BUNN®
Quality Since 1840

nitroN2®
COLD DRAFT

INSTALLATION & OPERATING GUIDE

BUNN-O-MATIC CORPORATION

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To ensure you have the latest revision of the Operating Manual, or to view the Illustrated Parts Catalog, Programming Manual, or Service Manual, please visit the Bunn-O-Matic website, at www.bunn.com. This is absolutely FREE, and the quickest way to obtain the latest catalog and manual updates. For Technical Service, contact Bunn-O-Matic Corporation at 1-800-286-6070.

54261.0003A 03/18

BUNN-O-MATIC COMMERCIAL PRODUCT WARRANTY

Bunn-O-Matic Corp. ("BUNN") warrants equipment manufactured by it as follows:

1) Airpots, thermal carafes, decanters, GPR servers, iced tea/coffee dispensers, MCR/MCP/MCA single cup brewers, thermal servers and ThermoFresh® servers (mechanical and digital) 1 year parts and 1 year labor.
2) All other equipment - 2 years parts and 1 year labor plus added warranties as specified below:
a) Electronic circuit and/or control boards - parts and labor for 3 years.
b) Compressors on refrigeration equipment - 5 years parts and 1 year labor.
c) Grinding burrs on coffee grinding equipment to grind coffee to meet original factory screen sieve analysis - parts and labor for 4 years or 40,000 pounds of coffee, whichever comes first.

These warranty periods run from the date of installation BUNN warrants that the equipment manufactured by it will be commercially free of defects in material and workmanship existing at the time of manufacture and appearing within the applicable warranty period. This warranty does not apply to any equipment, component or part that was not manufactured by BUNN or that, in BUNN's judgment, has been affected by misuse, neglect, alteration, improper installation or operation, improper maintenance or repair, non periodic cleaning and descaling, equipment failures related to poor water quality, damage or casualty. In addition, the warranty does not apply to replacement of items subject to normal use including but not limited to user replaceable parts such as seals and gaskets. This warranty is conditioned on the Buyer 1) giving BUNN prompt notice of any claim to be made under this warranty by telephone at (217) 529-6601 or by writing to Post Office Box 3227, Springfield, Illinois 62708-3227; 2) if requested by BUNN, shipping the defective equipment prepaid to an authorized BUNN service location; and 3) receiving prior authorization from BUNN that the defective equipment is under warranty.
THE FOREGOING WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTY, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF EITHER MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The agents, dealers or employees of BUNN are not authorized to make modifications to this warranty or to make additional warranties that are binding on BUNN. Accordingly, statements by such individuals, whether oral or written, do not constitute warranties and should not be relied upon.
If BUNN determines in its sole discretion that the equipment does not conform to the warranty, BUNN, at its exclusive option while the equipment is under warranty, shall either 1) provide at no charge replacement parts and/or labor (during the applicable parts and labor warranty periods specified above) to repair the defective components, provided that this repair is done by a BUNN Authorized Service Representative; or 2) shall replace the equipment or refund the purchase price for the equipment.
THE BUYER'S REMEDY AGAINST BUNN FOR THE BREACH OF ANY OBLIGATION ARISING OUT OF THE SALE OF THIS EQUIPMENT, WHETHER DERIVED FROM WARRANTY OR OTHERWISE, SHALL BE LIMITED, AT BUNN'S SOLE OPTION AS SPECIFIED HEREIN, TO REPAIR, REPLACEMENT OR REFUND.

In no event shall BUNN be liable for any other damage or loss, including, but not limited to, lost profits, lost sales, loss of use of equipment, claims of Buyer's customers, cost of capital, cost of down time, cost of substitute equipment, facilities or services, or any other special, incidental or consequential damages.

CONTENTS

INTRODUCTION

The cold draft dispenser and door have been shipped in one complete package (the door is in its own package inside the larger box). To prevent damage, the door should remain in its individual packaging until it is ready for installation. This package also includes the drip tray and grate, and the tapper handles for mounting onto the door of the dispenser.

USER NOTICES

Carefully read and follow all notices on the equipment and in this manual. They were written for your protection. All notices are to be kept in good condition. Replace any unreadable or damaged labels.

As directed in the International Plumbing Code of the International Code Council and the Food Code Manual of the Food and Drug Administration (FDA), this equipment must be installed with adequate backflow prevention to comply with federal, state and local codes. For models installed outside the U.S.A., you must comply with the applicable Plumbing /Sanitation Code for your area.

00656.0001

⚠ WARNING

- **Use only on a properly protected circuit capable of the rated load.**
- **Electrically ground the chassis.**
- **Follow national/local electrical codes.**
- **Do not use near combustibles.**
- **Do not deform plug or cord.**

FAILURE TO COMPLY RISKS EQUIPMENT DAMAGE, FIRE OR SHOCK HAZARD.

READ THE ENTIRE OPERATING MANUAL BEFORE USING THIS PRODUCT

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00986.0002

⚠ WARNING

Moving Parts.	**Risk Of Electrical Shock.**
Do not operate unit with this panel removed.	Disconnect power before servicing unit.

27442.0000

SET N2 PRESSURE
125 PSIG

41509.0006

CHARGE
Type R134A, Amount **9** oz (255 gm)
Design Pressures:
High **255** psi (17.6 bar) (1.76 MPa)
Low **36** psi (2.5 bar) (0.25 MPa)

33461.0001

NORTH AMERICAN REQUIREMENTS

- This appliance must be installed in locations where it can be overseen by trained personnel.
- For proper operation, this appliance must be installed where the temperature is between 41°F to 95°F (5°C to 35°C).
- Appliance shall not be tilted more than 10° for safe operation.
- An electrician must provide electrical service as specified in conformance with all local and national codes.
- This appliance must not be cleaned by pressure washer.
- This appliance can be used by persons aged from 18 years and above if they have been given supervision or instruction concerning use of the appliance in a safe way and if they understand the hazards involved.
- Keep the appliance and its cord out of reach of children aged less than 18 years.
- Appliances can be used by persons 18 years and above 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 under the age of 18 years should be supervised to ensure they do not play with the appliance.
- If the power cord is ever damaged, it must be replaced by the manufacturer or authorized service personnel with a special cord available from the manufacturer or its authorized service personnel in order to avoid a hazard.
- Machine must not be immersed for cleaning.
- Cleaning and user maintenance shall not be made by children unless they are older than 18 years and supervised.
- This appliance is intended for commercial use in applications such as:
  - staff kitchen areas in shops, offices and other working environments;
  - by clients in hotel and motel lobbies and other similar types of environments;
- Access to the service areas permitted by Authorized Service personnel only.

INITIAL SET-UP

The cold draft dispenser dimensions are 10"W x 28.4"D x 34"H. The dispenser is designed for indoor use only, in ambient temperatures ranging from 50°F to 90°F and 65% relative humidity environments. Avoid locating the machine where it will be subject to direct sunlight or exposed to other external heat sources. Install the dispenser on a counter that is able to support 150lbs (68 KG) of weight from the machine. Allow a minimum clearance of 6" at the back and top of the dispenser for proper air circulation. Leave some space so the dispenser can be moved for cleaning. For optimum performance, **do not** let warm air from surrounding machines blow on the dispenser.

PLUMBING REQUIREMENTS

This dispenser must be connected to a **FILTERED WATER** source with operating pressure between 30 and 90 psi (0.207 and 0.621 mPa) dynamic. This water source must be capable of producing a minimum flow rate of 2 fluid ounces (88.7 milliliters) per second. A shut off valve should be installed in the line that will supply the dispenser. If installing a water filter, it should be installed as close as possible to the inlet of the machine, but downstream of the shut-off valve. The machine is supplied with a 3/8" (9.52 mm) male barb fitting.

NOTE- At least 18 inches (457 mm) of an FDA approved flexible beverage tubing, such as reinforced braided polyethylene, before the dispenser will facilitate movement to clean the countertop. BUNN-O-MATIC does not recommend the use of saddle valves to install the dispenser. The size and shape of the hole(s) made in the supply line(s) by saddle valves may restrict water flow.

If the water pressure is below 30 psi (dynamic) pressure, a booster pump (P/N 41815.1000) is required at the water line. When installing a water filter and a booster pump, install the water filter in between the booster pump and the machine.

As directed in the International Plumbing Code of the International Code Council and the Food Code Manual of the Food and Drug Administration (FDA), this equipment must be installed with adequate backflow prevention to comply with federal, state and local codes. For models installed outside the U.S.A., you must comply with the applicable Plumbing /Sanitation Code for your area.

NITROGEN GAS HOOK-UP

An N_2 high-pressure tank must also be available prior to installation (customer supplied). There must be sufficient space for the cylinder and should be properly secured with a stand or chain to comply with local safety codes.

The cold draft dispenser will need to be connected to an external Nitrogen (N_2) source. This will require an N_2 pressure regulator to be installed at the tank with a gas supply line to the dispenser. The external N_2 supply connection is a ¼" MFL located on the back of the machine.

The cold draft dispenser may also need connected to a nitrogen generator. The supply pressure from the generator to the machine should be set to 125 psi.

NOTE - If the customer is supplying their own regulator, the regulator should have a working pressure up to 130 psi. 6-feet of dedicated N_2 gas tubing line is required to connect the N_2 regulator to the machine. The gas tubing line must be rated at least 130 psi and requires a ¼" FFL fitting at the end of the line to connect to the machine.

NOTE: For best drink consistency and nitrogen infusion, the nitrogen supply pressure to the machine should be set to 125 psi and maintain +/-10 psi from the 125 psi pressure set point.

NOTE - To ensure safe N_2 operation and compliance with local safety codes, the N_2 cylinder must be properly secured. A strap or chain should be used as a means of properly securing the cylinder.

NOTE - When the supply nitrogen pressure drops below 100 psi, a red light indicator will flash at the top of the dispenser door.

NOTE - This dispenser is not designed to accept CO_2 gas.

ELECTRICAL REQUIREMENTS

CAUTION: The dispenser must be disconnected from the power source until specified in *Electrical Hook-Up*.

The 120V rated dispensers have an attached cord set and require a 2-wire, grounded, individual branch circuit rated 120 volts ac, 15 amp, single phase, 60Hz. The receptacle must be within 6 feet of the machine. The mating connector is NEMA 5-15R.

Refer to the data plate for exact electrical requirements.

ELECTRICAL HOOK-UP

CAUTION: Improper electrical installation will damage electronic components.

1. An electrician must provide electrical service as specified.
2. Using a voltmeter, check the voltage and color coding of each conductor at the electrical source.
3. Confirm that the refrigeration switch near the main control board is in the **OFF** position.
4. Connect the dispenser to the power source.
5. If plumbing is to be hooked up later, be sure the dispenser is disconnected from the power source. If plumbing has been hooked up, the dispenser is ready for *Initial Fill*.

PRODUCT CONCENTRATE REQUIREMENTS

The dispenser works with a range of concentrates. Some dispensers will dispense a range of 4:1 to 12:1 and some dispensers will dispense a range of 10:1 to 32:1. Comfirm you have the correct dispenser for the concentrate you plan to use. **NOTE** - Some concentrates may have different ratio capacities in the dispenser.

Only a few product concentrate suppliers manufacture BIBs that fit directly into our dispenser. If you are working with BIB concentrates that have a Scholle fitting or are packaged in jugs, we recommend you pour the concentrate into our refillable containers (P/N 39302.0000).

PLUMBING HOOKUP

The water connection is located on the rear of the dispenser. A 3/8" (9.52 mm) male flare adapter fitting is supplied, installed on the rear of the dispenser.

NOTE - Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed and maintained in accordance with federal, state and local codes.

Water Hook Up

CAUTION: Improper electrical installation will damage electronic components.

- An electrician must provide electrical service as specified.
- Using a voltmeter, check the voltage and color coding of each conductor at the electrical source.

Plug the dispenser into a 120V power source. Set the dispense switch to the ON position.

INITIAL FILL

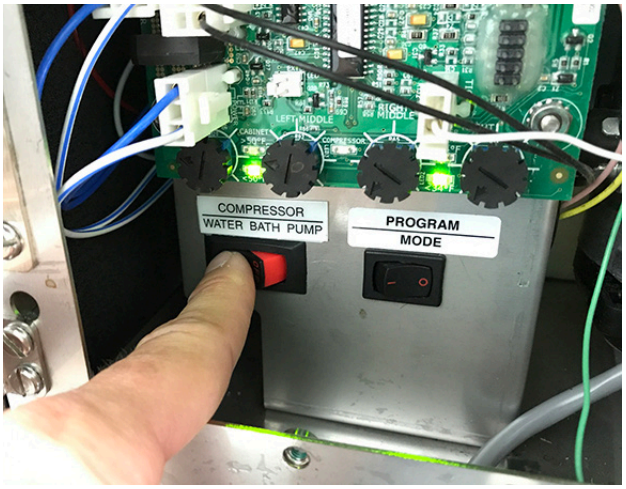
CAUTION: The dispenser must be disconnected from the power source throughout the initial fill except when specified in the instructions.

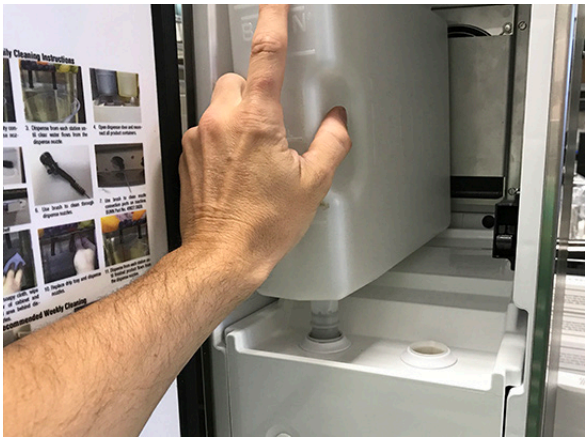
1. Remove drip tray assembly and splash panel from the dispenser. Replace the drip tray.
2. Connect the water source to the back of the dispenser.
3. Connect dispenser to the power source.
4. The dispenser is equipped with an automatic bath fill circuit. When water is supplied and power is applied, the water will automatically fill if program switch is OFF and dispense switch is ON.
5. It is okay to turn ON the compressor water bath switch as soon as the bath starts filling.
6. Replace the splash panel and drip tray.
7. It will take several hours to create the ice bank required for full dispenser performance. During this time, some further trickling from the water bath is expected due to expansion caused by ice bank formation. While the refrigeration system is creating the ice bank, the dispenser may be readied for use as described in *Loading, Priming* and *Adjustment.*

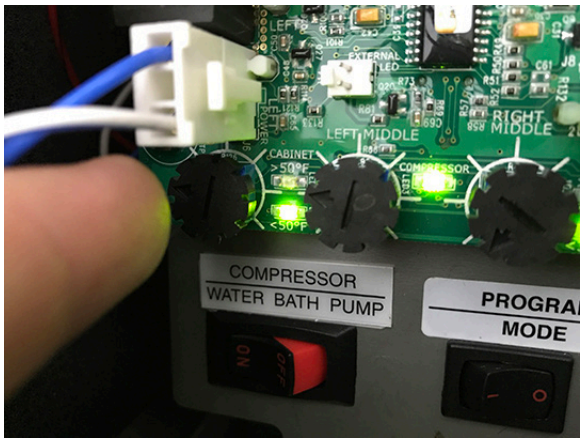
SET-UP INSTRUCTIONS

1. After connecting to a filtered water source (see *PLUMBING REQUIREMENTS*), turn on the water supply to the dispenser.
2. Connect the Nitrogen source to the dispenser, turn on the Nitrogen supply. For best drink consistency and nitrogen infusion, the nitrogen supply pressure to the machine should be set to 125 psi and maintain +/- 10 psig from the 125 psi pressure set point. Verify that the regulator's output gauge reads 125 psig. If the regulator has a shut-off valve, move the regulator's valve handle to the open position (the handle should be parallel to the gas supply line).
3. Connect the LED lighting from the door cover to the door. Install the door using the 5 mounting screws provided. (See *DOOR COVER INSTALLATION*)
4. Confirm that the dispense switch (located in upper right corner of door when open) is in the OFF position.
5. Connect the switches from the handle set to the wire harness on the door (note right and left connections). Install the handle set using the two screws on the bottom side of the handles. Snap the plug in the hole on the door under the handles.
6. Remove the drip tray and splash panel.
7. Install dispense nozzles and drip tray. The nozzle with the Nitro Stout Insert goes in the LEFT* dispense station. The nitro stout insert's function is to provide back pressure while dispensing Nitro Coffee and aides in creating the "cascading" or surging effect in the dispensed drink.
8. Load product into both stations of the dispenser. Prime each side with product by pulling the tapper handle until you see finished product flowing from the dispense nozzle.
9. Dispense a drink at each station and check the Brix by using the Ratio Dispense Test or the Brix Dispense Test.
    - The first dial (left-most potentiometer on the board) will adjust pump speed for the LEFT dispense station. The second dial (second from the left) will adjust pump speed for the RIGHT dispense station. Best practice is to start with the pump dial set to 9:00 position.
10. Make adjustments to pump speed to achieve the desired Brix target of the product.
11. Reinstall the splash panel. The dispenser will take between 4-6 hours to completely build the ice bank.

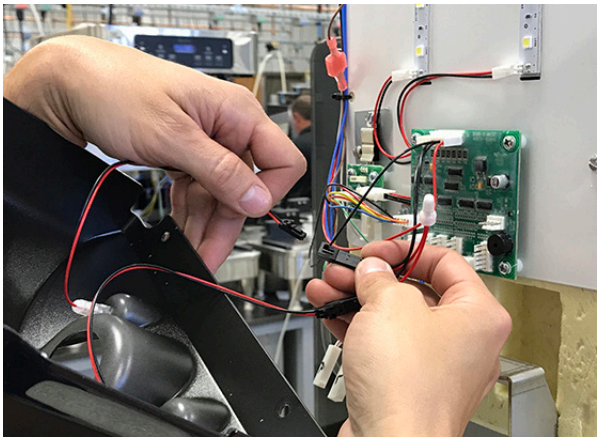
NOTE: Some models dispense nitro beverage on both dispense stations. For these models use a stout dispense nozzle on bothe dispense stations.



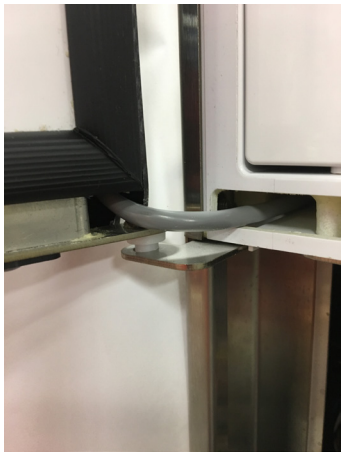




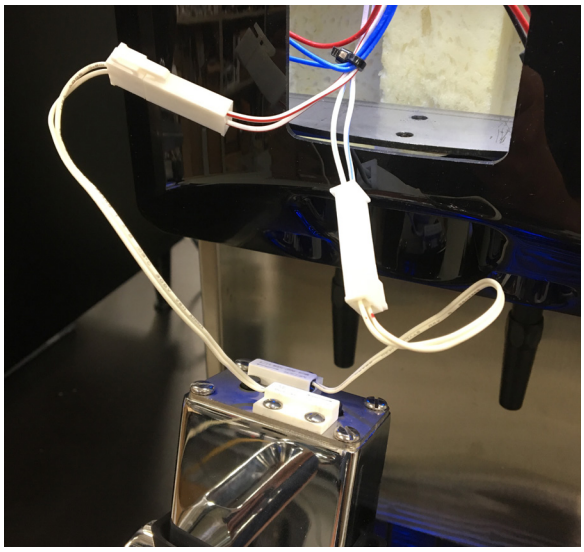
DOOR COVER INSTALLATION



1. Install door cover by first plugging the LEDs from the door into the black connectors with RED/BLACK wires

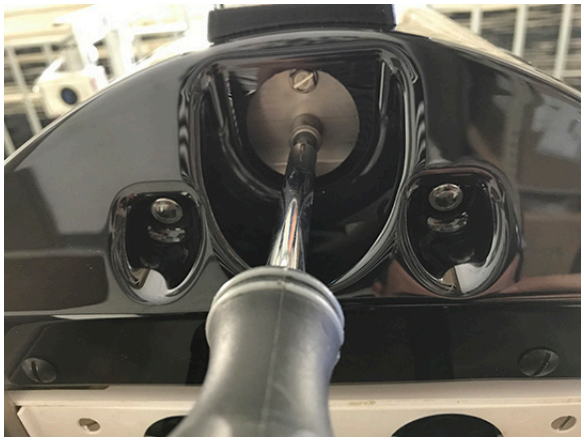


2. Confirm door wiring harness is routed as shown in photo when installing door cover. Install door cover and secure the door cover using 5 screws provided.



3. Connect tapper handle switches to harness in door. NOTE: Connect left switch to blue wires (Left) and right switch to red wires (Right).

4. Slide tapper handle into door assembly.



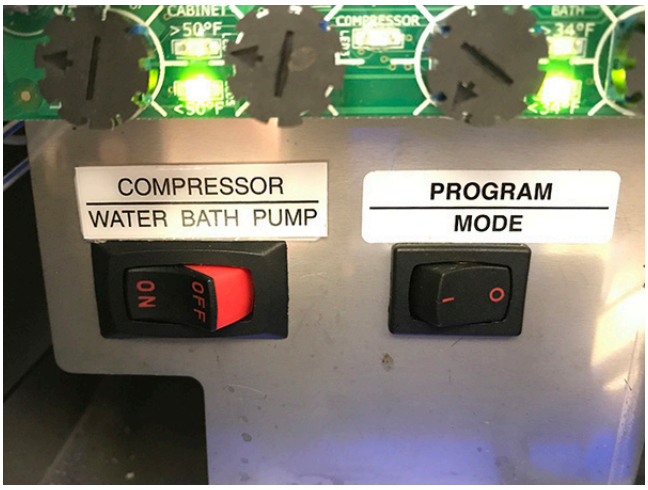
5. Mount tapper handles through bottom of door as shown using the screws provided.

6. Install black hole cover as shown.

OPERATING CONTROLS

Compressor/Water Bath Switch

The refrigeration switch is located on the Electrical Panel of the dispenser near the Circuit Board. This switch controls power to the water bath pump and relay contacts for the compressor and condenser fan motor.



Refrigeration Switch

Product Dispense Tap Handles

Pulling and holding tap handle will initiate product flow from the respective nozzle; releasing the tap handle will stop the flow.

Product Dispense Handles

OPERATING CONTROLS (Continued)

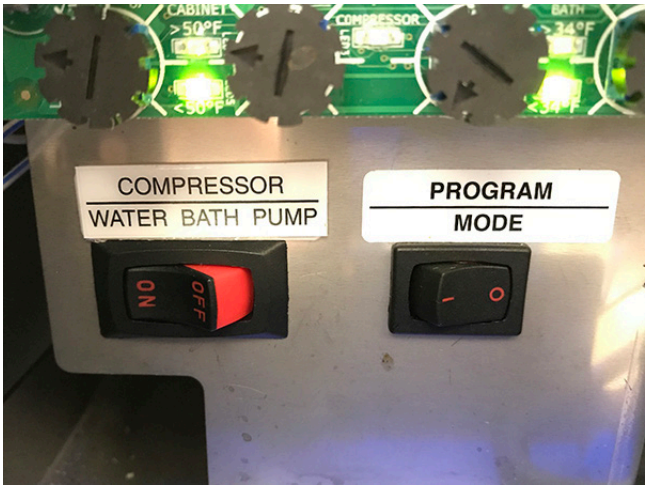
Dispense Lockout Switch

This switch is located inside the door at the top. It is used to turn ON and OFF the Dispensing function. It is also used for fill procedures.

Dispense Lockout Switch

Program Switch

This switch is located near the main control board next to the refrigeration switch.



Program Switch

CLEANING & PREVENTIVE MAINTENANCE

Daily: Rinse Procedure

Tools required: 32 oz. (946 ml) minimum empty container

1. Open dispenser door. Lift up on product containers and remove them from the machine.
2. Wipe down the internal compartment of the cabinet and the concentrate container's inlet adapter(s) area.
3. Close the door, place an empty container under the dispensing nozzle(s).
4. Dispense from each station until clear water flows from the dispense nozzle(s).
5. Open dispenser door and reconnect all product containers.

Daily: Parts Washing

1. Remove and wash the dispense nozzle(s), Nitro Stout Insert, drip tray and drip tray cover in a mild detergent solution. Rinse thoroughly. Use brush (00674.0000) to clean inside and oring area on dispense nozzles.
2. Remove Nitro Stout Insert in nitro nozzle for cleaning. Replace before reinstalling nozzle.
3. Wipe splash panel, areas around dispense nozzle(s), and refrigerated compartment with a clean, damp cloth.
4. Use brush and a mild detergent solution to clean inside dispense area where dispense nozzles are removed. Rinse and wipe thoroughly.

Sanitize Process for Semi-Automatic and Manual

Tools required: 1 empty 5 gallon (18.9 L) bucket, 2 packets of Kay 5 sanitizer, and clean, empty concentrate container.

1. Remove all concentrate from the dispenser and store in a separate refrigerated compartment.
2. Fill clean empty concentrate container(s) with approximately 32 oz. (946 ml) of hot tap water (approximately 140° F (60° C). Load the containers of hot water into the dispenser (just like concentrate).
3. Place an empty container under the dispense nozzles.
4. Pull and hold the tapper handles at each station until the stream out of the nozzles runs clear (about 30 seconds). NOTE - the dispenser will not allow all stations to run at the same time.
5. Once this is completed, remove the container(s) and empty.
6. Remove each dispense nozzle and Nitro Stout Insert. Run under hot tap water to remove excess product build-up.
7. Prepare 2.5 gal. (9.46 L) of sanitizing solution by dissolving 1 packet of Kay-5 sanitizer into 2.5 gal. (9.46 L) of 120° F (48.9° C) water to ensure 100 ppm of available chlorine.
8. Place nozzle(s) in a separate 1-quart container of sanitizing solution and mix thoroughly. Allow the parts to soak for 2 minutes.
9. Clean the dispense nozzle receptacle (dispense valves) with the sanitizing solution and a soft bristle brush.
10. Clean the concentrate container's inlet adapter(s) using the sanitizing solution and a soft bristle brush. Discard all remaining sanitizing solution.
11. Place the nozzle(s) back in their dispense stations making sure to place the Nitro Stout Insert back in the LEFT dispense nozzle.
12. Fill approximately 128 ounces (3.8 L) of clean sanitizing solution into clean, empty concentrate container(s). Do not re-use the sanitizing solution used in step 10. Load the container(s) into the dispenser.
13. Place the empty 5 gallon bucket under the dispense nozzles.
14. Dispense sanitizing solution through each station for 1 minute. Allow to soak for 5 minutes. Dispense from each station for 2 minutes.

NOTE – The machine will allow only one station to dispense at a time. Alternating stations is required for these steps.

15. When the above cycle is complete, remove the sanitizing solution and replace with concentrate.
16. At each station, pull and hold the dispense tapper handles until product appears. Dispense one 12 ounce (354.9 ml) glass of finished product and discard.
17. Wipe internal and external surfaces with a clean, damp cloth.

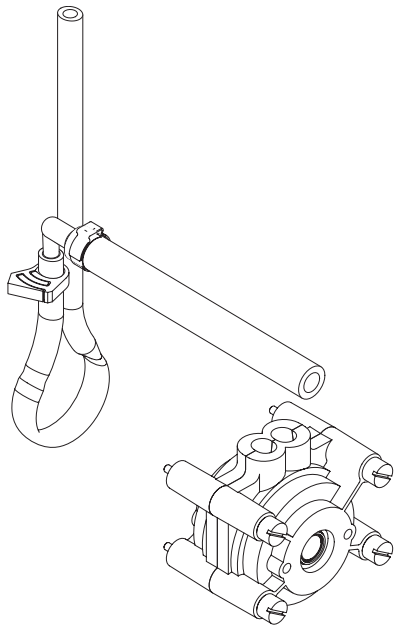
CLEANING (cont)

Weekly: Clean Condenser Coils and Air Filter

1. 1. Locate the removable air filter at the back of machine and remove to clean in warm soapy water.
2. Use a soft bristle brush to clean the build-up of dirt in the condenser.

Annually: Replace Pump Tubing

1. Open dispenser door.



2. Remove all product containers and place them in a refrigerated (35-40 degrees F [1.6-4.4 degrees C]) environment. Disconnect all connections to ambient products from the bottle adapter.
3. Rinse all dispense stations using steps outlined in “DAILY RINSE PROCEDURE”.
4. Disconnect dispenser from power source.
5. Remove the dispense platform cover.
6. Disconnect the dispense platform water line(s) from the supply line inside the refrigerated cabinet and disconnect the wiring connection(s) from the cabinet receptacle(s).
7. Remove the mounting screw(s) securing the dispense platform(s) to the cabinet .
8. Pull the dispense platform(s) completely out of the cabinet and place it on a flat work surface.
9. Close the dispenser door.
10. Remove the 4 screws securing the pump head.
11. Gently pull the pump head apart.
12. Gently pull the pump tube from around the pump’s rotor.
13. Release the clamps securing the old pump tubing to the plastic elbows.
14. Pull the plastic elbows from the old pump tubing, and discard the old pump tubing.
15. Insert the plastic elbows into the new pump tubing and secure it with the clamps.

NOTE: Obtain new parts using the Illustrated Parts Catalog listed at **www.bunn.com**.

16. Gently wrap the new pump tubing around the pump’s rotor.
17. Reassemble the pump housing onto the platform assembly.
18. Repeat steps 10 through 17 for the remaining pump(s).
19. Replace the dispense platform(s) into the refrigerated cabinet, making sure to reconnect all electrical and water connections.
20. Replace the dispense platform cover.
21. Turn power on to dispenser.
22 Install containers of rinse water, run each station and check for leaks. Repair leaks as necessary.
23. Replace product shelf and product containers. Reconnect any connections to ambient product containers.
24. Prime the pumps as described in “PRIMING” in the Initial Fill Section.

ADJUSTMENT & OPTIONAL SETTINGS

Water Flow Testing and Adjustment - Still Side Only

NOTE: Purge all dispense stations to remove air from water line before making initial adjustments.

NOTE: Some models are equipped with nitro dispense valves at both dispense stations. Nitro dispense valves do not reuire any water flow adjustment.

1. Place a graduated measuring cup or the large chamber of the empty brixing cup (BUNN-O-MATIC part number 33095.0000) under the appropriate dispense nozzle. Place the Program switch in the ON position.
2. Pull and release the desired tap handle three times.
3. The selected position will dispense water (no concentrate) only for 3 seconds.
4. Measure the water dispensed. Suggested target is 133 ml (4.5 oz) per 3 seconds flow rate.
5. Adjust the water flow rate Fig 17, (counterclockwise to increase flow rate; clockwise to decrease flow rate) to the corresponding product mix ratio.

Adjusting Water Flow
Using Flat Blade Screwdriver

6. Repeat steps 1 through 5 as necessary until the correct water flow rate is achieved.
7. Place the Program switch back into the OFF position.

Pump Speed Adjustment

1. Disconnect the dispenser from the power source.
2. Remove the drip tray.
3. Remove the two screws securing the splash panel and remove the splash panel
4. Locate the adjustment knobs on the circuit board.

NOTE: Start with the adjustment dial in the nine o'clock position.

5. Turn the adjustment knobs clockwise to increase speed and counterclockwise to decrease speed.

NOTE: Use the two left most knobs to make pump speed adjustments. Left most being station #1 (left side dispense) and second from left being station #2 (right side dispense).

6. Reinstall the splash panel and drip tray and reconnect the dispenser to the power source.

LOADING

Frozen Concentrates

NOTE: Loading frozen concentrate in the product cabinet may cause damage to the machine. This damage is not covered by warranty.

1. Thoroughly mix the thawed concentrate by vigorously shaking the product container.
2. Open the dispenser door.
3. Prior to placing the product container in the dispenser, make sure that the o-ring on the container adapter is lubricated. This will ease removal of the container when it becomes necessary.
4. Place the product container in the desired position and press it firmly into the bottle adapter opening.
5. Open the vent hole in the product container. (If required)

Note: Concentrate in the container must be completely thawed and be within the temperature range of 35-40 degrees F (1.6-4.4 degrees C.) Product outside of this temperature range, especially below, may produce an "out of ratio" drink.

Ambient Concentrates (Optional)

1. Install an Ambient Concentrate Conversion Kit (BUNN-O-MATIC part number 33699.0002) per the instructions provided in the kit.
2. Attach the concentrate product hose to the appropriate concentrate line located at the rear of the dispenser.
3. Attach the other end of the product hose to the product container through an appropriate fitting.

NOTE: Although the dispenser is designed to accept ambient concentrates, the Nitro Coffee cascade performance may be reduced due to ambient product mixing with the cold nitrogenated water.

PRIMING

1. Open the dispenser door
2. Load concentrate per instructions in section titled *Loading*.
3. Close the dispenser door.
4. Place a large container under the appropriate dispense nozzle.

Pull and hold the tap handle, until concentrate dispenses from the dispense nozzle.

Note: This may take several seconds, depending on the installation and set pump speed.

ADJUSTMENT & OPTIONAL SETTINGS (cont)

Ratio Dispense Test Set Up Procedure

1. Place the Program switch in the ON position.
2. Water flow rate should be factory pre-set to 133 ml (4.5 oz) per 3 second dispense. To verify, place a graduated measuring cylinder under the dispense nozzle, pull and release the tapper handle 3 times. The dispenser will then dispense an amount of water for 3 seconds. Record the water output for later reference on each dispense head.
3. Pull and release the tapper handle 6 times. The dispenser will then dispense an amount of concentrate for 3 seconds.
   - For best results, discard the first two samples before recording output. Repeat the same practice after every adjustment.
4. Record the amount dispensed. NOTE – Measuring in milliliters is required for accuracy.
5. Refer to the Ratio chart below to confirm proper volumes for desired ratios. Concentrate amounts for each ratio are highlighted in yellow under the ratio number.
6. To increase or decrease the product output, refer to Step 10 of SET-UP INSTRUCTIONS.
7. Place the Program switch back to the OFF position.

Ratio Target / 3 sec. water dispense in milliliters	4+1	5+1	6+1	7+1	8+1	9+1	10+1	11+1	12+1	13+1
127	31.8	25.4	21.2	18.1	15.9	14.1	12.7	11.5	10.6	9.8
130	32.5	26.0	21.7	18.6	16.3	14.4	13.0	11.8	10.8	10.0
133	33.3	26.6	22.2	19.0	16.6	14.8	13.3	12.1	11.1	10.2
136	34.0	27.2	22.7	19.4	17.0	15.1	13.6	12.4	11.3	10.5
139	34.8	27.8	23.2	19.9	17.4	15.4	13.9	12.6	11.6	10.7

	14+1	15+1	16+1	17+1	18+1	19+1	20+1	21+1	22+1	23+1
127	9.1	8.5	7.9	7.5	7.1	6.7	6.4	6.0	5.8	5.5
130	9.3	8.7	8.1	7.6	7.2	6.8	6.5	6.2	5.9	5.7
133	9.5	8.9	8.3	7.8	7.4	7.0	6.7	6.3	6.0	5.8
136	9.7	9.1	8.5	8.0	7.6	7.2	6.8	6.5	6.2	5.9
139	9.9	9.3	8.7	8.2	7.7	7.3	7.0	6.6	6.3	6.0

	24+1	25+1	26+1	27+1	28+1	29+1	30+1	31+1	32+1	33+1
127	5.3	5.1	4.9	4.7	4.5	4.4	4.2	4.1	4.0	3.8
130	5.4	5.2	5.0	4.8	4.6	4.5	4.3	4.2	4.1	3.9
133	5.5	5.3	5.1	4.9	4.8	4.6	4.4	4.3	4.2	0.0
136	5.7	5.4	5.2	5.0	4.9	4.7	4.5	4.4	4.3	4.1
139	5.8	5.6	5.3	5.1	5.0	4.8	4.6	4.5	4.3	4.2

Brix Dispense Test Set Up Procedure

1. Load the concentrate in the dispense station. Dispense until the finished drink is flowing from the dispense nozzle.
2. Dispense a typical cup size and discard.
3. Dispense another sample and measure the Brix using a refractometer. Best practice is to allow samples dispensed with nitrogen to settle before taking a measurement.
   - Once a sample is placed on the refractometer, wait until it reaches temperature to determine current Brix measurement (about 1-2 minutes).
   - Many refractometers include a thermometer on board and will help indicate that the sample is at room temperature and ready to be tested. (See refractometer manual for more details on usage.)
4. To increase or decrease the product output, refer to Step 10 of SET-UP INSTRUCTIONS.
5. Continue making pump speed adjustments and measuring samples until desired Brix target is reached.

Dispenser Lockout

Dispense functions of the dispenser can be turned-off to prevent unauthorized use of the dispenser, while keeping the refrigeration system running.

1. Locate the Dispense Lockout switch inside the door at the top of the dispenser.
2. Place the switch in the OFF position to prevent dispensing.
3. Place the switch in the ON position to allow dispensing.

NOTE: This switch will also operate the door lights on models equipped with this feature and actuates water bath autofill.

DISPENSER FAULT CODES

NOTE: All LED flashing sequences include a 3-second delay between flash codes.

1. Bath Sensor Open – 1 flash of the circuit board mounted bath LED's and 1 flash of the door mounted blue LED's.
   Possible Cause(s): Bath sensor not connected to the main board. Bath sensor failed.

2. Bath Sensor Shorted – 2 flashes of the circuit board mounted bath LED's and 2 flashes of the door mounted blue LED's.
   Possible Cause(s): Bath sensor failed. Shorted bath sensor wires.

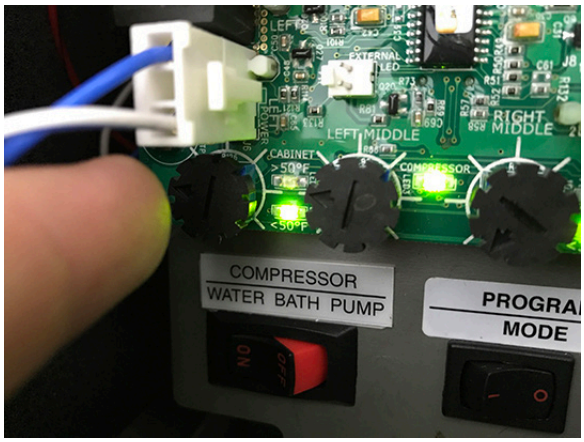
3. Cabinet Sensor Open – 1 flash of the circuit board mounted cabinet LED's and 3 flashes of the door mounted blue LED's.
   Possible Cause: Cabinet sensor not connected to the main board.

4. Cabinet > 50 degrees for 4 hours – Circuit board mounted cabinet LED's will flash slowly. 4 flashes of the door mounted blue LED's. This fault will stop all dispense functions.
   Possible Cause(s): Cabinet fan not running. Water bath pump not running. Check compressor/WB pump switch to confirm it is On. Water bath is low.
   Troubleshoot by powering the dispenser down and back up to reset the fault.

5. Left Concentrate Pump Stalled - 5 flashes of the door mounted LED's.
   This fault will reset itself after 5 seconds.
   Possible Cause: Peristaltic pump failed or stalled.

6. Right Concentrate Pump Stalled – 6 flashes of the door mounted LED's.
   This fault will reset itself after 5 seconds.
   Possible Cause: Peristaltic pump failed or stalled.

7. Refill Fault – 7 flashes of the door mounted LED's if the bath has not reached proper level after 4 minutes. Dispenser will not allow additional bath filling until this fault is reset.
   Possible Cause(s): Water line to machine turned off. Water not connected to dispenser. Water flow/pressure source too low. Bath fill valve failed.
   Troubleshoot by powering the dispenser down and back up to reset the fault. Bath will start filling 30 seconds after power up.



Fault Code LEDs

TROUBLESHOOTING

A troubleshooting guide is provided to suggest probable causes and remedies for the most likely problems encountered. If the problem remains after exhausting the troubleshooting steps, contact the Bunn-O-Matic Technical Service Department.

- Inspection, testing, and repair of electrical equipment should be performed only by qualified service personnel.
- All electronic components have 120-240 volt ac and low voltage dc potential on their terminals. Shorting of terminals or the application of external voltages may result in board failure.
- Intermittent operation of electronic circuit boards is unlikely. Board failure will normally be permanent. If an intermittent condition is encountered, the cause will likely be a switch contact or a loose connection at a terminal or crimp.
- Solenoid removal requires interrupting the water supply to the valve. Damage may result if solenoids are energized for more than ten minutes without a supply of water.
- The use of two wrenches is recommended whenever plumbing fittings are tightened or loosened. This will help to avoid twists and kinks in the tubing.
- Make certain that all plumbing connections are sealed and electrical connections tight and isolated.

WARNING – • Exercise extreme caution when servicing electrical equipment.
- Unplug the dispenser when servicing, except when electrical tests are specified.
- Follow recommended service procedures.
- Replace all protective shields or safety notices.

PROBLEM	PROBABLE CAUSE	REMEDY
Cold Water Circulation Dispense stations not working. **Note:** Cooling failure or excessive cabinet temperatures for more than 4 hours will result in dispense lockout or no dispense. **Note:** Reset fault/timer by unplugging unit.	1. Cabinet cooling fan.	Replace fan (24vdc). Note: Fan receives power when the dispenser is powered.
	2. Bath recirculation pump.	A) If not running, check refrigeration switch and wiring for proper continuity. B) Check for 120V or 230V AC at pump. Replace pump.
	3. Restricted water flow to cabinet water coil and bath.	Check for kinked hose.
Dispense nozzle dripping/won't stop dispensing.	1. Juice residue causing oring on dispense nozzle to lose vacuum.	A) Remove dispense nozzles and stout insert. Clean nozzles and oring in mild detergent solution. B) Use soft bristle brush and mild detergent solution to clean dispense valve area that dispense nozzles are seated.

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Refrigeration Dispense stations not working. **Note:** Cooling failure or excessive bath and cabinet temperatures for more than 4 hours will result in dispense lockout or no dispense.	1. Compressor ON/OFF switch.	Check for "ON" position or no continuity - replace switch.
	2. Dirty condenser filter or fins.	Clean filter and fins or replace condenser filter. (Filter not supplied on some machines).
	3. Condenser fan not running.	A) Check for 120V or 230V AC. Replace fan motor or check fan blades for obstructions. B) Check compressor LED on circuit board. If ON, relay coil should have power (120 or 230 VAC).
	4. Compressor relay not activating.	Check compressor relay coil for 120 or 230vac. NOTE: Always check power with coil attached. If compressor LED is ON and no 120 or 230vac - replace board. If yes, 120 or 230vac - replace relay. Note: Relay contacts are normally open.
	5. Compressor not running.	Check compressor thermal overload (N/C). If open check for dirty condenser filter or adequate ventilation and space around machine.
	6. Compressor running and not cooling.	Check refrigeration system for leaks and proper charge.
	7. Low water bath or bath fill valve failed.	Check Dispense switch is set to ON and sight gauge shows full water bath. If sight gauge is low, press Dispense switch to OFF. Wait a few seconds. Press Dispense switch to ON. Bath will automatically start filling water bath after 30 seconds.

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Dispenser Locked Out Dispense stations not working.	1. Check Dispense Lockout switch.	(A) Set switch to ON position. (B) Check switch and harness for proper continuity.
Cooling system failure.	1. Refrigeration or cold water recirculation system.	Check all previous items that pertain to refrigeration or cold water recirculation
Dispense station not working	1. Dispense Lockout switch set to OFF position.	Place switch in ON position.
	2. Dispense switch failed	Check switch and harness for proper continuity.
All stations dispense concentrate only	Main water supply	Check for ON position.
	Frozen bath	A) Compressor relay/contacts shorted - replace relay. B) Recirculating pump - replace or check for kinked flex line.
	Inlet water valve failed	A) Check for 120V or 230V power when dispensing. If yes, replace valve. If no, check harness for proper continuity. Then replace circuit board if needed.

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Dispense station **concentrate only**	Water solenoid	Replace solenoid (24vdc) or check wire connection between water valve and main control board.
Dispense station **water only**	Concentrate out	Replace refill concentrate container or BIB
	Product pump not pumping	Check for proper counterclockwise rotation of pump rollers. If counterclockwise, replace pump tubing. If clockwise, wire connection to pump is reversed. Switch wires on terminals.
	Pump not turning	A) Check speed setting on circuit board and increase speed (turn clockwise) B) Check for d.c. power to pump motor. If yes, replace motor assy. If no, check harness for proper continuity. Then replace circuit board if needed.

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Water leak filling drip tray or around dispense deck area	1. Initial fill/setup	Some expansion normal. May fill drip tray during initial ice block formation
	2. Dispense deck	Inspect or replace fittings clamps, o-rings, solenoids and quick disconnect fittings. **NOTE:** Dispense deck area slopes to drain tube that leads to the drip tray.
	3. Water pressure greater than 100psi	Install water pressure regulator and reduce to 50 psi.
Water leaking beneath machine	1. Bath tank overflow.	A) Check all internal water connections. B) Check internal plumbing connections. C) Check bath float switch
	2. Condensation from cabinet cooling coil.	Check for routing of condensation tube to water bath.

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Unit is not working	1. Step-down transformer.	Check for 120/24 or 230/24 vac. If no 24vac reading, replace step-down transformer.
	2. Main control board.	If 24 vac present and no LED's lit, replace control board.
Difficulty brixing and/or weak beverage	1. Product viscosity or too cold.	Thorough thaw of product before use (35° - 40°)
	2. Low water pressure.	Maintain 30 psi or higher and a minimum dynamic flow rate of 4.5 fl oz/sec.
	3. High water pressure.	Over 100 psi, install a pressure regulator and set to 50 psi.
	4. Dispense valve adjustment setting.	A) Perform 3 second water dispense test. Factory setting is 133 ml in 3 second dispense. B) Adjust water to 133 mL/3 sec.. Once water is set, adjust motor speed to achieve brix degrees.
	5. Brix ratio.	Check for proper brix ratio per product using Ratio method and or refractometer method.
Difficulty brixing and/or weak beverage	1. Pump tubing.	Inspect, clean, or replace tubing and pump rotor/rollers for ease of rotation.
	2. Use of portable water pump.	A) Follow plumbing requirements for pressure and flow rate. B) Source another portable pump or water supply that meets requirements.
Difficulty brixing bag-in-box	Vacuum leak	Inspect all lines and connections from bag-in-box connector to bottle adapter assembly.

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Only Water Flowing from Faucet	1. Bag-in-Box (BIB) or caddy is empty.	1. Change BIB to full BIB or refill the caddy with more product.
	2. BIB or caddy is not engaged in bottle adapter properly.	2. Lift BIB or caddy out of adapter and seat it back down properly. Follow step-by-step instructions on priming product through the system.
Head on Beverage Thinner than Desired	1. System is not set to temperature yet (ice bank not fully formed).	1. Wait until system is fully cooled and ice bank fully formed before setting preferred N2 pressure. Check Compressor switch is set to ON and sight gauge shows full water bath. If water bath sight gauge is low, press Dispense switch to OFF. Wait a few seconds. Press Dispense switch to ON. Bath will automatically start filling water bath after 30 seconds.
	2. a) Tank regulator is below 125 psi (red LED Nitrogen "Out" light is flashing on dispenser door).	2. a) Adjust tank regulator by turning the T-handle clockwise until needle reaches 125 psi. Dispense a drink to make sure needle stays set at 125 psi.
	b) Gas leak on tank regulator.	b) If gas is leaking from tank regulator, replace tank regulator by contacting manufacturer or supplier.

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Coffee is Weaker than Desired	1. BIB or caddy is empty.	1. Change to full BIB or replenish caddy with more product.
	2. Product pump tubing is worn.	2. Contact authorized service agent or perform product tubing replacement if authorized to do so.
	3. Build-up is occurring in nozzle and system needs cleaning.	3. Remove nozzles and clean with sanitizing solution to remove build-up. Follow Care and Cleaning instructions and run sanitizing solution through system.
	4. Brix is off target and needs adjustment.	4. Follow set-up instructions to adjust Brix.
Coffee is Stronger than Desired	1. Water supply is turned off or too low water pressure from source/inlet.	1. Assure required water connection was made properly and if there's a shut-off valve, make sure shut-off valve is open. Check that water inlet pressure has dynamic operating pressure between 30 to 90 psi. If below 30 psi, install water booster pump for adequate water pressure to supply line of dispenser.
	2. Brix is off target and needs adjustment.	2. Follow set-up instructions to adjust Brix

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Nothing Flowing from Nozzles	1. Dispense switch is OFF.	1. Turn Dispense switch ON.
	2. Gas, coffee, and water not connected.	2. Assure all required connections are made according to set-up instructions before operating the system.
Product Pouring Too Warm and/or Inside Cabinet Too Warm	1. System has not reached temperature (ice bank not fully formed).	1. Wait until system is fully cooled and ice bank fully formed. Check Compressor switch is set to ON and sight gauge shows full water bath. If water bath sight gauge is low, press Dispense switch to OFF. Wait a few seconds. Press Dispense switch to ON. Bath will automatically start filling water bath after 30 seconds.
	2. BIB or caddy is ambient temp and needs to cool down.	2. Best practice is to use a chilled BIB or caddy for proper nitrogenation. If using ambient concentrates, chill BIB or caddy first prior to using.
	3. Water bath pump not running.	3. Confirm the compressor/water bath pump switched is turned ON. Confirm the water bath pump and compressor are running.

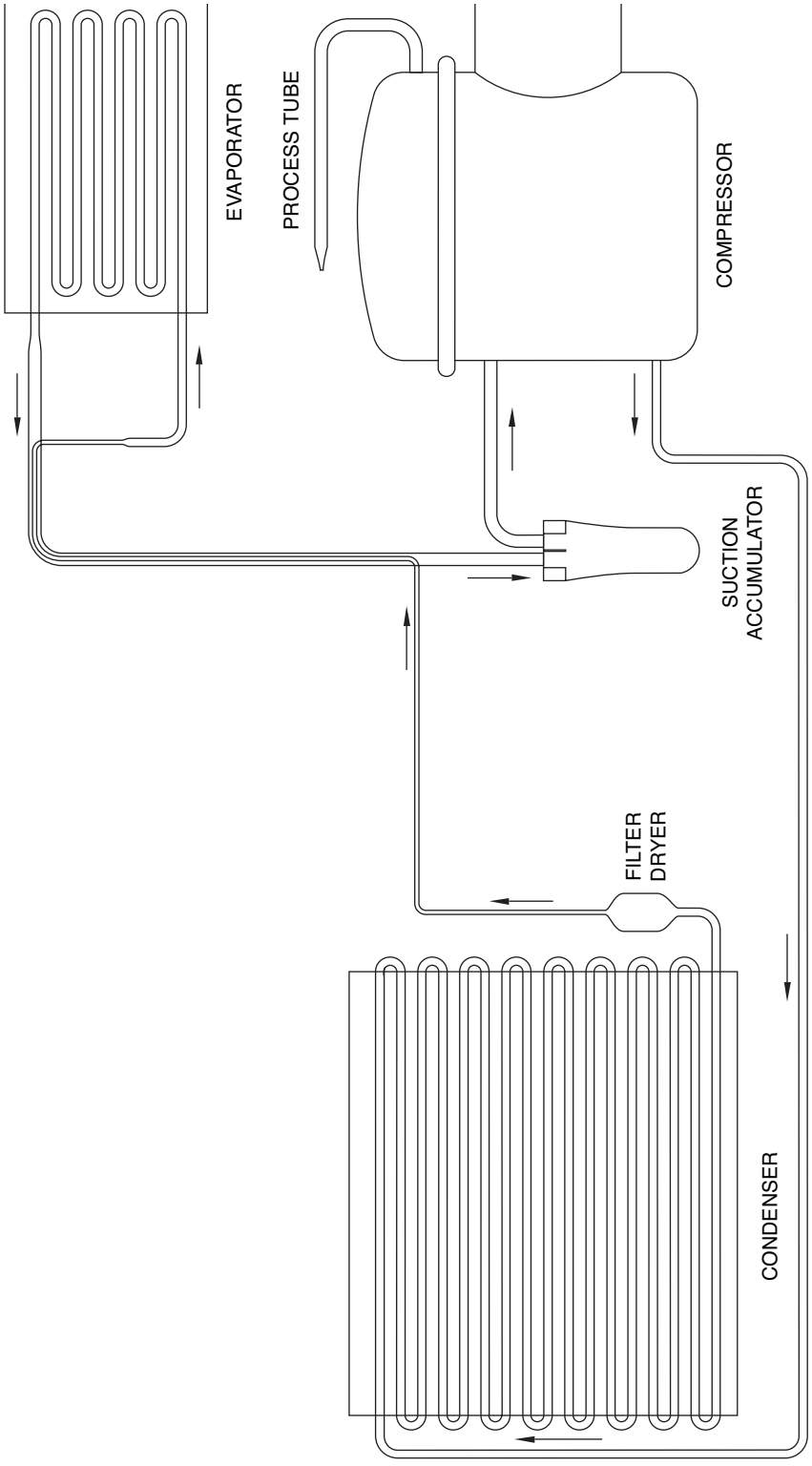
TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Irregular Flow from Nozzle 1. Flow is pulsating/ hammering	1. The product pump speed is set too high (at max) to dispense a lower ratio product (below 4:1).	1. Use a more appropriate concentrate (between 4:1 to 11:1) and adjust the product dial to the proper Brix setting.
2. Flow coming out at an angle	2. The nozzle has accumulated build-up or debris.	2. Remove nozzles and clean with sanitizing solution to remove build-up. Follow Care and Cleaning instructions and run sanitizing solution through system.
3. Flow rate is slow	3. a) The nozzle has accumulated build-up or debris b) The water needle valve on right-side of deck may be set too low (only affects Still Dispense station) c) The system needs cleaning	3. a) Remove nozzles and clean with sanitizing solution to remove build-up. Follow Care and Cleaning instructions and run sanitizing solution through system. b) Water flow rate should be factory pre-set to 133 ml (4.5 oz) per 3 second dispense. To verify, switch to Program mode. Place a graduated measuring cylinder under the dispense nozzle, pull and release the tapper handle 3 times. The dispenser will then dispense an amount of water for 3 seconds. If water flow rate is set too low, adjust the water needle valve using a small flathead screwdriver and turning the needle counter-clockwise. c) Clean the system by following the Care and Cleaning instructions.

TROUBLESHOOTING (cont.)

PROBLEM	PROBABLE CAUSE	REMEDY
Unit Performing Inconsistently (Brix/Nitro fluctuating wildly or outside normal range)	1. System was installed/set-up incorrectly or has been placed in an environment with unacceptable conditions: a. Incorrect water line size	1. a) Install a water line that is in accordance with machine specifications.
	b. Incorrect gas line size	b) Install a gas line that is in accordance with machine specifications.
	c. Fluctuations in water or gas supply pressures	c) Assure the unit is being fed consistent and constant gas and water pressure.
	d. Ambient temperature too high or low	d) Place the unit in a location in accordance with machine specifications.
	2. System has internal malfunction and needs service by a technician	2. Call Customer Support for assistance.

COOLANT SCHEMATIC DIAGRAM



SCHEMATIC WIRING DIAGRAM