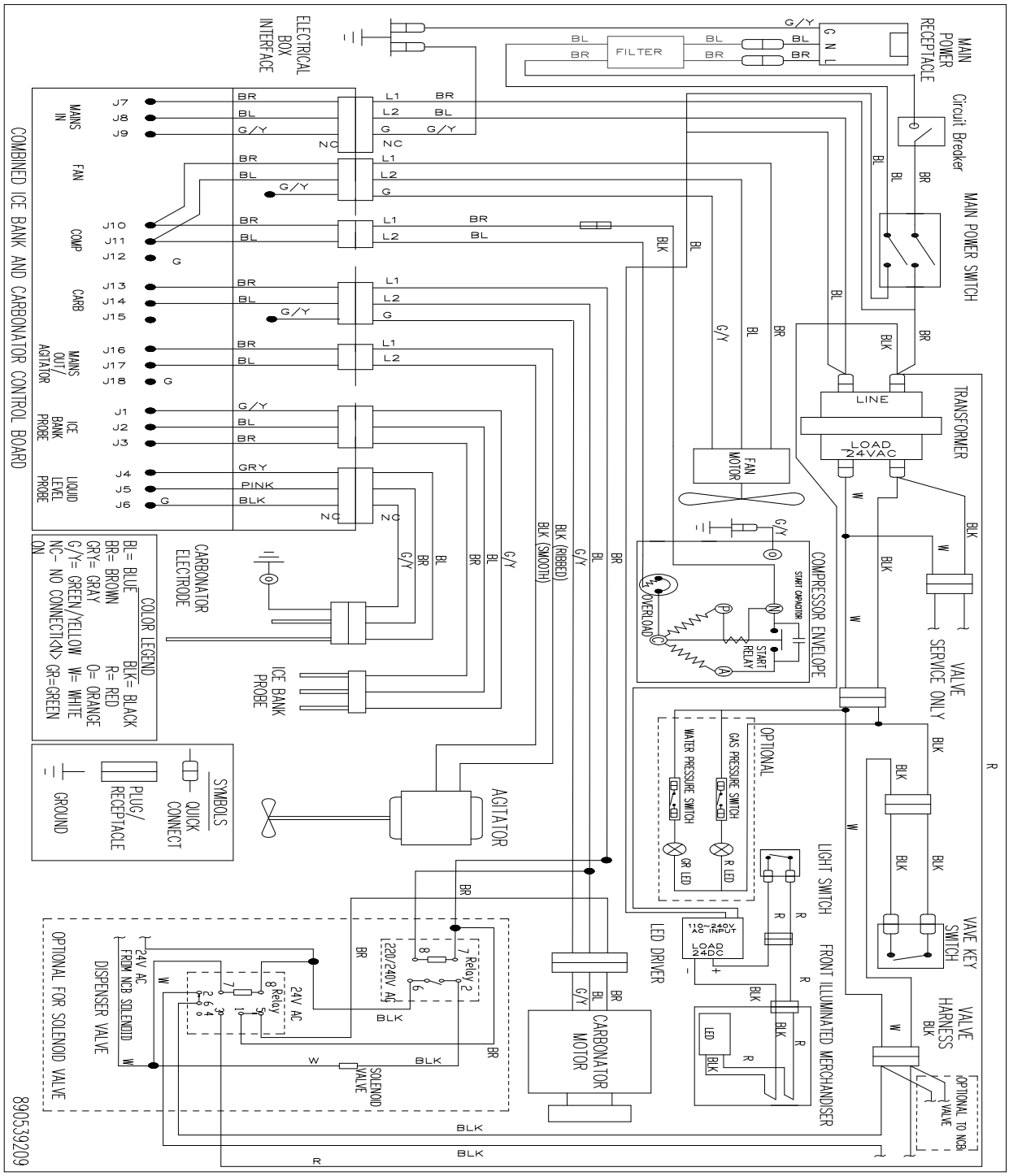
NOTE: Crushed ice also causes dispensing problems. When finished drink hits sharp edges of ice, carbonation is released from dispensed drink.

Dispensed product produces foam as it leaves dispensing valve.	1. Recovery rate of refrigeration of system exceeded, ice bank depleted. 2. Primary CO_2 regulator pressure too high for existing water conditions or temperature. 3. Tanks System-Syrup over-carbonated with CO_2 as indicated by bubbles in inlet syrup lines leading to unit. 4. Dispensing valve restricted or dirty. 5. Tapered gasket inside carbonated water line swivel nut connector distorted restricting carbonated water flow. 6. Dirty water supply. 7. Finished drink above 4.4° C (40° F).	1. Allow ice bank to recover. 2. Reduce primary CO_2 regulator pressure settings. 3. Remove syrup tanks quick disconnects. Relieve tank CO_2 pressure as many times as necessary to remove over-carbonation. 4. Sanitize syrup system as instructed in Service and Maintenance Manual. 5. Replace tapered gasket.Make sure it is properly seated. 6. Check water filter. Replace cartridge. 7. Check refrigeration system.
No product dispensed.	1. No electrical power to dispenser. 2. Disconnected dispensing valves power cord. 3. Disconnected or broken wiring to dispensing valve. 4. Inoperative transformer or dispensing valve solenoids.	1. Plug in dispenser power cord or check for blown power fuse or tripped circuit breaker. 2. Connect dispensing valves power cord. 3. Connect or replace wiring. 4. Replace inoperative part.
Only carbonated water dispensed.	1. Syrup supply container not securely connected into syrup system. 2. No syrup supply. 3. Bag-in-Box System – Inoperable syrup pump. Tanks System – Syrup tanks CO_2 regulator not properly adjusted. 4. Inoperable dispensing valve. 5. Dispensing valve syrup flow control not properly adjusted.	1. Securely connect syrup supply container into syrup system. 2. Replenish syrup supply. 3. Replace inoperable syrup pump. Adjust syrup tanks CO_2 regulator as instructed. 4. Repair dispensing valve. 5. Adjust dispensing valve syrup flow control (Water-to-Syrup ratio) as instructed.
Compressor will not stop after sufficient ice bank is produced.	1. Ice bank probe location incorrect. 2. Ice temperature sensor inoperative. 3. Control board inoperative.	1. Place probe in proper location. 2. Replace ice temperature sensor. 3. Place power switch in ON position.
Compressor operates continuously but does not form sufficient ice bank.	1. Cooling capacity is exceeded by overdrawing. 2. Unit located in excessively hot area or air circulation through condenser coil is restricted.	1. Reduce amount of drinks drawn per given time. 2. Relocate unit or check and if necessary, clean condenser coil as instructed.
Carbonator pump not operating	1. 3 minutes run limit exceeded. 2. Water supply to carbonator disrupted. 3. Carbonated water tank water level probe electrical wiring disconnected. 4. Inoperative carbonated water tank water level probe. 5. Inoperative carbonator pump or motor. 6. Inoperative control board.	1. Turn power OFF for 15 second. 2. Correct water supply problem. 3. Connect electrical wiring to water level probe (see note). 4. Replace probe (see note). 5. Replace pump or motor. 6. Replace control board.

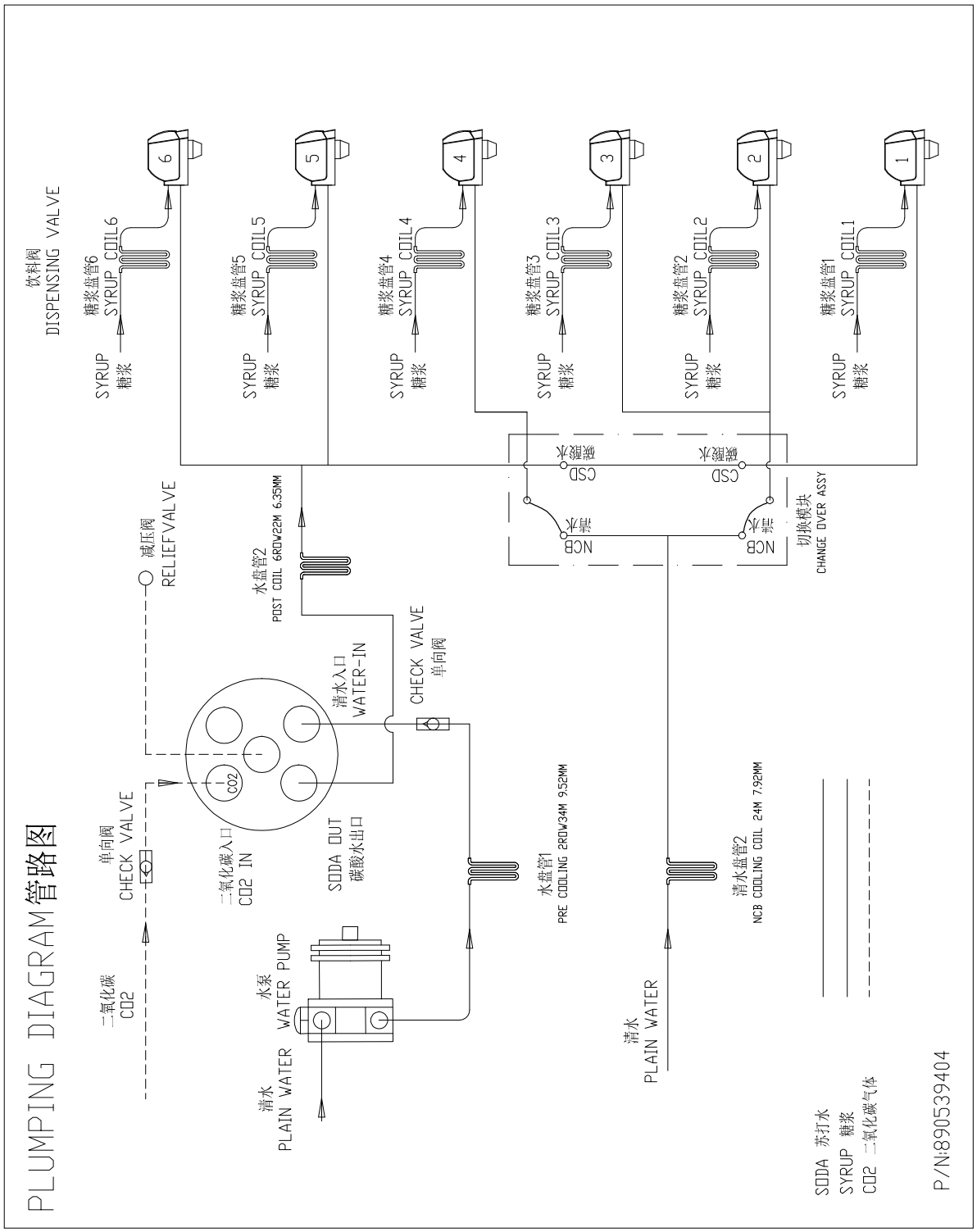
Agitator motor not operating.	1. No power source (blown fuse or tripped circuit breaker).	1. Replace fuse or reset circuit breaker. (NOTE: Fuse or circuit breaker are not part of unit).
	2. Agitator motor propeller obstructed.	2. Remove obstruction.
	3. Low Voltage.	3. Voltage must be 90- 135VAC (110-120 volt unit) or 180-260(230 VAC unit) at compressor terminals when compressor is trying to start.
	4. Loose, disconnected, or broken wiring.	4. Tighten connections or replace broken wiring.
	5. Inoperative agitator motor.	5. Replace agitator motor.
Refrigeration compressor does not operate.	1. Ice bank sufficient.	1. No refrigeration called for.
	2. No water in water tank.	2. Fill water tank with water as instructed.
	3. Control board power switch on 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 refrigeration compressor starts).
	4. Unit power cord un- plugged, or drop-in refrigeration assembly power cord unplugged.	4. Plug in power cord.
	5. Ice sensor electrically disconnected.	5. Electrically connect or replace inoperable sensor.
	6. No power source (blown fuse or tripped circuit breaker).	6. Replace fuse or reset circuit breaker. (Note: Fuse or circuit breaker are not part of unit).
	7. Low/high voltage.	7. Voltage must be 180- 255 Volts or 90 -130Volts.
	8. Loose, disconnected, or broken wiring.	8. Tighten connections or replace broken wiring.
	9. Overload protector cut out; overheated compressor. Condenser fan motor not operating as required.	9. Compressor will cool enough to restart, Do not overdraw cooling capacity of unit. Refer to “Condenser Fan Motor Not Operating” in this section.
	10. Inoperative overload protector or start relay.	10. Replace inoperative part.
	11. Inoperative ice bank probe.	11. Replace ice bank probe.
	12. Inoperative control board.	12. Replace control board.

REFERENCE MATERIAL

WIRING DIAGRAM



PLUMBING DIAGRAM



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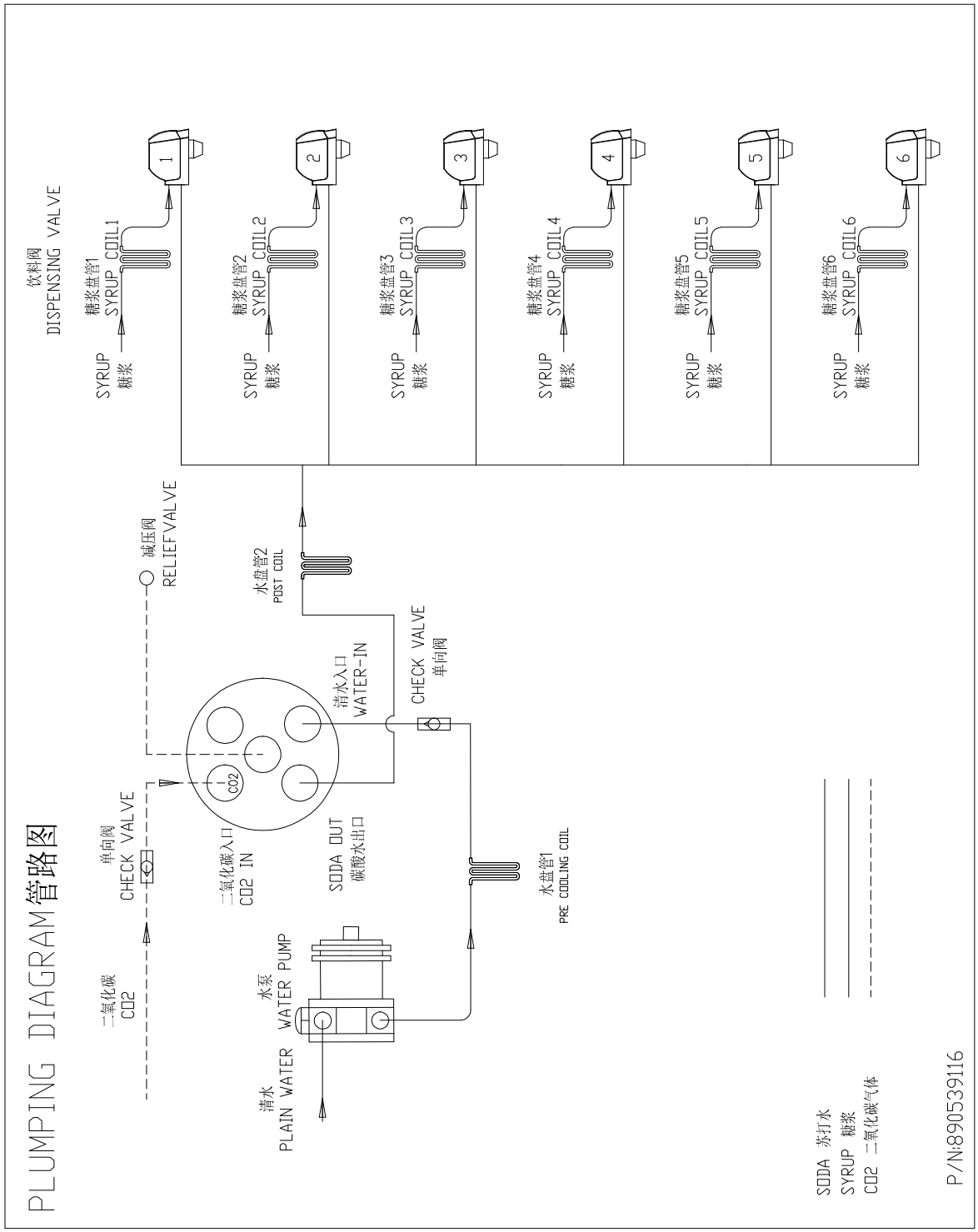

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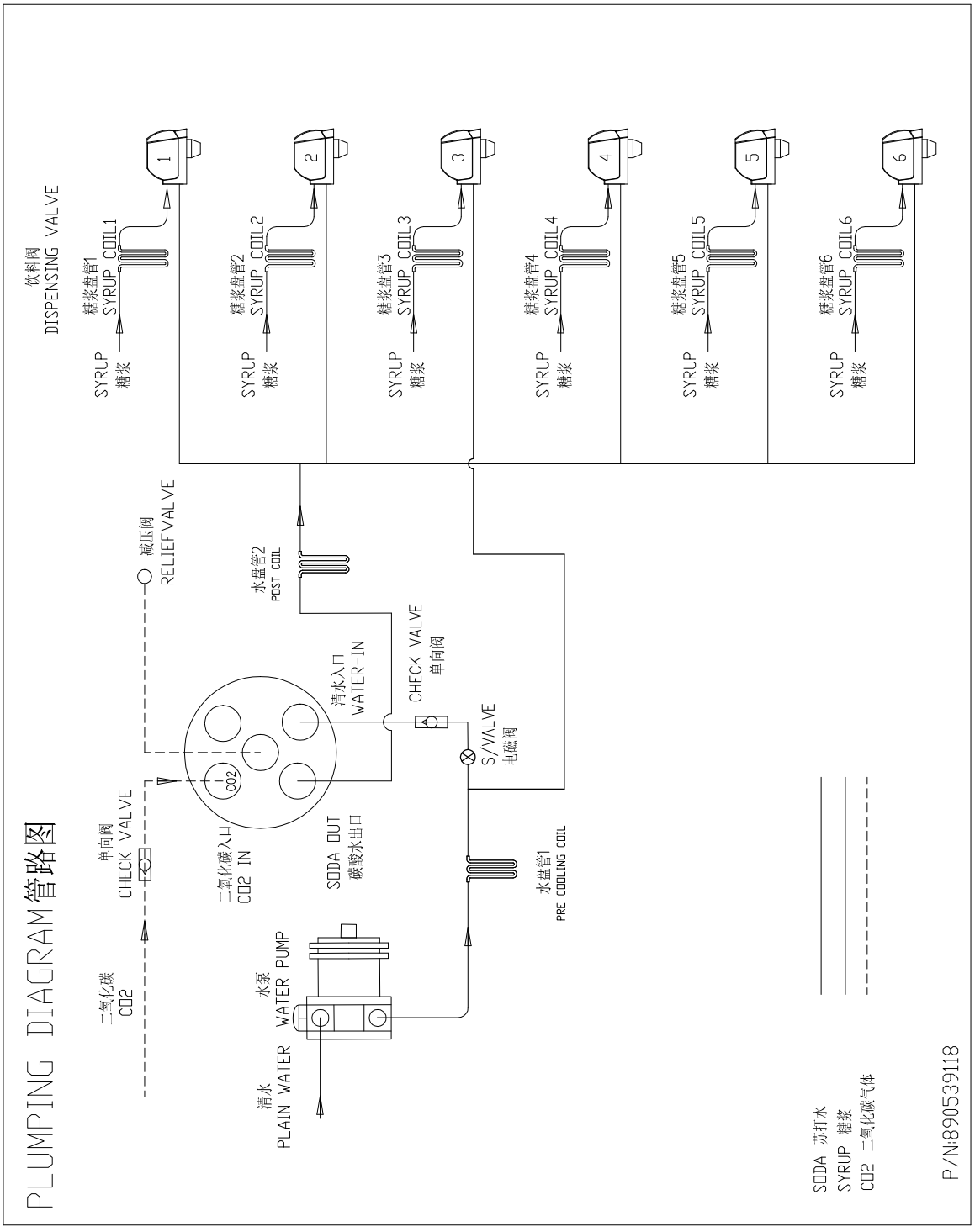

Notes

Titan R290 饮料现调机

安装维护手册

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对本公司产品及此手册有任何疑问请联系：

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目 录

记　　录

安　全

安全指示

阅读并遵守安全指示

阅读并遵循手册及设备上所有安全指示(贴纸 、标签、卡片)。

在操作设备前要阅读并理解所有适用的(职业安全卫生管理)安全规则。

在维修和维护之前，专业人员必须佩戴手套进行操作。

辨认安全警示

这是安全警示信号。当你在手册或设备上看到这个信号时，要小心会有潜在的人身伤害、死亡或设备损坏的现象发生。

警示的不同类型

警示有三种类型：

危险 -- 表示马上会有危险，如果不能避免，将造成严重伤害，死亡或设备损坏。

警告 -- 表示有潜在的危险，如果不能避免，会造成严重伤害，死亡或设备损坏。

注意 -- 表示有潜在的危险，如果不能避免，可能造成轻微伤害，死亡或设备损坏。

安全提示

* 仔细阅读手册上所有的安全信息及设备上的安全警示。
* 保持安全警示处于良好状态，替换丢失或损坏的安全警示。
* 学习如何操作设备及如何正确控制设备。

本设备使用可燃制冷剂，在移动，维修过程中避免损坏泄露，必须有具有维修资质的人员进行处理。

* 不得让任何未经过正规培训的人操作设备。
* 使设备处于正常的工作状态，未经授权不得改装设备。

授权维修人员

注意 -- 应由受过训练并有从业资格的电工、管路技工、制冷技工维修设备。所有布线及管道安装必须要符合国家及地方规范。

CO_2 警示

警告 -- 二氧化碳取代氧气。要仔细观察，防止二氧化碳在整个二氧化碳及软饮料系统中泄漏。如果怀疑有二氧化碳泄漏，尤其是在小面积内，要立即对受污染区进行通风处理然后再进行修理。暴露在高浓度二氧化碳气体中的人会战栗，然后失去知觉至死亡。

注意 -- 储存时要注意：应储存在通风良好的场地。气瓶需方向向上牢固地固定，以免翻落或撞倒。用手拧紧螺旋阀保护帽。储存温度不能超过 52℃。满气瓶和空气瓶要分别存放。实施先进先出的库存制度，以防满气瓶存放时间过长。

注意 -- 在处理过程中须注意：防止气瓶受损。用相应的手推车移动气瓶。不要拖曳，滚动，滑动或摔落气瓶。切忌手持气瓶帽提拉气瓶。气瓶帽只适用于保护阀门。禁止将任何物体（如扳手，螺丝刀， 撬杆等）插入帽口，否则会损坏阀门并导致泄露。用可调带式扳手拆卸过紧或生锈的阀帽。慢慢打开阀门。如果阀门难以打开，停止操作并与供应商联系。不要对气瓶的任何部分使用火苗或采取局部加热方法。高温会损坏气瓶，并导致减压装置过早报废并释放出内容物。禁止在充满压缩气体的气瓶上进行电弧作业，或把充满压缩气体的气瓶做为电路的一部分进行连接。如需更多储存和使用方面的信息，请参阅压缩气协会(CGA)关于“容器内压缩气体的安全处理”的手册(可从CGA处获得)。

装运与储存

注意 -- 在装运、储存或重新布置设备前，必须对糖浆系统消毒,并且要排净糖浆系统中消毒液。水也必须从清水和碳化水系统中全部排净。寒冷的周围环境会使消毒残液或存留在设备中的水冻结，从而损坏内部部件。

设备处理

注意 -- 禁止在设置有喷射水的区域安装饮料机。切忌用喷射的方式清洗设备。

注意 -- 当设备空箱时因顶部过重而不稳固。设备只有在放置稳妥并且水箱注满水的情况下方可启动运行。

记　　录

综 述

综述

手册是安装、操作和维修设备的指南。本章节内容包括设备描述、操作原理和设计数据。设备必须由有资格的维修人员进行安装和维修。设备不包含用户维修部件。

保修信息

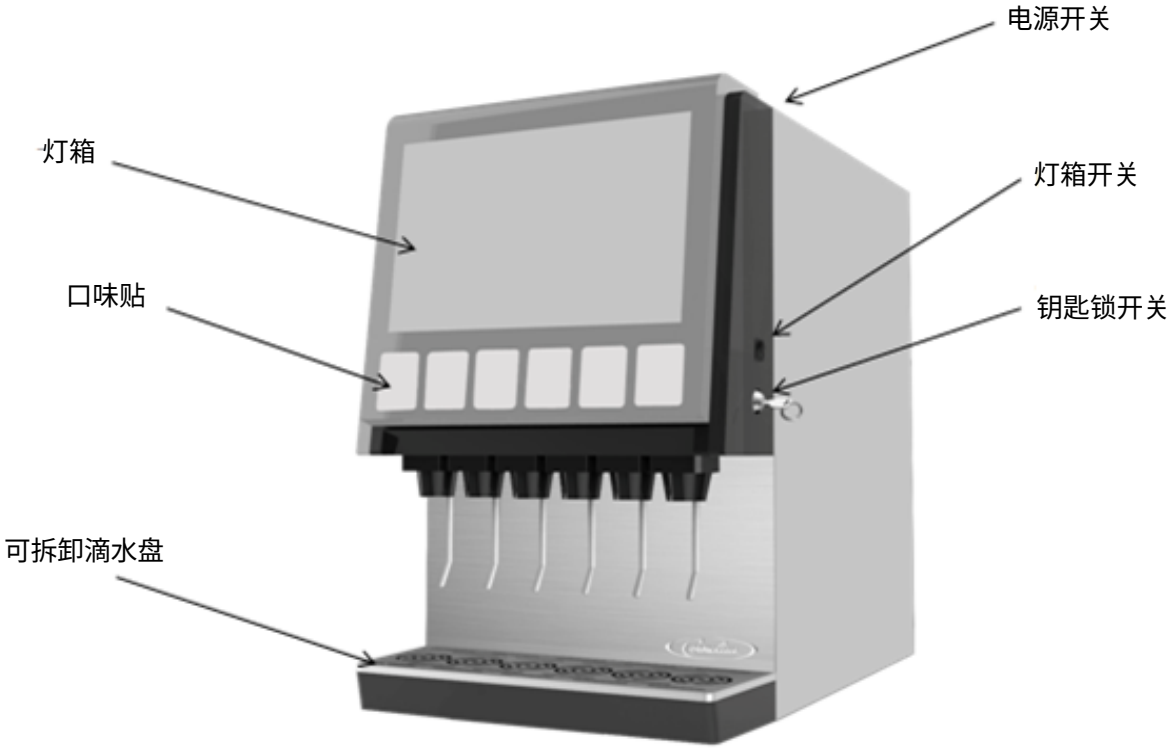
保修注册日期 (由客户填写)
设备型号:
序列号:
安装日期:
本地授权维修中心:

设备描述

Titan现调饮料机体积小、重量轻型。每种机型均有内置式或外置式碳化器可供选择，并可配置糖浆泵。

* 大型 -- 6阀

Titan 现调饮料机可安装在柜台前，也可安装在柜台后。1/3 H.P.制冷机组易于拆卸，便于维修与维护。分配阀上的水流量调节器和糖浆流量调节器可以调节，使用方便。



Titan现调饮料机具有以下特点：

- 钥匙锁开关
- 灯箱
- 内置式糖浆泵(可选项)
- 可拆卸滴水盘
- 断路器保护
- 内置式碳化器
- 可拆卸制冷系统

规格

技术参数(配置碳化器)

阀门	
可转换为清水的分配阀号	
标称冰层规格	12kg(26.5lbs.)
水箱体积	48L(13gal.)
高度	843mm(33in)
宽度	460mm(18in)
长度	743mm(29in)
运输重量(参考)	65kg(142lbs.)
* 面向饮料机前面,阀门从右向左标号.	

其它信息

制冷剂.....R290
压缩机HP.....1/3+
设计阀门流量.....85克/秒(最大128克/秒)
标准阀门.....LEV,SFV,LVV阀
置杯间距.....250mm
安全认证.....CE,GB
卫生认证.....ETS (NSF18)
电路控制.....冰层和液体水位控制

操作原理

配置碳化器的设备

注**:** 设备在出厂前已按客户要求被设定为可分配碳化水和非碳化水两种形式，最多可安装3个非碳化水出水阀，剩余的阀则可设置为碳化水出水阀。非碳化水出水阀可转换成碳化水出水阀。

二氧化碳气体(CO_2) 通过可调的二氧化碳调节器流入相应的糖浆筒或糖浆泵以及内置式饮料机的碳化器。清水进入碳化器被二氧化碳气体碳化后沉积在碳化罐内。当出水阀打开时，在二氧化碳压力的作用下，相应的糖浆筒或糖浆袋里的糖浆通过冷却盘管流到出水阀。

碳化水在二氧化碳气体的压力下从内置式饮料机的碳化器，通过碳化水分配器流至出水阀。糖浆和碳化水在出水阀同时相遇，生成碳酸饮料并由出水阀分配。非碳化饮料也以同样方式由出水阀进行分配。

记　　录

安　装

警告 -- 设备应由受过训练并有从业资格的电工、管路技工、制冷技工维修。所有布线及管道安装必须要符合国家及地方规范。

注意 -- 水管联接件以及与饮用水源直接联接的紧固件必须按照NSF标准18、联邦、州以及当地规范测量、安装和维护。

注意 -- 安装人员必须确保安装防止供水回流的防护装置。该防护可以是ANSI/ASME A112.1.2-1979定义的气体间隙或核准的真空断路器以及其它认可的方法。

到货检验与打开包装

检验

到货后立即检验，如有设备损坏或不规则部件现象发生，请立即向货物承运人呈报，并向其提交一份赔偿单。

拆除包装

拆除包装胶带和其它包装材料。
打开备用部件，确认所有部件齐备。

松动部件	部件号	数量
排料软管	14-0610	1.5 米
夹具	70339	2 个
贴纸	根据饮料机不同	1 套
手册	890539401CHN	1 本

安装要求

要求总述

重量.....柜台必须水平，并能够支撑至少100kg的重量
环境.....只限室内安装
温度.....环境温度应在4℃-43℃
间距..... 上部间距46cm,侧面间距15cm
CO_2.....分配饮料时应为5.2bar(75psi)
糖浆.....4.1bar(60psi)
水.....建议4.5bar(65psi)
电 标准230VAC,50或60Hz
..... 180VAC最小运转电压
.....255VAC 最大运转电压
..... 标准115VAC,60Hz
..... 90VAC最小运转电压
..... 130VAC最大运转电压

电力要求

设备接通电源之前，参阅铭牌上关于电源的要求。

危险 — 为避免可能的严重伤亡，所有50HZ设备的电路中都要安装接地漏电断路器（ELCB)。

警告 — 为避免可能的电击，必须把电子接触箱内的绿色接地螺丝做电力接地。

注意 — 线路必须接通一个10安培的断路开关并妥善接地(减流熔断器或等效的HVAC/R 断路器)。所有布线必须符合国家和当地标准。确保设备妥善接地。

环境要求

环境温度(房间)温度不允许超过43℃。若超过43℃可能会导致制冷系统故障，并不在我厂保修范围内。

注意 — 为避免设备过热和损坏，超出保修范围，每个侧面的间距必须至少为0.15m，设备顶部间距至少为0.45m。

注意 — 设备只适用于室内(非严酷环境)安装。避免阳光直射。

注意 — 如果将设备置于结冰温度下，设备中的水会结冰，并可能损坏设备。

注意 — 防止使水从顶部通风装置处溅入。

安装步骤

台面安装

1. 设备应置于至少能够支撑180公斤重量的水平柜台上。
2. 拆下滴水盘和防溅板。

拆下滴水盘

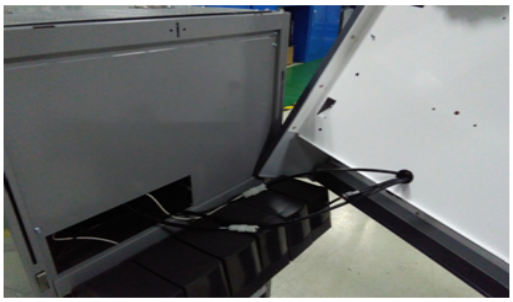
拆下防溅板

3. 拆下灯箱前面板然后拆下顶部通风面板。断开电源电路和钥匙锁开关电路。

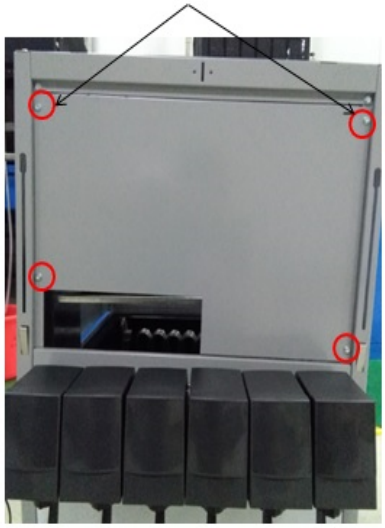
向上推动灯箱

弹簧支架支撑灯箱

拆除4颗螺钉



断开灯电源线进线，阀电源进线，阀线接头；



注意 -- 不要在水箱中加入防冻剂或其他化学物质，否则会导致严重伤害

4.使用Dow Corning RTV 731 或相当的认可的密封材料封堵饮料机底座周围的通漏（符合国家卫生协会NSF要求

5.向水箱注水直到水溢出溢流管,确保溢流管不被堵住或堵塞,使用低矿物市政水，禁止使用蒸馏水或去离子水.

打开红色塑料帽，向水箱内注水；

6.将注水口帽塞盖好，连接好前面板；

7 连接灯箱线，饮料阀连接线；

整体冰层控制运行原理 (GIBO)

设备一经通电，搅拌电机启动。延时三分钟后，制冷压缩机和冷凝器风扇电机启动。设备每次切断电源后，都会有三分钟延时。

设备会持续处于工作状态，直到冰层覆盖住冰层控制探针的三根不锈钢销。 冰层控制模块通过测量水和冰之间的电阻差对此产生感应。

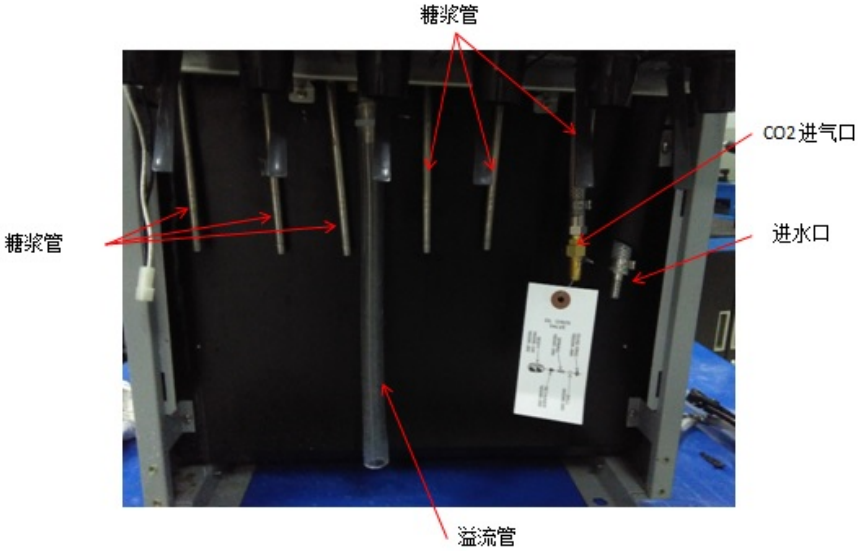
当蒸发器盘管上的冰厚达到一定程度时，就会盖住冰层控制探针的三根不锈钢销。当控制模块感应到有足够的冰时，就会关闭制冷压缩机和冷凝器风扇电机。

设备将一直保持关闭状态,直到冰层控制的三根不锈钢销上的冰全部消融。这时,冰层控制模块启动制冷压缩机和冷凝器风扇电机。

连接糖浆、水、二氧化碳和碳化水管线

行程和管路连接

1. 将糖浆和清水线路布在饮料机下面。线路可从柜台上的孔向上或从设备后面向前穿过。将入水管线与适当的入口连接。入水口有2个接头，1个直接连接到碳化器泵入口，另一个与防溅板后的旁路入口泵连接(见管路图)。一定要将水供应管路与这两个联接点连接。



注 -- 必须按照NSF标准18和联邦、州及当地规范测量、安装并维护饮用水源的水管连接件和紧固件。

注 -- 安装人员要确保安装防回流保护装置以防止水的回流。可采用ANSI/ASME A112.1.2-1979规定的气体空隙或核准的真空断路器以及其它认可的方法。

注 -- 建议供水压力为65psi(4.5bar)。如果供水压力高于75psi (5.2bar)，需要安装一个水压减压调节器，压力过高会导致碳化器罐泄流或降低碳化程度。如果供水压力低于20psi(1.37bar)，则需在供水线路上安装一个增压装置。压力过低于可能导致分配非碳化水的阀门水流量减少。

注 -- 建议在供水管线上安装阀门和过滤器。

2. 根据现场可以选择加长流流管长度;

3. 连接二氧化碳进气管，最大进气压力设定为75psi,过高的压力会对设备产生影响.

4. 确保糖浆管连接紧固

5. 重新安装接水盒

6. 检测系统内气体管路,确保没有泄漏

7. 检测系统内水路管路,确保没有泄漏

初级和次级二氧化碳调节器的设置

1. 稍稍打开二氧化碳气瓶，慢慢放进气体。当线路压力平衡时，完全打开阀门。
2. 将气瓶的二氧化碳调节器调至75psi(5.2bar)，以应用于袋式糖将系统。
   40psi(2.8bar)应用于含糖的软饮料，10psi(0.69bar)应用于不含糖的软饮料。

注 -- 配置内置式冷却碳化器的饮料机要求二氧化碳供应压力为
75psi(5.2bar)。

3. 打开安全阀将管线中的气体排放出去。
4. 检查系统是否漏气。

连接电源

注 -- 接通饮料机电源之前，察看铭牌，确认电源要求。

1. 确认关断电力线路断路器或断开保险丝。
2. 插上饮料机插头。

3. 重新接通总开关和钥匙锁开关。将机顶面板复位。
4. 接通电源。打开总开关和钥匙锁开关。

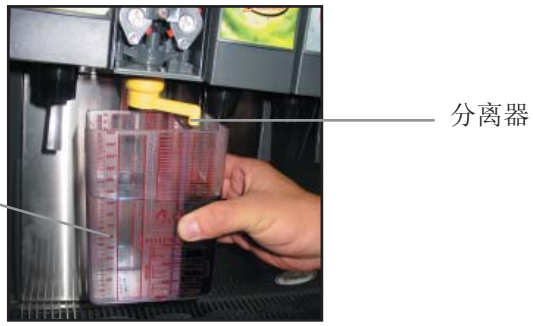
查漏

1. 打开出水阀将管路中的气体放出。
2. 打开安全阀放掉碳化器中的空气(如果设备配置有内置式碳化器)直到有水流出。
3. 给系统加压，检查系统是否漏气，然后关闭气瓶阀门。等几分钟，检查气瓶量表读数是否下降。
4. 检查系统是否有漏水或漏糖浆。

重新安装面板

1. 重新安装顶部、前部的通风面板以及前面的不锈钢面板。
2. 开启电源。
3. 查看制冷系统是否有3分钟的启动延迟。
4. 在打出成品饮料前需等待3-6小时，以形成一定的冰层。

调节水-糖浆比例



1. 拆下阀盖，将糖浆分离器安装在喷嘴处。
2. 将杯子放在出水阀下面，在设定的时间内(比如4秒钟)打出饮料。
3. 注：检查比例前水和糖浆必须是冷的。
4. 将碳化水流量调到理想比率(比如74ml/秒)。每次调节1/4圈然后再检查流量。顺时针调节增加流量。

5. 设定糖浆流量调节器达到理想的比例。

6. 试验、调节阀门直到连续3次打出比例一致的成品饮料。
7. 在其他阀门上重复相同的步骤。

电控箱功能

使用一块集成电路板和微处理器控制饮料机的电力功能。控制箱的功能特点包括：

- 与压缩机匹配的冰层控制系统的启动保护
- 碳化器的持续运转保护
- LED诊断

电路板包含的部件有线路电源、冰块位置传感器和碳化水水位传感器。
电路板的输出控制着压缩机、搅拌器电机、冷凝器风扇电机以及碳化器
泵(参阅参考资料章节中列出的电路图）。

冰层控制

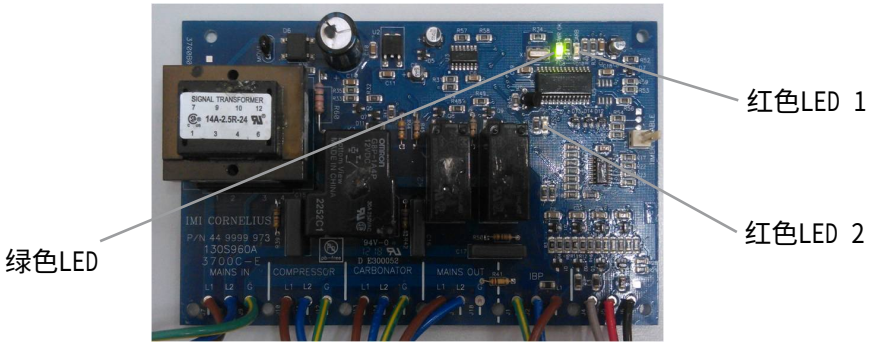
冰层控制通过压缩机和冷凝器风扇电机来控制冰层的尺寸。控制板在压缩机
至少已经关闭3分钟以后才会重新启动压缩机。

碳化器控制

碳化器控制器驱动一体化的碳化器泵，以保持碳化罐的水位维持在事先设定
的范围内。
如果连续工作超过三分钟，计时器就会关闭碳化器水泵电机，以防止在供水
泄漏或流失的情况下碳化器的连续运转。

LED诊断

控制板上的LED可以辅助故障排除,上面共有1个绿色LED灯和2个红色LED灯(如图所示)



各个LED等的功能:

红色和绿色LED都不亮——饮料机无电源输入

绿色LED灯亮起——电源接通，且回路内电压在允许的范围内。

红色LED-1亮起——水泵开始工作。当红色LED-1开始闪烁，则水泵工作已经超过3分钟。

红色LED-2亮起——压缩机在3分钟延时后启动正常工作。 若红色LED-2闪烁，则证明压缩机正处于3分钟延时启动这个阶段内。

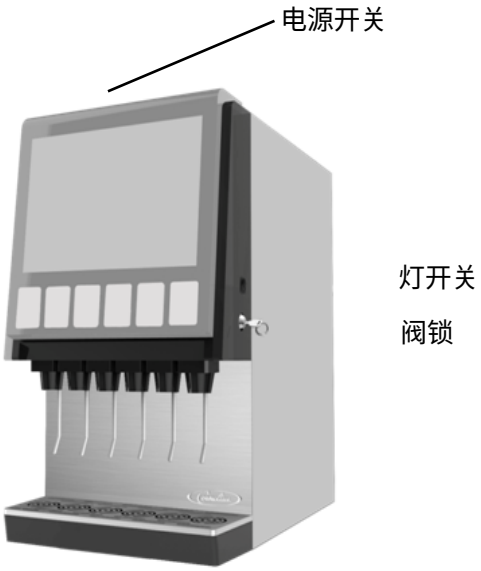
注：在红色LED-1开始闪烁，3分钟持续工作时间已超过的情况下，碳化泵仍不工作，那么请重置控制板。重置控制板时请关闭机器主电源开关，等待15秒，然后打开开关。

记　　录

运　行

运行

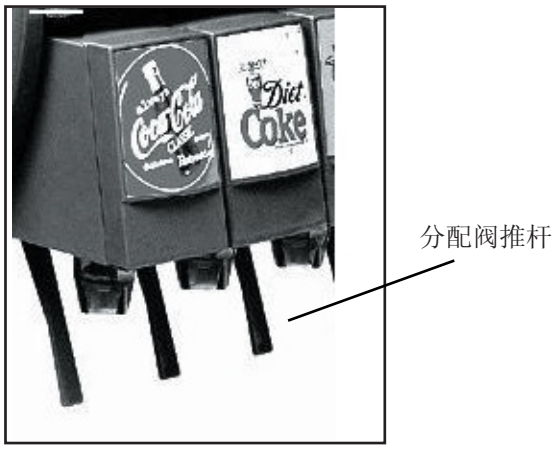
设备的启动和停止



1. 推动电源开关ON/OFF到ON，给设备通电。
2. 将钥匙插入钥匙锁，转动到ON来启动阀门。

饮料分配

用杯子按压推杆或按下阀盖上的按钮即可打出饮料。



补充糖浆供应

糖浆筒系统：

1. 先断开糖浆管线，再断开二氧化碳管线，然后移开空糖浆筒。
2. 用温水浸泡，断开配件，去除糖浆残渣。
3. 将装满糖浆的筒移到位，然后连接二氧化碳管线，再连接糖浆管线。

糖浆袋系统：

1. 断开空袋中的糖浆管，卸下空袋。
2. 用温水浸泡，断开配件，去除糖浆残渣。
3. 安装一个满袋，连接糖浆管。

调节

调节水-糖浆比例

此工作应由有资格的维修人员进行。参阅维修一章关于调节的步骤。

清理和检查

日常清理

- 检查二氧化碳供应。
- 检查糖浆供应。
- 卸下喷嘴部件，用温水(不是热水)浸泡。如可能，将喷嘴在碳化水中浸泡一夜，然后再用温水清洗。

- 用温和肥皂水清洗外表面，然后用清水浸泡后擦干。拆下滴水盘，用温和肥皂水清洗并擦干。

注意 -- 不要在装置上使用研磨剂或粗糙的去污剂。
注意 -- 禁止在设置有喷射水的区域安装饮料机。切忌用喷射的方式清洗设备。

糖浆系统消毒

糖浆系统应由有资质的维护人员，按如下步骤(或符合NSF和FDA要求的消毒方法),使用Oakite Products.Inc.公司的Chlor－Tergent(或等效消毒剂),每隔3个月消毒一次。

糖浆筒系统消毒

1. 拆下糖浆筒的快速接头，用饮用水浸泡。
2. 用干净的空糖浆筒，混合21℃-38℃饮用水和10cc/3.79L消毒剂作为消毒液。混合液体中应含有100PPM的氯。摇动消毒液罐，彻底混合消毒液。
3. 将盛装消毒液的罐子连接到一条糖浆线路上。
4. 将废液容器置于出水阀下面。将消毒液排出阀门，排出糖浆线路的糖浆。继续排出直到排出的液体全部是消毒液为止，然后关闭阀门。
5. 在其余的糖浆线路中重复步骤3和4。
6. 消毒液滞留在糖浆线路里至少10分钟，但不得超过15分钟。
7. 断开糖浆线路与含消毒液的糖浆筒的连接。
8. 将装有饮用水的筒连接到一个糖浆线路。

注意 -- 彻底冲洗本系统的残液。滞留在系统中的消毒残液会造成健康危害。

9. 将废液容器置于出水阀下面。打开出水阀门使饮用水排出，冲洗糖浆线路及排水阀中残留的消毒液。继续排出直到排出物全部是饮用水为止，然后关闭阀门。
10. 在其余的糖浆线路中重复步骤9和10。

注意 -- 为避免可能发生的人身伤害或财产损失，在二氧化碳压力从筒中全部释放出之前，不要打开糖浆筒盖子。

11. 断开糖浆线路与饮用水筒的连接，然后连接糖浆筒。
12. 打开排出阀直到排出物全部是糖浆为止，从而将系统的饮用水排净。
13. 将消毒液倒入下水渠。彻底浸泡清洗装过消毒液的糖浆筒的里面和外面，去除消毒液残液。

使用泰华素消毒

1.将泰华素与水混合制成溶液（混合比例150克泰华素/10L水）。
2.使用混合好的溶液清洗糖浆管路和水路系统，并保持溶液在系统内超过15分钟。
3.用清水冲洗糖浆管和水路系统，持续30分钟。
4.将打出的前三杯饮料倒掉。

袋式糖浆系统消毒

1. 拆下袋式糖浆容器中所有的糖浆输出管连接件，用温饮用水清洗连接件。
2. 用干净的20L容器，混合21℃ - 38℃饮用水和40cc/15L消毒剂作为消毒液。此混合液中应含有100PPM的氯。摇动消毒液罐，彻底混合消毒液。
3. 在糖浆输出管连接件的一端安装袋输出接头，从空袋糖浆容器中切断。
4. 在盛装消毒液的容器中配置糖浆输出管路，一端应配置袋输出紧固件。
5. 将废液容器置于出水阀下面。将消毒液排出阀门，净化排出糖浆线路的糖浆。继续排出直到排出的液体全部是消毒液为止，然后关闭阀门。

6. 断开糖浆线路与含消毒液的容器的连接。然后将它们置于装有饮用水的容器里面。

注意 -- 彻底冲洗本系统的残渣，否则滞留在系统中的残留消毒液会造成健康危害。

7. 将废液容器置于出料阀下面。饮用水排出阀门，净化糖浆线路的消毒液。继续排出直到排出糖浆线路的是饮用水为止，然后关闭阀门。
8. 断开所有糖浆出口管线与装有饮用水的容器的连接。
9. 断开糖浆输出口管线连接件与糖浆袋输出接头的连接。
10. 连接糖浆输出口管连接件与糖浆袋连接件。
11. 打开排出阀直到排出物全部是糖浆为止，从而将系统的饮用水排净。
12. 将消毒液倒入下水渠。彻底浸泡清洗装过消毒液的糖浆筒的里面和外面，去除消毒液残液。

双重止回阀的检验和清理

注意 -- 任何水供应系统中断(管道工程、地震等)后，都必须检验碳化器双液体止回阀。正常状态下至少也要每年检验一次。如有颗粒进入止回阀，二氧化碳气体会回流至供水系统，从而对健康造成危害。

1. 断开设备电源。
2. 关闭与设备连接的二氧化碳、糖浆和水的供应。
3. 拆解分配阀。
4. 检查底座及0形环。如果需要替换之。
5. 重新组装并安装分配阀。

查漏

定期检查糖浆、水及二氧化碳是否有泄漏。

检查比例

口味改变时或预调时进行。

清洁冷凝器

制冷冷凝器上积累的尘土和油污会使系统过热。应按以下步骤经常清理：

1. 断开饮料机的电源。
2. 卸下顶部面板(一个螺丝)。断开总开关和钥匙锁开关的电线。
3. 卸下灯箱罩(如配置灯箱则拆下电线)。
4. 用真空吸尘器或用软刷子清理冷凝器盘管，也可采用低压压缩空气。
5. 清理制冷系统顶部。
6. 重新安装灯箱及顶部面板并接通开关电线。

清洁过滤网

过滤网上的灰尘和油污会使系统过热。因此应按以下步骤经常清理：

1.断开饮料机的电源。

2.直接拉住滤网提手，向上取出过滤网；

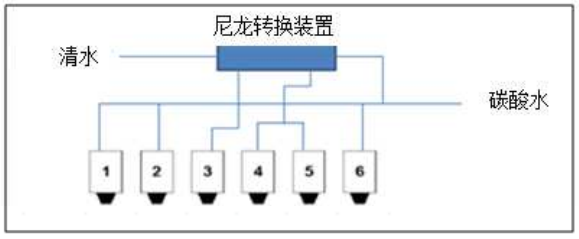
3.使用清水将滤网清干净。

CSD/NCB转换（可选配置）

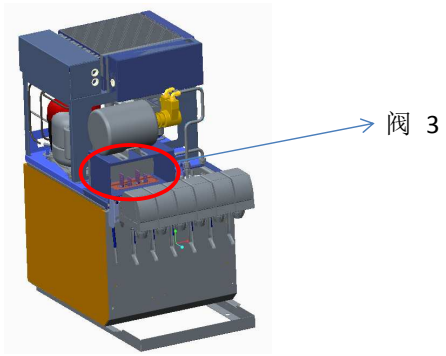
Titan 机器有两种版本 ：

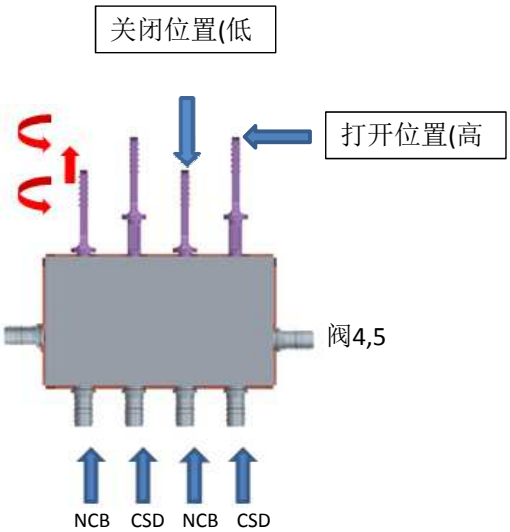
1.全碳酸版本

2.可转换版本 (此版本出厂设置为全碳酸版 面对机器从左到右，阀 1， 2， 6 为固定碳酸阀，阀 3， 4， 5 为可转发阀（其中阀 4， 5 在同一 水路中）。



转换装置介绍：

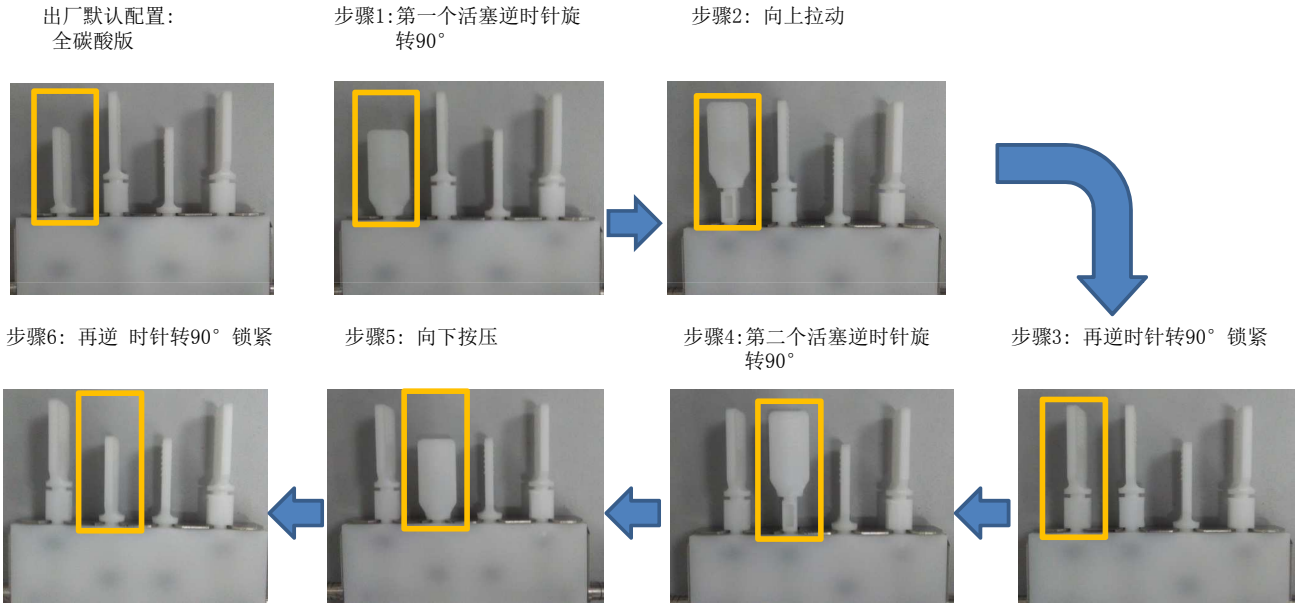




如何进行CSD/NCB转换操作（例如：阀3 CSD转换成NCB）

警告

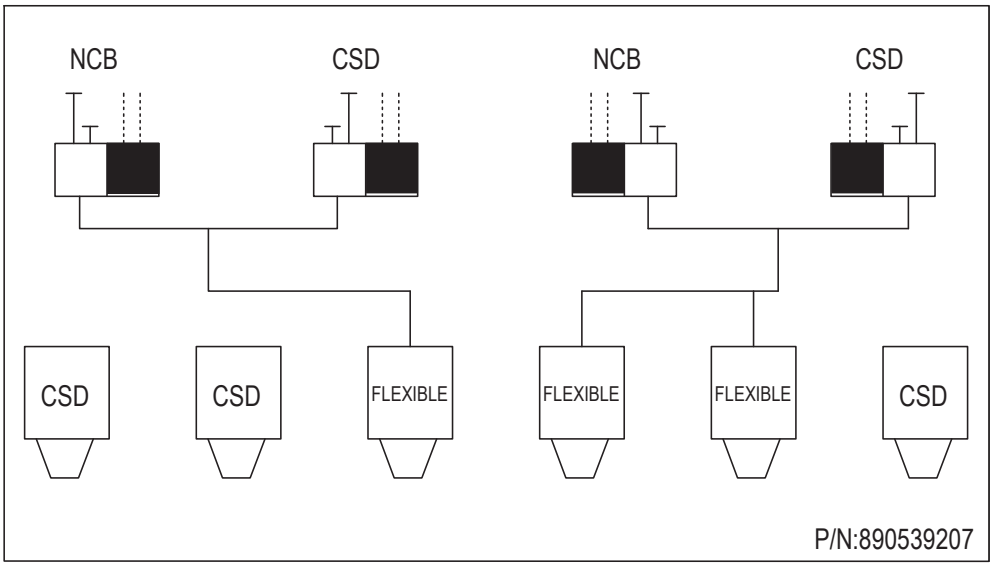
转换操作必须由有资质的专业人员进行.
在进行转换操作之前必须对水路系统泄压.



注意：一次正确的转换操作必须包括以上6个步骤

转换完毕，所有活塞手柄窄面必须朝前保证活塞都在锁紧状态。

尼龙块设置示意图



维　修

注意 -- 应由受过训练并有从业资格的电工、管路技工、制冷技工维修设备。所有布线及管道安装必须要符合国家及地方规范。

预防性维护

预防性维护总结

预防性维护总结	
程序	频率
设备消毒	建议3 个月
检查比例	建议6 个月
清洁冷凝器	6个月，按需要
碳化器双液体止回阀	建议每年
查漏	建议每年
清理袋式容器的连接	建议每年
清洁冷凝器	按需要

消毒

使用不含香味剂的含5.25%次氯酸钠的家用漂白液，每隔3个月对糖浆系统消毒一次。具体消毒步骤参阅本手册关于运行一章相关内容（第23页）。

双重止回阀的检验和清理

参阅本手册关于运行一章相关内容（第25页）。

查漏

参阅本手册关于运行一章相关内容（第26页）。

检查比例

口味改变时或预设时进行。参阅本手册关于运行一章相关内容（第26页）。

清洁冷凝器

参阅本手册关于运行一章相关内容（第26页）。

清洁糖浆袋连接件

见手册中运行一章的相关说明（第24页）。

清洁过滤网

见手册中运行一章的相关内容（第26页）。

调节

CO_2 连接

1. 拧开二氧化碳气瓶阀带链保护帽。安装初级二氧化碳调节器前，逆时针轻轻打开二氧化碳气瓶阀，将出口接头处的尘土和灰尘从出口配件中吹出，然后关闭阀门。
2. 从初级二氧化碳调节器组件的连结螺母上拆下运输标签，确定垫圈在螺母里面。将调节器组件安装到二氧化碳气瓶上，以便于比较容易地读出计量表的读数，然后拧紧连结螺母。
3. 将软饮料罐的二氧化碳管线连接到初级二氧化碳调节器的分流器组件上。
4. 将气体快速断开部件安装到软饮料罐的二氧化碳管线末端。

警告 -- 为避免人身伤害和财产损失，要始终将二氧化碳气瓶置于向上的位置，并用安全链拖住，以防翻落。

警告 -- 二氧化碳取代氧气。暴露在高浓度二氧化碳气体中的人会战栗，然后失去知觉至死亡。防止二氧化碳泄露非常重要，尤其是在不通风的小范围内。如果有二氧化碳泄漏，在修理泄漏前要立即对受污染区采取通风的措施。

初级和次级二氧化碳调节器的设置

1. 稍稍打开二氧化碳气瓶，慢慢放进气体。当线路压力平衡时，完全打开阀门。
2. 将气瓶的二氧化碳调节器调至70psi(4.8bar)，以应用于袋式糖将系统。40psi(2.8bar)应用于含糖的软饮料，10psi(0.7bar)应用于不含糖的软饮料。

   注 -- 配置内置式冷却碳化器的饮料机要求二氧化碳供应压力为75psi(5.2bar)。
3. 打开安全阀给线路放气。
4. 检察系统是否漏气。

故障查找

重要 -- 只有维修人员方可维修内部零件或电子线路。

重要 -- 如果修理其中一条糖浆线路，维修前要断开糖浆筒，放掉压力。

重要 -- 如果修理二氧化碳或碳化水系统，维修前要关闭二氧化碳和水源供应并释放压力。

警告 -- 为避免人身伤害，在维修电力系统或设备内部部件前要断开设备的电源。

现调机设备故障查找		
故障	可能原因	补救方法
出水阀经过调节后，糖浆流量调节器并没有将水和糖浆的比例增加到理想的比例。	1. 无糖浆供应。 2. 糖浆供应容器没有与系统紧密连接。 3. 水箱系统-糖浆筒次级CO_2调节器失效。 袋式糖浆系统-初级CO_2调节器失效。 4. 糖浆流量控制阀不起作用。 5. 旋转螺母内部的锥形垫圈连接过紧，扭曲变形，限制了糖浆流量。	1. 补充糖浆供应。 2. 将糖浆供应容器与糖浆系统紧密连接。 3. 按照指示调节糖浆罐的次级调节器。 按照CO_2指示调节初级CO_2调节器。 4. 修理糖浆流量控制出水阀。 5. 更换锥形垫圈。 确定正确放好。

现调机设备故障查找		
故障	可能原因	补救方法
出水阀经过调节后，糖浆流量调节器并没有将水和糖浆的比例降低到理想的比例。	1. 有尘土或糖浆流量控制阀失效。	1. 卸下并清理糖浆流量控制阀。
排出饮料的碳化程度太低。	1. 现有水源和温度条件下，初级CO_2调节器失去调控能力。 2. 碳化水罐中有空气。 3. 二氧化碳供应中含水、油或尘土。 4. 失去二氧化碳供应。	1. 按照指示调节初次CO_2调节器。 2. 通过安全阀排出碳化器水罐中的气体。 3. 更换受污染的二氧化碳。用温和清洁剂清洗二氧化碳系统（线路、调节器等）。安装清洁的二氧化碳气源。 4. 补充二氧化碳供应。
饮料排出阀门时清澈，但在杯子或玻璃杯中出现泡沫。	1. 杯子或玻璃杯中有油层或肥皂残渣。 2. 成品饮料中的冰处于零度以下。	1. 使用干净的杯子或玻璃杯。 2. 不要直接从冰箱中取用冰块。冰在使用前要将其变“湿”(参阅下面的注释)。
注：碎冰也会造成出水问题。当成品饮料碰到冰块的锐边时，碳酸气就会从排出的饮料中释放出来。		

现调机设备故障查找		
故障	可能原因	补救方法
饮料排出阀门时出现泡沫。	1. 制冷系统复原速度过快，冰层耗尽。	1. 重新生成冰层。
	2. 现有水源条件或温度下，初级CO_2调节器压力过高。	2. 降低初级CO_2调节器压力设置。
	3. 水箱系统-糖浆碳化过度。表现为糖浆线路与设备入口的连接处有气泡。	3. 拆除糖浆筒快速断开件。尽可能多的放出筒中二氧化碳压力以消除过度碳化。
	4. 排水阀受限或变脏。	4. 按照服务与维护手册的指导消毒糖浆系统。
	5. 旋转碳化水管路内部的锥形垫圈使螺母接头扭曲变形，限制碳化水流量。	5. 更换锥形垫圈。确定安放正确。
	6. 脏水供应。	6. 检查滤水器，更换滤水器滤袋。
	7. 成品饮料温度在4.4° C以上。	7. 检查制冷系统。

现调机设备故障查找		
故障	可能原因	补救方法
打不出饮料。	1. 出水阀钥匙锁开关处于关断位置。 2. 饮料机无电源。 3. 出水阀电源断开。 4. 出水阀电线断开或损坏。 5. 变压器失效或出水阀电磁阀失效。	1. 将钥匙锁开关置于打开位置。 2. 接通饮料机电源或检查保险丝是否烧融或断路器跳闸。 3. 接通出水阀电源。 4. 连接或更换电线。 5. 更换失效部件。
成品饮料碳化气含量过低。	1. 在现有供水和温度条件下初级CO_2调节器失去调控能力。 2. 碳化水罐中有空气。 3. 二氧化碳供应中含水、油或尘土。	1. 按照指示调节初级CO_2调节器。 2. 打开1号排水阀，排出碳化气罐中的气体，使水泵电机运转起来。 3. 由维修人员断开受污染的二氧化碳供应源，用温和清洁剂清洗该系统(线路、调节器等)。安装一个干净的二氧化碳供应源。

碳化器故障查找		
故障	可能原因	补救方法
只出碳化水。	1. 糖浆容器与糖浆系统连接不紧密。 2. 无糖浆供应。 3. 糖浆袋系统-糖浆泵失效。糖浆筒系统-糖浆筒的二氧化碳调节器不能适当调节。 4. 出水阀不起作用。 5. 出水阀糖浆流量控制不能适当调节。	1. 紧密连接糖浆容器与糖浆系统。 2. 补充糖浆供应。 3. 更换失效的糖浆泵。按指示适当调节糖浆筒的二氧化碳调节器。 4. 修理出水阀。 5. 按指示调节糖浆流量控制(水-糖浆比例)。
碳化器泵不工作。	1. 超过3分钟运转限制。 2. 碳化器的水源中断。 3. 碳化器罐的水位探针电线断开。 4. 碳化器罐的水位探针失效。 5. 碳化器泵或电机失效。 6. 控制板失效。	1. 补充CO_2供应。 2. 纠正水供应问题。 3. 连接水位探针电线(见注释)。 4. 更换探针(见注释)。 5. 更换泵或电机。 6. 更换控制板。

制冷系统故障查找		
故障	可能原因	补救方法
制冷压缩机不运行。	1. 冰层太厚。	1. 非设备故障。
	2. 水箱中无水。	2. 按照指导注水。
	3. 设备上端控制板电源处于关闭状态。	3. 将控制板电源开关打到“ON”状态(压缩机启动前固定有3分钟延迟)。
	4. 设备电源线未插，或内部制冷组件电源线未插。	4. 插上电源线。
	5. 冰感器断电。	5. 接电或更换不工作的传感器。
	6. 无电源(保险丝烧断或断路器断开)。	6. 更换保险丝或重置断路器(注：保险丝和断路器不做为设备部件提供)。
	7. 电压高/低。	7. 电压必须在198-232Volt之间。
	8. 线路松动、断开或电线破损。	8. 紧固布线或更换破损电线。
	9. 过载保护器切断；压缩机过热，冷凝器风扇电机不能按要求运行。	9. 压缩机冷却到一定程度后方可重新启动，不要透支设备的制冷能力。参见本章“冷凝器风扇电机不工作”部分。
	10. 过载保护器失效或启动延迟。	10. 更换失效部件。
	11. 冰层探针失效。	11. 更换冰层探针。
	12. 控制板失效。	12. 更换控制板。

制冷系统故障查找		
故障	可能原因	补救方法
冰层足够后压缩机不停止工作。	1. 冰层探针位置不正确。	1. 将冰层探针置于正确位置。
	2. 冰层温度传感器失效。	2. 更换冰层温度传感器。
	3. 控制板失效。	3. 更换控制板。
压缩机连续工作但不能形成足够冰层。	1. 过度使用冷却能力。	1. 减少给定时间内排放饮料的总量。
	2. 设备置于过热区域或通过冷凝器盘管的空气受阻。	2. 重置设备，必要时检查，按照指示清洗冷凝器盘管。
搅拌机电机不运转。	1. 无电源(保险丝烧断或断路器断开)	1. 更换保险丝或重置断路器(注：保险丝和断路器不作为设备部件提供)。
	2. 搅拌器电机叶片受到挡。	2. 去除阻挡物。
	3. 低电压。	3. 压缩机启动时，电压必须为90-103Volts(115VAC设备)或180-260Volts(230VAC设备)。
	4. 电子线路松动、断开或电线破损。	4. 紧固布线或更换破损电线。
	5. 搅拌器电机失效。	5. 更换搅拌器电机。

记　　录

部件维修

以下是Titan饮料机主要部件的更换步骤。

更换碳化器泵

1. 断开设备电源。

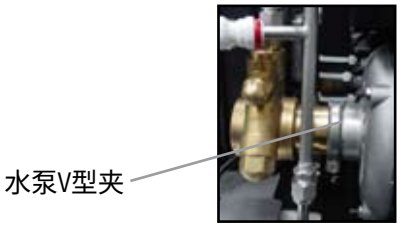
2. 关闭水和二氧化碳气瓶。

3. 拆除下列物件：
   - 卸下顶部一个螺丝，上提，取下灯箱。
   - 钥匙锁开关线。
   - 卸下顶部一个螺丝，上提、前倾，卸下罩板。

4. 取下任何一个排水阀电磁防尘罩，
   向下按电磁阀，给碳化器减压。

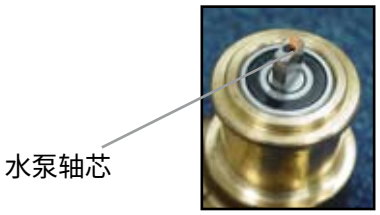
5. 关闭水路管线的进出口。

6. 松开V形夹子，卸下水泵。



7. 按相反步骤安装新水泵。

注 -- 在泵驱动轴芯一定要涂有防护物质。



更换泵电机

1. 断开装置电源。
2. 拆除下列物件：
   - 卸下顶部一个螺丝，上提，取下灯箱。
   - 钥匙锁开关线路。
   - 卸下顶部一个螺丝，上提、前倾，卸下罩板。

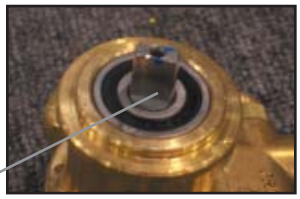
3. 拔掉电机线束。

4. 松开V形夹子，卸下水泵。

5. 卸下螺栓上的2个螺母，拆下电机。

6. 按相反步骤安装新电机。

注 -- 在泵驱动轴芯一定要涂有防护物质。



更换搅拌机电机

1. 断开装置电源。

2. 拆除下列物件：
   - 卸下顶部一个螺丝，上提，取下灯箱。
   - 钥匙锁开关线。
   - 卸下顶部一个螺丝，上提、前倾，卸下罩板。

3. 拔掉电机线束。

4. 卸下安装螺丝。

5. 将电机滑出定位槽，向上提起。

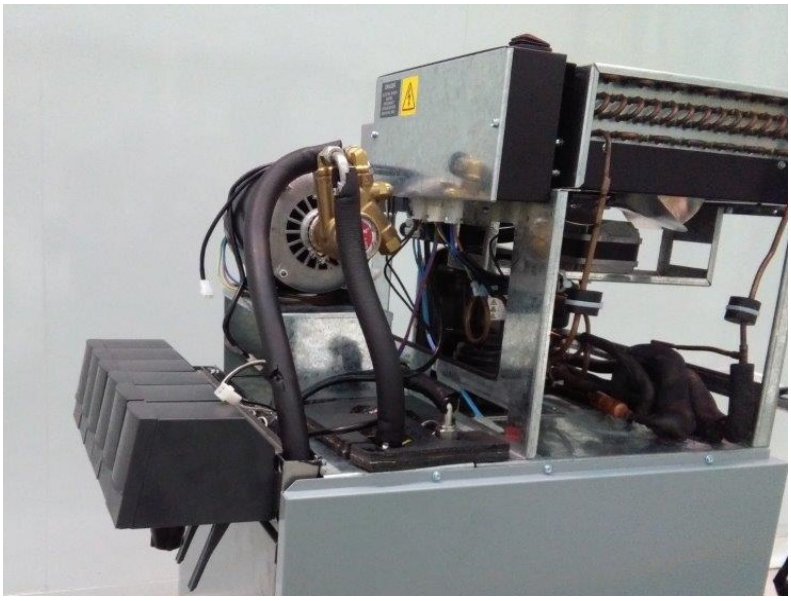
6. 按相反步骤安装新电机。

更换控制板

1. 断开装置电源。

2. 拆除下列物件：
   - 卸下顶部两个螺丝，上提，取下灯箱。
   - 钥匙锁开关线。

3. 提起控制板罩。
   - 拆下安装螺钉。
   - 回推控制板罩。



4. 拔掉所有连接件。

5. 取出所有绝缘体，拆下控制板。

6. 按相反步骤安装新控制板。

更换冷凝器风扇电机

1. 断开装置电源。

2. 拔掉电机线束。

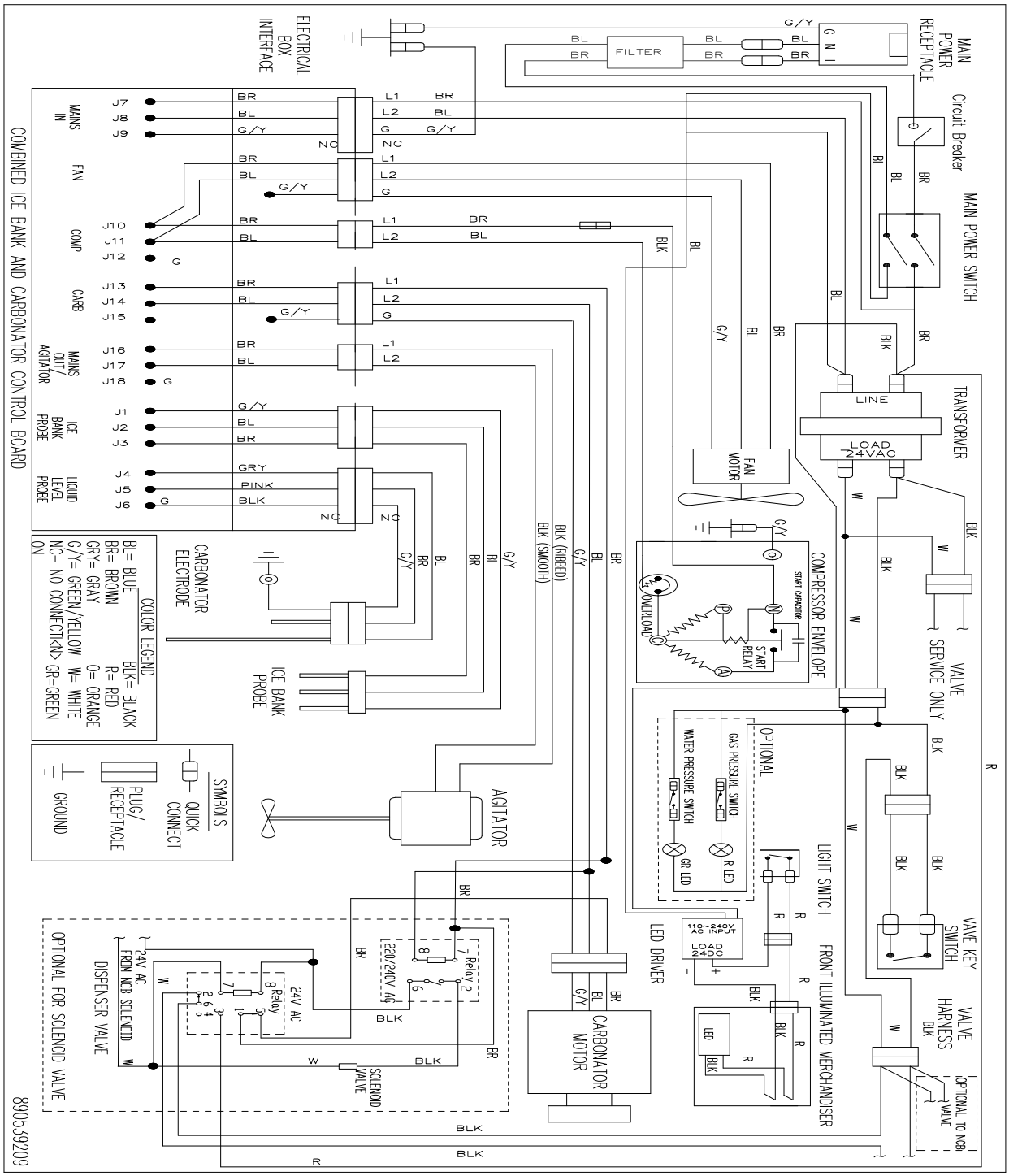
3. 拆掉螺丝，取出风扇电机组件。

4. 从风扇电机组件上拆下电机。

5. 按相反步骤安装新电机。

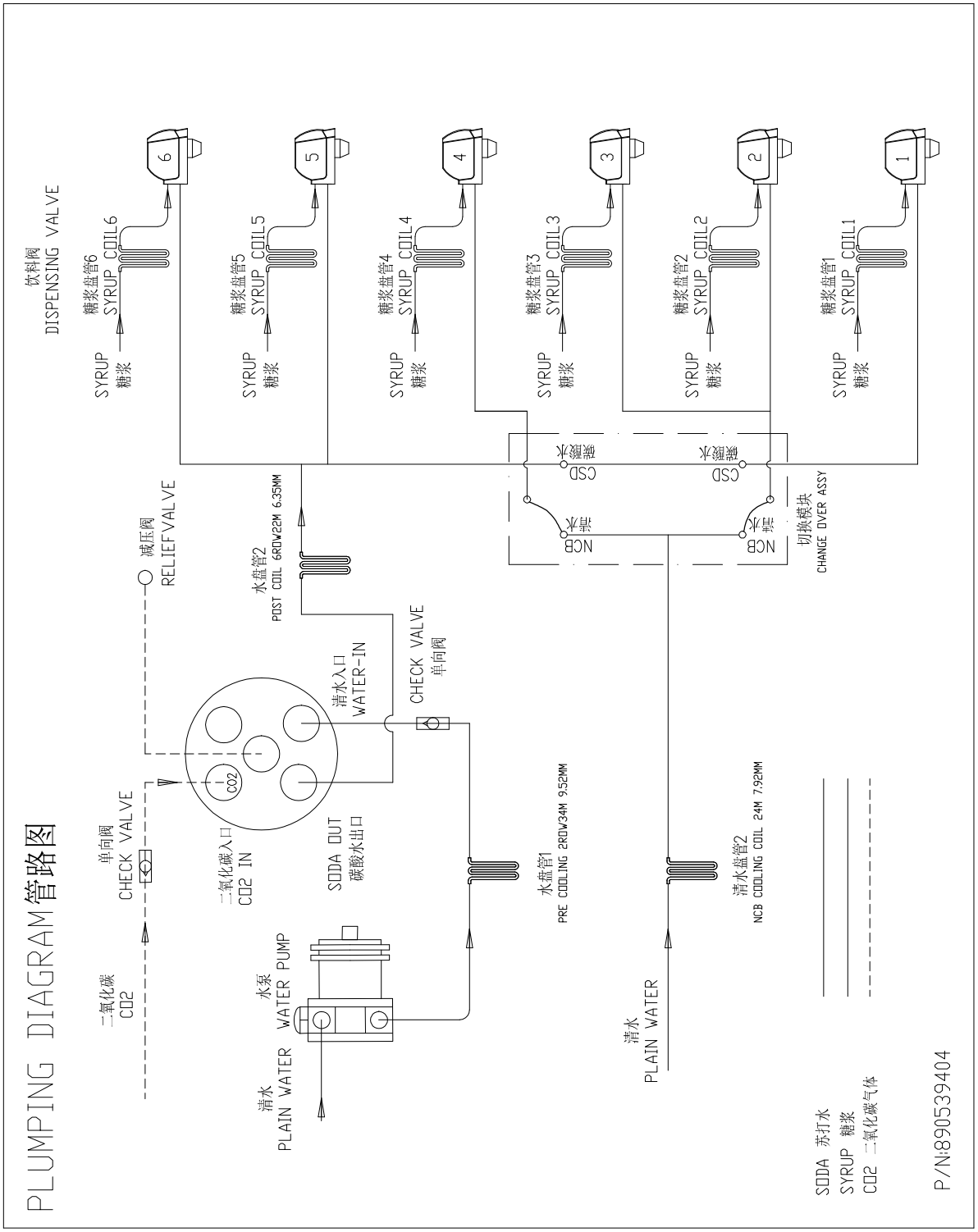
参考资料

电 路 图



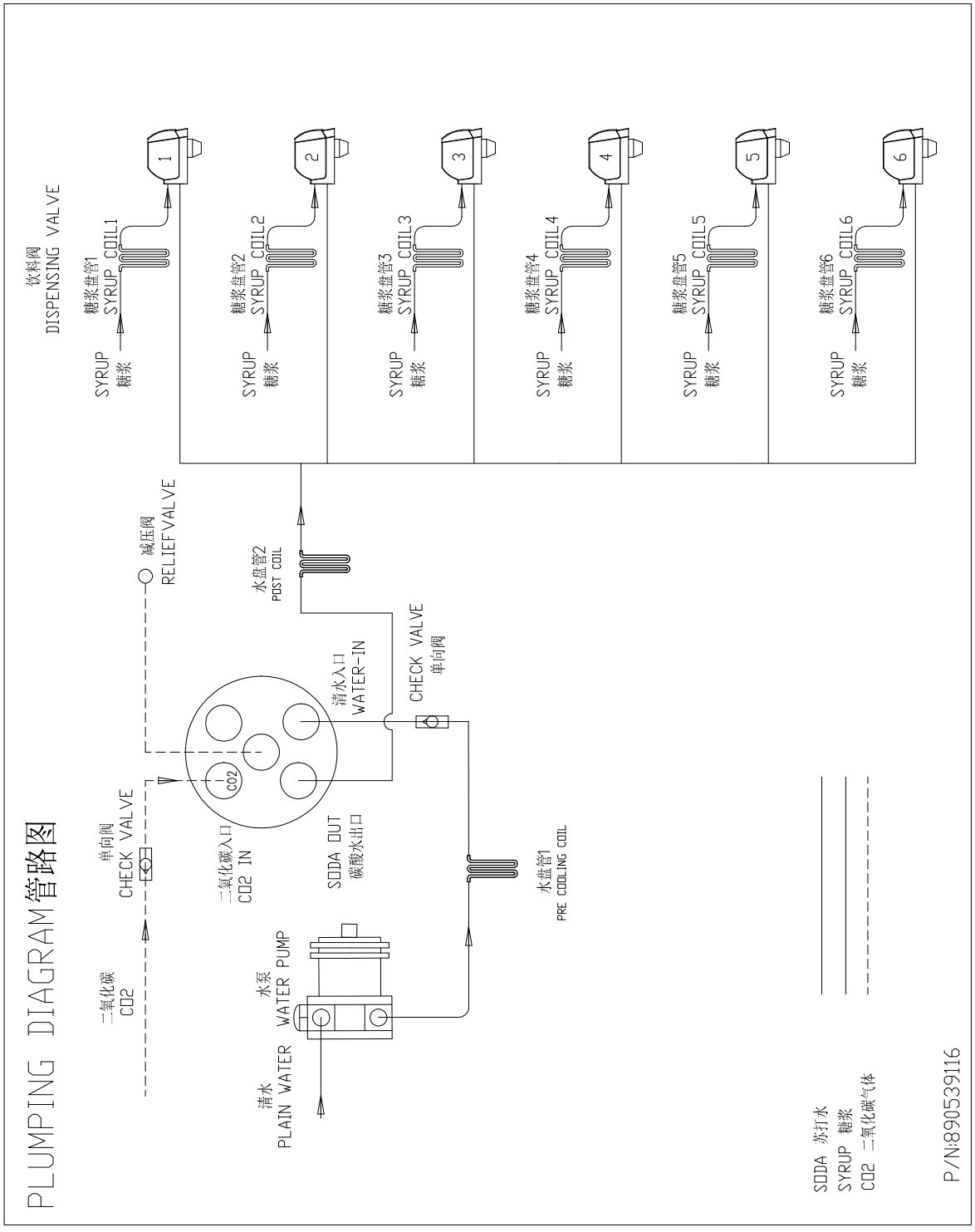
参考资料

管路图



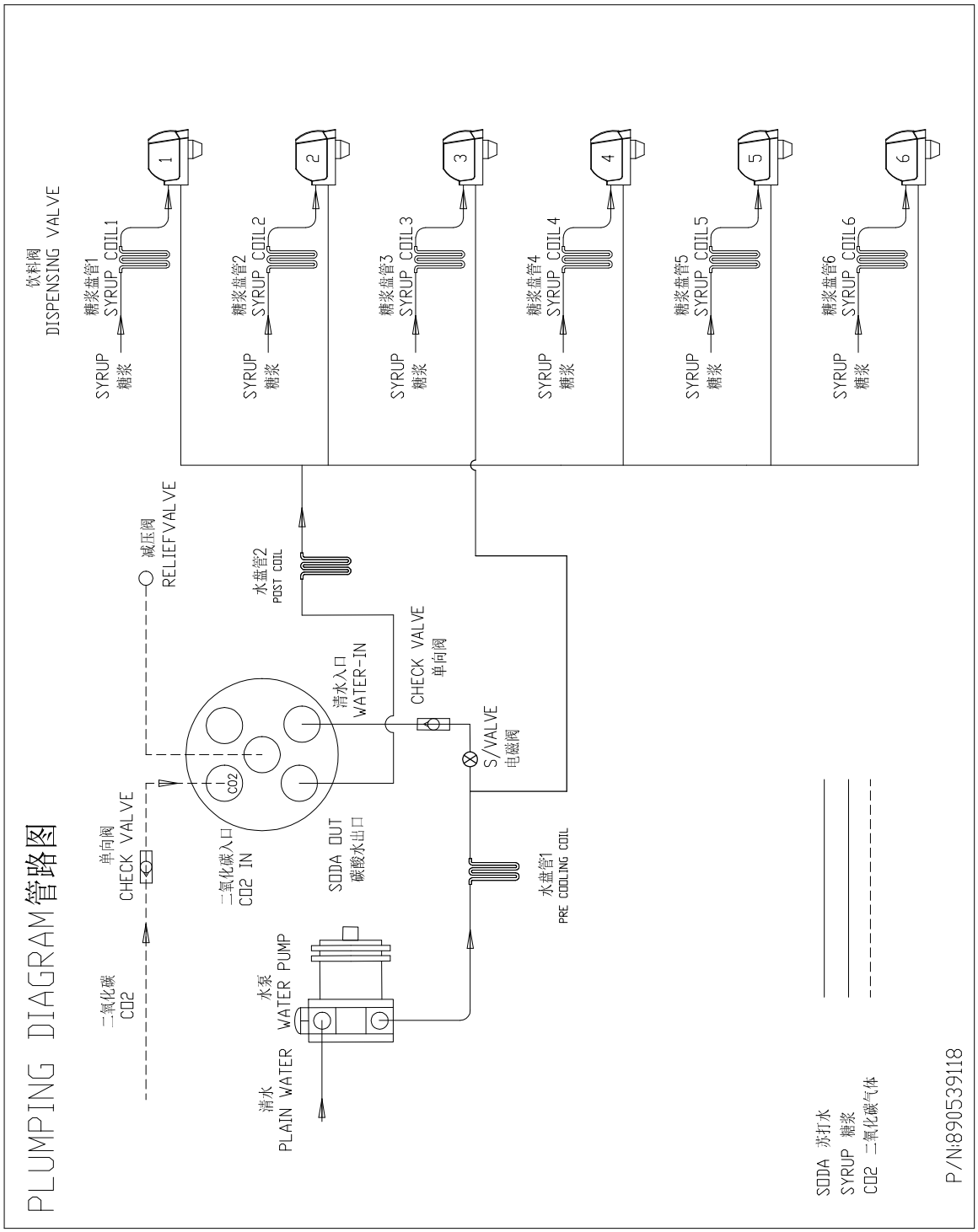
参考资料

管路图



参考资料

管路图



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