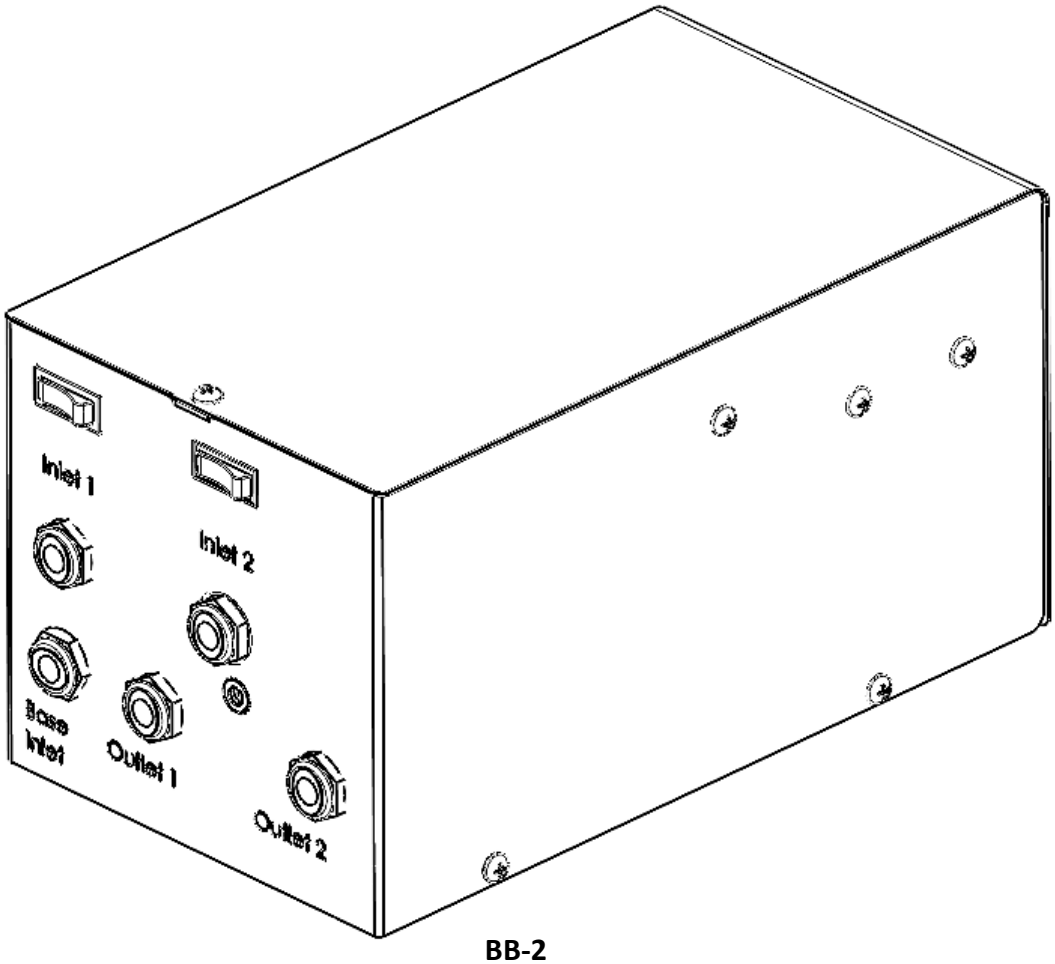
AC Beverage Blend Box (BB-2)

Installation & Operation Manual



BB-2

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Safety & Procedural Notices

Correct use of the Blend Box is important for your personal safety and for trouble-free use. Incorrect use can cause damage to the Blend Box and shorten the lifespan of the components, or in rare cases, cause personal injury.

All personnel involved with installation, operations, and maintenance of the Blend Box models must follow safe working practices, OSHA, and local health/safety code regulations during the installation, operation, and maintenance of the unit.

This manual must be read in its entirety prior to installing and operating the Blend Box to prevent damage to the equipment or personal injury. Contact your service technician or supplier if you detect a problem that you cannot solve with this manual. Only use the Blend Box in accordance with its designed purpose. Only service technicians that are qualified to work on beverage, electric and pneumatic equipment are permitted to perform the installation, maintenance, and repairs. Do not tamper or experiment with the equipment or exceed the technical specifications.

Receiving & Inspecting

Upon receipt of your Blend Box, check the package(s) and unit(s) for any damage that may have occurred during transportation. Visually inspect the exterior of the package(s). If damaged, open and inspect the contents and report with the carrier and shipper/supplier. Any damage should be noted and reported on the delivering carrier's receipt.

In the event that the packaging is not damaged, yet upon opening, there is concealed damage to the equipment, notify the carrier and the shipper/supplier immediately. Notification should be made verbally as well as in written form. Request an inspection by the shipping company of the damaged equipment. Retain all packaging material until inspection has been made.

What's Included?

BB-2

2-Product Blend Box

French Cleat Mounting Kit

24V Power Supply w/ Barrel Connector

(1) 1/2" barb x 1/2" barb - shutoff valve (base inlet)

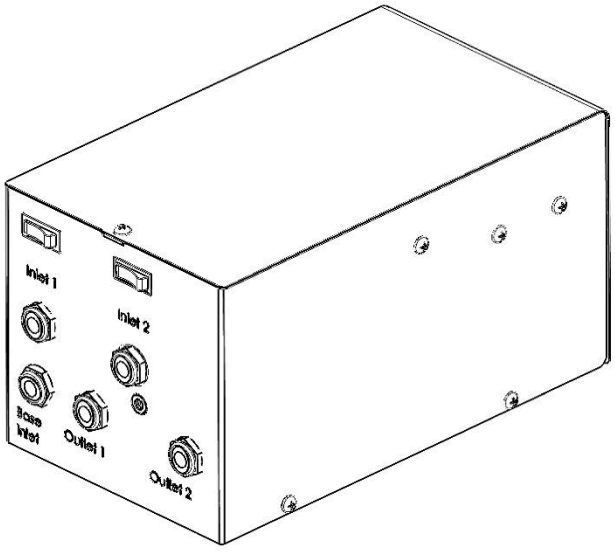
(1) 1/2" stem x 1/2" barb - adapter (base inlet - option 1)

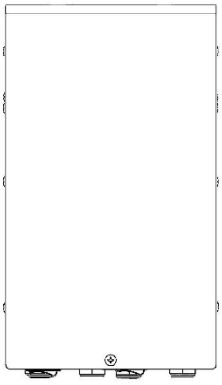
(1) 1/2" stem x 3/8" barb - adapter (base inlet - option 2)

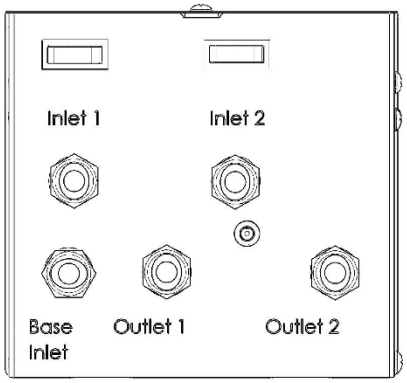
(2) 3/8" stem x 1/4" barb - adapter (outlets – option 1)

(4) 3/8" stem x 3/8" barb - adapter (inlets x 2) (outlets x 2 – option 2)

Specifications



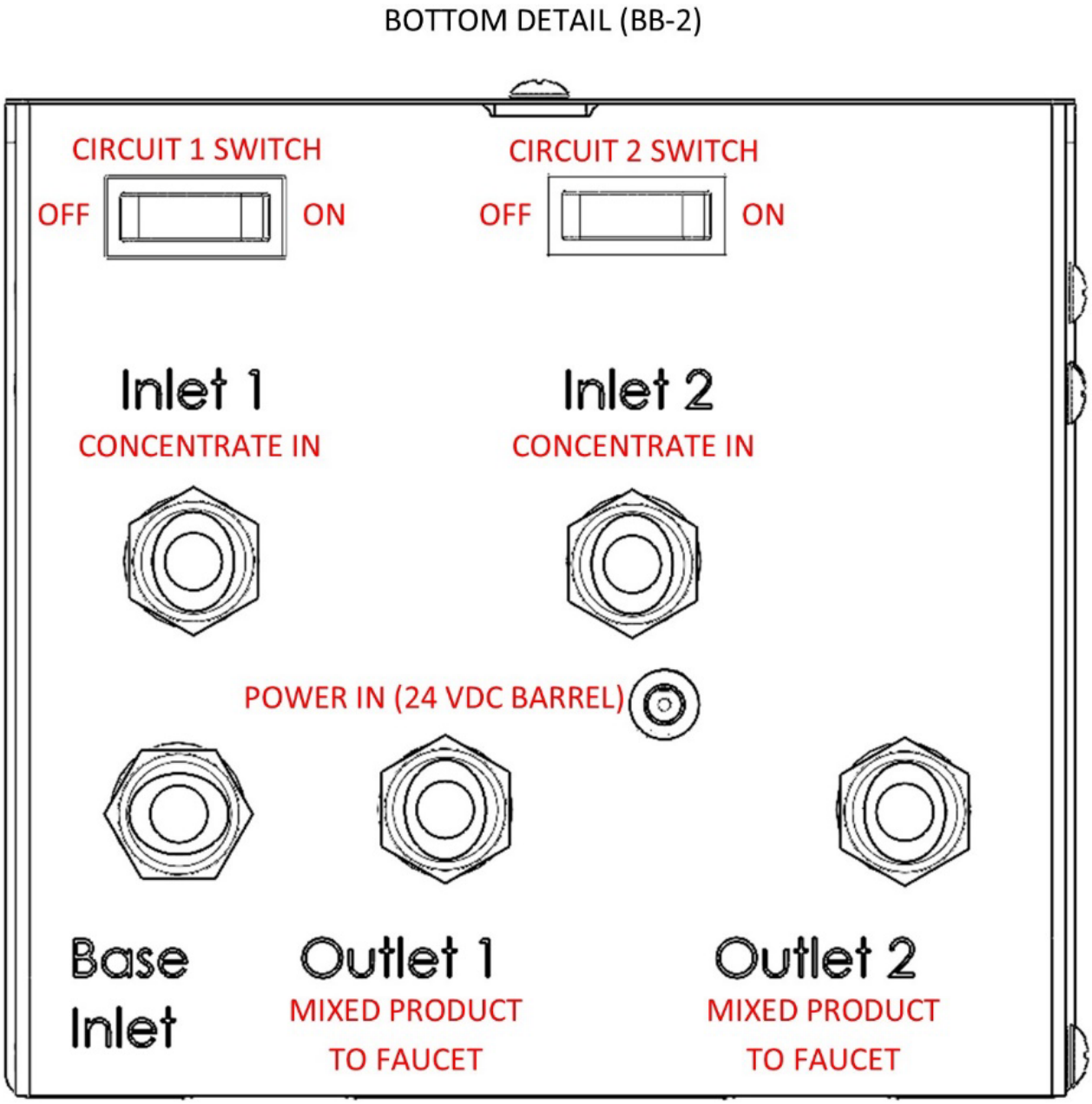




BLEND BOX (BB-2) DATA SHEET

Electrical	115V/60Hz/1PH | NEMA 5-15P
Power Consumption	1.9 amps
Dimensions	12.5" L x 7" W x 6.5" D
Weight	15lbs
Max Base Inlet Pressure	30 psi
Operating Pressure Range	10 psi - 30 psi
Inlet Connections	(3) 3/8" OD Female Push-to-Connect
Outlet Connection	(2) 3/8" OD Female Push-to-Connect
Inlet Concentration Range	2:1 - 20:1

Bottom Side Detail View (Control Switches & Connections)



Installation

Note: Only service technicians that are qualified to work on beverage, electric and pneumatic equipment are permitted to perform the installation, maintenance, and repairs.

Storage

Store Blend Boxes in a dry and climate controlled (40-95°F) room.

Always keep Blend Boxes in box as shipped until arriving at installation location.

Do not connect the power cable until this manual has been read completely and all connections are made as stated within this manual.

Never place/stack objects on top of the Blend Box.

Location Requirements

The Blend Box should be mounted to a wall using the included French Cleat hardware.

The Blend Box should be installed indoors, in an environment between 33F and 95F, in an upright position where it will not be damaged by spraying water (water jetting) or moving equipment. Leave at least 1” of clearance on the top side and at least 2” of clearance on the bottom side.

Mounting

The Blend Box should be wall-mounted using the included French Cleat & hardware.

Note: Ensure the French Cleat is level using included tubular spirit level.

Note: Use best general practices to ensure the wall will support the system at its full weight.

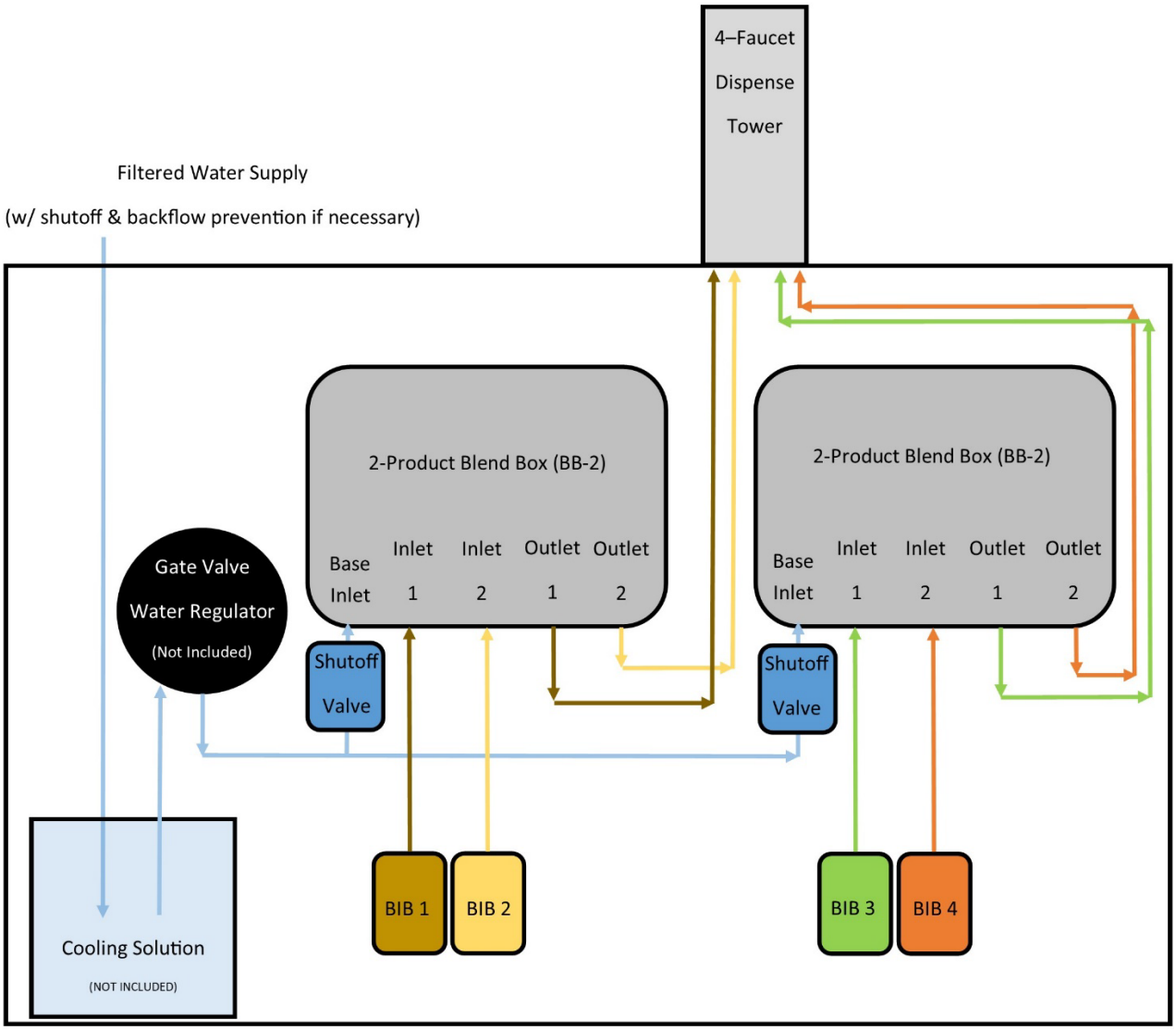
Making Connections

The system is equipped with 3/8” female push-to-connect bulkhead fittings for all inlet and outlet connections. Ensure all ports have been connected or plugged before system startup.

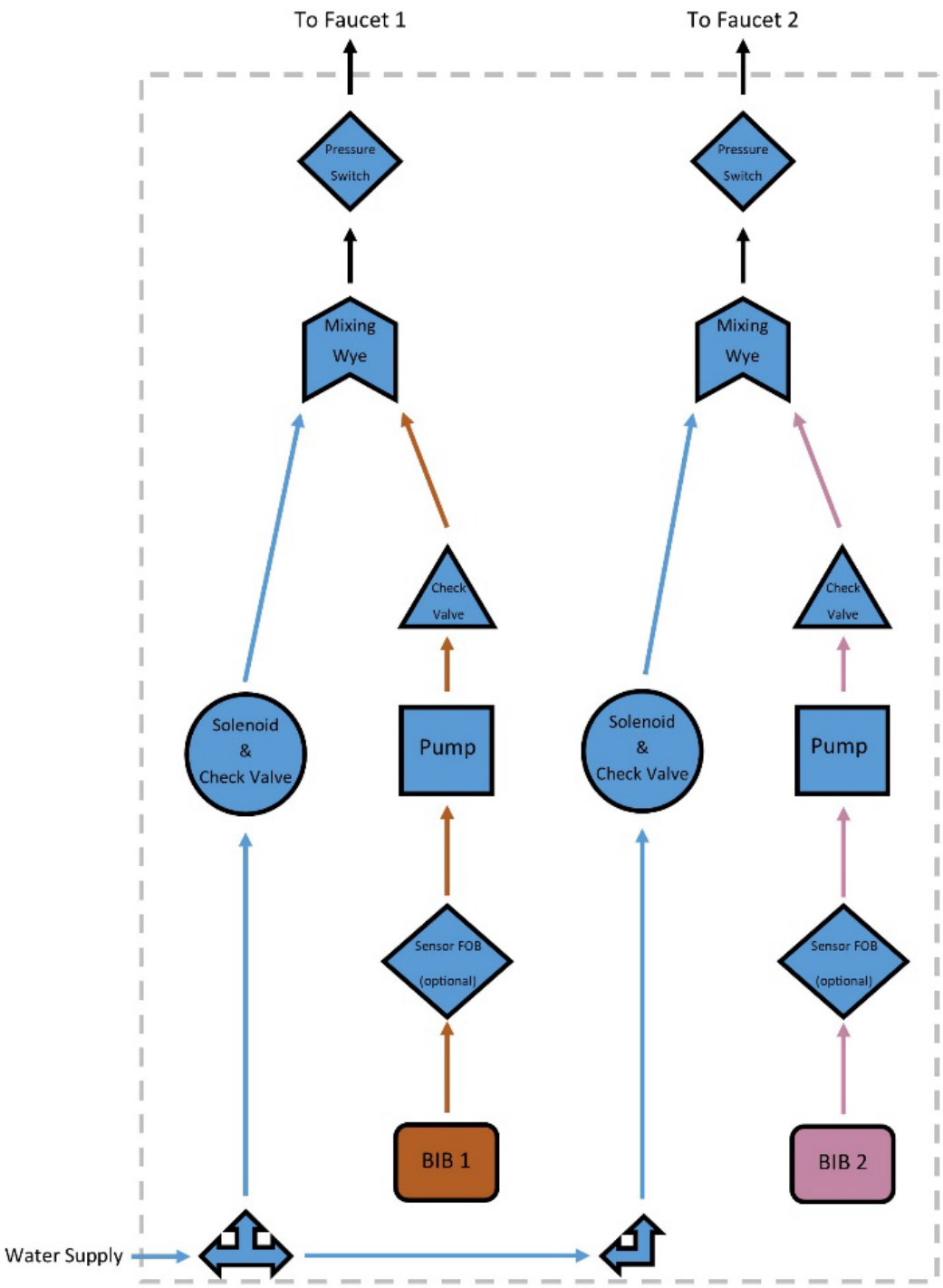
Note: Push-to connect locking clips are recommended to secure connections once tested to be leak free.

Schematics

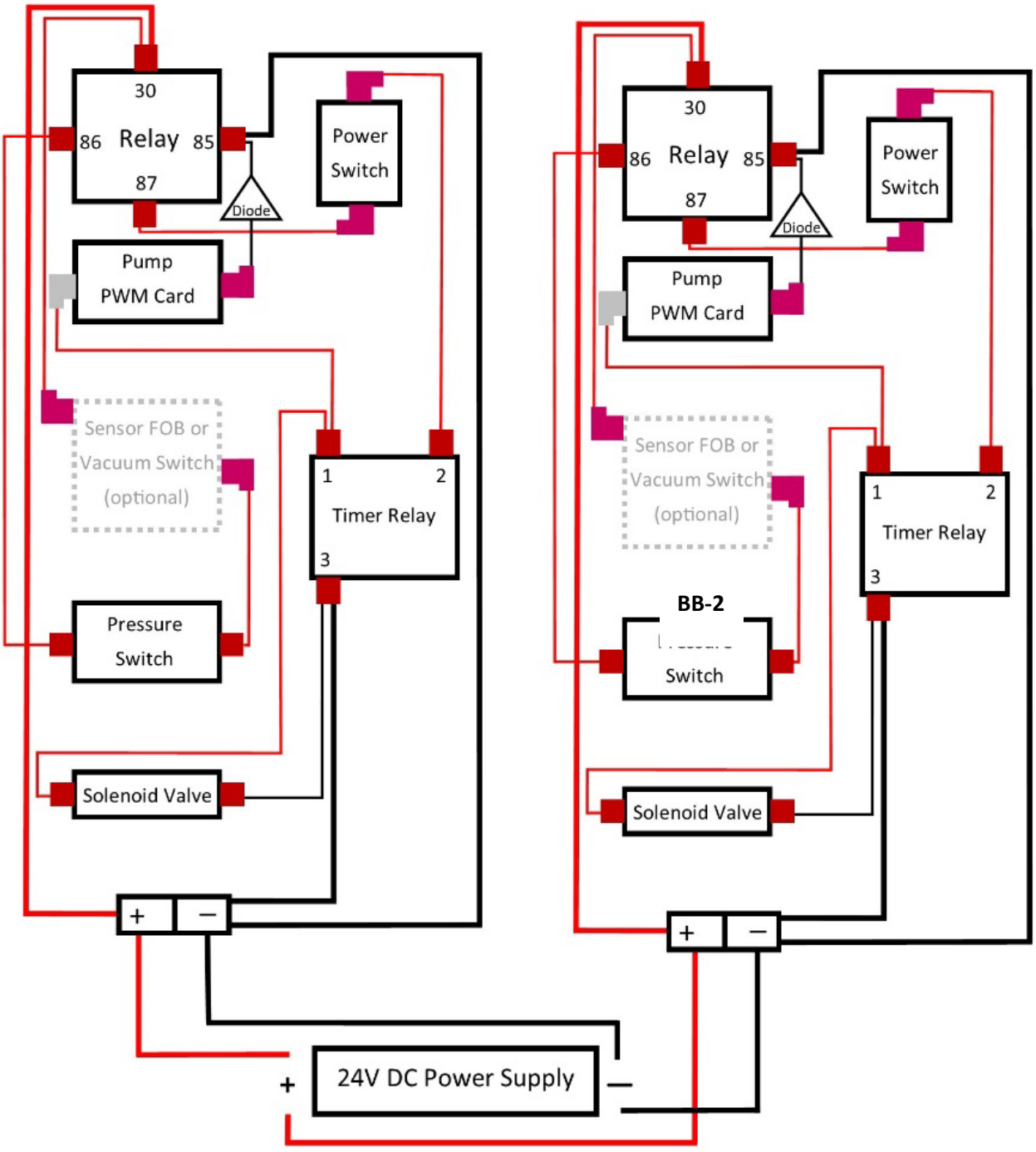
External Plumbing



Internal Plumbing



Electrical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86 Relay 85
87
Diode
Power Switch
Pump PWM Card
Sensor FOB or Vacuum Switch (optional)
1
2
Timer Relay
3
Pressure Switch
Solenoid Valve
+
–
30
86 Relay 85
87
Diode
Power Switch
Pump PWM Card
Sensor FOB or Vacuum Switch (optional)
1
2
Timer Relay
3
BB-2
Switch
Solenoid Valve
+
–
+
24V DC Power Supply
–

Startup Procedure

Before proceeding, confirm location requirements have been met, the system is properly mounted, all connections have been made properly, and that the unit is plugged in to an appropriate electrical outlet.

1. **Remove front cover** from Blend Box by removing the screw on the front, then pulling up/out.
2. **Connect** all **BIBs** and ensure the **base** (water or other pressurized source) is **turned ON.**
    a. **Observe for** any **leaks** (internal or external connections made during installation).
    b. If applicable, **repair leaks** before proceeding to the next step.
3. Ensure all **pressure switch adjustment** knobs are at their **lowest setting** (turn counterclockwise).
4. Ensure all **product pump speed dials** are at their **highest setting** (set to 100).
5. **Turn ON** the shutoff **valve** on the **base inlet tube** supplying the Blend Box. Note: the valve is on/open when the lever is parallel to the tube/flow.
    a. **Observe for** any **leaks** (internal or external connections made during installation)
    b. If applicable, **repair leaks** before proceeding to the next step.
6. **Open faucets** one at a time and **turn** the **pressure switch adjustment knob** switch **clockwise** until the corresponding **pump stops pulsing** (turning on and off w/ faucet open).
    a. The **pump** should **run continuously/smoothly** while the **faucet is open**.
7. **Open and close** each faucet one at a time and ensure the **pump** that corresponds to that faucet **shuts OFF** within a **half second** of the **faucet** being **closed**.
    a. The pump **should not continue running** after the **faucet has been closed**.
8. **Determine target brix** for product attached to **each line**.
9. Open faucet in question, **dispense 16oz** of product, then **discard**.
10. **Dispense** another **12oz** into a **clean container** and take a **brix reading** using a **refractometer**.
    a. If the reading is **lower than** the **target brix** (with pump speed dial at 100) water flow must be reduced using a flow control faucet or needle/flow control valve on the outlet line, or a lower pressure water regulator/valve on the water supply line.
    a. If the reading is **higher than** the **target brix**, then the product **pump speed** adjustment **dial** must be **turned down** (counterclockwise).
11. Once an adjustment is made, repeat steps 9-10 until the target brix is reached for each faucet.

System Calibration

Adjusting Brix

1. **Determine target brix** for product attached to **each line**.
2. Open faucet in question, **dispense 16oz** of product, then **discard**.
3. **Dispense** another **12oz** into a **clean container** and take a **brix reading** using a **refractometer**.
4. If the reading is **lower than** the **target brix,** do one of the following:
    a. **Increase product flow** (turn pump speed dial clockwise)
    b. **Decrease water flow** using a flow control faucet or needle/flow control valve on the outlet line, or a lower pressure water regulator/valve on the water supply line.
5. If the reading is **higher than** the **target brix**, do one of the following:
    a. **Decrease product flow** (turn pump speed dial counterclockwise)
    b. **Increase water flow** using a flow control faucet or needle/flow control valve on the outlet line, or a higher-pressure water regulator/valve on the water supply line.
6. Once an adjustment is made, repeat steps 2-5 until the target brix is reached for each faucet.

Adjusting Pressure Switches

1. **Open** the **faucet** in question while **observing** the **pump** that corresponds to that faucet.
2. If the **pump is pulsing** on and off with the **faucet open**:
    a. Turn the **pressure switch** adjustment knob that corresponds to the pump/faucet in question **clockwise** until the pump begins to run **continuously** with the **faucet open**.
3. **Open & close** the **faucet** in question while **observing** the **pump** that corresponds to that faucet.
4. If the **pump runs** for **more than .5 seconds** after the **faucet is closed**:
    a. Turn the **pressure switch** adjustment knob that corresponds to the pump/faucet in question **counterclockwise** until the pump **stops within .5 seconds** of the **faucet closing**.

Daily Operation

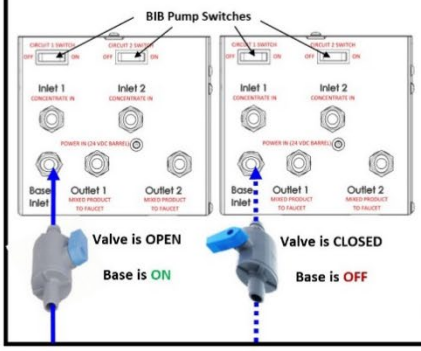
Bag-in-Box (Best Practices)

1. Leave bags inside the box at all times.
2. Bag-in-box product must be refrigerated at all times.
3. The bag-in-box connector should be at the bottom when connected.
4. Always remove the plastic cap from the bag-in-box before connecting.

Note: If nothing comes out of the faucet after a bag-in-box is replaced. Cycle the power switch OFF and then back to the ON position to reset the 3-minute run timer.

Cooling Coil (Best Practices)

1. Check ice levels regularly.
2. Drain water & refill with ice when all ice has melted.
3. Do not move the cooling solution. Use drain tube with blue valve to empty water.
4. The stainless coil should be completely submerged with ice water while in use.



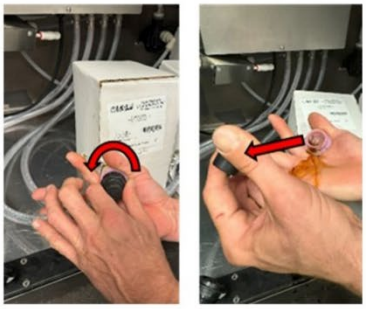
Blend Box Switches (Best Practices)

1. The grey valve with the blue lever turns base supply ON/OFF. The valve should be ON/OPEN at all times — unless there is a leak or performing a cleaning.
2. If a bag-in-box is connected, the corresponding BIB pump switch should be ON.
   If a bag-in-box is NOT connected, the corresponding BIB pump switch should be OFF.

Note: Bottom view of Blend Box shown in diagram.
Note: The base valve is ON/OPEN when the blue lever is parallel to the tube/flow.
Note: The base valve is OFF/CLOSED when the blue lever is perpendicular to the tube/flow.

Changing a Bag-in-Box (Procedure)

When a BIB is empty (or very low), the product being dispensed may become lighter in color or turn completely to water.



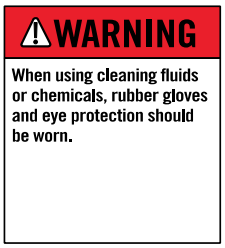
1. Disconnect the empty BIB

2. Connect a new BIB

3. Open faucet until flow transitions from water to full strength product

In Place Line Cleaning Procedure (at least monthly):

Required Materials:



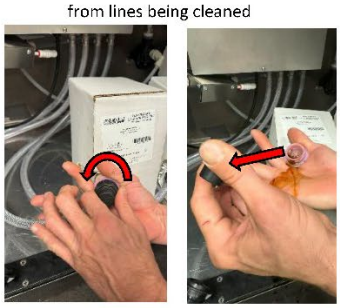
1. Potable water
2. Rubber gloves
3. Protective eyewear
4. Approved cleaning solution
5. Sink (to dump excess product, water & cleaning solution)
6. BIB Cleaning Adapter(s) (equal to # of lines being cleaned)
7. Clear container w/ measurement graduations (must fit under faucets)
8. Food-safe reservoir for cleaning solution (must be large enough to hold total amount of cleaning solution required)

Note: Multiply the # of faucets being cleaned by 32oz to determine total amount of solution required.

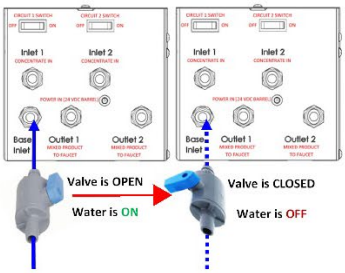
Line Cleaning Procedure:

1. Disconnect all BIBs connected to the system & turn off the shutoff valve on the base inlet tube.
2. Place the clear container w/ measurement graduations under the faucet(s) being cleaned.
3. Locate & attach the BIB Cleaning Adapters to each of the active BIB connectors on the suction lines of the dispenser.
4. Locate the cleaning reservoir and prepare at least 32oz of cleaning solution for each faucet/line being cleaned.
    a. **Note:** Mixing up more cleaning solution than necessary is perfectly acceptable, but DO NOT make less.
5. Place the container with the cleaning solution inside of the refrigerator (directly below the mixing box) and drop the BIB suction lines into that container.
    a. **Note:** Ensure lines are drawing liquid from bottom of pitcher so that all the cleaning solution can be used.
6. Open the faucet(s) being cleaned until 16oz of liquid has been dispensed from each.
7. Ensure the faucet(s) being cleaned are closed & allow the system to soak w/ cleaner in the lines for at least 5 minutes.
8. Dispense at least 16 more oz of cleaning solution through each faucet being cleaned.
9. Close all faucets and remove BIB suction lines from the vessel containing the cleaning solution.
10. Turn the shutoff valve on the base inlet tube back on (with BIB cleaning adapter(s) still connected) and dispense 32oz through each faucet.
11. Disconnect BIB cleaning adapters & reconnect BIB products to their corresponding suction line/faucet.
12. Open each faucet being cleaned until the flow transitions from water to full strength product.
13. Pour at least 12oz of product from each faucet to remove any residual cleaner from the suction line and test system.
    a. **Note:** Do not consume sample pours as they may contain small amounts of cleaning solution.

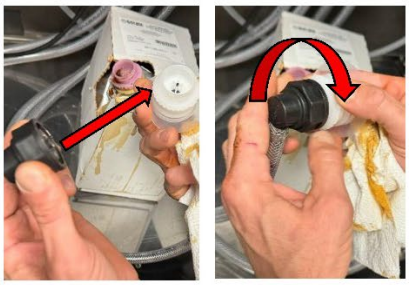
1. **Disconnect Bag-in-Box** product from lines being cleaned



2. **Turn OFF water valve(s)** & place measured container under faucets being cleaned



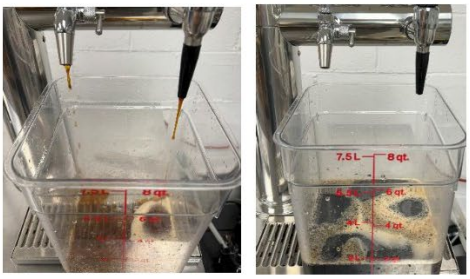
3. **Attach cleaning adapters** to lines being cleaned



4. Prepare at least **32oz** of cleaning solution **for each line** being cleaned

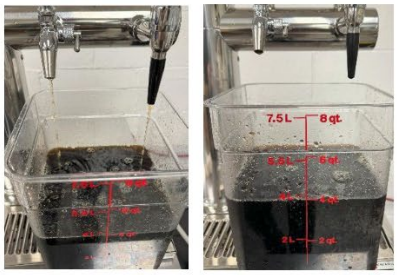
5. Place **BIB lines** (w/ adapters) in bottom of cleaning container

6. **Dispense 16oz** from **all faucets**/lines being cleaned



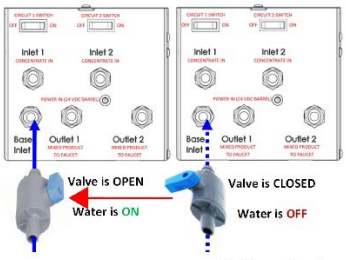
7. Close faucets & **soak lines** for 5 minutes

8. **Dispense** an **additional 16oz** of cleaning solution from **all faucets** being cleaned



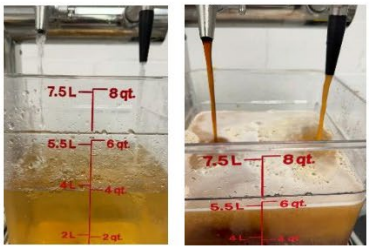
9. **Close faucets** & **remove suction lines** from container

10. **Turn ON water valve(s)** & **dispense 32oz** from each faucet being cleaned



11. **Disconnect** cleaning **adapters** & **reconnect BIBs** to correct lines

12} **Open each faucet** being cleaned until flow **transitions from water to product**



13. **Pour & discard at least 16oz from each line being cleaned** to remove residual cleaner **(DO NOT CONSUME)**

Troubleshooting

Basic Checklist:

- ✓ Are the BIBs fully connected, oriented properly & connected to the correct line?
- ✓ Do all the BIBs have liquid inside? (lift or shake them to find out)
- ✓ Has a new BIB been connected to the line in question?
- ✓ Are the appropriate switches turned on?
- ✓ Has the on/off switch for circuit in question been cycled off and back on to reset the run timer?
- ✓ Has the system had an in-place line cleaning performed in the last 30 days?
- ✓ Are the power cable(s) connected and electrical outlet(s) functioning properly?

Symptom	Potential Issue	Potential Solution(s)
Nothing coming out of faucet when open	1. BIB is empty. 2. BIB connector is not fully engaged. 3. A 3-minute run timeout has occurred on circuit in question. 4. Product pump switch and base (water) shutoff valve are OFF. 5. The power cable is disconnected.	1. Replace the BIB. 2. Disconnect and reconnect the BIB. 3. Turn the power switch OFF and then back ON again to reset the run timer. 4. Turn the product pump and base (water) shutoff valve ON. 5. Reconnect power cable (bottom of box).
Product is **weak** in color/taste or has **transitioned to water**	1. BIB is empty. 2. BIB connector not fully engaged. 3. Product pump switch is OFF. 4. System lines need cleaning. 5. Product pump dial needs adjusted. 6. Pressure switch needs adjusted.	1. Replace the BIB. 2. Disconnect and reconnect the BIB. 3. Turn product pump switch ON. 4. Perform In Place Line Cleaning 5. Call for service. 6. Call for service.
Product is **pulsing** (on/off) from the faucet and is too weak or strong	1. BIB is empty. 2. BIB connector not fully engaged. 3. Buildup in the nozzle (nitro only). 4. System lines need cleaned. 5. Pressure switch needs adjusted.	1. Replace the BIB. 2. Disconnect and reconnect the BIB. 3. Remove nozzle and clean. 4. Perform In Place Line Cleaning. 5. Call for service.
Product coming out very **strong** and very **slow**	1. Base (water) shutoff valve is OFF. 2. Water supply is off/compromised.	1. Turn base (water) shutoff valve ON. 2. Ensure main water shutoff valve is ON.
Product is **not cold enough**	1. There is no ice on the cooling coil. 2. The refrigerator is not cooling.	1. Drain water & fill w/ ice. (if applicable) 2. Call for service. (if applicable)

Warranty

AC Beverage warrants that its products will be free from defects in material and workmanship, under normal use, regular service, and maintenance, for 1 year from the date of sale.

Prerequisites: This warranty is available to the first end user for equipment purchased from AC Beverage or authorized dealers. Equipment sold without such authorization will not be covered under this warranty. Equipment installed by AC Beverage carries a 90-day labor warranty. Equipment not installed by AC Beverage does Not carry a labor warranty. All equipment must be maintained and cleaned regularly. In case of equipment failure, the customer must contact AC Beverage for repair authorization before any repairs are made.

Warranty Period: Warranty period is one (1) year from the date of installation but no longer than fourteen (14) months from date of sale. Please do not return any item to AC Beverage without first notifying us and explaining the complete circumstances. AC Beverage must be notified and approve any merchandise returned for repair.

Warranty Coverage: If a product is deemed defective by AC Beverage within the warranty period described above, AC Beverage, at its discretion, will either repair or authorize the repair of the product. AC Beverage will be responsible for the labor charges within the warranty period provided that all above mentioned prerequisites are satisfied. The customer is responsible for the return of the defective part or product to AC Beverage for inspection and defect determination. Customer must package the part or product before shipping it. AC Beverage will cover the shipping costs for the part or product as described in the Shipping segment of this warranty.

Defect Determination: Defect determination is the sole discretion of AC Beverage. Customers must contact AC Beverage to receive authorization for any course of action prior to any repairs. A warranty claim in writing must be submitted to AC Beverage to process the claim and authorize any reimbursements. If a repair is made without the explicit authorization from AC Beverage, it will not be covered by the warranty and will not be reimbursed. “Authorization for return” is for inspection purposes only. It is the sole discretion of AC Beverage as to whether a repair will be performed under warranty.

Product Delivery: The customer is responsible for inspecting units upon receipt for concealed damage caused during shipping. The customer must report damaged or non-working units or components to AC Beverage immediately. Deliveries with physical damage should be denied. A claim must be filed with the carrier for any damages during shipping. AC Beverage is not responsible for units damaged during shipping.

Warranty does not cover:

- Physical damage or water damage to the unit caused by negligence of the user.
- Improper installation and modifications made without AC Beverage’s explicit approval.
- Damage resulting from electrical supply, water supply, drainage, flood, storm, or any other incidents.
- Repairs made without the explicit authorization of AC Beverage or without the submission of a written warranty claim.

AC BEVERAGE IS NOT RESPONSIBLE FOR ECONOMIC LOSS OR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSSES OR DAMAGES ARISING FROM EQUIPMENT FAILURE.

Shipping: During the warranty period AC Beverage will be responsible for shipping charges as described in the previous segments. AC Beverage will ship replacement parts using standard ground shipping only. If expedited shipping is needed, the customer will incur the difference in shipping cost.