

***N-Fusion*™ 2.0E**

Infused Beverage Dispenser

Installation, Operation & Maintenance Manual

This manual is updated as new information and models are released. Visit our website for the latest manual.



Safety Notices

DEFINITIONS

 **DANGER**

Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This applies to the most extreme situations.

 **Warning**

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

 **Caution**

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

Notice

Indicates information considered important, but not hazard-related (e.g. messages relating to property damage).

NOTE: Indicates useful, extra information about the procedure you are performing.

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Section 1

General Information

Read This Manual

Welbilt KitchenCare developed this manual as a reference guide for the owner/operator and installer of this equipment. Please read this manual before installation or operation of the machine. A qualified service technician must perform installation and start-up of this equipment. Consult **Section 4** within this manual for service assistance.

If you cannot correct the service problem, consult Welbilt KitchenCare at 1-844-724-CARE. Always have your model and serial number available when you call.

Your Service Agent _____

Service Agent Telephone Number _____

Your Local Distributor _____

Distributor Telephone Number _____

Model Number _____

Serial Number _____

Installation Date _____

About N2Fusion™

Class A: EMC Registration is done on this equipment for business use only (Class A). Product seller and user should notice that this equipment is not for household use.

Unit Inspection

Thoroughly inspect the unit upon delivery. Immediately report any damage that occurred during transportation to the delivery carrier. Request a written inspection report from a claims inspector to document any necessary claim. See "Warranty Information" on page 5.

⚠ Warning

Do not damage the refrigeration circuit when installing, maintaining or servicing the unit.

⚠ Warning

Do not operate equipment that has been misused, abused, neglected, damaged, or altered/modified from that of original manufactured specifications.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision concerning use of the appliance by a person responsible for their safety.

Model Numbers

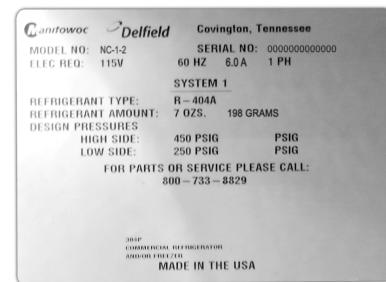
This manual covers the following models:

N ₂ Fusion™ Nitrogen Beverage Dispenser
ND31RS30, ND31RS30C, ND34RC30, ND44RC30

Serial Number Location

Serial tags are located inside the cabinet on the upper left hand side wall.

Always have the serial number of your unit available when calling for parts or service.



Sample Serial Tag

Warranty Information

Consult your local Service Agent or Representative for terms and conditions of your warranty. Your warranty specifically excludes all general adjustments, cleaning, accessories and related servicing.

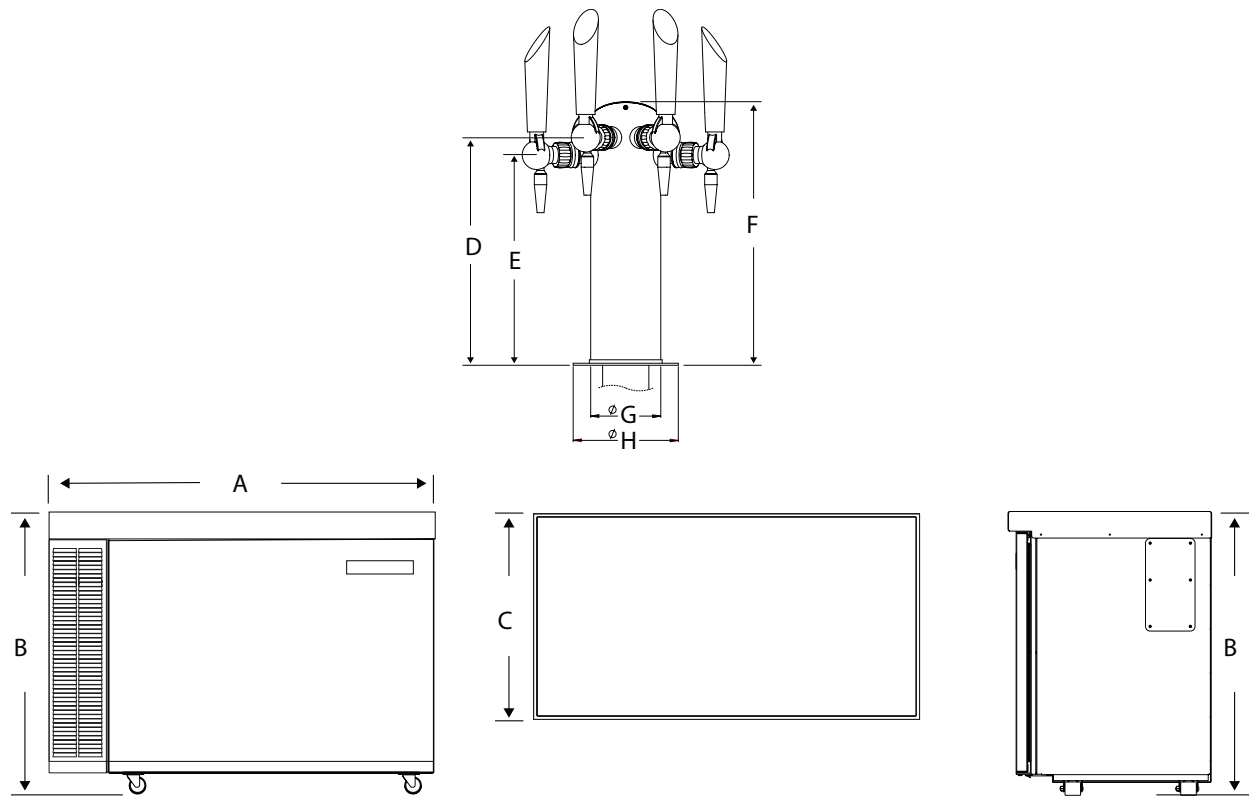
Your warranty card must be returned to activate the warranty on this equipment. If a warranty card is not returned, the warranty period can begin when the equipment leaves the factory.

No equipment may be returned without a written Return Materials Authorization (RMA). Equipment returned without an RMA will be refused at the dock and returned to the sender at the sender's expense.

Please contact your local distributor for return procedures

Specifications

DIMENSIONS



Model	A	B	C	D	E	F	G	H
ND31RS30	36.25"	30.93"	23.0"	13.00"	12.00"	15.04"	4.00"	6.00"
ND31RS30C	(92cm)	(79cm)	(58cm)	(33cm)	(30cm)	(38cm)	(10cm)	(15cm)

⚠ Warning

To avoid instability the installation area must be capable of supporting the weight of the equipment. Additionally the equipment must be level side to side and front to back.

CAPACITY & WEIGHT

Model	Max Capacity	Volume	Weight
ND31RS30	3 - 3 Gallon (11.36L) Coffee Kegs	5.7Ft3 (161L)	375lbs (170kg) <i>(Ship Weight)</i>
ND31RS30C			

PRODUCT DELIVERY LOCATION**⚠ Warning**

This equipment must be positioned so that the plug is accessible unless other means for disconnection from the power supply (e.g., circuit breaker or disconnect switch) is provided.

⚠ Warning

Adequate means must be provided to limit the movement of this appliance without depending on or transmitting stress to the electrical conduit or gas lines.

⚠ Warning

To avoid instability the installation area must be capable of supporting the combined weight of the equipment and product. Additionally the equipment must be level side to side and front to back.

⚠ Warning

This equipment is intended for indoor use only. Do not install or operate this equipment in outdoor areas.

⚠ Warning

Do not position the air intake vent near steam or heat exhaust of another appliance.

The location selected for the equipment must meet the following criteria. If any of these criteria are not met, select another location.

- Units are intended for indoor use only.
- The location MUST be level both front to back and side to side, stable and capable of supporting the weight of the equipment.
- Position the equipment so it will not tip or slide.
- Recommended air temperature is 41° - 86°F (5° - 30°C), and must not exceed 86°F (30°C).
- Location must have proper ventilation, DO NOT install in an enclosure/enclosed cabinet with no access to ambient air.
- The location must not be near heat-generating equipment or in direct sunlight and must be protected from weather.
- Verify floor of install location is within 1/2" (1.3 cm) of level front to back, side to side.
- Keep equipment area clear of combustible material.
- Do not install the equipment directly over a drain. Steam rising up out of the drain will adversely affect operation, air circulation, and damage electrical /electronic components
- Do not install in an area where a high-pressure water jet could be used for cleaning.

Clearances**⚠ DANGER**

Minimum clearance requirements are the same for noncombustible locations as for combustible locations. The flooring under the appliance must be made of a noncombustible material.

⚠ DANGER

Risk of fire/shock. All minimum clearances must be maintained. Do not obstruct vents or openings..

Right Side	0" (0 cm) *
Left Side	0" (0 cm)
Back	5" (13 cm)
Front	30" (76 cm)

* Units with conduit routed through the right side instead of the back will need 5" (13 cm) clearance.

⚠ Warning

Do not obstruct machine vents or openings this includes installing in an enclosed cabinet where the unit will not have access to ambient air.

Heat of Rejection

Model	BTU/hr
ND31RS30	902
ND31RS30C	

REFRIGERANT CHARGE**Important**

Due to continuous improvements, this information is for reference only. Please refer to the serial number tag to verify..

Model	Type	Refrigerant Charge
ND31RS30	R404A	9.5 oz (269g)
ND31RS30C		

ELECTRICAL**⚠ DANGER**

Check all wiring connections, including factory terminals, before operation. Connections can become loose during shipment and installation.

⚠ Warning

The machine must be wired and grounded in accordance with national and local electrical codes.

Minimum Circuit Ampacity

The minimum circuit ampacity is used to help select the wire size of the electrical supply. (Minimum circuit ampacity is not the N2Fusion System's running amp load.) The wire size (or gauge) is also dependent upon location, materials used, length of run, etc., it must be determined by a qualified electrician.

Voltage

A dedicated electrical circuit is required, a power cord is provided with all units. Some models are available in different voltages and may be equipped with a different plug.

The following precautions must be observed:

- The equipment must be grounded.
- A separate fuse/circuit breaker must be provided for each unit.
- A qualified electrician must determine proper wire size dependent upon location, materials used and length of run (minimum circuit ampacity can be used to help select the wire size).
- The maximum allowable voltage variation is $\pm 10\%$ of the rated voltage at equipment start-up (when the electrical load is highest).
- Check all green ground screws, cables and wire connections to verify they are tight before start-up.

Minimum Circuit Amperage Chart**Important**

Due to continuous improvements, this information is for reference only. Please refer to the serial number tag to verify..

Model	Voltage/Cycle/Phase	Total Amps	HP	Breaker Size (Max)
ND31RS30 ND31RS30C	115/60/1	6.5 A	1/5	20 A

Grounding Instructions

This appliance must be grounded/earthed. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded/earthed in accordance with all local codes and ordinances.

Check with a qualified electrician or serviceman if the grounding instructions are not completely understood or if in doubt as to whether the product is properly grounded.

Do not modify the plug provided; if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Do not use an extension cord or an adapter plug with this equipment.

⚠ Warning

When using electric appliances, basic precautions must always be followed, including the following:

- Read all the instructions before using the appliance.
- To reduce the risk of injury, close supervision is necessary when an appliance is used near children.
- Do not contact moving parts.
- Only use attachments recommended or sold by the manufacturer.
- Do not use outdoors.
- For a cord-connected appliance, the following must be included:
 - Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
 - Unplug from outlet when not in use and before servicing or cleaning.
 - Do not operate any appliance with a damaged cord or plug, or after the appliance malfunctions or is dropped or damaged in any manner. Contact the nearest authorized service facility for examination, repair, or electrical or mechanical adjustment.
- Follow applicable lock out tag out procedures before working on equipment.
- Connect to a properly grounded outlet only. See Grounding Instructions.

Section 2 Installation

Step-by-Step Installation

These instructions are provided to assist the qualified installer. Contact your Manitowoc Foodservice Service Agent or call Manitowoc Foodservice for information regarding start-up services.

DANGER

Use appropriate safety equipment during installation and servicing.

DANGER

Installation must comply with all applicable fire and health codes in your jurisdiction.

Warning

Remove all removable panels before lifting and installing.

Warning

Do not damage the refrigeration circuit when installing, maintaining or servicing the unit.

Important

All plumbing must conform to local, state and national codes.

Important

Failure to follow these installation guidelines may affect warranty coverage.

PRE-INSTALLATION CHECKLIST

- ☐ Any damage should be noted and reported to the delivering carrier immediately.
- ☐ Check the lower portion of the unit to be sure casters are not bent.
- ☐ Visually inspect the refrigeration package, compressor compartment housing. Be sure lines are secure and base is still intact.
- ☐ Inspect installation location behind the unit for electrical outlet location, Nitrogen (N₂) and CO₂ source.
- ☐ Power unit up by plugging into power source.
- ☐ Check for correct voltage at outlet dedicated for the dispenser.
- ☐ Verify floor of install location is within 1/2" (1.3 cm) of level front to back, side to side and all casters are touching the floor.

Warning

The mass of this appliance will allow it to move uncontrolled on an inclined surface. Adequate means must be provided to prevent uncontrolled movement at all times.

- ☐ Check that internal connections are secure and did not vibrate loose during shipment.
- ☐ Installation location has proper ventilation where unit has access to ambient air.

REMOTE TOWER INSTALLATION

Checklist

- ☐ Tower location should be within 8 to 13in (20-33cm) from edge of the counter.
- ☐ Mount tower within 19 linear ft (1.83m) from side of base cabinet.
- ☐ Make sure location has space for the drip tray shipped with the unit.

Location

1. Identify and mark the counter top location for the tower making sure there is room for the drip tray, conduit routing under the counter, and is away from any heat source.

Important

The drip tray is equipped with a drain, make sure install location is near a floor drain.

2. Cut and drill holes in the counter using the markings.

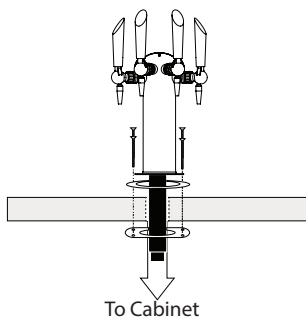
NOTE: Drip trays equipped with a drain will need a $\frac{7}{8}$ " (2.22cm) hole drilled into the counter using the provided template for routing to a floor drain.

Mounting & Routing

If installing the tower directly above the cabinet See "Under Counter Conduit Guide" on page 10. The guide allows for a 2 inch (5 cm) gap between top of unit and underside of counter.

Important

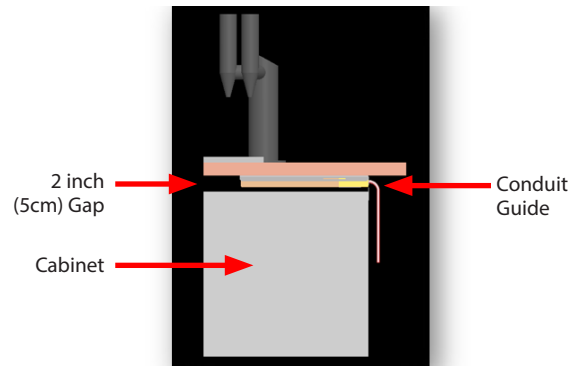
Make sure the rubber counter top gasket is in place on the tower before routing conduit and mounting tower.



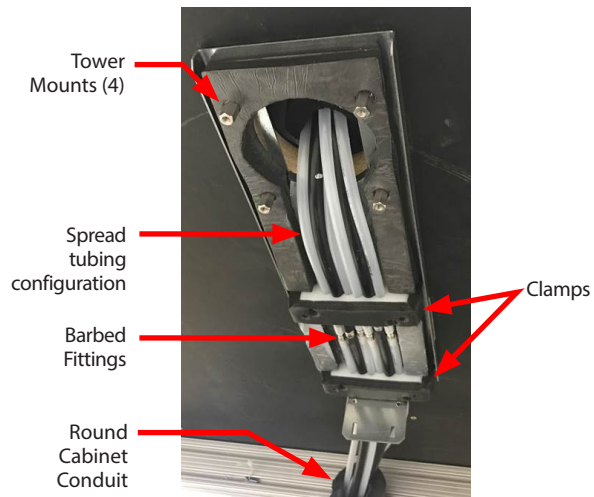
3. Route tubing from the tower down through hole and mount the tower to the counter top with the provided plate and screws.

Under Counter Conduit Guide

The conduit routing guide is only necessary for tower installations that are located directly over top of the unit. This routes tubing into a flat 2 inch (5cm) tall configuration while maintaining insulation/condensation barrier. If the guide is not necessary proceed to "Cabinet Connections" on page 11



4. Mount the top of the conduit guide to the under side of the counter using the four (4) tower mount nuts.



5. Route tubing through counter top and into the conduit guide spreading out from round configuration at the bottom of the tower to flat configuration for conduit guide.
6. Clamp the tubing into the guide using the provided clamps.
7. Make barbed fitting connections to the cabinet conduit.

NOTE: The connections shown above are between the clamps, this can also be done in the back of the guide before entering/exiting the clamps.

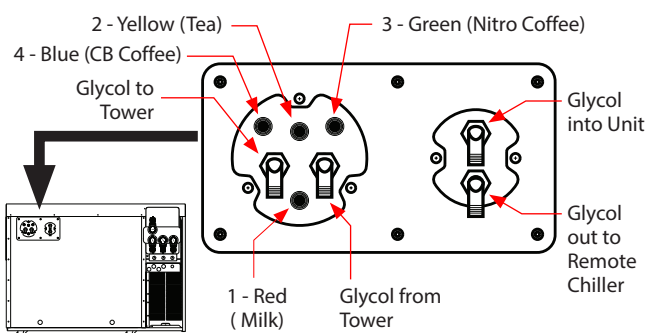
8. Apply remaining insulation over the tubing and hole, completely surrounding the lines.
9. Fasten the conduit guide cover over the insulation using the four (4) supplied screws.

Cabinet Connections

10. Run the python conduit from the tower to the N2Fusion™ cabinet and connect to the barbed connections using an oetiker clamp on each connection.

Important	
Do not over bend the conduit this can damage the tubing.	
CONDUIT	MAX BEND RADII
Product	1ft (30 cm)
Glycol	2ft (61 cm)

NOTE: Color call-outs in the illustration below correspond to the tubing markers from the tower.



11. Connect the glycol lines from the remote chiller to the N2Fusion™ cabinet and connect to the barbed connections using an oetiker clamp on each connection.

Warning

Do not add line to the conduit this can cause poor drink quality and the unit may not perform properly.

Important

Allow four (5)ft (1.5m) of tubing for a service loop to allow the cabinet to be pulled out during service and cleaning. Cut off extra tubing if needed.

12. Once connections have been made re-insulate any exposed tubing.

Drip tray

13. Place drip tray or drain pan in proper location lined up below the dispensing taps.

Important

Drip trays are equipped with a drain and need to be sealed to the counter top, be sure to follow all local codes.

REGULATOR & TANK ASSEMBLIES

⚠ DANGER

N₂ & CO₂ tanks are under high pressure. Do not drop or allow tank to fall over. Tank must be chained and secured to prevent movement as per OSHA requirements. Do not attempt to handle or connect to tank unless properly trained.

N₂ & CO₂ ARE ASPHYXIANT GASES. A LEAK IN AN ENCLOSED AREA COULD DISPLACE OXYGEN AND CAUSE ASPHYXIATION. ALWAYS TEST GAS HANDLING SYSTEMS FOR LEAKS. A GAS DETECTOR IS RECOMMENDED.

Cylinders contain high-pressure gas which can be hazardous if not handled properly. Make sure you READ and UNDERSTAND the following procedures for N₂ and CO₂ cylinders BEFORE installation.

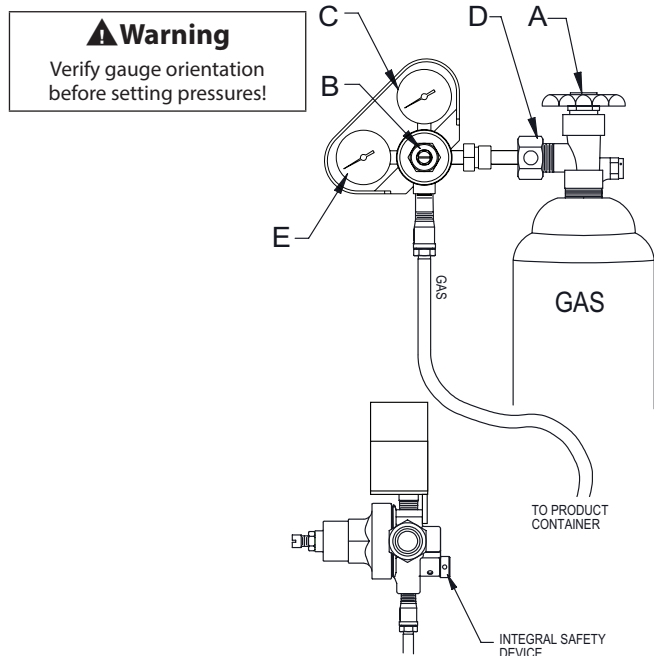
Important

Use only food grade nitrogen (99.5% pure) & CO₂ (99.9% pure).

1. ALWAYS connect the nitrogen cylinder to the primary regulator and NEVER directly to the unit, keg, or dispensing system. Failure to do so could result in an explosion with possible death or injury when the cylinder valve is opened.
2. ALWAYS follow correct procedures when cylinders are changed.
3. ALWAYS secure the cylinder in an upright position with a chain.
4. NEVER drop or throw a nitrogen cylinder.
5. ALWAYS keep a nitrogen cylinder away from heat. Store extra cylinders in a cool place (preferably 70°F). Securely fasten with a chain in an upright position when storing.
6. ALWAYS check the D.O.T. test date on the cylinder neck before installation. Ask your gas supplier for D.O.T. test requirements.
7. NEVER connect a product container unless there is a safety in the pressure system at or on the nitrogen regulator.

GAS INSTALLATION/REPLACEMENT

NOTE: During initial installation of the unit a bracket for the gas cylinder must be installed to solid wall nearby and a chain used to secure it to the bracket.



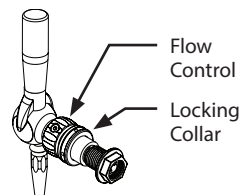
1. Make sure cylinder valve "A" is closed.
2. Unscrew (counter clockwise) regulator key "B" as far out as it will go. (The regulator is now in the off position).
3. Remove regulator from empty cylinder at "D".
4. Remove dust cap from new cylinder at "D". Open and close valve "A" quickly to blow dust from outlet.
5. With cylinder valve "A" in closed position, re-attach regulator to cylinder at "D".
6. Open valve "A" all the way. (This is important because this cylinder valve seals in two places).
7. Screw regulator key "B" in (clockwise) until required pressure is reached "C".

NOTE: Drinks will not pour if outlet valve "A" is closed.

GAS CONNECTIONS & PRESSURES

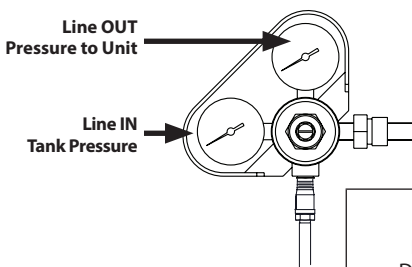
Caution

Installer should always check the locking collars on the taps are tight prior to connecting the gas supply line. If these collars are loose they can leak at the tower shank when pressurized.



Supply Pressure Settings

REGULATOR	SETTINGS
N₂ Generator to Unit	80 psi (.586 MPa, 586kPa, 5.86bar)
N₂ Bulk Tank to Unit (if used)	85 - 90 psi (.586 - .621 MPa, 586 - 621 kPa, 5.86 - 6.21 bar)
CO₂ to Blender	75 - 80 psi (.517 - .552 MPa, 517 - 552 kPa, 5.17 - 5.52 bar)
Mixed Gas to Unit	60 psi (.414 MPa, 414 kPa, 4.14 bar)



Warning

Line Out Pressure
Do Not exceed 90 psi
(.621 MPa, 621 kPa, 6.21 bar)
to the unit!

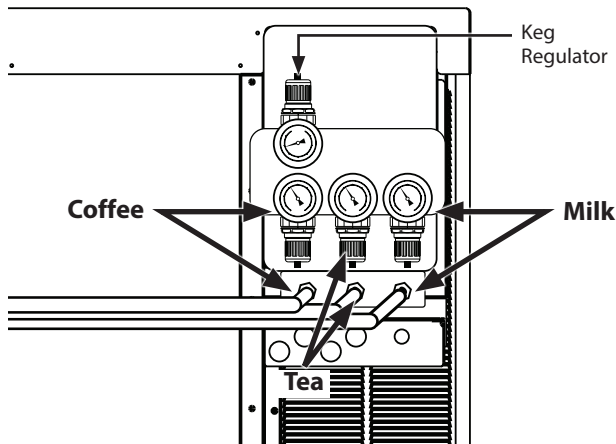
Important

If a nitrogen generator is used instead of bulk N₂ the generator must be capable of maintaining system pressures under demand.

Important

All plumbing must conform to local, state and national codes.

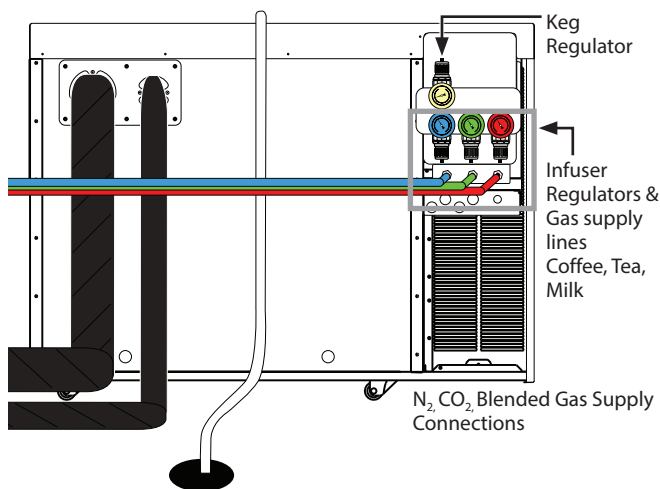
8. Locate the three (3) female quick connect gas supply inlets located in the rear upper right of the unit.



9. Connect the Gas supply lines using male quick connect fittings. Regulators correspond to line locations (Coffee, Tea, Milk from right to left).

Keg & Pump Regulators

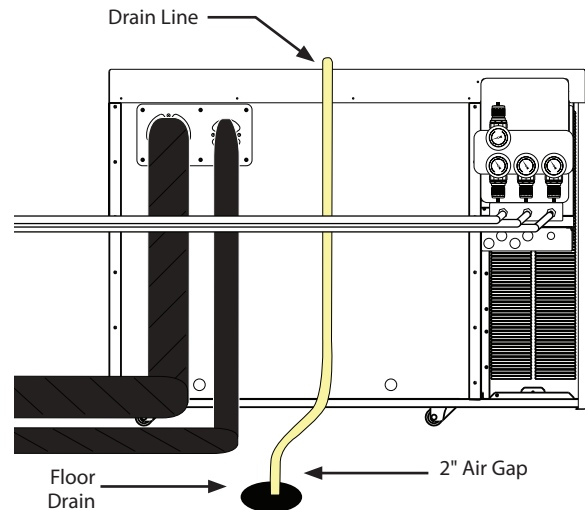
10. Once the Nitrogen, CO₂, and/or Blended Gas lines are hooked up to the unit check the pressures on the regulators located in the back of the unit.



REGULATOR	SETTINGS
Keg Push Regulator	16 psi +/- 2 psi (.110 MPa, 110 kPa, 1.10 bar)
Infuser Regulators	40 psi +/- 2 psi (.276 MPa, 276 kPa, 2.76 bar)

⚠ DANGER

ELECTRICAL SHOCK HAZARD! The power supply is located in the upper right behind the cover and has live heat sinks. Unplug from power source when removing cover..

DRAIN LINE

11. Run the drip pan drain line and to floor drain.
12. Ensure drain line is not kinked or otherwise blocked for proper drainage.

KEG CONNECTIONS

⚠ DANGER

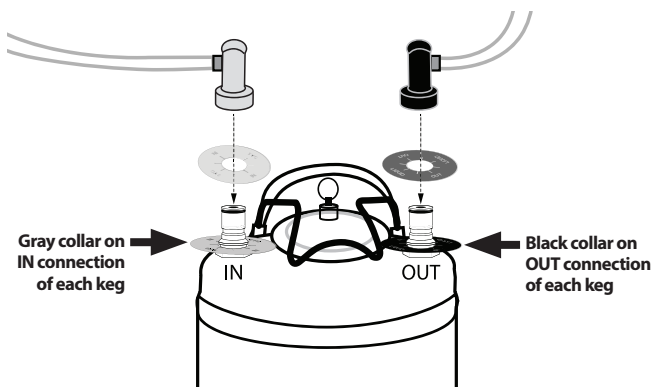
Never stand directly over keg when connecting, disconnecting, or when keg is pressurized.

Important

Only use AEB Kegs. Available from Welbilt KitchenCare..

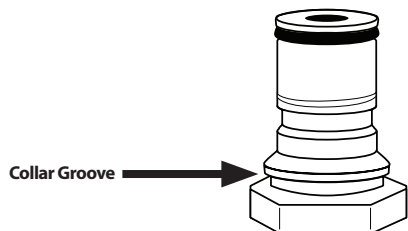
Keg Post Collars

1. Locate post collars and match the black to OUT post and gray to IN post.



NOTE: Color coding allows partners to match the black connector to black collar and gray connector to gray collar.

2. Press each collar over the IN and OUT posts until they seat in the groove below the taper.



Connecting the Keg

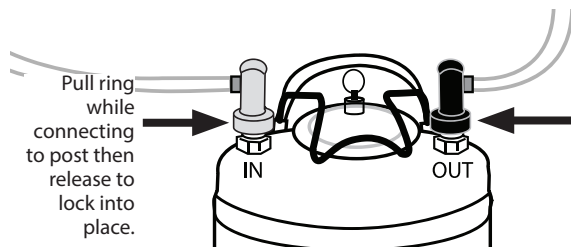
⚠ DANGER

Never stand directly over keg when connecting, disconnecting, or when keg is pressurized.

3. First connect the Black quick connect line to the connection labeled OUT on the coffee keg. This supplies coffee to Tap 1 and 2.

Important

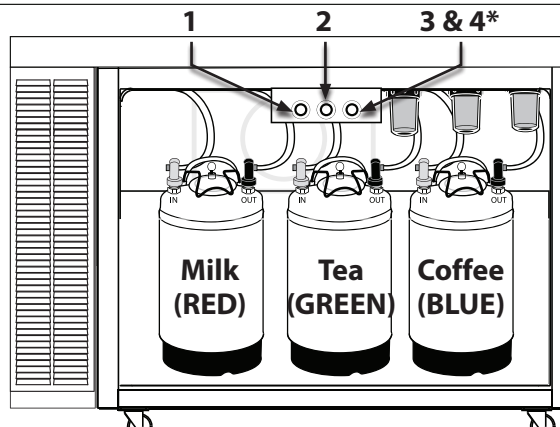
Hook the OUT line up to the coffee keg first, this helps prime the system once the nitrogen IN line is connected to the tank.



4. Connect the Gray quick connect line second to the connection labeled IN on the coffee keg. This line supplies Nitrogen into tank. See "Keg Change" on page 23 & "Priming the System" on page 22
5. The system is now ready to be primed.

NOTE: If the first unit has just powered up, the Prime/Clean buttons will blink blue until pressed one time. They will then turn red.

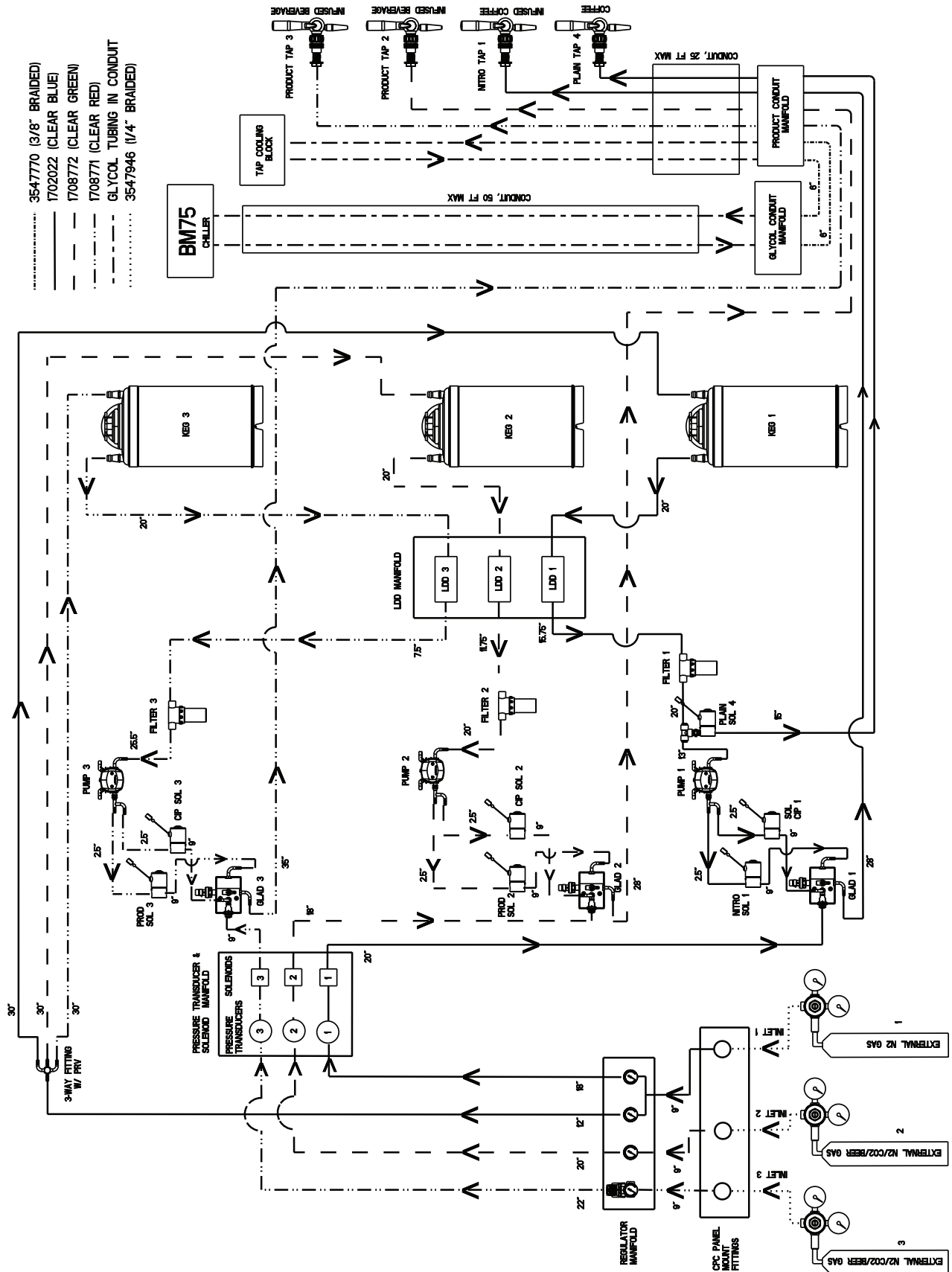
6. Press the corresponding Prime/Clean button, located in the upper center of the refrigeration cabinet, once to prime the keg line. The LED around the button will turn constant BLUE signifying that the system has been primed.



NOTE: * Button 3 controls both the Plain and Nitro Coffee taps.

7. The pump may run for up to fifteen (15) seconds while priming.
- NOTE: If priming fails to complete the system will go into an error state and the Prime/Clean button LED will turn constant RED until the error is cleared. See "Out of Prime & Cleaning Error" on page 22
8. Once the system is primed it is ready to pour drinks.
 9. Check the regulators to make sure the pressures have not changed.
 10. Check for leaks inside the cabinet and at the taps.
 11. Close cabinet door and unit is ready for use.

PLUMBING DIAGRAM



CALIBRATION

Important

Calibration is only to be performed by a qualified technician using the proper tools and specifications. Due to variabilities in conduit length, ambient temperatures, product usage, height above sea level, etc. a re-visit for fine tuning may or may not be necessary

Once all pressures and connections have been made and verified the unit can be calibrated if the following have been met;

Disassembly

Using a Phillips Head [Screwdriver](#), remove the left side panel and front facing louvered panel.

Pre-Calibration Checklist

- ☐ Power/Gas/Conduit/Remote Chiller/Product Kegs/ N2 Generator all are connected and ON.
- ☐ Regulators correctly set; 15 PSI Keg, 40 PSI GLAD.
- ☐ N2Fusion Refrigerator set to 34°F.
- ☐ Remote Chiller Glycol Bath temperature measures 30°F with a +/- 1° differential.
- ☐ All kegs are primed and ready, Blue LED lit on all Prime/Clean buttons.
- ☐ Correct nozzles are on each tap; Milk, Tea and Nitro Coffee have size 30 diffusers.
- ☐ Drink temperatures are all 41°F or under; pour and test Milk, Tea, and Nitro Coffee.

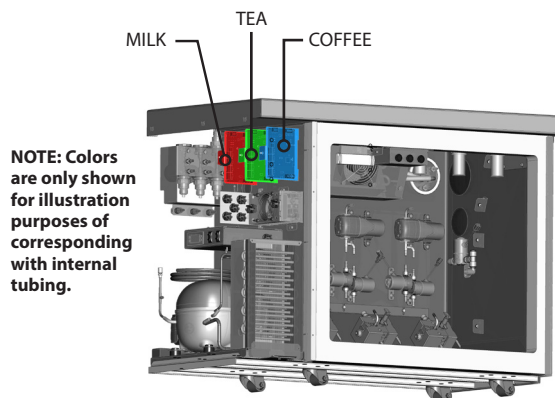
NOTE: If drink sputters or has too violent of a pour to perform the temperature test, proceed to Steps 1 - 3 then test.

Important

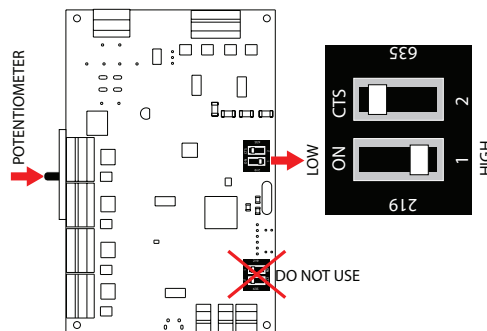
If Drink temperatures are too high calibration should wait until they are 41°F or under.

Dip Switches

NOTE: Each time a dip switch is moved or it will initiate a 30 second adjustment timer allowing adjustments to be made. After 30 seconds from the last switch move or potentiometer adjustment the board settings will lock. Clear lines with a 10 second pour after any adjustment.



- Starting with the Coffee Board, far right board three (3), use an o-ring pick to move the dip switch to the HIGH (right) setting. If already set to HIGH, move to LOW (left) then back to HIGH (right).



- Rotate the potentiometer Counter Clockwise as far as it will go to zero (0) it out. (See "Calibration Blink Scale" on page 17)

NOTE: This equals zero (0) blinks on the HIGH side of the scale and will be the starting point for calibration on all drinks. (See "Calibration Blink Scale" on page 17)

- Repeat Steps 1 and 2 on the Milk and Tea boards to zero (0) out all boards.

Adjustments

4. Starting with Nitro Coffee, clear the line and test the drink to the "Drink Quality Specifications" on page 18.
 - A. If drink has short cascade/low head hight, stay on the HIGH side of the corresponding board and adjust up one blink at a time, Clockwise, until drink is within quality range.
 - HIGH side adjustments are made by moving the dip switch to LOW (left) then back to HIGH (right) and rotating the potentiometer Clockwise one (1) blink, clear the line and retest.

NOTE: If a HIGH side adjustment above zero (0) has made the drink too foamy, stay on the HIGH side and adjust back down one (1) blink, clear the line and retest.

- B. If drink is too foamy/head too high after zeroing on the HIGH side, move the dip switch to the LOW side

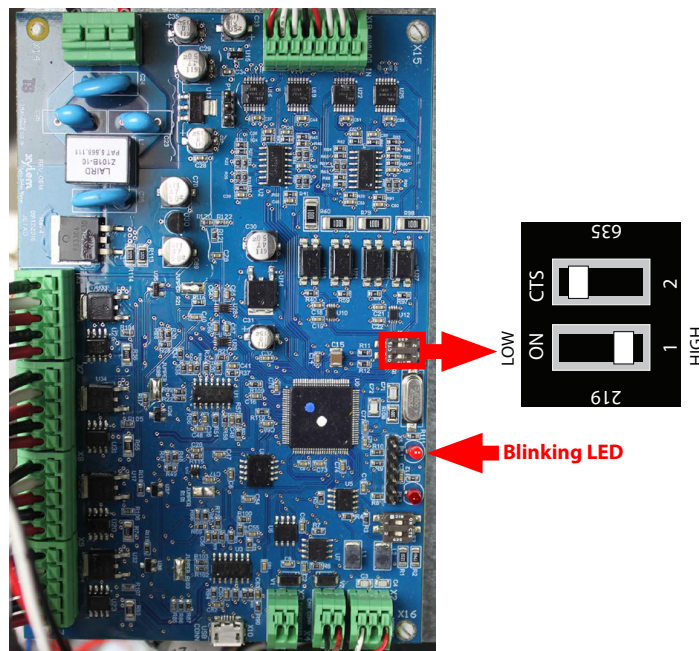
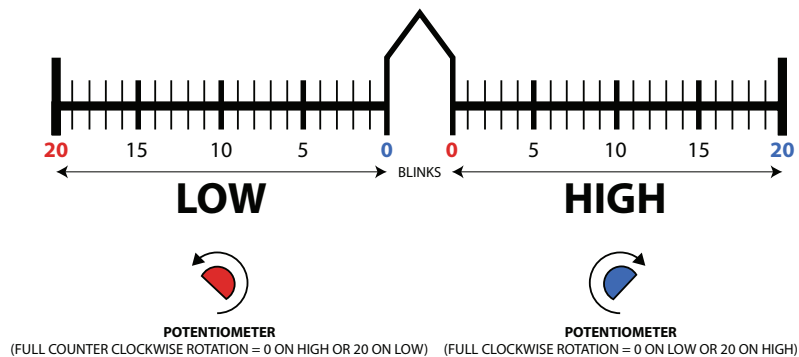
of the corresponding board by flipping it to the left and zero (0) out the potentiometer by rotating it Clockwise as far as it will go, clear the line and retest.

- LOW side adjustments are made by moving the dip switch to HIGH (right) then back to LOW (left) and rotate potentiometer Counter Clockwise one (1) blink, clear the line and retest.

NOTE: If a LOW side adjustment above zero (0) has made the drink too weak with short cascade/low head height, stay on the LOW side and adjust back down one (1) blink, clear the line and retest.

5. Repeat quality tests and adjustment Step 4 A or B on the Milk and Tea.
6. Once drinks are acceptable quality reattach the left and front panels.

Calibration Blink Scale



Drink Quality Specifications

Draft Beverage Metrics									
**all metrics are based on a Starbucks, Tall (12oz) beverage in a cold cup									
Beverage	Gas	Cascade Time	Head Height (after 3 minutes)	Weight	Temperature	Texture	Gold Standard photo		
Cold Brew Coffee	N2	2 - 2:30	0.5 inches +/- 0.15 inches	310g +/- 20g, fill to top ridge in cup	Under 41 degrees	Creamy, visible cascade after pouring, no carbonation			
Whole Milk	N2	N/A- little to no visible cascade	0.5 inches +/- 0.15 inches	310g +/- 20g, fill to top ridge in cup	Under 41 degrees	Creamy, slightly fluffy compared to still milk, dense foam settles after 3 minutes			
Peach Tranquility	CO2/N2	1:15 - 1:45 minute	0.6 inches +/- 0.15 inches	320g +/- 20g, fill to top ridge in cup	Under 41 degrees	Creamy with a hint of carbonation and dense foam settling after cascade			

Section 3 Operation

Machine Operation

CONTROLS/PROGRAMMING/SETTINGS

After the unit is connected to power and switch in the ON position, it will begin operating. With the doors closed, the temperature of the cabinet should reach 36°F to 40°F (2°C to 4°C) in about 25 minutes.

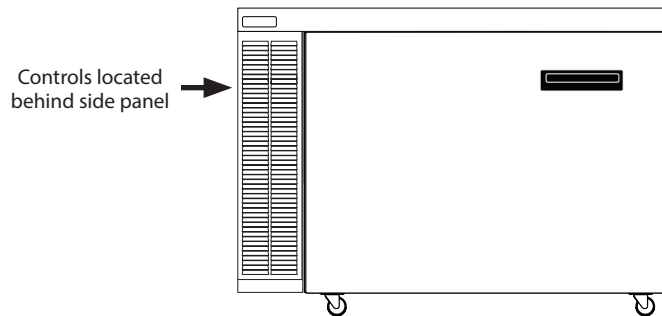
Refrigerators defrost automatically with every cycle of the compressor. The water generated is routed to a pan below the compressor on the rear of the unit and is evaporated by the heat given off by the compressor.

NOTE: During normal operation the evaporator fan will run constantly independently of the compressor.

REFRIGERATOR EVAPORATOR FAN

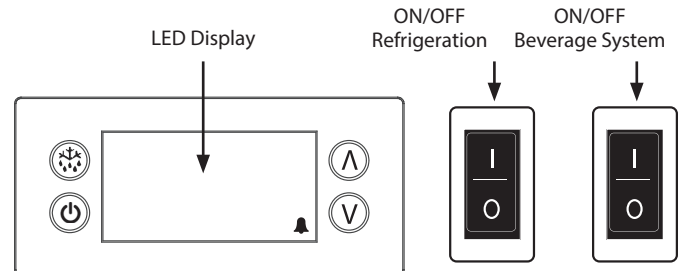
When the refrigerator is initially powered up or immediately following a power outage the unit will begin cooling after a 3-6 minute delay.

115 VOLT CONTROLS



- The 112ERC temperature control display and ON/OFF switches are located behind the removable side panel.

ERC112 TEMPERATURE CONTROL



Operation / Indication		
Status	Displayed	Comments
Normal (°C)	Temp. [°C]	Unit depends on setting (parameters in control)
Normal (°F)	Temp. [°F]	
Show set-point	Temp.	
Set to Defrost	dEF / Temp	Depends on setting (parameters in control or as chosen by upper left button)
Sensor 1 defect	E01	Air sensor
Sensor 2 defect	E02	Coil sensor
High temperature alarm	Hi	Automatically switching at 2 sec rate
Low temperature alarm	Lo	
Line voltage too high	uHi	
Line voltage too low	uLi	

NOTE: When any error code is displayed on the LED screen a red bell icon will also appear in the lower right corner.



Press upper or lower right button

- Display show actual set-point (blinking).
 - If buttons untouched for 3 seconds returns to normal.
- Increase set-point by pressing upper button. Max value depends on parameters in control.
- Decrease set-point by pressing lower button. Min value depends on parameters in control.
 - If buttons untouched for 3 seconds returns to normal and stores new set-point.

Press upper left button for 5 seconds

- Start defrost.

Press lower left button for 5 seconds

- Unit goes into stand-by mode.
 - The display will read Off, then a period.
- Press the lower left button again for 5 seconds.
 - The display will read On.
 - The unit will then start up in the defrost mode and display will read dEF.

Temperature Alarm

The alarm will flash HI or LO 90 minutes after the unit has reached its alarm temperature point or after any power interruption if the temperature is above or below the alarm set points.

- The high refrigerator temperature point is 50°F (10°C).
- The low refrigerator temperature point is 25°F (-4°C).

CHANGING DISPLAY FROM FAHRENHEIT TO CELSIUS

1. Simultaneously hold the up and down arrows for 5 seconds to access menu for password protected parameters.



2. Screen should temporarily flash PAS and then move to a numeric screen.



3. Scroll to 187 using the up/down arrows and push the stand-by button (lower left button) to enter.



4. Scroll to dis using the up/down arrows and push the stand-by button (lower left button) to enter into the display menu.



5. Scroll to CFu using the up/down arrows and push the stand-by button (lower left button) to enter the display unit menu.



6. -F should be displayed indicating Fahrenheit. Use the down arrow to change it to -C for Celsius and hit the stand-by button (lower left button) to enter the change.

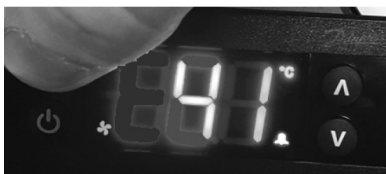


7. Push the defrost button (upper left button) to move out of the display unit menu.



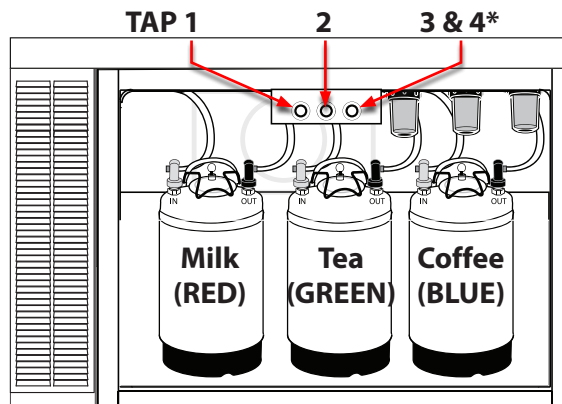
8. Push the defrost button (upper left button) to move out of the display menu and back to the normal display.

NOTE: For steps 7 and 8, display will return back to normal display after 30 seconds of inactivity.



PRIME / CLEAN BUTTONS

The Prime/Cleans buttons are located in the upper middle of the refrigeration cabinet. These buttons are used for priming the system with coffee, tea, milk, or other beverage from the keg, cleaning, and displaying error codes using the LED ring around the button.



NOTE: * Button 3 controls both the Nitro and Plain Coffee taps.

The following table lists the Prime/Clean Button functions and state the LED is in during each mode.

PRIME /CLEAN BUTTON FUNCTIONS	
Mode	LED
Start Up	Blinking only BLUE - Occurs when power cycled, press button once to enter Prime or Dispense mode.
Dispense	Constant BLUE, keg is Primed and ready
Out of Prime	Constant RED - Press button to Prime or keg change may be required.
Cleaning	Blinks RED and BLUE during cleaning.
Cleaning Error	Blinks RED during cleaning - Press once to clear to constant RED, cleaning will need to be restarted.
Gas Out	Blinks Fast Red - Correct Gas Pressure
CIP Warning	Blinks Blue & Purple - Starts blinking when there is 1 hr left until CIP Lockout. Perform cleaning to clear.
CIP Lockout	Solid Purple - Perform cleaning to clear.

Important

DO NOT put unit into cleaning mode with a product keg connected! This will empty the keg out the tap if it is open.

NOTE: If cleaning mode is accidentally entered with a product keg attached immediately press and hold the Prime/Clean button until the LED turns RED. Priming may be required to put the unit back into dispense mode.

OUT OF PRIME & CLEANING ERROR**Important**

Prime/Clean button LED will stay constant RED and unit will not dispense until out of prime is corrected. Blinking RED means there was an error during cleaning due to cleaning keg not being full. See "Troubleshooting" on page 38

To correct a Cleaning Error;

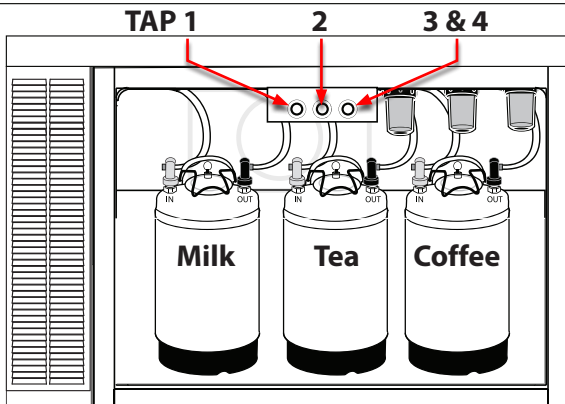
1. Single press and the Prime/Clean button for 1 second and the LED around the button will turn RED.
2. Once the error has been cleared, connect a full cleaning keg press and release the Prime/Clean button again to prime the unit.
3. Restart the CIP (Clean in Place) process by holding the corresponding Prime/Clean Button down until it alternates blinking RED and BLUE.

To correct a Out of Prime a keg change may be required. See "Priming the System" on page 22

PRIMING THE SYSTEM**Important**

Priming is always required during keg change.

1. Make sure the button is constant RED.



2. Open the tap on the line that is to be primed.
3. Press the corresponding Prime/Clean button, located in the upper middle of the refrigeration cabinet, once to prime the beverage line.
4. After a few seconds close the tap.

NOTE: This will purge any air trapped in the line. If the tap is left open too long it will fail to prime.

5. The LED around the button will turn constant BLUE once the line has primed.
6. The pump may run for up to fifteen (15) seconds while priming.

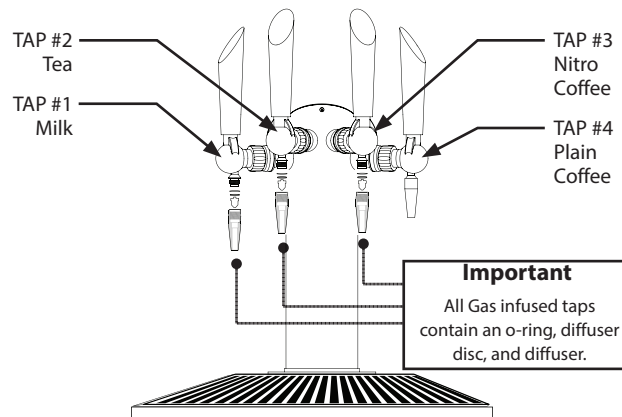
Important

If priming fails to complete the system will go back into an out of prime state and the Prime/Clean button LED will turn solid RED continuously. Open and close the taps to relieve pressure and try again..

7. Once the system is primed it is ready to pour drinks.
8. Close cabinet door and unit is ready for use.

TAPS & NOZZLES

For best performance do not allow any taps to remain fully opened for extended periods of time.

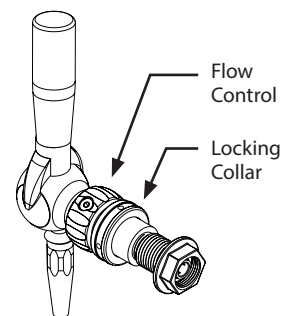
**Important**

Beverages on infused taps will not be infused properly if the correct nozzle with diffuser is not installed.

"How to Remove Nozzles" on page 28 & "How to Install Nozzles" on page 28

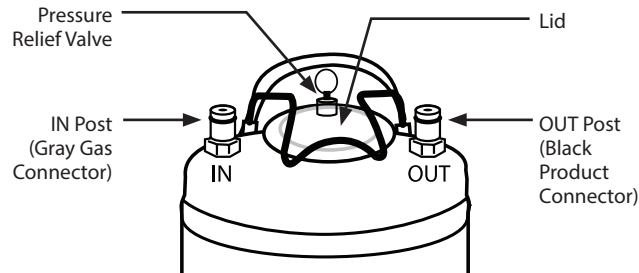
Flow Control & Locking Collar

DO NOT adjust the flow control, it is set at the factory. The locking collar keeps the tap tightened to the tower. A special tool is required for proper adjustment.



KEGS**Important**

Only use AEB Kegs. Available from Welbilt KitchenCare..

**Warning**

Do not attempt to remove lid until all pressure has been relieved from keg.

KEG CHANGE

When a coffee keg is empty product will no longer dispense.

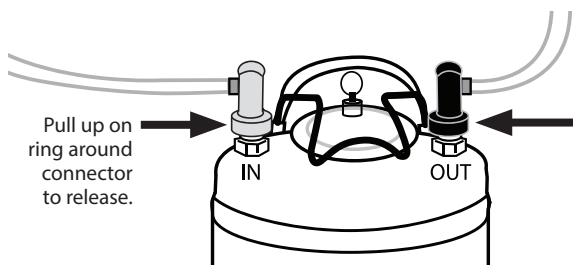
Important

Make sure new product keg has been chilled to the operating temperature range of 41° - 36°F (5° - 2°C) before use or may cause foaming in the system.

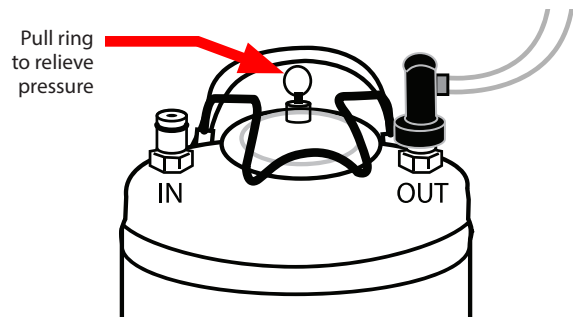
DANGER

Never stand directly over keg when connecting, disconnecting, or when keg is pressurized.

1. Disconnect the GAS IN (gray) fitting from the keg by pulling up on the ring around the connector to release from the post.



2. Leave the PRODUCT OUT (black) fitting connected to the keg.



3. Pull up on the pressure relief ring on top of the keg (illustrated above) to vent the nitrogen from the keg and the system plumbing shown above.

NOTE: Hold the ring up until the system is fully vented (hissing gas stops).

4. Disconnect the PRODUCT OUT (black) fitting from the keg and remove the keg.
5. Place new keg in cabinet
6. Connect the PRODUCT OUT (black) fitting to the keg first then connect the GAS IN (gray) fitting.
7. Prime system by pressing the Prime/Clean button. See *"Priming the System"* on page 22
8. Pour a drink out of each tap to see if beverage comes out, if not See *"Troubleshooting Charts"* on page 38.

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Section 4

Maintenance

Cleaning & Sanitizing

NOTE: Cleaning items, other than the nozzle cleaning hoses, are not supplied with the N2Fusion™ dispenser.

DANGER

It is the responsibility of the equipment owner to perform a Personal Protective Equipment Hazard Assessment to ensure adequate protection during maintenance procedures.

DANGER

Failure to disconnect the power at the main power supply disconnect could result in serious injury or death. The power switch DOES NOT disconnect all incoming power.

DANGER

Disconnect electric power at the main power disconnect for all equipment being serviced. Observe correct polarity of incoming line voltage. Incorrect polarity can lead to erratic operation.

Important

When cleaning interior and exterior of unit, care should be taken to avoid electrical components and wiring. Keep water and/or cleaning solutions away from these parts.

Warning

Do not damage the refrigeration circuit when installing, maintaining or servicing the unit.

Warning

Never Use Steel Pads, Wire Brushes or Scrapers!

Important

Never use a high-pressure water jet for cleaning or hose down or flood interior or exterior of units with water. Do not use power cleaning equipment, steel wool, scrapers or wire brushes on stainless steel or painted surfaces..

MAINTENANCE SCHEDULE

Maintenance	Daily	Weekly	Monthly	After Prolonged Shutdown	At Start-up
Kegs	X			X	
Interior	X			X	X
Gasket	X		X	X	X
Exterior	X			X	X
Drain	X	X		X	X
Condenser Coil			X	X	X
Casters			X	X	X
Milk Line	X	X		X	X
System		X		X	X

GENERAL CLEANING

Interior Cleaning

Notice

When cleaning interior and exterior of unit, care should be taken to avoid the rear power cord. Keep water and/or cleaning solutions away from electrical parts.

Important

Never use a high-pressure water jet for cleaning or hose down or flood interior or exterior of units with water. Do not use power cleaning equipment, steel wool, scrapers or wire brushes on stainless steel or painted surfaces.

The interior can be cleaned using soap and warm water. If this isn't sufficient, try ammonia and water or a nonabrasive liquid cleaner.

Exterior Cleaning

⚠ Caution

Never use an acid-based cleaning solution! Many food products have an acidic content, which can deteriorate the finish. Be sure to clean the stainless steel surfaces of ALL food products.

Clean the area around the unit as often as necessary to maintain cleanliness and efficient operation.

Wipe gasket and surfaces with a damp cloth rinsed in water to remove dust and dirt from the outside of the unit. Always rub with the "grain" of the stainless steel to avoid marring the finish. If a greasy residue persists, use a damp cloth rinsed in a mild dish soap and water solution. Wipe dry with a clean, soft cloth.

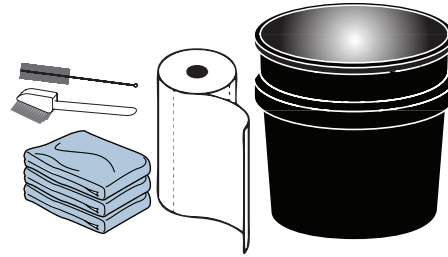
Never use steel wool or abrasive pads for cleaning. Never use citrus based or abrasive cleaners. Never use chlorinated, cleaners greater than 200 ppm.

Stainless steel exterior panels have a clear coating that is stain resistant and easy to clean. Products containing abrasives will damage the coating and scratch the panels.

Daily cleaning may be followed by an application of stainless steel cleaner which will eliminate water spotting and fingerprints. Early signs of stainless steel breakdown are small pits and cracks. If this has begun, clean thoroughly and start to apply stainless steel cleaners in attempt to restore the steel.

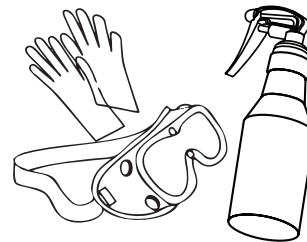
CLEANING SUPPLIES

1. Towels, wipes, brushes, and buckets.



- Use clean towels for any spilled fluid during cleaning process.
- Small cleaning wipes for cleaning top, sides, and interior of unit.
- A small brush is useful to clean keg connections
- Small bucket should be available for dipping keg connections into sanitizer.

2. Spray bottles and PPE (gloves, goggles).



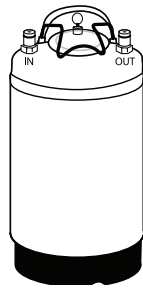
⚠ Warning

When in contact with cleaning and sanitizing solution chemicals gloves and safety glasses are recommended.

- Use spray bottle when wiping down surfaces and other exterior parts.
- Gloves and eye protection should be worn to lessen chance of irritation or injury.

MANUAL KEG CLEANING

This is to be performed when a product keg is empty prior to filling the keg with new product.



1. Empty remaining product from the keg into the 3-compartment sink.
2. Add QSR Heavy Duty Multi-Purpose Sink Detergent™ from the dispenser at the back room sink, or other approved cleaning solution mixed to the proper concentration, with warm tap water in the keg.
3. Use the urn brush to scrub the inside of the keg and lid, loosening coffee soils, oils, and residue.
4. Empty the dirty soapy water into the 3-compartment sink.

NOTE: Take care not to damage the inner parts of the keg including the stem.

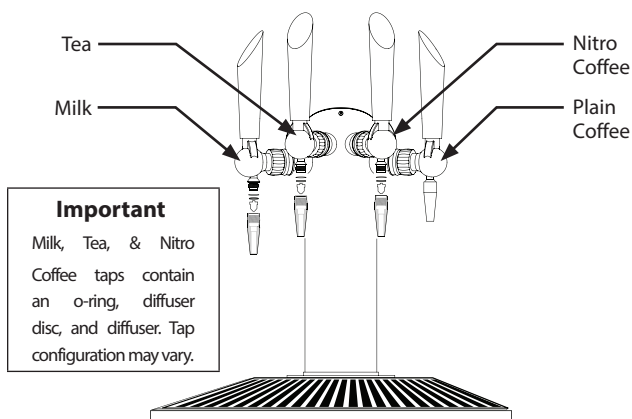
5. Fill half the keg with clean water, replace the lid, and agitate the keg to thoroughly rinse the inside of the keg.
6. Empty the rinse water into the 3-compartment sink.
7. Mix proper concentration of approved sanitizing solution (KAY-5® 100 ppm chlorine mixed 1 pack per 2.5 gallons or Quat based Urnex® Complete Cafe™ mixed ½ oz per gallon.) in the keg with warm tap water.
8. Replace the lid and agitate the keg to thoroughly sanitize the inside of the keg.
9. Allow the sanitizer to sit inside of the keg for at least one minute.
10. Empty the sanitizer solution into the 3-compartment sink.
11. Store the keg and lid in a location that protects the keg from overhead contamination.
12. Allow the keg and lid to fully air dry before next use.

LEVEL 1 - DAILY CLEANING**Important**

The Milk line need to have Level 2 Cleaning performed daily. See "Level 2 - Weekly Cleaning (Single Step Method)" on page 30 or See "Level 2 - Weekly Cleaning (Three Step Method)" on page 32 for this procedure.

Sanitizing / Cleaning

1. Put on gloves and safety goggles before cleaning unit.
2. Add **KAY-5®** Sanitizer/Cleaner to spray bottle mixed to 100 ppm chlorine concentration or Quat based Urnex® Complete Cafe™ mixed ½ oz per gallon and spray all external surfaces. Allow to remain for 1 minute, or as directed by manufacturer, before wiping off.
3. Check each tap for obstructions and proper flow.



NOTE: Nozzles are fully cleaned through the weekly Clean In Place (CIP) process. If removing a tap nozzle to sanitize / clean an obstruction is necessary do so prior to CIP. Be aware that some contain an o-ring and diffuser. DO NOT lose the diffusers and make sure nozzles are put back on the correct taps (*Tap configuration may vary from illustration, Plain Coffee is the only tap without diffuser*).

HOW TO REMOVE NOZZLES

- A. Rotate nozzle counter-clockwise by hand, no tool should be required for removal.

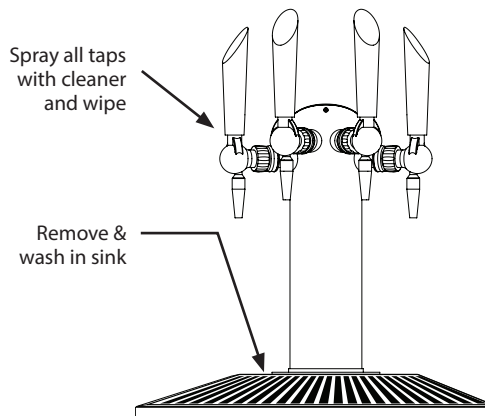
HOW TO INSTALL NOZZLES

- B. To re-install the nozzle, thread the nozzle back onto the tap by turning clockwise and firmly hand tighten to prevent leaks, no tool required for installation.

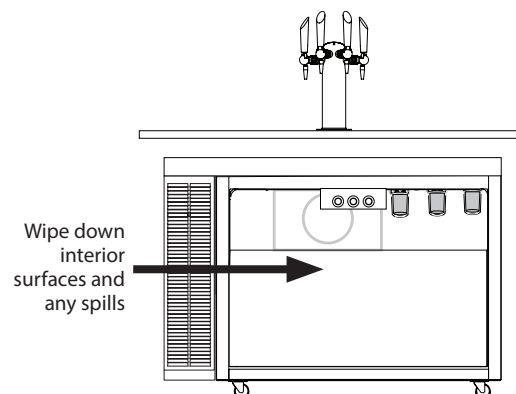
Important

Beverages that use nitrogen or other gases will not infuse properly if the correct nozzle with diffuser are not installed on the corresponding tap.

4. Spray each nozzle and allow to soak for 1 minutes, or as directed by manufacturer, before wiping off.



5. Drain grate should be removed, interior of drain pan cleaned, and wiped dry.
6. Wash drain grate in sink and allow to dry.
7. Check interior for any spills or drips, spray internal surfaces and allow to air soak for 1 minute, or as directed by manufacturer, before wiping off



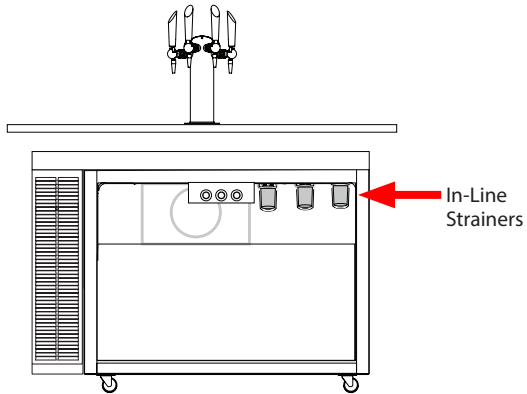
8. Pull unit out and clean around the cabinet.

Caution

Attention and care should be used to avoid spraying any electrical component (fans, thermostat and sensor connections) with any of the fluids.

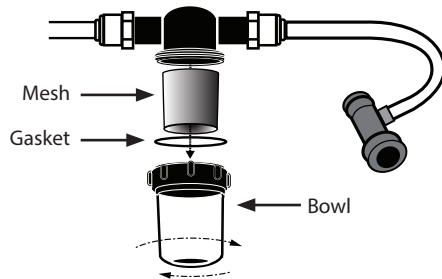
Clean In-line Strainer

1. Locate the three (3) in-line strainers on top right ceiling of the refrigeration cabinet.



HOW TO REMOVE STRAINERS

- A. First depressurize the system then disconnect the keg. See "Keg Change" on page 23
- B. Put down a towel or small cloth to catch any product that may still be in the line or bowl during removal.
- C. Grasp the bowl and rotate counterclockwise to loosen and remove the bowl.



NOTE: The strainer is a metal mesh cylinder that will be located inside the bowl. Also be careful not to damage the rubber gasket that is seated in the bowl.

- D. Visually inspect the clear strainer bowl for debris and coffee grinds.
- E. Rinse under tap water, scrub thoroughly inside and out with the tube brush included with the unit.
- F. Reassemble the bowl with mesh and gasket back in place.**
- G. Rotate bowl clockwise and hand tighten.
- H. Reconnect the keg and check for leaks.

Important

Strainer should be cleaned at minimum once a day.

LEVEL 2 - WEEKLY CLEANING (SINGLE STEP METHOD)**Important**

One of the Level 2 methods is to be performed daily on the Milk line.

NOTE: Only to be performed using **KAY-5®** Sanitizer/Cleaner, if **KAY-5®** Sanitizer/Cleaner is not available the three step, Clean, Rinse, Sanitize method must be performed. See "Level 2 - Weekly Cleaning (Three Step Method)" on page 32

1. Approved Sanitizer / Cleaner.



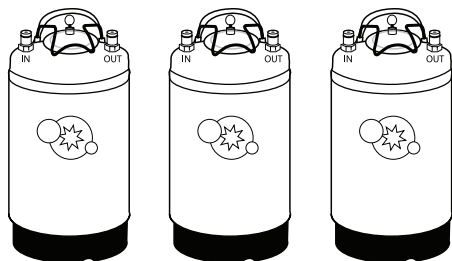
- Only use approved Sanitizer / Cleaner.
- **KAY-5®** Sanitizer/Cleaner mixed one (1) packet in 2.5 gallons (9.5L) of lukewarm water to equal 100 ppm chlorine. This sanitizer / cleaner is compatible with equipment metals and materials.

NOTE: The cleaner / sanitizer must provide 100 ppm chlorine, use the provided 2.5 (9.5L) measuring bucket to ensure proper ratio.

Warning

Powdered cleaners and sanitizers must be thoroughly mixed into water/solution to prevent crystals from remaining and causing damage to system components.

2. One (1) set of three (3) clean and sanitized three (3) gallon (11.36L) pressure kegs.



- One (1) sanitizing / cleaning solution keg for each line.

Important

Kegs and bucket used for the sanitizing / cleaning solution should be emptied and cleaned before reuse.

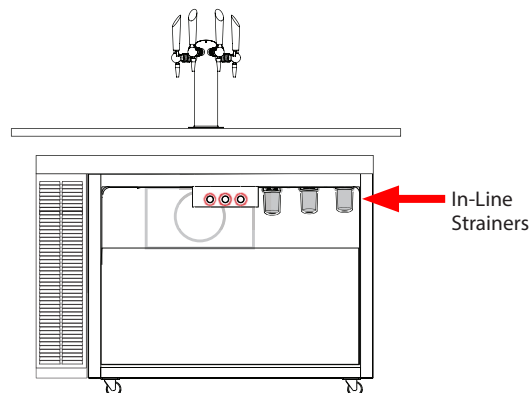
Depressurize System

1. Depressurize the system, disconnect the product kegs, and set aside (See "Keg Change" on page 23).
 - Disconnect the gas inlet (gray connector) from each keg, pull the relief valve ring to depressurize the lines and disconnect the product outlet (black connector) from each keg.
 - Open all taps to empty lines of remaining product then close them.

NOTE: All three (3) Prime/Clean buttons will turn solid RED.

Clean In-line Strainer

2. With the system depressurized, remove and clean the in-line strainer. See "Clean In-line Strainer" on page 29.



3. Reassemble the bowl with mesh and gasket back in place.

Sanitizing / Cleaning the System (CIP)

4. Empty one (1) packet of **KAY-5®** Sanitizer/Cleaner into each cleaning keg.
5. Using the red 2.5 gallon (9.5 L) bucket, fill each keg using only one (1) bucket of warm tap water per keg to create the proper 100 ppm chlorine concentration.

NOTE: Verify the powder is dissolved completely, shake or stir to help dissolve powder if necessary.

6. Connect a cleaning keg to each beverage system in the unit by connecting the black outlet (OUT) then gray inlet (IN) keg connectors.
7. Attach the cleaning manifold to each tap nozzle and route the outlet to the hole in the drain pan.

NOTE: All three (3) Prime/Clean buttons should still be RED.

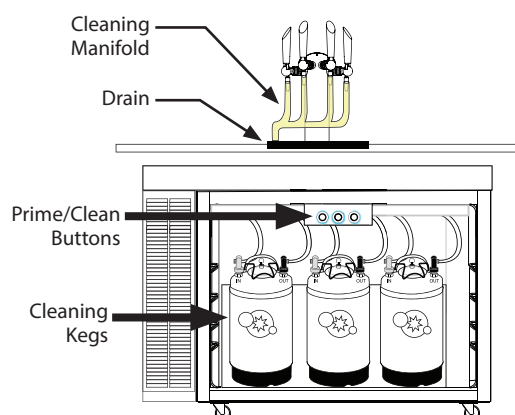
8. Prime the cleaning kegs by pressing and releasing each of the Prime/Clean buttons one at a time, all buttons should turn BLUE.

Important

All three (3) Prime/Clean buttons must be Blue before continuing. If a line fails to prime the button will stay RED short press the Prime/Clean button again to prime. If the button is blinking RED, open and close the corresponding tap then press the Prime/Clean button again to clear the error. When the button is again solid RED, short press to prime. Continue once all buttons are BLUE.

Important

Clean only one (1) line at a time, multiple lines simultaneously will cause gas out and errors during cleaning.



9. Open one (1) tap, liquid will begin flowing through the cleaning hoses, immediately press and hold the corresponding Prime/Clean Button down until it alternates blinking RED and BLUE.

NOTE: The line will now automatically run through the cleaning process and the LED around each button will blink RED/BLUE until completed.

10. At the end of the automated process the system will purge and the Prime/Clean buttons will turn solid RED.
11. Repeat steps 9 and 10 on each of the remaining lines one at a time until all lines have been Cleaned/Sanitized.

Important

If any Prime/Clean button starts blinking only RED during the cleaning process this indicates an error and the corresponding cleaning keg will need refilled with **KAY-5®** Sanitizer/Cleaner solution and started over. See "Out of Prime & Cleaning Error" on page 22

NOTE: To abort cleaning mode at any time short press the Prime/Clean button one time. The system will return to its normal operating mode and may need to be Primed before use if the Prime/Clean button remains constantly RED.

NOTE: Priming is required after aborting cleaning or clearing an error. See "Priming the System" on page 22

12. Remove the cleaning solution kegs by disconnecting the gray gas inlet connector, pulling on the relief valve ring to depressurize the line, then disconnecting the black outlet connector and set aside.

Important

If cleaning mode is accidentally aborted or aborted because of an issue/reason, then the cleaning process will need to start over from the beginning.

Important

Kegs used for cleaning, rinsing, and sanitizing solutions should be emptied and cleaned before reuse.

13. The Clean In Place cycle is now complete, continue to "Clean In-line Strainer" on page 34

LEVEL 2 - WEEKLY CLEANING (THREE STEP METHOD)**Important**

One of the Level 2 methods is to be performed daily on the Milk line.

NOTE: Only to be performed if **KAY-5®** Sanitizer/Cleaner is not available. See "Level 2 - Weekly Cleaning (Single Step Method)" on page 30

1. Approved cleaner and sanitizer.



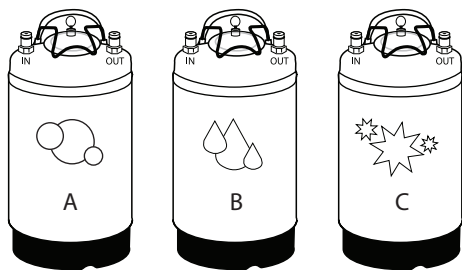
- Only use approved cleaner and sanitizer.
- Urnex® Cafiza® Espresso Machine Cleaner mixed one (1) teaspoon per gallon, must be used. This cleaner is compatible with equipment metals and materials.
- The approved sanitizer is Quat based Urnex® Complete Cafe™ mixed ½ oz per gallon.

NOTE: The sanitizer must provide 400 ppm.

Warning

Powdered cleaners and sanitizers must be thoroughly mixed into water/solution to prevent crystals from remaining and causing damage to system components.

2. Three (3) sets of clean and sanitized three (3) gallon (11.36L) pressure kegs.



- A. One (1) for cleaning solution.
- B. One (1) for rinse water solution.
- C. One (1) for sanitizing solution.

Important

Kegs used for cleaning, sanitizing solutions and rinse water should be emptied and cleaned before reuse.

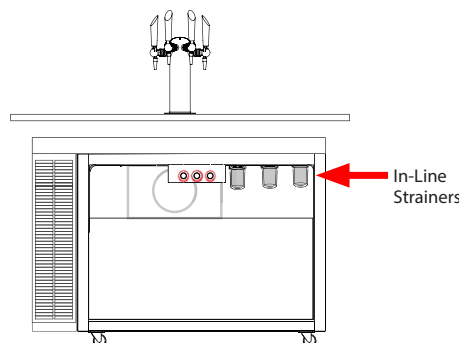
Depressurize System

1. Depressurize the system, disconnect the product kegs, and set aside (See "Keg Change" on page 23).
 - Disconnect the gas inlet (gray connector) from each keg, pull the relief valve ring to depressurize the lines and disconnect the product outlet (black connector) from each keg.
 - Open all taps to empty lines of remaining product then close them.

NOTE: All three (3) Prime/Clean buttons will turn solid RED.

Clean In-line Strainer

2. With the system depressurized, remove and clean the in-line strainer. See "Clean In-line Strainer" on page 29.



3. Reassemble the bowl with mesh and gasket back in place.

Cleaning the System

4. Using three (3) kegs, mix proper concentration of cleaning solution in each, (3) gallon keg with warm tap water.
5. Connect the outlet (OUT) then inlet (IN) keg connectors to each cleaning solution kegs.
6. Attach the cleaning manifold to each tap nozzle and route the outlet to the hole in the drain pan.

NOTE: All three (3) Prime/Clean buttons should still be RED.

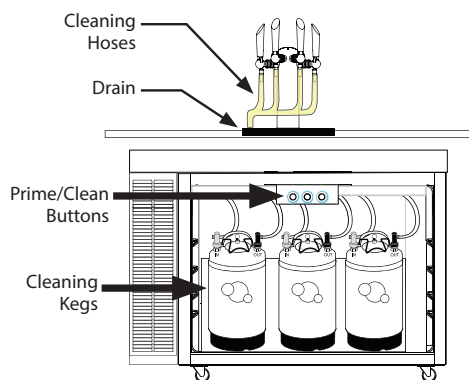
7. Prime the cleaning kegs by pressing and releasing each of the Prime/Clean buttons one at a time, all buttons should turn BLUE.

Important

All three (3) Prime/Clean buttons must be Blue before continuing. If a line fails to prime the button will stay RED short press the Prime/Clean button again to prime. If the button is blinking RED, open and close the corresponding tap then press the Prime/Clean button again to clear the error. When the button is again solid RED, short press to prime. Continue once all buttons are BLUE..

Important

Clean only one (1) line at a time, multiple lines simultaneously will cause gas out and errors during cleaning.



8. Open one (1) tap, liquid will begin flowing through the cleaning hoses, immediately press and hold the corresponding Prime/Clean Button down until it alternates blinking RED and BLUE.

NOTE: The line will now automatically run through the cleaning process and the LED around each button will blink RED/BLUE until completed.

9. At the end of the automated process the system will purge and the Prime/Clean buttons will turn solid RED.
10. Replete steps 8 and 9 on each of the remaining lines one at a time until all lines have been cleaned.

Important

If any Prime/Clean button starts blinking only Red during the cleaning process this indicates an error and the corresponding cleaning keg may not have been full to start. Refill the keg with cleaning solution and start over. See "Out of Prime & Cleaning Error" on page 22

NOTE: To abort cleaning mode at any time press the Prime/Clean button one time. The system will return to it's normal operating mode and may need to be Primed before use if the Prime/Clean button remains constantly Red.

Important

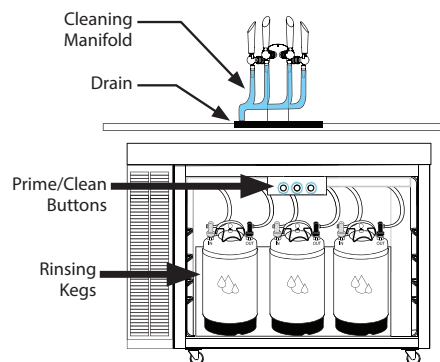
If cleaning mode is accidentally aborted or aborted because of an issue/reason, then the cleaning process will need to start over from the beginning after a two (2) minute wait.

NOTE: If an error is encountered at any time during cleaning process the cleaning button will blink Red ON/OFF rapidly indicating unit is in an error state and cleaning process has stopped. See "Out of Prime & Cleaning Error" on page 22.

11. Disconnect cleaning solution kegs and set aside, then continue to "Rinsing the System" on page 33

Rinsing the System

1. Using three (3) kegs, fill each with (3) gallons of clean warm rinse water.
2. Connect the outlet (OUT) then inlet (IN) keg connectors of unit to sanitizing solution keg.



NOTE: All three (3) Prime/Clean buttons should be Blue before continuing.

3. Open one (1) tap, liquid will begin flowing through the cleaning hoses, immediately press and hold the corresponding Prime/Clean Button down until it alternates blinking RED and BLUE.

NOTE: The line will now automatically run through the cleaning process and the LED around each button will blink RED/BLUE until completed.

4. At the end of the automated process the system will purge and the Prime/Clean buttons will turn solid RED.
5. Replete steps 3 and 4 on each of the remaining lines one at a time until all lines have been rinsed.

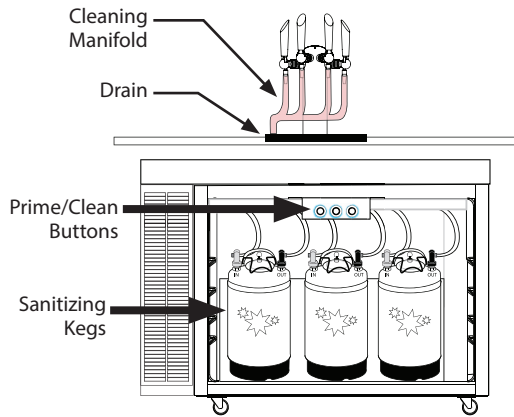
Important

If any Prime/Clean button starts blinking only Red during the cleaning process this indicates an error and the corresponding cleaning keg may not have been full to start. Refill the keg with cleaning solution and start over.

6. Disconnect cleaning solution kegs and set aside, then continue to "Keg Connector Sanitizing / Cleaning" on page 35

Sanitizing the System

1. Using three (3) kegs, mix proper concentration of approved sanitizing solution (400 ppm Quat concentrate) in each, (3) gallon keg with warm tap water.
2. Connect the outlet (OUT) then inlet (IN) keg connectors of unit to sanitizing solution kegs.



NOTE: All three (3) Prime/Clean buttons should be Blue before continuing.

3. Open one (1) tap, liquid will begin flowing through the cleaning hoses, immediately press and hold the corresponding Prime/Clean Button down until it alternates blinking RED and BLUE.

NOTE: The line will now automatically run through the cleaning process and the LED around each button will blink RED/BLUE until completed.

4. At the end of the automated process the system will purge and the Prime/Clean buttons will turn solid RED.
5. Replete steps 3 and 4 on each of the remaining lines one at a time until all lines have been sanitized.

Important

If any Prime/Clean button starts blinking only Red during the cleaning process this indicates an error and the corresponding cleaning keg may not have been full to start. Refill the keg with cleaning solution and start over.

6. Disconnect sanitizing solution kegs and set aside, then continue to "Clean In-line Strainer" on page 34

Important

Kegs used for cleaning, rinsing, and sanitizing solutions should be emptied and cleaned before reuse.

Clean In-line Strainer

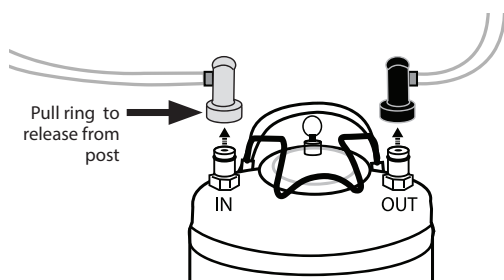
7. Once the CIP cycle is complete the strainers will need cleaned again to ensure no new debris have been trapped in the filter.
8. Depressurize the system See "Keg Change" on page 23 then See "Clean In-line Strainer" on page 29.
9. Reassemble each bowl with mesh and gasket back in place.
10. Complete all weekly cleaning task before reconnecting product kegs to unit. See "Level 2 - Weekly Cleaning (Single Step Method)" on page 30, and See "Interior/ Exterior Cleaning, Sanitizing & Rinse" on page 35
11. Continue to "Keg Connector Sanitizing / Cleaning" on page 35.

Keg Connector Sanitizing / Cleaning

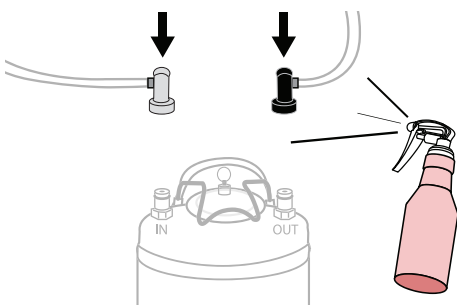
- Frequency: Every week or as required.
- Mix proper concentration of approved sanitizing solution (**KAY-5**® Sanitizer/Cleaner solution mixed one (1) packet in 2.5 gallons (9.5L) of lukewarm water to equal 100 ppm chlorine or Quat based Urnex® Complete Cafe™ mixed ½ oz per gallon) for spray bottle and in a clean bucket.
 - If keg is not disconnected, then do so and set keg aside.

⚠ Warning

NEVER ATTEMPT TO REMOVE KEG LID WITHOUT FIRST DE-PRESSURIZING KEG!



- Spray sanitizer / cleaner on one keg connector and wipe down with clean towel.



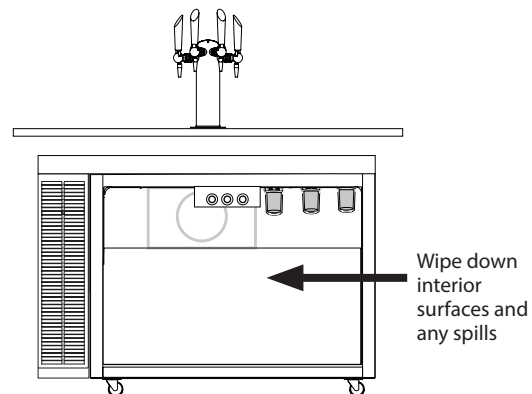
- If required supplied brush can be used for stains or residue build-up.
- Repeat Step 3 and 4 for other keg connectors.
- Place keg connectors into Sanitizer solution bucket and allow to soak for 1 minute, or as directed by manufacturer.

NOTE: An alternative method is to heavily spray connectors with sanitizing solution and allow sanitizer to remain for one (1) minute or as directed by manufacturer.

- Once keg connectors are cleaned and sanitized can air dry until the rest of cleaning is completed.

Interior/Exterior Cleaning, Sanitizing & Rinse

- Put on gloves and safety goggles before cleaning unit.
- Use the **KAY-5**® Sanitizer/Cleaner to spray bottle or Quat based Urnex® Complete Cafe™ and spray all external surfaces. Allow to remain for 1 minute, or as directed by manufacturer, before wiping off.
- Check each tap for obstructions and proper flow. See "Level 1 - Daily Cleaning" on page 28
- Drain grate should be removed and interior of drain pan cleaned and wiped dry.
- Wash drain grate in sink and allow to dry.
- Spray top surface of unit with cleaner and wipe dry.
- Check interior for any spills or drips, spray with cleaner and wiped down.



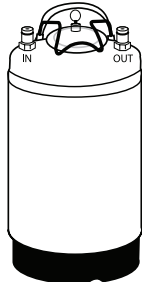
Connect Keg & Prime System

Once all cleaning has been completed the keg can be reconnected to the system. See "Keg Change" on page 23

Important

Make sure new product kegs have been properly chilled to at least 41° before use.

- Once all kegs have been primed and Prime/Clean buttons are BLUE close cabinet door, unit is ready for use.

LEVEL 3 - MONTHLY CLEANING**In Place Keg Cleaning**

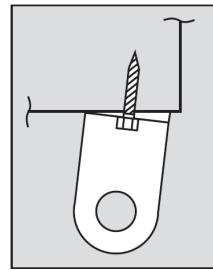
Perform the “Level 2 - Weekly Cleaning (Single Step Method)” on page 30 on all store kegs. This can be performed during the weekly cleaning once a month.

Other Operations**DOORS & HINGES**

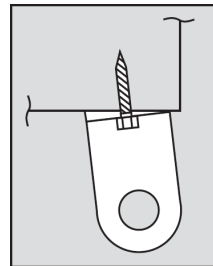
Over time and with heavy-use doors, the hinges may become loose. If this happens, tighten the screws that mount the hinge brackets to the frame of the unit. Loose or sagging doors can cause the hinges to pull out of the frame, which may damage both the doors and the hinges. In some cases this may require qualified service agents or maintenance personnel to perform repairs.

Door Adjustment

If the door needs lowering at the handle, use a 5/16” (8mm) wrench to loosen the hinge screws and install a spacer outside of the hinge. Tighten the screws.



If the door needs to be higher at the handle, use a 5/16” (8mm) wrench to loosen the hinge screws and install a spacer inside of the hinge. Tighten the screws.



Section 5

Troubleshooting

Troubleshooting Charts

Prior to contacting Service please find the issue in one of the charts and perform the correction, if the issue is not listed or persists then contact Service.

DISPENSING ISSUES		
Problem	Cause	Correction
Product does not dispense	Product line is not primed	Press the Prime/Clean button for one second to prime system
	Product frozen in the line	Turn off refrigeration
	Blockage in tap diffuser plate	Clean the tap nozzle
System not able to prime	Gas Supply tank is empty/ Gas Pressure below 30 PSI	Change out the supply tank/Set correct gas pressure
	Product keg is empty	Change out the product keg.
	System under service mode	Move dip switch on PCBA board to normal operating mode
	Pump "Air Locked"	Ensure keg is full, open tap and prime the system
	Product frozen in the line	Turn off refrigeration
	Blockage in pump due to particles	Run warm water through the pump to clean the internals
	Blockage in GLAD due to particles/build-up	Clean GLAD internal blockage
	Blocked in the system	Check keg connection/clean filter/Solenoid valve connection/clean tap diffuser plate
Pump turning on at regular interval	System internal leakage	Find and resolve leakage
Continuous Pump pulsation	Error mode - due to restriction in system - debris	Remove the nozzle and open the tap to remove the debris
Prime button not illuminated	Power	Is there power to the unit? Plug in unit and press the button
	Fuse blown (Power into to the board)	Replace fuse and press the button
Prime button blinking RED LED	Tap closed during CIP, or incomplete CIP	Re-run CIP test
Prime button blinking BLUE LED	System in standby mode after Power On/Off cycle	Push prime button and hold until LED turns Solid RED
	Short circuit on board due to wiring issue	"Ensure there is no Power cycle condition. Check wiring, splice between wires can lead to short circuit"
Puddle of product on the floor, potential leakage	Pump leakage	Replace pump
	System leakage	Check for leaks
	Board Malfunction during Power ON/OFF, opens PRV on GLAD	Update board software/Replace board
Product seeing on CIP loop (between CIP solenoid valve and GLAD CIP port)	Board Malfunction during Power ON/OFF, opens CIP solenoid valve	Update board software/Replace board
	CIP solenoid valve leakage	Clean/replace solenoid valve.
Product does not appear to be infused	Air side solenoid valve not opening	Repair the solenoid valve
	CIP side solenoid valve allowing fluid to pass through	Run CIP & if needed repair the solenoid valve
	Blockage in GLAD due to particles/build-up	Clean/replace GLAD
	System out of calibration	Re-calibrate the system
Product flowing slow from valve	Debris in tap nozzle	Remove nozzle and clean diffuser plate.
	Debris in filter	Remove and Clean Filter.
	Debris in Pump and/or GLAD	Change or Clean the device
	Check Gas pressure on Keg	Make sure pressures are set correctly.
	Pump not running	Check wiring
	Keg gas coupler not connected	Ensure keg connections
Product flowing fast from valve and entering in Prime pending mode (Red LED)	Nozzle does not have diffuser installed	Check the nozzle

DISPENSING ISSUES		
Problem	Cause	Correction
Product dispensing with too much foam	Drink temp above 45 degrees	<i>Ensure that the product is within temperature specs (36-41F)</i>
	System out of calibration	<i>Re-calibrate the system</i>
	Pump not able to maintain flow/leakage	<i>Change pump</i>
	Potentiometer connection issue	<i>Check Potentiometer wiring</i>
	Too much water in the drink	<i>Ensure that the drink in the keg is not diluted</i>
Nitrogen Supply Tank OFF	Nitrogen Generator not keeping up with demand or OFF	Tank incorrectly shut OFF during keg change. See "Regulator & Tank Assemblies" on page 11
	Tank incorrectly shut OFF during keg change.	
	Nitrogen Generator not keeping up with demand or OFF	Turn on or call for service.
Keg connectors won't go onto the keg posts	Incorrect connector	Make sure the IN connector is gray and the OUT connector is black. See "Keg Change" on page 23
	Not pulling up on the connector release ring while connecting	<i>Pull up on the ring around the connector to allow it to slip over the IN or OUT post and lock into place. See "Keg Change" on page 23</i>
The coffee is warmer than expected	Verify the thermometer reads below 41°F	Refer to refrigeration section checklist. See "Controls/Programming/Settings" on page 19 and See "Keg Change" on page 23
There is a hissing sound coming from the nitrogen tank	Regulator nut	<i>Tighten regulator nut. See "Regulator & Tank Assemblies" on page 11</i>
		<i>Check for missing washer inside of regulator nut</i>
The drain pan under the taps has standing coffee	Pinched or clogged drain line	<i>Clean out drain line.</i>
		<i>Replace drain line</i>
Pump does not flow fluid through on Milk line	Milk system not cleaned on daily basis or product left in the line too long	<i>Clean system using hot water, if still pump not able to flow fluid through then replace the pump and clean or replace infuser</i>

REFRIGERATOR CABINET ISSUES		
Problem	Cause	Correction
Cabinet not running	Fuse blown or circuit breaker tripped.	Replace fuse or reset circuit breaker.
	Power cord unplugged.	Plug in power cord.
	Thermostat set too high.	Set thermostat to lower temperature.
Condensing unit runs for long periods or continuously	Excessive amount of warm product placed in cabinet.	Allow adequate time for product to cool down.
	Prolonged door openings or door(s) ajar.	Make sure door(s) are closed when not in use. Avoid prolonged door openings.
	Door gasket(s) not sealing properly.	Check gasket condition. Adjust door or replace gasket if necessary.
	Dirty condenser coil.	Clean the condenser coil.
	Evaporator coil iced over.	Turn unit off and allow coil to defrost. Make sure thermostat is not set too cold. Also, check gasket condition.
Cabinet temperature is too high	Thermostat set too high.	Set thermostat to lower temperature.
	Poor air circulation in cabinet.	Re-arrange product to allow proper air circulation.
	Excessive amount of warm product placed in cabinet.	Allow adequate time for product to cool down.
	Prolonged door openings or door(s) ajar.	Make sure door(s) are closed when not in use. Avoid prolonged door openings.
	Dirty condenser coil.	Clean the condenser coil.
	Evaporator coil iced over.	Turn unit off and allow coil to defrost. Make sure thermostat is not set too cold. Also, check gasket condition.
Cabinet is noisy	Loose part(s).	<i>Locate and tighten loose part(s).</i>

REFRIGERATOR CABINET ISSUES		
Problem	Cause	Correction
Pump is Noisy	Restricted fluid inlet	<i>Remove restriction</i>
	Pump has been run continuously for extended time	<i>Replace pump</i>
	Pump has been under "High Duty Cycle" conditions for extended period	<i>Replace pump</i>
Pump does not flow fluid through Milk line	Milk system not cleaned on daily basis or product left in the line too long	<i>Clean system using hot water, if still pump not able to flow fluid through then replace the pump and clean or replace infuser</i>
GLAD does not flow fluid through Milk line	"Blocked infuser holes, potential issues: -Milk system not cleaned on daily basis -Particles in the system"	<i>Clean system using hot water, if still not able to flow fluid through then disassemble the GLAD and clean it under hot running water</i>
Refrigerator is freezing product	Thermostat is set too low.	<i>Set thermostat to higher temperature.</i>
	Dirty condenser coil.	<i>Clean the condenser coil.</i>
	Not enough cabinet clearance for proper refrigeration system operation.	<i>Move cabinet or make other adjustments to gain proper cabinet clearances.</i>
Compressor will not start	Low voltage to cabinet.	<i>Check and correct incoming voltage to cabinet.</i>
Leaking internally	Check the in-line filter bowl and o-ring.	<i>May need to depressurize the unit and remove the filter bowl to check. See "How to Remove Strainers" on page 29</i>

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