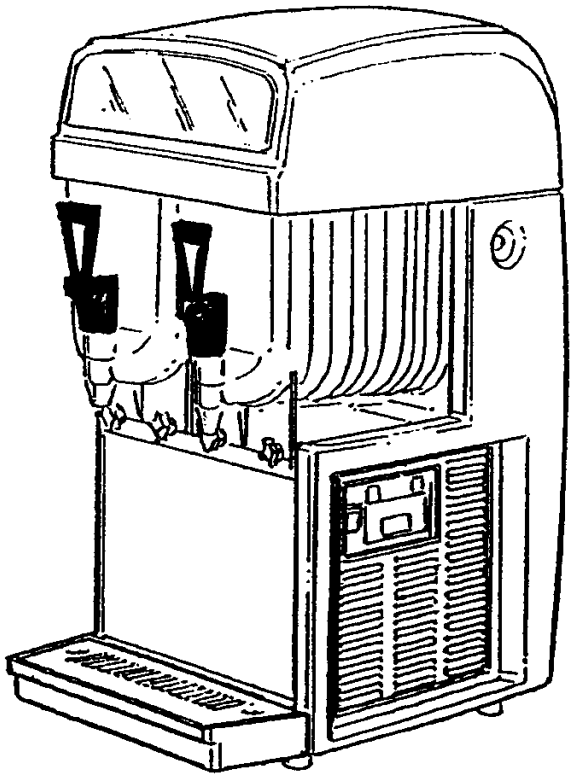
VFCB

Ice Frost

2 and 3 Bowl Post-Mix and 2 Bowl Pre-Mix

Installation, Service, and Operator's Manual



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The products, technical information, and instructions contained in this manual are subject to change without notice. These instructions are not intended to cover all details or variations of the equipment, nor to provide for every possible contingency in the installation, operation or maintenance of this equipment. This manual assumes that the person(s) working on the equipment have been trained and are skilled in working with electrical, plumbing, pneumatic, and mechanical equipment. It is assumed that appropriate safety precautions are taken and that all local safety and construction requirements are being met, in addition to the information contained in this manual.

This Product is warranted only as provided in Cornelius' Commercial Warrant applicable to this Product and is subject to all of the restrictions and limitations contained in the Commercial Warranty.

Cornelius will not be responsible for any repair, replacement or other service required by or loss or damage resulting from any of the following occurrences, including but not limited to, (1) other than normal and proper use and normal service conditions with respect to the Product, (2) improper voltage, (3) inadequate wiring, (4) abuse, (5) accident, (6) alteration, (7) misuse, (8) neglect, (9) unauthorized repair or the failure to utilize suitably qualified and trained persons to perform service and/or repair of the Product, (10) improper cleaning, (11) failure to follow installation, operating, cleaning or maintenance instructions, (12) use of "non-authorized" parts (i.e., parts that are not 100% compatible with the Product) which use voids the entire warranty, (13) Product parts in contact with water or the product dispensed which are adversely impacted by changes in liquid scale or chemical composition.

Contact Information:

To inquire about current revisions of this and other documentation or for assistance with any Cornelius product contact:

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This document contains the original instructions for the unit described.

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TABLE OF CONTENTS

IMPORTANT WARNINGS AND ADVICE

This instruction manual represents an integral part of the equipment and must be kept readily available for use.

Read the warnings contained herein carefully before installing and using this equipment.

In addition to offering information concerning routine maintenance for the Ice Frost unit and technical back-up for troubleshooting, this manual aims to help the user make the most of the unit's potential, adapting it to suit the specific needs of the various countries it will be used in.

Modifications or attempts to modify the equipment will not only result in the forfeiture of the warranty, but are also extremely dangerous.

The maintenance operations must be carried out by qualified professionals. Never attempt to repair the unit yourselves as the intervention of non-qualified persons, as well as being hazardous, could also lead to serious damage to the unit.

TECHNICAL DATA

PLATE DATA

The voltage and the frequency are indicated on the serial number plate, located behind the drip tray and on the right hand side near the controls.

Unit	Number of Bowls	Volt	Hertz	Amps
VFCB Post Mix	2	230	50	7.3
		115	60	13.8
VFCB Pre Mix	2	230	50	7.3
		115	60	13.8
VFCB Post Mix	3	115	60	21.5

TRANSPORTATION INDICATIONS

To prevent the oil contained in the compressor from flowing out into the cooling circuit, the equipment must be transported, stored, and handled in a vertical position, as per the indications given on the packing.

The wooden pallet, with access for a fork lift, allows the packed equipment to be moved using normal handling and hoisting means.

Publication Number: M620919596OPR

INSTALLATION

1. Remove the equipment from the packing, then pull the carton up (see FIGURE 1).
2. Check the unit identification after removing the packing, you must check that the equipment you have received is the unit you ordered, make sure the specifications indicated on the invoice or the delivery note are identical to those on the data plate.
3. Equipment accessories
   The following accessories are included inside the bowls:
   - This instruction manual;
   - 1 tube of food grade lubricant to be used for the maintenance the unit requires;
   - A drip tray.
4. Positioning - make sure the unit's bodywork is well ventilated, at least 8" on all sides, and do not install near a heat sources.
   We recommend you keep the room temperature at between 59 and 90°F.

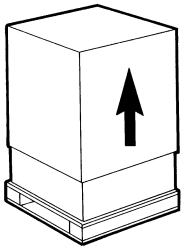


FIGURE 1

IMPORTANT: All the pieces of packing must be kept out of reach of children as they represent potential hazards.

CONNECTING THE ELECTRICITY MAINS

Before inserting the plug into the mains socket for your own safety you must take careful note of the following precautions.

- The unit's electrical system can only be considered safe when it is connected correctly to a grounded outlet, as provided for by the national safety regulations. The manufacturer cannot be held responsible for any damages that may be caused by failure to ground the system.
- For the system to be installed correctly and safely, it is essential to provide a suitable socket which complies with the national safety standards in force (see FIGURE 2).

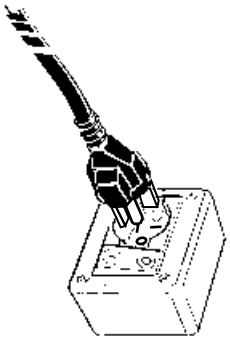


FIGURE 2

- Check the power supply cable to make sure it is not being crushed. Do not use extension cords and turn OFF the switch before removing the plug, hold the plug tightly and pull gently.
- Do not obstruct the ventilation and the heat dissipation grids, in addition to reducing the output and causing bad functioning, could also lead to serious damage to the equipment.

Unit	VFCB Post Mix 115-60 2 Bowl VFCB Pre Mix 115-60 2 Bowl	VFCB Post Mix 115-60 3 Bowl	VFCB Post Mix 230-50 2 Bowl VFCB Pre Mix 230-50 2 Bowl
Plug	Nema 5-20	Nema L5-30	cs-sd or cs-sa




IMPORTANT: If the power supply cord is damaged, it must be replaced by qualified persons only to prevent any possible risks.

CONNECTION DIAGRAMS

Ice Frost Generic (Pre-mix)

The diagram shows the sequence for the connection between the ICE FROST GENERIC PRE to an existing pre-mix system.

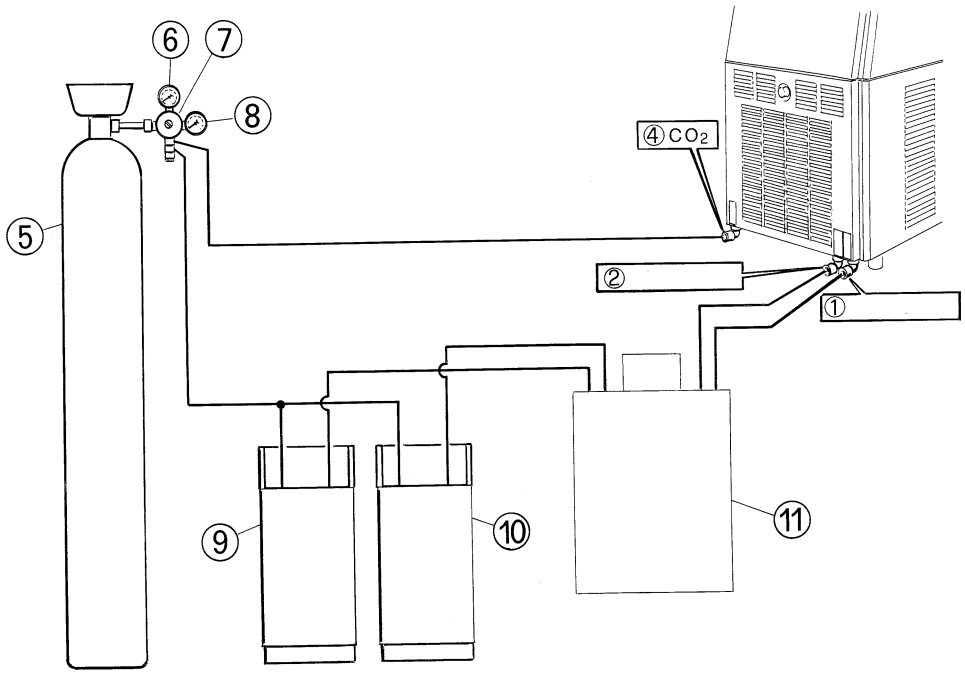


FIGURE 3

Description:

1. Pre-mix product 1 inlet.
2. Pre-mix product 2 inlet.
4. Inlet for CO_2 (recommended pressure 19-21 psi).
5. CO_2 gas cylinder.
6. Operating pressure gauge.
7. CO_2 pressure regulator.
8. Gas cylinder pressure gauge.
9. Pre-mix product 1 container.
10. Pre-mix product 2 container.
11. Cooling unit (Optional).

Connection:

Connect the points 1, 2, and 4 on the unit to the existing pre-mix system using quick couplings.

Publication Number: M620919596OPR

Ice Frost Generic (Post-mix)

The diagram shows the sequence for the connection between the ICE FROST GENERIC POST to an existing post-mix system.

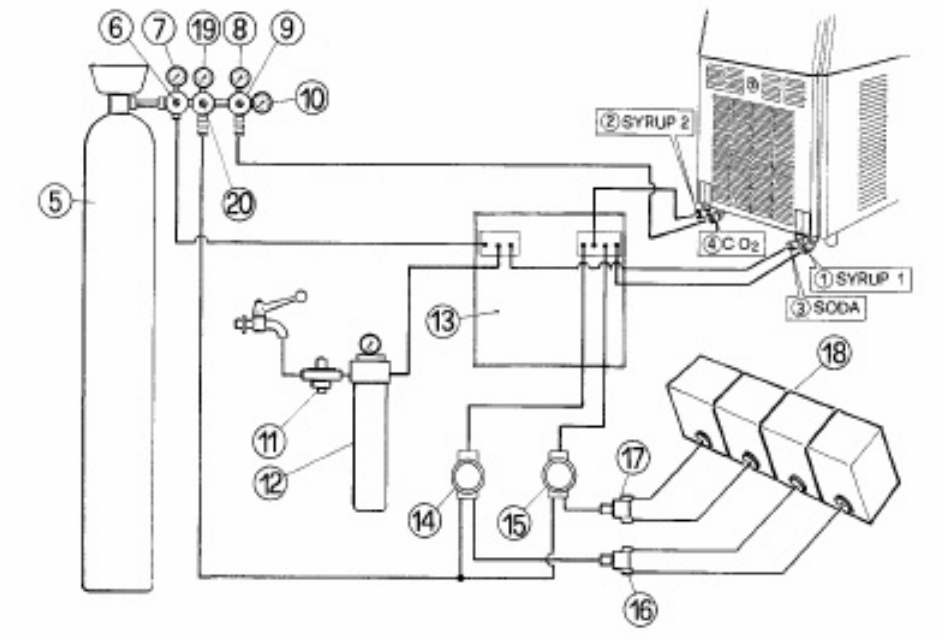


FIGURE 4

Description:

1. Syrup 1 inlet.
2. Syrup 2 inlet.
3. Soda water inlet.
4. Inlet for CO_2 (recommended pressure 19-21 psi).
5. CO_2 gas cylinder.
6. Operating pressure regulator for carbonation unit.
7. Carbonation unit operating pressure gauge.
8. Unit operating pressure gauges.
9. Pressure regulator.
10. Gas cylinder operating pressure gauge.
11. Water Pressure regulator.
12. Filter.
13. Carbonation unit and optional precooling unit.
14. Syrup 1 pump.
15. Syrup 2 pump.
16. Bag-in-box exchanger.
17. Bag-in-box exchanger.
18. Bag-in-box.
19. BIB operating pressure gauge.
20. Pressure regulator

Connection:

Connect the points 1, 2, 3, and 4 on the unit to the existing post-mix system using quick couplings.

BOWL LOADING OPERATIONS

Ice Frost Generic (Pre-mix)

- Switch the main switch to the ON position (1).
- Put the switch (A) into the ON position (1) see FIGURE 5, switch A controls the flow of the product in the bowls.
- The bowls will now fill up until the maximum level is reached.

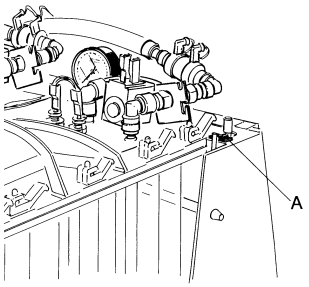


FIGURE 5

Ice Frost Generic (Post-mix)

- Switch the main switch to the ON position (1).
- Make sure the switch (L1) is in the OFF position (0) - FIGURE 6 - (switch L1 controls the flow of the products in the bowls).
- Turn mixing motors OFF immediately. Do not run unit with bowls empty.

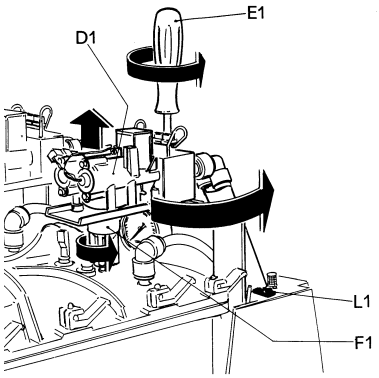


FIGURE 6

Publication Number: M620919596OPR

BRIX PROCEDURE

NOTE: Prior to final installation of the 3 Bowl VFCB unit, make a final Brix adjustment on the center bowl from the rear of the unit.

This will be a two step process. First to adjust the water flow rate by adjusting the water flow control and second to obtain the proper Brix by adjusting the syrup flow control.

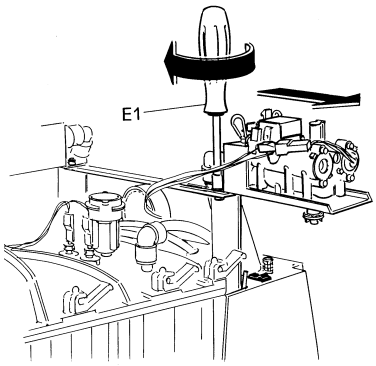


FIGURE 7

1. Using an 1/8 inch (8 mm) socket wrench (E1), loosen the nut that holds the post-mix valve (D1).
2. Twist nozzle counter-clockwise (F1), lift the post-mix valve (D1) up slightly and turn it towards the outside, leave nozzle and coupling attached to the bowl.
3. Rotate the valve assembly 90 degrees and slide to the outside of the unit. Tighten the 1/8 inch (8mm) nut using a socket wrench (E1), see FIGURE 7.
4. Checking and adjusting the water flow is most easily done by first disconnecting the syrup bib.
5. Hold the measuring cup below the valve & activate dispense using the micro switch on the valve.
6. Adjust the water flow rate using a stop watch to 13 oz in 10 seconds (1.3 oz per second). Turn the water adjustment screw on the flow control clockwise to increase water flow or counter clockwise to decrease water flow.
7. Reconnect the syrup bib.
8. Dispense product into a cup by depressing the micro switch on the valve. Check Brix using a refractometer. The Brix should be set to 13% ± 1%. To increase the Brix adjust the syrup adjustment screw on the valve clockwise to increase syrup flow or counter clockwise to decrease syrup flow**.**

CAUTION: Do not turn the syrup flow control counter clockwise too far.

9. When the Brix has been set to specification, reposition the valve to its original setting and tighten retaining nuts.
10. Repeat the operation for the second bowl and third bowl if applicable.

Once the adjustments have been completed for each bowl, place the switch (L1) in the ON position, see FIGURE 8.

Both bowls will fill until the level sensor is activated.

Turn mixing motors ON (switch located on the control panel). The dispenser has built in delays for compressor and bowl fill switch.

NOTE: During initial filling it is normal for some foaming to take place. The bowl level management will adjust as the product freezes & the foam will dissipate.

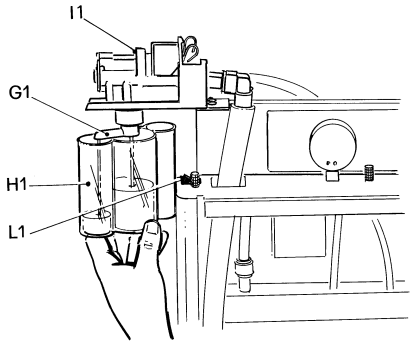


FIGURE 8

PROGRAMMING ELECTRONIC TOUCH PAD 2 BOWLS AND 2 COMPRESSORS

Main Power Switch

- Turns unit ON.
- Selects 12/24 time clock or F°/C° temperature display when turned ON while simultaneously pressing the auger button (left).
- Sets current time when turned ON while simultaneously pressing the PRESS TO SELECT FUNCTION button.

Auger ON/OFF Button

- Turns auger ON and OFF when main power switch is ON.
- Must be ON to permit COLD time to be reset.
- Must be ON to activate the PRESS TO SELECT FUNCTION button to select manual OFF, FREEZE, or COLD functions.

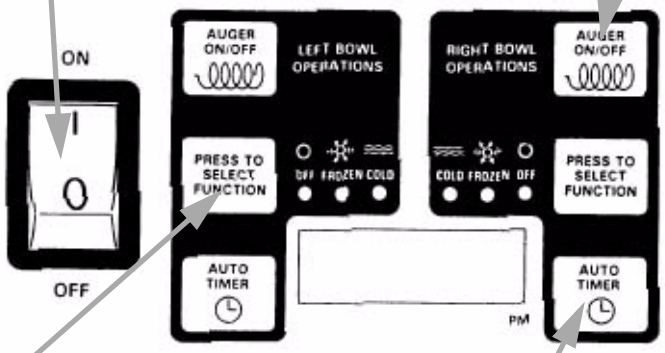


FIGURE 9

PRESS TO SELECT FUNCTION Button

- Used to manually select OFF, FREEZE, or COLD functions when auger is turned ON.
- Accesses COLD timer reset mode when pressed for an extended period when auger is turned ON.
- Does not function when light on AUTO TIMER button is illuminated.
- Locks in hours, minutes and final time settings after they are reset using the AUTO TIMER button.

AUTO TIMER Button

- Turns auto COLD mode ON or OFF (light on switch indicates when auto COLD mode is activated).
- Used to adjust the hours and minutes settings when readjusting current time or auto COLD timer.
- Reset: Press and hold the AUTO TIMER button on the left. Turn the main switch ON and wait until "PreS" appears on the display.

Program Time on Initial Installation or in the Event of Time Change

1. Turn the power switch OFF.
2. Press and hold the left PRESS TO SELECT FUNCTION button and turn ON the power switch. Release the PRESS TO SELECT FUNCTION button when the hour digits start blinking.
3. Set the hour by pressing the left AUTO TIMER clock button until the appropriate hour is shown.

NOTE: When using a 12 hour clock the time is P.M. when the dot at the bottom right corner of the LED display is lit; A.M. when dot is not lit.

4. Press the left PRESS TO SELECT FUNCTION button to set the minutes, then press the left AUTO TIMER clock button until the appropriate minutes are set.
5. Press the PRESS TO SELECT FUNCTION button one more time to save your settings.

Publication Number: M620919596OPR

Setting COLD Timer (Night Setting)

1. Turn the power switch ON. Make sure the AUTO TIMER is OFF (light on button is not lit).
2. Press the left AUGER ON/OFF button ON.
3. Press and hold the left PRESS TO SELECT FUNCTION button until you hear a long beep and the LED, COLD and the AUTO TIMER clock light begins to blink.
4. Press the left AUTO TIMER clock button to set the hour you want it to turn to COLD mode and then press the left PRESS TO SELECT FUNCTION button to save the hour setting.
5. Press the left AUTO TIMER clock button to set the minutes to complete time setting that you want it to turn to COLD mode. Then press the left PRESS TO SELECT FUNCTION button to save the minute setting. The COLD light will turn OFF and the FROZEN light and AUTO TIMER light will begin blinking.
6. Set the time you want the unit to return to FROZEN mode by following steps 1 - 5 above. Then press the PRESS TO SELECT FUNCTION button to save the time settings for FROZEN mode.
7. Repeat steps 1 - 6 using the right buttons to set the COLD timer for the right bowl.

NOTE: Once the settings have been saved, the unit will keep the settings, even when the power switch is turned OFF.

NOTE: When the light on the AUTO TIMER clock button is ON, the COLD timer is activated. To turn OFF the COLD timer, press the AUTO TIMER clock button(s) until the light(s) on the clock button(s) turns OFF.

Operate in Automatic Mode (with COLD Timer Activated)

1. Turn power switch ON and wait for LED display to light up.
2. Press the left hand AUGER ON/OFF button ON.
3. To operate in COLD mode press the AUTO TIMER button until it is illuminated.

NOTE: When setting automatic times, please keep in mind it will take time for the frozen product to become liquid or vice versa.

4. Repeat steps 1-3 to set the right bowl using the right buttons.

Operate in Manual Mode (without COLD Timer Activated)

1. Turn the power switch ON and wait for LED display to light up.
2. Make sure the clock button is OFF (LED light on clock button should not be lit up).
3. First turn auger ON by pressing the AUGER ON/OFF button until it beeps.

NOTE: The auger must be ON before the unit will allow the COLD or FROZEN mode to be activated.

4. Then select COLD or FROZEN mode by pressing the PRESS TO SELECT FUNCTION button until the light under the selection you desire is lit up.

NOTE: In the COLD mode, the LED will read the actual temperature of the product (the temperature setting is preset to NSF standards and is not adjustable.) In the FROZEN or OFF mode the LED will read the current time.

Setting the 12 or 24 Hour Display and ^{O}F or ^{O}C Temperature Display

1. Turn the power switch OFF.
2. Press and hold the left AUGER ON/OFF button and turn ON the power switch. Release the AUGER ON/OFF button when either "12" or "24" are shown (indicates the current hour view).
3. Press the AUTO TIMER button until the desired hour display type is shown (12 or 24).
4. Press the PRESS TO SELECT FUNCTION button until either ^{O}F or ^{O}C is shown on the display.
5. Press the AUTO TIMER button until the desired temperature display type is shown (^{O}F or ^{O}C).
6. Store the change by pressing the PRESS TO SELECT FUNCTION button until the current time is displayed. The unit is now ready for use.

Viewing the Bowl Temperature

1. Press the PRESS TO SELECT FUNCTION button until the COLD LED is lit. The display will now show the current bowl temperature in either ^{O}F or ^{O}C as applicable.
2. Turn ON the auger on the side that you want to display the bowl temperature (press the AUGER ON/OFF button).

"FILTER CLEANING" Alarm

A filter cleaning alarm will activate when the unit is running hot due to insufficient internal air circulation. When this occurs a "Filtr" message will appear on the touch pad LED display readout and an intermittent tone will also sound to alert the operator of this condition.

The "Filtr" message will appear when the alarm activates (a beeping sound every 4-5 seconds). To determine the condition that caused the alarm and correct problem, see list of conditions below:

Condition	Corrective Action
• The filter is dirty and needs to be cleaned.	• Clean and replace filter following instructions (Removing and Cleaning Filter).
• The unit is positioned too close to a wall or other object restricting air flow and causing the unit to run at a higher temperature.	• Reposition unit to maximize ventilation space (Installation Instructions).
• The filter is not properly installed.	• Properly install filter (Removing and cleaning filter).
• The unit has been installed near a heat source, such as a coffee machine, ice maker or cold beverage machine which expels hot air from its vents, causing the unit to run at a high temperature (installation near a heat source should be avoided).	• Reposition unit to maximize ventilation space.

"SYSTEM OVER TEMPERATURE" Alarm

A system over temperature alarm will activate as a safety precaution when the unit has overheated to protect the compressor.

- The system automatically goes to "OFF" status where the compressor's operations is stopped, while augers will keep working to avoid forming ice blocks.
- When this occurs an "Err" message will appear on the touch pad LED readout accompanied by a continuous buzzer sound to alert the operator of this condition.
- When this alarm sounds, turn OFF all switches. Then determine the reason for the alarm. (See "Filter Cleaning" Alarm Section for Conditions and Corrective Actions).

Publication Number: M620919596OPR

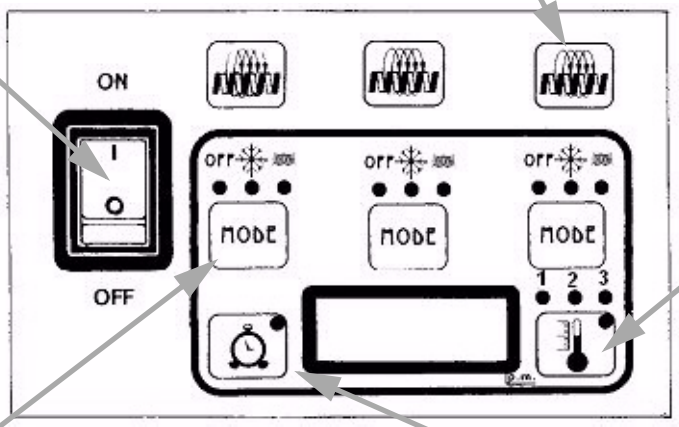
PROGRAMMING ELECTRONIC TOUCH PAD 3 BOWLS AND 3 COMPRESSORS

Main Power Switch

- Turns unit ON.
- Selects 12/24 time or F°/C° temperature display when turned ON while simultaneously depressing the Auger button (left).
- Sets current time when turned ON while simultaneously pressing the left MODE button.

Auger ON/OFF Button

- Turns auger ON and OFF when main power switch is ON.
- Must be ON to permit COLD time to be reset.
- Must be ON to activate the MODE button to select manual OFF, FREEZE, or COLD functions.



Bowl Temperature Button

In defrost condition this shows the product temperature inside the bowl.

FIGURE 10

MODE Button

- Used to manually select OFF, FREEZE, or COLD functions when auger is turned ON.
- Accesses COLD timer reset mode when pressed for an extended period when auger is turned ON.
- Does not function when light on Auto Timer button is illuminated.
- Locks in hours, minutes and final time settings after they are reset using the Auto Timer button.

Auto Timer Button

- Turns auto COLD mode ON or OFF (light on switch indicates when auto COLD mode is activated).
- Used to adjust the hours and minutes settings when adjusting current time or auto COLD timer.
- Reset: Press and hold the Auto Timer button on the left. Turn the main switch ON and wait until "PreS" appears on the display.

Program Time on Initial Installation or in the Event of Time Change

1. Turn the power switch OFF.
2. Press and hold the left MODE button and turn ON the power switch. Release the MODE button when the hour digits start blinking.
3. Set the hour by pressing the Auto Timer clock button until the appropriate hour is shown.

NOTE: When using a 12 hour clock the time is P.M. when the dot at the bottom right corner of the LED display is lit; A.M. when dot is not lit.

4. Press the left MODE button to set the minutes, then press the Auto Timer clock button until the appropriate minutes are set.
5. Press the MODE button one more time to save your settings.

Setting COLD Timer (Night Setting)

1. Turn the power switch ON. Make sure the Auto Timer is OFF (light on button is not lit).
2. Press the left Auger ON/OFF button ON.
3. Press and hold the left MODE button until you hear a long beep and the LED, Cold and the Auto Timer clock light begins to blink.
4. Press the Auto Timer clock button to set the hour you want it to turn to COLD mode and then press the MODE button to save the hour setting.
5. Press the Auto Timer clock button to set the minutes to complete time setting that you want it to turn to COLD mode. Then press the left MODE button to save the minute setting. The COLD light will turn OFF and the FROZEN light and Auto Timer light will begin blinking.
6. Set the time you want the unit to return to FROZEN mode by following steps 1 - 5 above. Then press the left MODE button to save the time settings for FROZEN mode.

NOTE: Once the settings have been saved, the unit will keep the settings, even when the power switch is turned OFF.

NOTE: When the light on the Auto Timer clock button is ON, the COLD timer is activated. To turn OFF the COLD timer, press the Auto Timer clock button(s) until the light(s) on the clock button(s) turns OFF.

Operate in Automatic Mode (with COLD Timer Activated)

1. Turn power switch ON and wait for LED display to light up.
2. Press the left hand Auger ON/OFF button ON.
3. To operate in COLD mode press the Auto Timer button until it is illuminated.

NOTE: When setting automatic times, please keep in mind it will take time for the frozen product to become liquid or vice versa.

NOTE: The COLD timer is the same for all the bowls. The COLD mode can be activated only if at least one Auger button is ON.

Operate in Manual Mode (without COLD Timer Activated)

1. Turn the power switch ON and wait for LED display to light up.
2. Make sure the clock button is OFF (LED light on clock button should not be lit up).
3. First turn auger ON by pressing the Auger ON/OFF button until it beeps.

NOTE: The auger must be ON before the unit will allow the COLD or FROZEN mode to be activated.

4. Then select COLD or FROZEN mode by pressing the MODE button until the light under the selection you desire is lit up.

NOTE: In the COLD mode, the LED will read the actual temperature of the product (the temperature setting is preset to NSF standards and is not adjustable.) Pushing the Thermometer button allows you to see the temperature in the left bowl (LED1 lit) or right bowl (LED 2 lit). In the FROZEN or OFF mode the LED will read the current time.

Setting the 12 or 24 Hour Display and ^{O}F or ^{O}C Temperature Display

1. Turn the power switch OFF.
2. Press and hold the left Auger ON/OFF button and turn ON the power switch. Release the Auger ON/OFF button when either "12" or "24" are shown (indicates the current hour view).
3. Press the Auto Timer button until the desired hour display type is shown (12 or 24).
4. Press the left MODE button until either ^{O}F or ^{O}C is shown on the display.
5. Press the Auto Timer button until the desired temperature display type is shown (^{O}F or ^{O}C).
6. Store the change by pressing the left MODE button until the current time is displayed. The unit is now ready for use.

Publication Number: M620919596OPR

Viewing the Bowl Temperature

1. Press the left MODE button until the COLD LED is lit, than press the Bowl Temperature button. The display will now show the current bowl temperature in either ^{O}F or ^{O}C, as applicable.
2. Turn ON the auger on the side that you want to display the bowl temperature (press the Auger ON/ OFF button).

CONSISTENCY ADJUSTMENT

1. To dispense the product, place the cup beneath the dispensing valve (Q) and pull the lever (R) very gently (FIGURE 11).
2. Adjusting the viscosity:
   To vary the viscosity of the product, turn the knob (S) as shown in FIGURE 12.

Turning the knob counter-clockwise will increase viscosity (make the product more dense).

Turning the knob clockwise will decrease viscosity (make the product less dense).

ATTENTION: This control only changes the viscosity of the product dispensed, it does not effect the COLD temperature.

ATTENTION: When the level of the product inside the bowl is below the minimum level, to stop the product from becoming too dense, you must switch the COLD system (OFF position) or refill the bowl.

An indicator gauge for reference is located on the back of the unit approximately 6 inches below the adjustment knob.

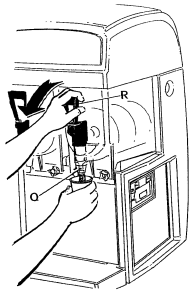


FIGURE 11

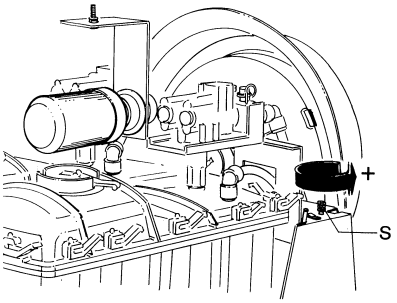


FIGURE 12

SEMI-ANNUAL CLEANING AND SANITATION OR FLAVOR CHANGE OUT

Perform this cleaning procedure once every 6 months.

NOTE: Cleaning and sanitizing intervals depend on the products used in the unit. Six month cleaning is the standard time for most products. If the product contains dairy, for example, a more frequent cleaning schedule may be necessary. Please contact service if you have any questions about the cleaning interval on the product you are using.

ATTENTION: The unit must be disconnected from the power supply before disassembling the unit for cleaning.

NOTE: During the cleaning and sanitizing procedure it is advised to Brix the valves to ensure accuracy. Follow the procedure on page 6.

1. Remove the cover (B) FIGURE 13.

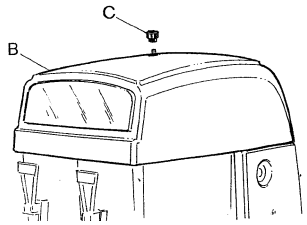


FIGURE 13

2. Turn the switch (L1 in FIGURE 6) to the OFF position (0).
3. Press the mode or select function button on the touch pad to the OFF position. (This will stop refrigeration).
4. Empty the bowl of any remaining product.
5. Remove all the quick disconnects from the BIB container.
6. Fill a suitable bucket with soap solution.
7. Submerge all disconnects in the soap solution and then clean them using a nylon bristle brush. (Do not use a wire brush). Rinse with clean water.
8. Using a bucket, prepare approximately 2.5 gallons of sanitizing solution.
9. Rinse the BIB disconnects in the sanitizing solution.
10. Sanitizing fittings must be attached to each BIB disconnect. If these fittings are not available, the fittings from empty BIB bags can be cut from the bags and used. These fittings open the disconnect so the sanitizing solution can be drawn through the disconnect.
11. Place all the BIB disconnects into the bucket of sanitizing solution.
12. Turn the switch (L1 in FIGURE 6) to the ON position (1). This will start flushing the syrup line with sanitizer.
13. Keep emptying the bowl until the incoming product runs clear.
14. Turn the switch (L1 in FIGURE 6) to the OFF position (0).
15. Allow the sanitizer to remain in the lines for fifteen (15) minutes.
16. Connect the BIB disconnect to the appropriate BIB container.
17. Turn the switch (L1 in FIGURE 6) to the ON position (1). This will start flushing the sanitizer out of the line and re-fill with syrup.
18. Keep emptying the bowl until the incoming syrup is flowing freely for approximately thirty (30) seconds.
19. Turn the switch (L1 in FIGURE 6) to the OFF position (0).
20. Empty the bowl of any remaining product and switch OFF the main switch.

Publication Number: M620919596OPR

21. Extract the quick couplings (C2) / (F2) - (FIGURE 14, FIGURE 15, and FIGURE 16).
22. Disconnect the probe fastenings (D2) / (E2) - (FIGURE 14 and FIGURE 15).

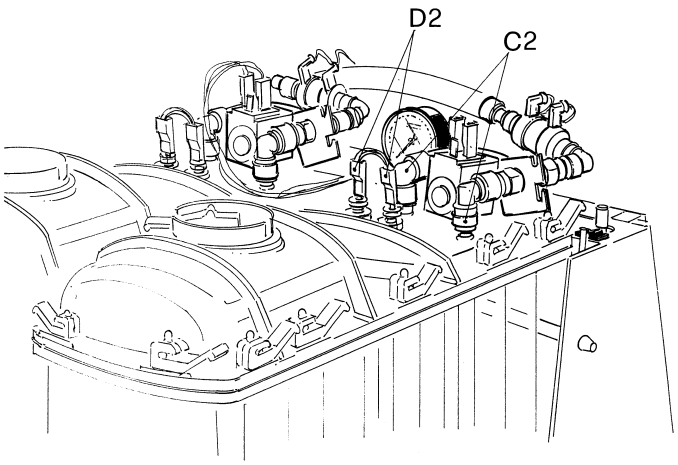


FIGURE 14. Pre-Mix Version

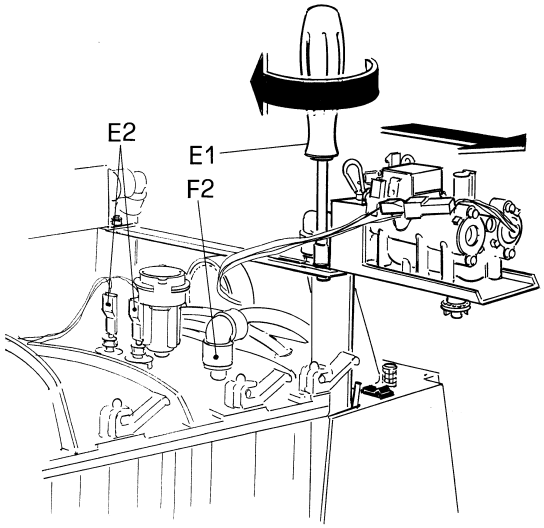


FIGURE 15. Post-Mix Version

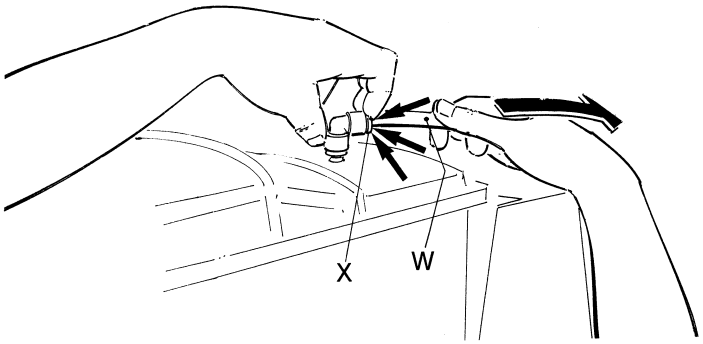


FIGURE 16

23. Pull the lockpin/safety pin (Y) upwards - FIGURE 17.

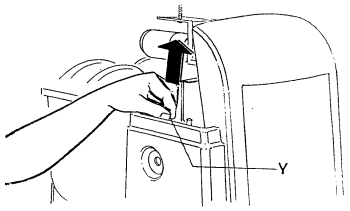


FIGURE 17

24. Slide the locking bar (Z) - FIGURE 18 - outwards so that the bowls are fully released.
    Unlock relief valve on the bowl lid cap and remove (FIGURE 19).

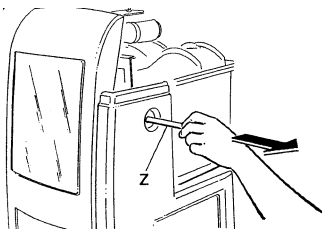


FIGURE 18

25. Unscrew the knobs (A1) so the bowls can be lowered slightly, open the tap to remove any remaining liquids and then extract it from its seating, pulling it outwards (FIGURE 19).

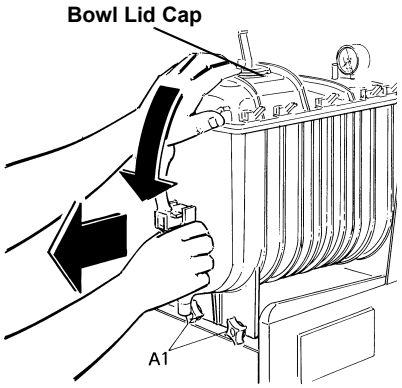


FIGURE 19

26. Remove the tap from its seating, press the two clamping wings at the same time (FIGURE 20) and push upwards.

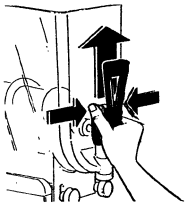


FIGURE 20

27. Remove the tap, holding the body (R) pressed downwards, then slide the lever (L) out of its seating (FIGURE 21). Wash all the parts thoroughly with hot water and mild detergent, rinse them well, and replace them.

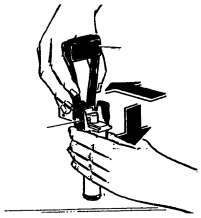


FIGURE 21

28. Separate the bowl from the cover, releasing the fastening (D1) by pulling them upwards, as shown in FIGURE 22.

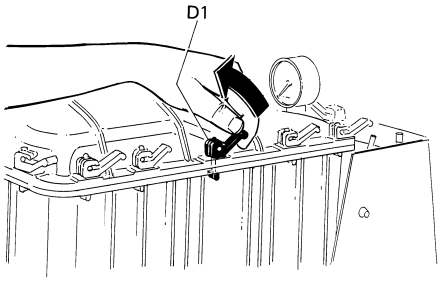


FIGURE 22

Publication Number: M620919596OPR

29. Wash the bowl and cover carefully with water and mild detergent, rinse them well, and replace them, making sure the sealing strip (E1) is positioned correctly between the cover and the bowl. To guarantee the seal, the rounded part of the sealing strip (as shown in FIGURE 23) must be facing the cover.

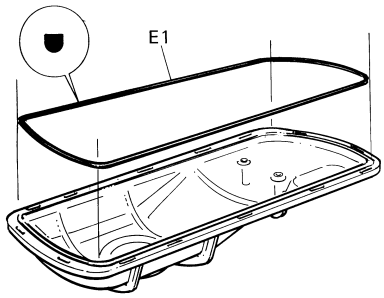


FIGURE 23

30. Unscrew the fastening knob (F1) clockwise as the direction indicated by the arrow (threading to the left) and remove the spiral scraper (G1) and the seals (H1) and (I1). Clean the individual parts thoroughly (FIGURE 24).

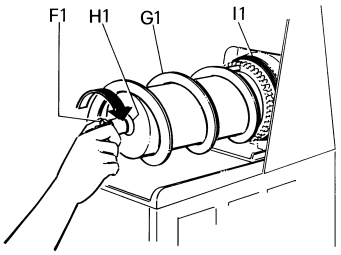


FIGURE 24

31. Clean the drip tray (J1) and the evaporator (K1) (FIGURE 25).
32. Replace the mixing unit as follows:
    - Dampen the sealing strip (I1) and insert it into its seating.
    - Apply a generous amount of food grade lubricant (supplied with the unit) to the suction cup seal (H1) (on the part that comes into contact with the evaporator K1) and insert it in its spiral seating.
    - Replace the spiral scraper (G1).
    - Fasten all the components in place by screwing the knob F1 counter-clockwise.
33. Replace the bowl by pushing it into its seating.
34. Fasten the bowl in place by tightening the knobs (A1) - FIGURE 26 and the locking bar (Z) - FIGURE 18. Reverse steps 3 and 4.

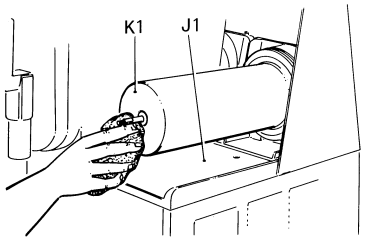


FIGURE 25

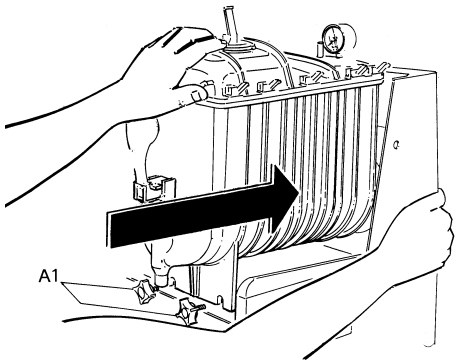


FIGURE 26

35. Replace the tap, apply Food Grade Lubricant to both the seating in the bowl and the seals (J, FIGURE 27).

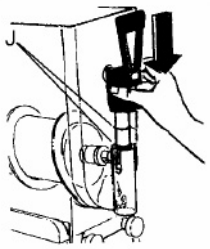


FIGURE 27

36. Remove the drip tray (L1) by rotating it slightly and pulling it outwards (FIGURE 28).
Wash all the parts carefully and reassemble it by following the prior operations, remembering to re-insert the condensation discharge pipe (M1) in its seating.

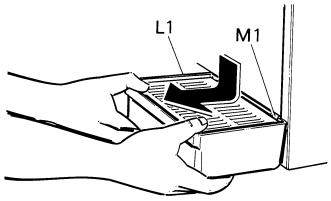


FIGURE 28

37. If the drip tray has a coupling (T0, FIGURE 29) it is possible to drain the water in the drip tray without removing it. In order to do that proceed as follows:
    - Remove the tap (T1, FIGURE 29).
    - Connect a tube to the coupling (T0, FIGURE 29).
38. Turn the main switch to the ON position and switch (L1 in FIGURE 6) to the ON position (1). Press the mode of select function button on the touch pad to the freeze position.

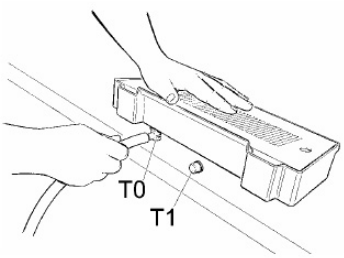


FIGURE 29

Publication Number: M620919596OPR

SPECIAL MAINTENANCE

ATTENTION: To guarantee peak cooling system performance level, the routine cleaning of the condenser filter is essential.

As explained earlier, an audible signal accompanied by the word FILT appearing on the control panel display, will warn the operator when the filter is clogged and so must be cleaned before the unit comes to an automatic stop.

WARNING: All the operations described in this procedure must done with the unit switched OFF and the power cable disconnected.

1. Disconnect the unit from the power supply.
2. Remove filter (FIGURE 30) and clean it.
3. Unscrew the nut (C) and remove the cover (B) as shown in FIGURE 31.
4. Disconnect the plug (D in FIGURE 32).
5. Lift and remove the back (E in FIGURE 32).
6. Clean the condenser with a brush, if necessary (FIGURE 33).

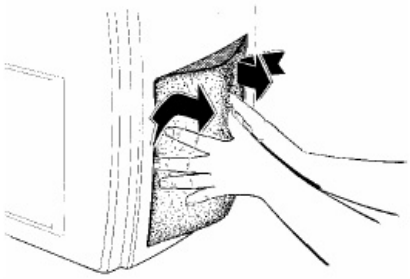


FIGURE 30

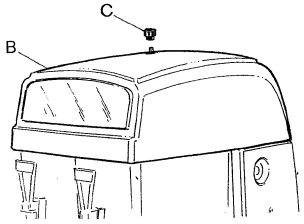


FIGURE 31

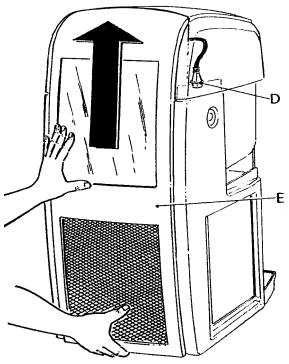


FIGURE 32

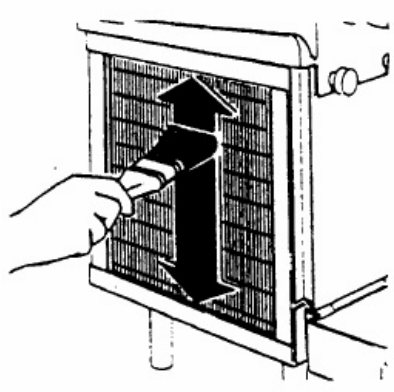


FIGURE 33

RESTRICTED AIR FLOW ALARM

To protect the entire cooling system, the Ice Frost is designed with an electronic system that issues an audible warning signal in the event of insufficient ventilation or if the condenser filter is clogged. In addition to this, the words **FILT** and then **ERR** will appear on the control panel display.

If the operator does not intervene when the signal is issued, restoring normal working conditions (i.e. ensuring better ventilation or cleaning the filter), this electronic system will stop the unit automatically.

ELECTRONIC MONITORING

ELECTRONIC BOWL MONITORING AND SAFETY SYSTEM

The diagram shows the electronic pressures and levels management system:

1. Safety valve.
2. Cut out level bowls control board.
3. Bowl 1 discharge solenoids valve.
4. Bowl 2 discharge solenoids valve.
5. CO_2 inlet solenoid valve.
6. Pressure and levels control board.
7. Draining tube.
8. Tube to the right bowl.
9. Tube to the pressure and level control board(s).
10. Tube to the operating pressure gauge.
11. Tube to the left bowl.

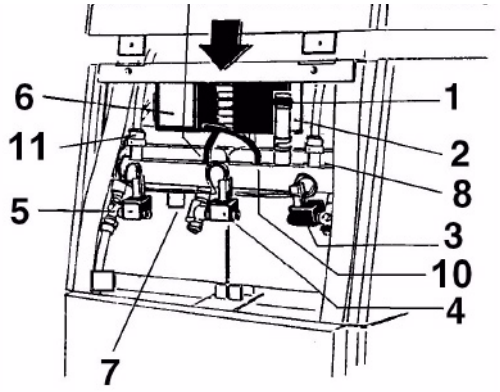
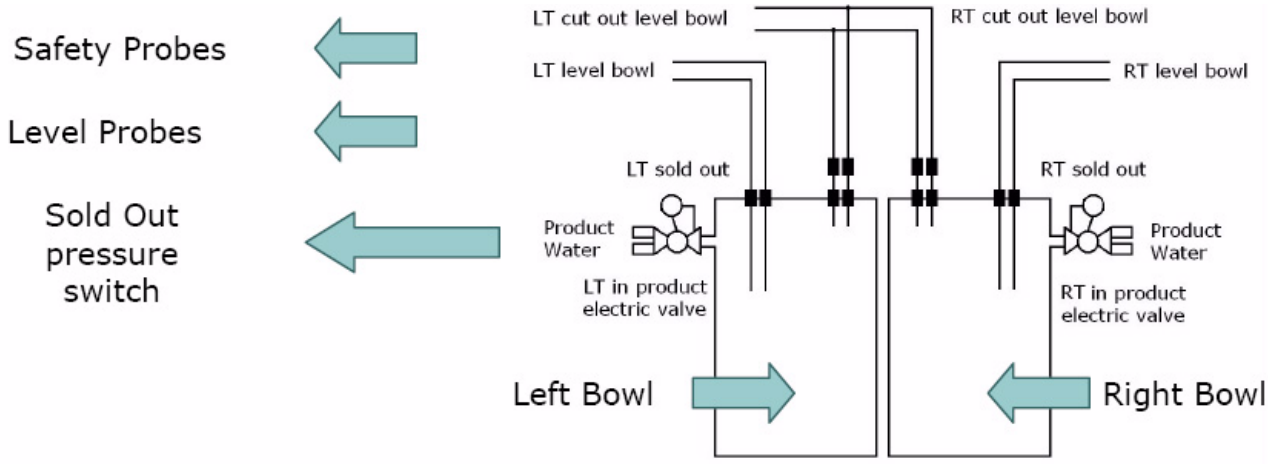


FIGURE 34

VFCB POST MIX ELECTRONIC MONITORING

Description



Sold out = Pressure switch / product presence

The "sold out" pressure switches, set on the electro-valves, detect the presence (or not) of product in the bag in box. The "sold out" pressure switches are not related to ANY control board. They work INDEPENDENTLY one from the other (left bowl sold out works independently from right bowl sold out). When the "sold out" pressure switches detect the lack of product, they stop the mix (product and water) dispensing. In managing bowls level condition they are active only during a bowl loading phase.

Level bowl =Level probes

The "level bowl" probes function is to control and manage the product level in the bowl. They work INDEPENDENTLY one from the other (left bowl level probes work independently from right bowl level probes).

Cut out level bowl = overflow probes

The "cut out level bowl" probes are safety probes. Their function is to avoid bowl's overflow if the "level bowl" probes are out of function (both of them or just one of them). If they are active they inhibit the "pressure and level control board".

Publication Number: M620919596OPR

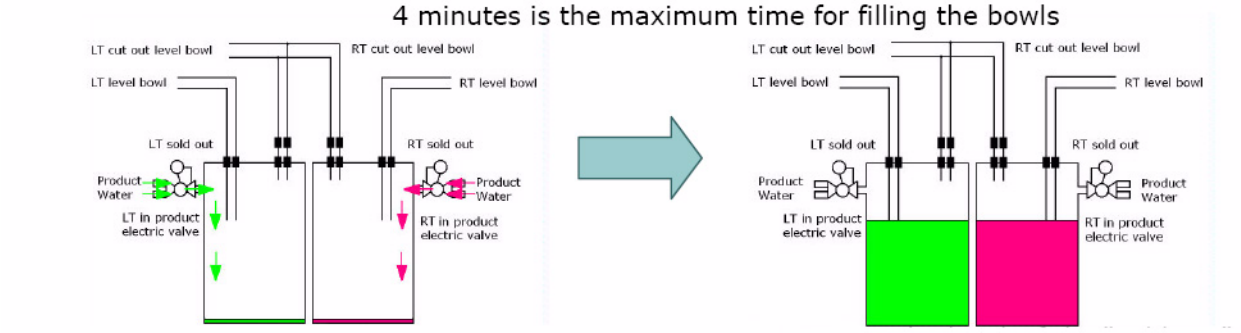
First Filling Condition

First Filling Condition → Each time the unit is turned off and then turned on

Each time the there is a lack of power supply to the unit

First Filling Condition → "Sold out" pressure switch begins to work only if it detects product

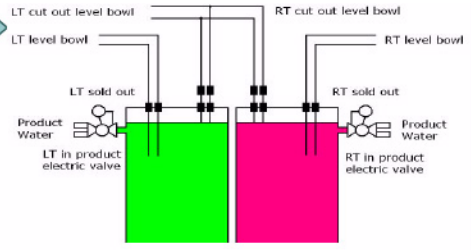
4 minutes is the maximum time for filling the bowls



If the "level bowl" probes are uncovered, the mix is introduced into the bowl. If the "sold out" pressure switch has detected product, the bowl filling continues until the "level bowl" probes are covered (4 minutes max); otherwise the unit begins to buzz after 4 minutes because the "level bowl" probes are not covered yet and the led (out of product) on the front panel is lit. Turn the unit OFF, remove the empty bag in box, replace it with a new one and turn the unit ON. The unit will work as a first filling condition. During the first filling condition it necessary that both "level bowl" probes (the left bowl and the right one) are reached otherwise the unit begins to buzz and will not work

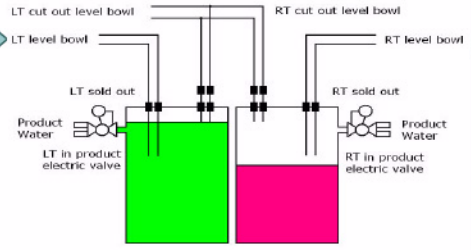
Managing Bowl Level

The overflow condition → **only** if the "level bowl" probes are out of service (both of them or just one)



→ When the product level in the bowl reaches the "cut out level bowl" probes the unit interrupts the bowl loading phase.

The overflow condition → If just one "cut out level bowl" is reached it is enough to stop the bowl loading phase in both the bowls.

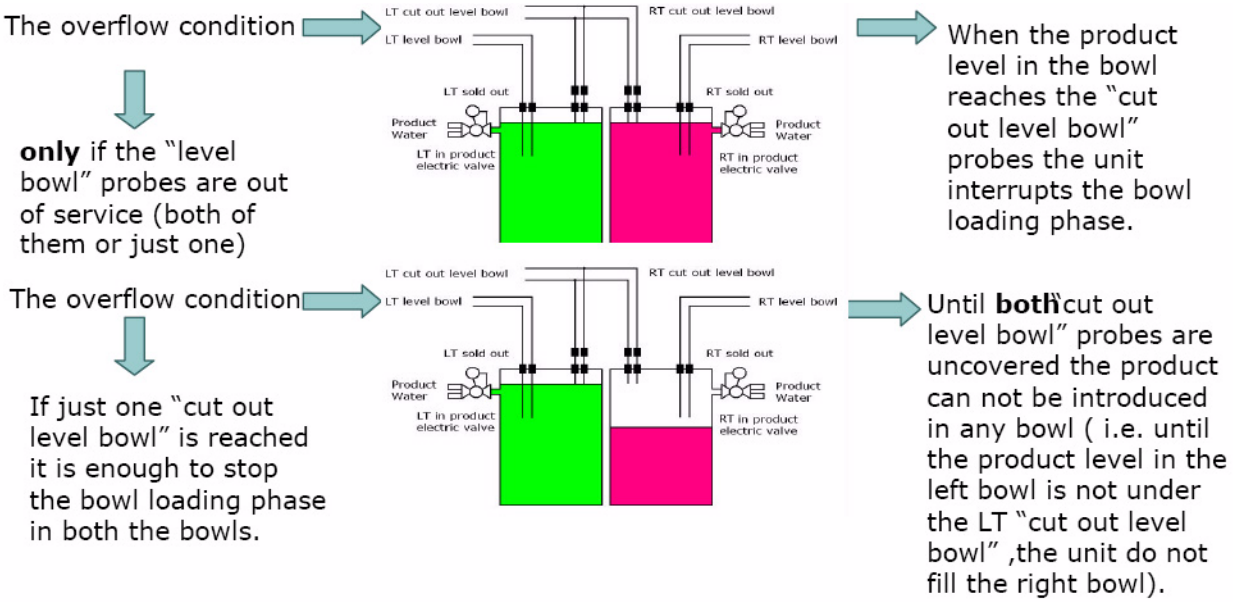


→ Until **both** "cut out level bowl" probes are uncovered the product can not be introduced in any bowl (i.e. until the product level in the left bowl is not under the LT "cut out level bowl" ,the unit do not fill the right bowl).

The "pressure and level control board" INDIRECTLY detects the lack of product because when the "sold out" pressure switch, set on the electro-valve, has detected the product missing, it stops the mix dispensing. In this situation the "level bowl" probes will never be covered, so after 1 minute (set time) the "pressure and level control board" detects the lack of product and the led (out of product) on the front panel is lit.

If the "level bowl" probes are not covered by a minute (i.e. the unit dispenses the mix continuously so the mix introduced in the bowl does not counterbalance the mix dispensed) the bowl loading phase stops and it is necessary to turn the unit OFF and then turn the unit ON. The unit works as a first filling condition.

Overflow Condition



Operation Troubleshooting

Some events that can happen during unit working are following:

- If a bag in box is empty during the first filling condition, the "sold out" pressure switch, set on the electro-valve, detects the lack of product and stops mix dispensing. After 4 minutes the "pressure and level control board" turns the front led (out of product) ON. So that it is necessary to turn the unit OFF, remove the empty bag in box, replace it with a new one and turn the unit ON. The unit will work as a first filling condition.
- If the unit is switched OFF and then switched ON without removing the empty bag in box, the unit works as a first filling condition and it happens the same situation described in the first point.
- If the "level bowl" probes are covered and the unit is switched OFF and then switched ON, the unit ignores the first filling condition because the "level bowl" probes are already covered.
- If the product inside a bag in box finishes during a managing bowl level, it is necessary to switch the unit OFF, remove the empty bag in box and replace it with a new one and then turn the unit ON. The unit works as a first filling condition and, when the "level bowl" probes are covered, the unit stops the mix dispensing in the bowl.
- If the product inside a bag in box finishes as soon as the "level bowl" probes are covered, the unit does not detect the end of product. As soon as the "level bowl" probes are uncovered the "sold out" pressure switch detects the end of product and stops the mix dispensing. After 1 minute the "pressure and level control board" lights the relative led (out of product) ON. So that it is necessary to turn the unit OFF, remove the empty bag in box, replace it with a new one and turn the unit ON. The unit will work as a first filling condition.

Publication Number: M620919596OPR

Bowl Pressure Managing

The pressure inside the bowls is managed by the "pressure and level control board".

First filling condition

In first filling condition the pressure inside the bowls is not checked until product reaches the "level bowl" probes in BOTH the bowls. When the "level bowl" probes are satisfied in BOTH the bowls the "pressure and level control board" begins to work and maintains the pressure inside each bowl between 1.74 psi (120mbar) (ON) and 2.32 psi (160mbar) (OFF). After 1 minute and 30 seconds, if the pressure inside the bowls does not reach 2.32 psi (160mbar), there are 2 possibilities:

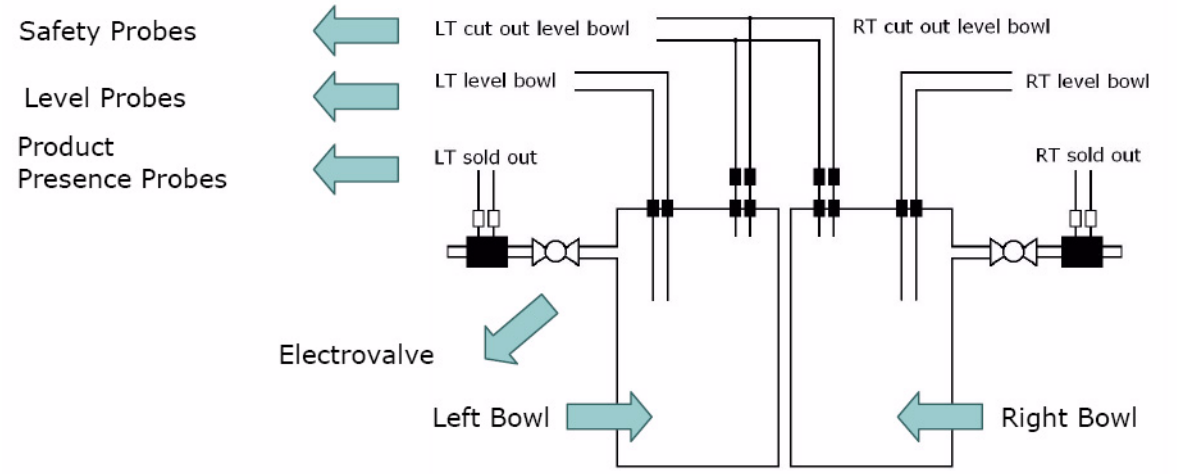
- There is no more gas in the CO2 external tank; so the "out gas" front led is lit and it is necessary to turn the unit OFF, remove the empty CO2 tank and replace it with a new one
- There is a lack of CO2; so the CO2 dispensing is interrupted in order to avoid the CO2 external tank run out. It is important to find out the origin of this lack.

Pressure managing

The pressure inside the bowl [between 1.74 psi (120mbar) and 2.32 psi (160mbar)] is managed INDEPENDENTLY from "level bowl" probes. For example if the "level bowl" probes (in both bowls or just in one) are uncovered and a bag in box is empty, the led (out of product) on the front panel is lit (after 1 minute) but the pressure inside the bowl remains between 1.74 psi (120mbar) and 2.32 psi (160mbar) even if the bag in box is not removed and replaced with a new one.

VFCB PRE MIX ELECTRONIC MONITORING

Description



Sold out= Product presence probes

The "sold out" probes detect the presence (or not) of product in the external tank/s. They work independently one from the other (left bowl sold out works independently from right bowl sold out). In first filling condition they are working after 30 seconds from the unit switched ON. In managing bowls level condition they are active only during a bowl loading phase and they are working with an hysteresis of 3 seconds.

Level bowl =Level probes

The "level bowl" probes function is to control and manage the product level in the bowl. They work independently one from the other (left bowl level probes work independently from right bowl level probes).

Cut out level bowl = overflow probes

The "cut out level bowl" probes are safety probes. Their function is to avoid bowl's overflow if the "level bowl" probes are out of function (both of them or just one of them). If they are active they inhibit the "pressure and level control board".

Publication Number: M620919596OPR

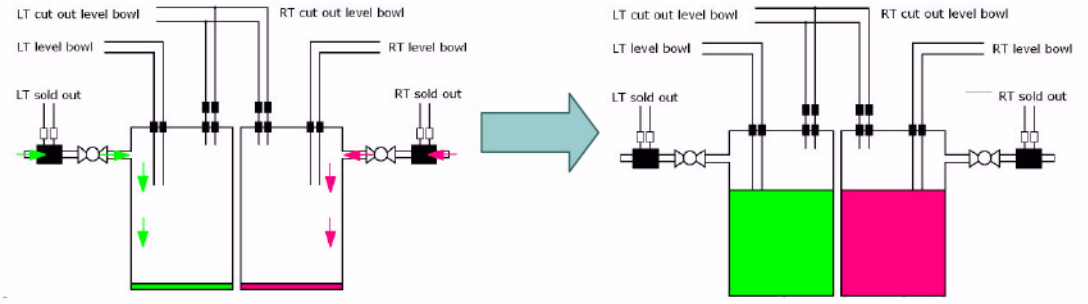
First Filling Condition

First Filling Condition → Each time the unit is turned off and then turned on

Each time the there is a lack of power supply to the unit

First Filling Condition → "Sold out" probes begin to work with delay of 30 seconds from the unit switched on

4 minutes is the maximum time for filling the bowls



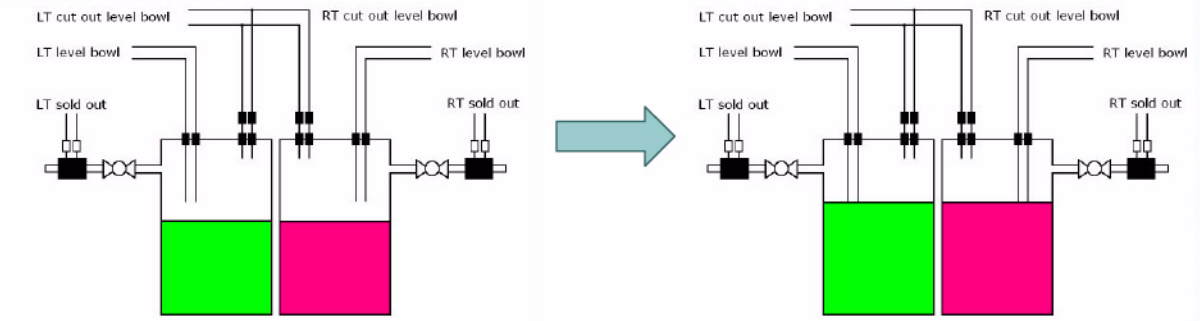
If the "level bowl" probes are uncovered the product is introduced in the bowl. After 30 seconds if the "sold out" probes have detected product, the bowl filling goes ON until the "level bowl" probes are covered (4 minutes max); otherwise the unit begins to buzz because the external tank is empty (or both tanks or just one as showed by the led on the front panel). So that it is necessary to turn the unit OFF, remove the empty tank (or the empty tanks), replace it (them) with a new one/s and turn the unit ON. The unit work as a first filling condition. During the first filling condition it necessary that both "level bowl" probes (the left bowl and the right one) are reached otherwise the unit begins to buzz and it does not work.

Managing Bowl Level

"Sold out" probes → Active **only** during the bowl loading phase

"Sold out" probes → Detect the lack of product with an hysteresis of 3 second.

"Level bowl" probes uncovered → Product introduced in the bowl until "level bowl" probes are covered



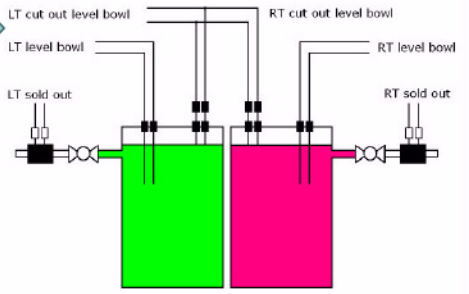
The "sold out" probes detect the product presence (or not) in the external tanks with a hysteresis of 3 seconds. 3 seconds software hysteresis are introduced to prevent the probes recognize the tank bowl conduit as empty when there is residual gas in it.

If the "level bowl" probes are not covered by a minute (i.e. the unit dispenses the mix continuously so the mix introduced in the bowl does not counterbalance the mix dispensed) the bowl loading phase stops and it is necessary to turn the unit OFF and then turn the unit ON. The unit works as a first filling condition.

Overflow Condition

The overflow condition

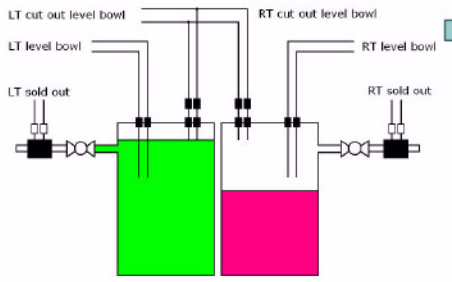
only if the "level bowl" probes are out of service (both of them or just one)



When the product level in the bowl reaches the "cut out level bowl" probes the unit interrupts the bowl loading phase.

The overflow condition

If just one "cut out level bowl" is reached it is enough to stop the bowl loading phase in both the bowls.



Until the "cut out level bowl" probes are uncovered the product can not be introduced in any bowl (i.e. until the product level in the left bowl is not under the LT "cut out level bowl" the unit do not fill the right bowl).

Operation Troubleshooting

It follows some events that can happen during unit working:

- If external tank (or tanks) is (are) empty during the first filling condition, the "sold out" probes, after 30 seconds, detect the lack of product and stop the unit. So it is necessary to switch the unit OFF, remove the empty tank and replace it with a new one and then turn the unit ON.
- If the unit is switched OFF and then switched ON without removing the empty external tank (or tanks), the unit works as a first filling condition and it happens the same situation described at point 1.
- If the "level bowl" probes are covered and the unit is switched OFF and then switched ON, the unit ignores the first filling condition because the "level bowl" probes are already covered.
- If the product inside the external tank finishes during a managing bowl level (the relative led must be lit), it is necessary to switch the unit OFF, remove the empty tank and replace it with a new one and then turn the unit ON. The unit works as a first filling condition and, when the "level bowl" probes are covered, the unit stops the product dispensing in the bowl.
- If product inside the external tank finishes as soon as the "level bowl" probes are covered, the unit does not detect the end of product because the monitoring of the "sold out" probes (covered / uncovered) is active only during the bowl loading phase. As soon as the "level bowl" probes are uncovered the "sold out" probes (after 3 second hysteresis) detect the end of product; so it is necessary to turn the unit OFF, remove the empty tank and replace it with a new one and then turn the unit ON.

Publication Number: M620919596OPR

Bowl Pressure Managing

The pressure inside the bowls is managed by the "pressure and level control board".

First filling condition

In first filling condition the pressure inside the bowls is not checked until product reaches the "level bowl" probes in BOTH the bowls. When the "level bowl" probes are satisfied in BOTH the bowls the "pressure and level control board" begins to work and maintains the pressure inside each bowl between 1.74 psi (120mbar) (ON) and 2.32 psi (160mbar) (OFF). After 1 minute and 30 seconds, if the pressure inside the bowls does not reach 2.32 psi (160mbar), there are 2 possibilities:

- There is no more gas in the CO2 external tank; so the "out gas" front led is lit and it is necessary to turn the unit OFF, remove the empty CO2 tank and replace it with a new one
- There is a lack of CO2; so the CO2 dispensing is interrupted in order to avoid the CO2 external tank run out. It is important to find out the origin of this lack.

Pressure managing

The pressure inside the bowl [between 1.74 psi (120mbar) and 2.32 psi (160mbar)] is managed INDEPENDENTLY from "level bowl" probes. For example if the "level bowl" probes (in both bowls or just in one) are uncovered and the external tank (product tank) is empty, the led is lit in the front panel (after 3 second hysteresis) but the pressure inside the bowl remains between 1.74 psi (120mbar) and 2.32 psi (160mbar) even if the external tank is not removed and replaced with new one (product tank).

VFCB (PRE-MIX) 115V/60HZ

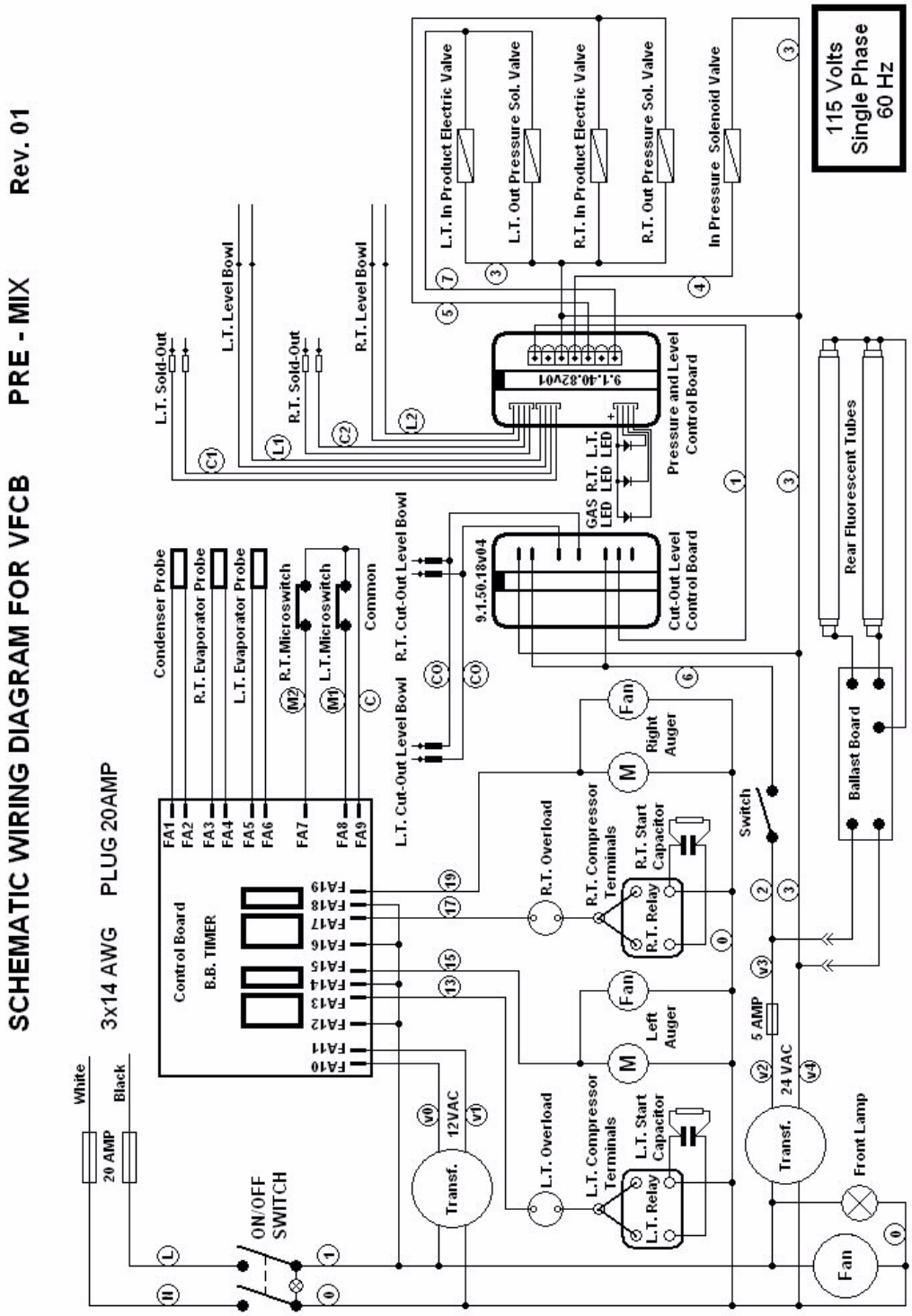


FIGURE 35

VFCB (POST-MIX) 115V/60Hz

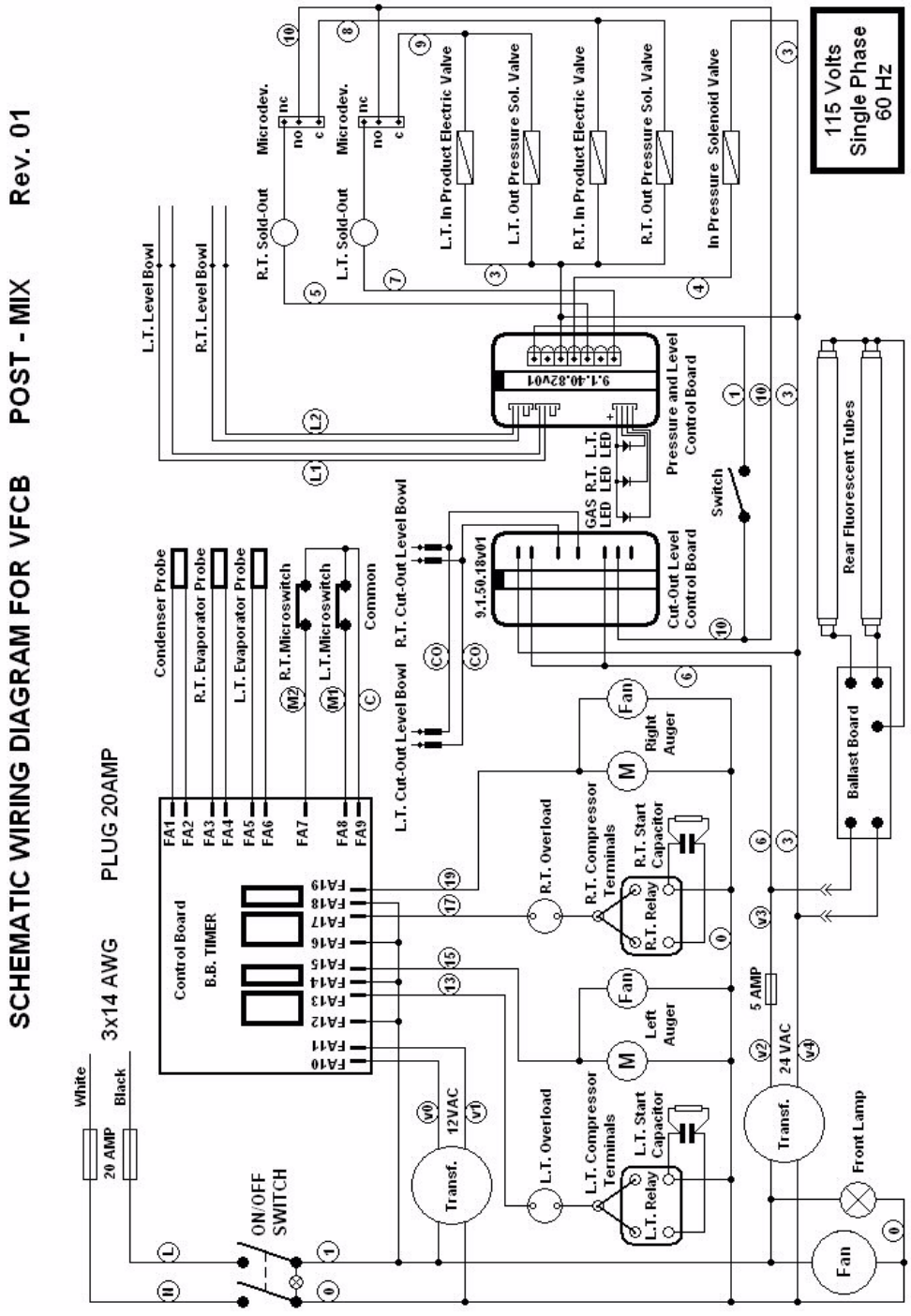


FIGURE 36

VFCB (PRE-MIX) 230V/50Hz

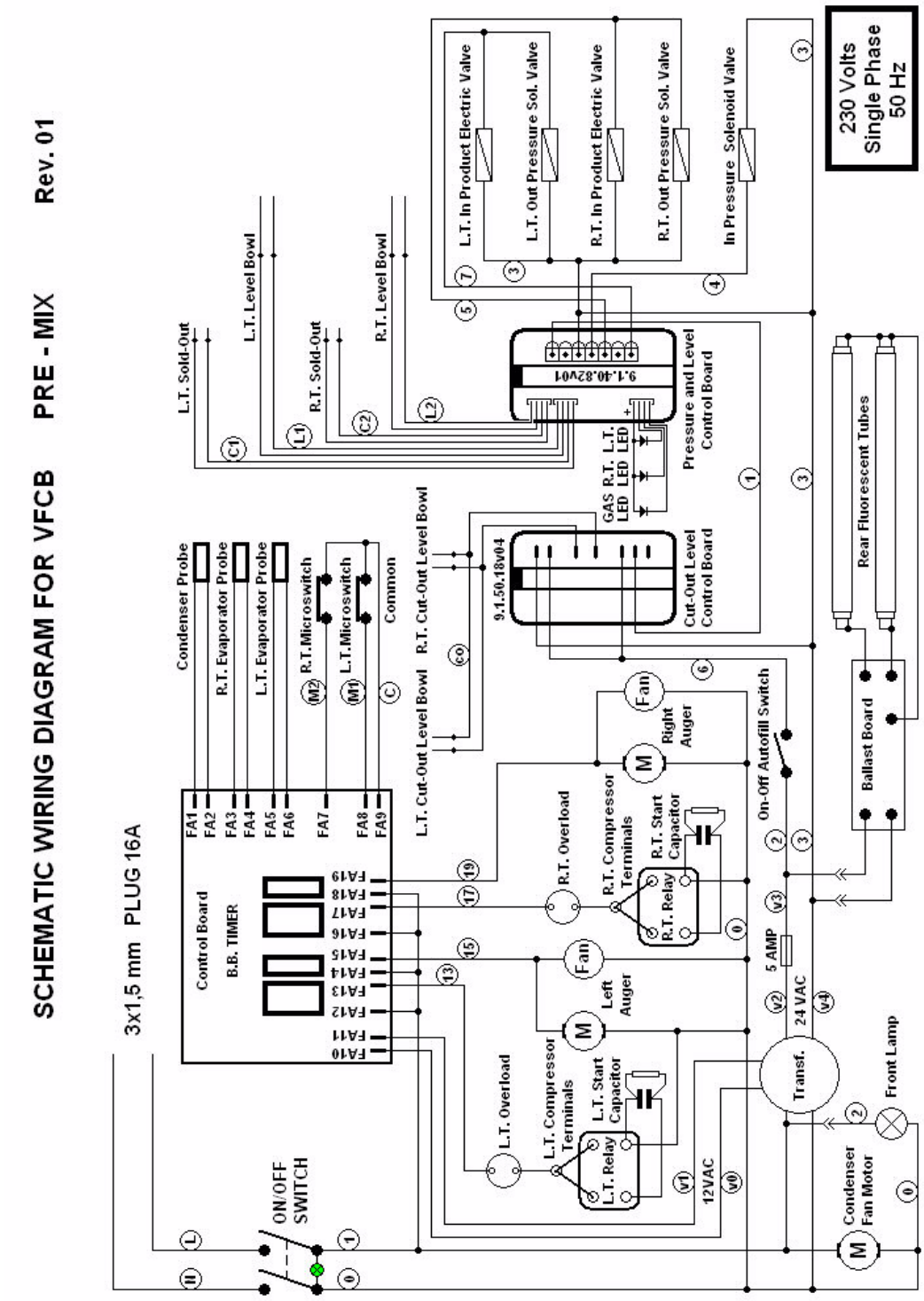


FIGURE 37

VFCB (POST-MIX) 230V/50Hz

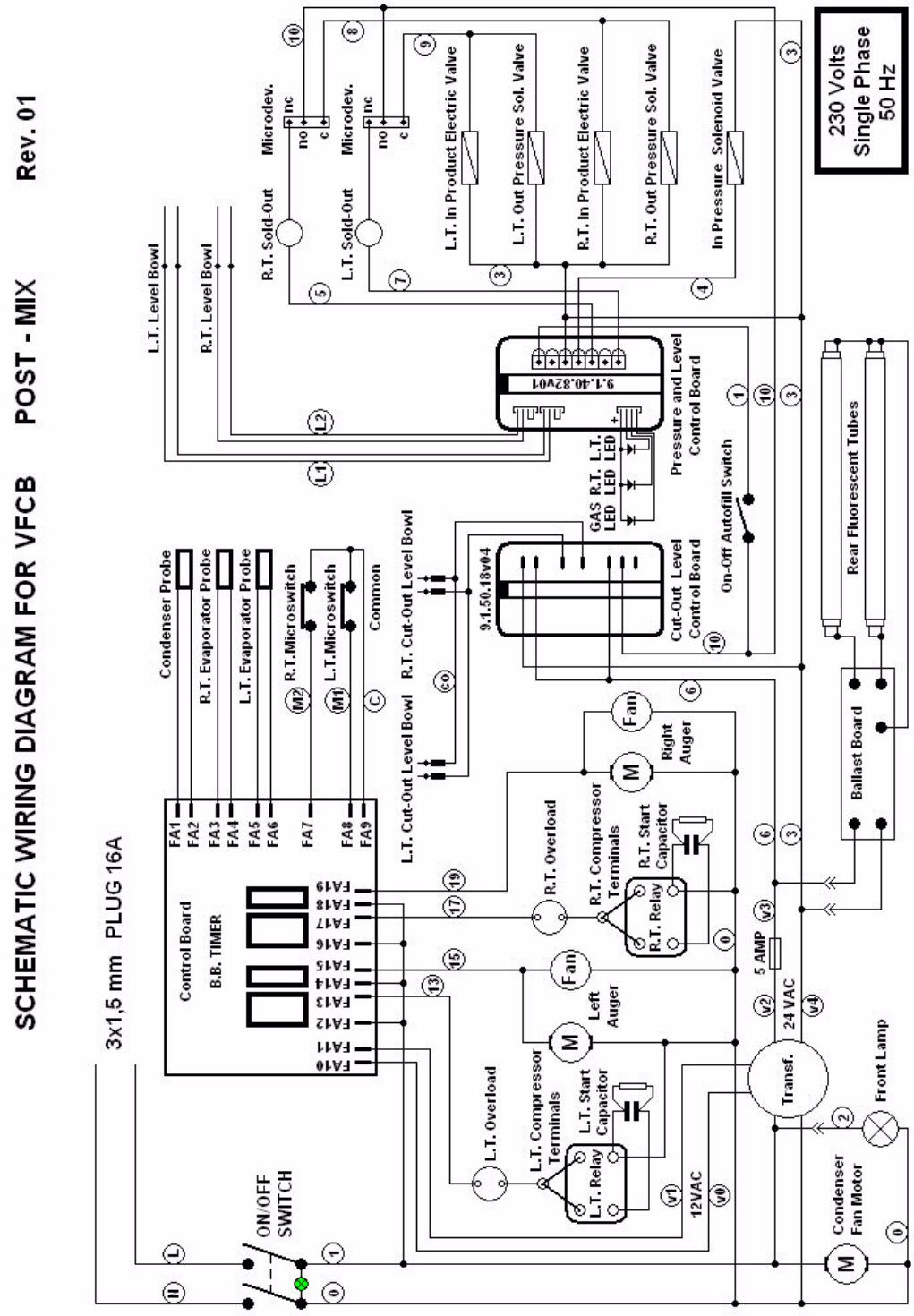


FIGURE 38

VFCB POST-MIX 115V/60H 3 BOWL

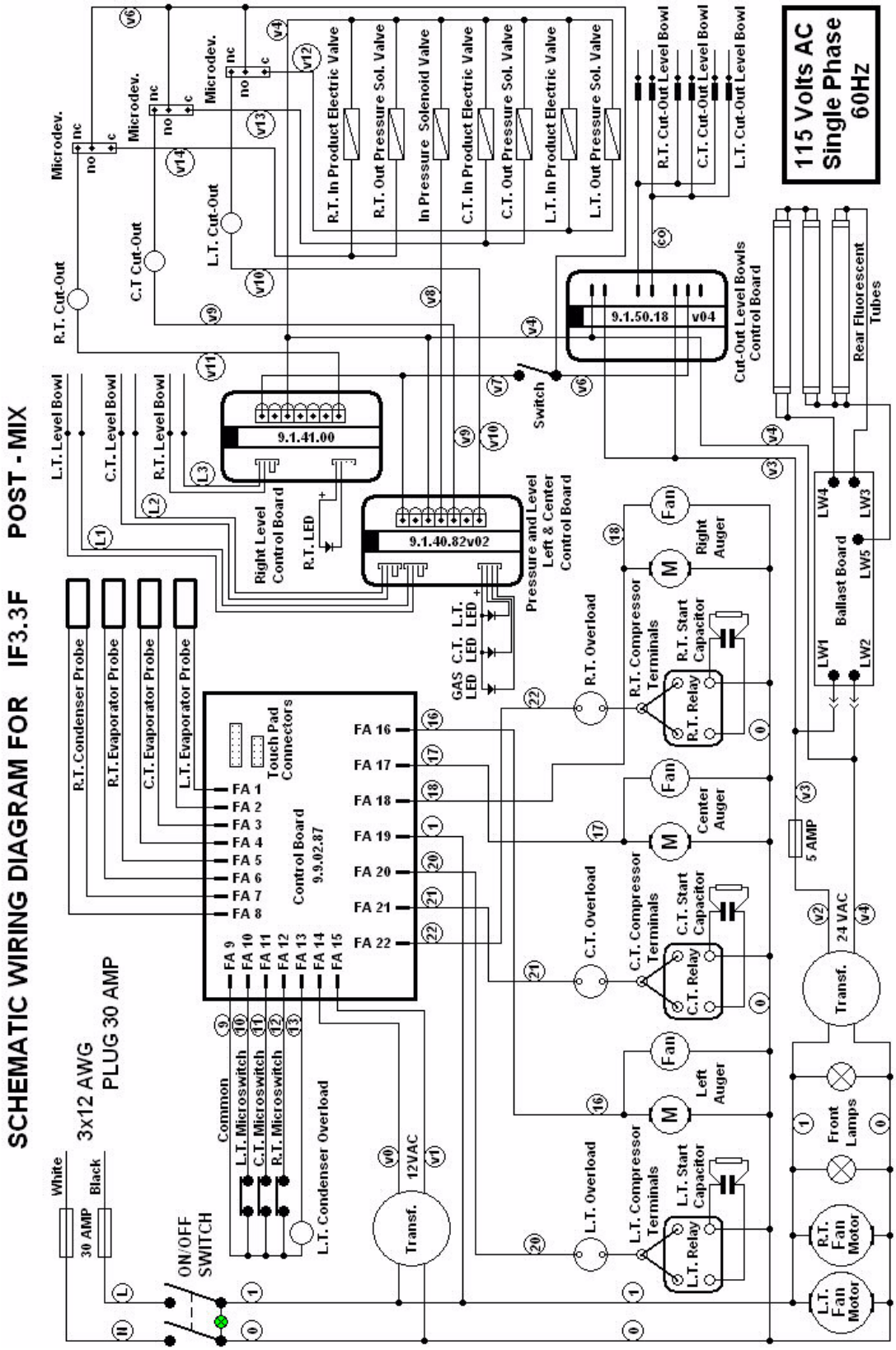


FIGURE 39

TROUBLESHOOTING

NOTE: The following procedures must be performed by a qualified service technician.

Problem	Possible Cause	Solution
"Filt" or "Err" message appears on the touchpad LED readout	• The filter is dirty and needs to be cleaned	• Clean and replace filter following instructions (Removing and Cleaning Filter)
	• The unit is positioned too close to a wall or other object restricting air flow and causing the unit to run at a higher temperature	• Reposition unit to maximize ventilation space (see installation figures)
	• The filter is not properly installed	• Properly install filter see "Removing and cleaning filter"
	• The unit has been installed near a heat source, such as a coffee machine, ice maker or cold beverage machine which expels hot air from its vents, causing the unit to run at a high temperature. (Installation near a heat source should be avoid)	• Reposition unit to maximize ventilation space (see installation figures)
The unit does not cool, or cools only partially, but the compressor(s) is/are running	• The space around the unit is inadequate for ventilation	• Allow at least 8" (20cm) between the unit and anything next to it; keep away from heat sources
	• Freezer is in COLD mode	• Return to FROZEN mode
	• The condenser fins are clogged with airborne particles	• Remove the side panels. Using a brush or compressed air clean the condenser
	• Fan motor is not running	• Check the fan motor's electrical connections and, if disconnected, reconnect. If still not operating, replace the motor
	• Refrigerant is leaking	• Locate the leak, eliminate it and recharge the system
The unit does not cool or cools only partially, but one or more of the compressors are not running	• Defective Electrical components	• Replace the malfunctioning components
	• Loose wire connections	• Check the contacts and correct those that are incomplete
	• One or more of the compressors are malfunctioning	• Replace the compressor(s)
	• No current is coming to the "compressor delay" PC board	• Check the electrical connections to the PC board as well as the transformer feeding the PC board and correct

Problem	Possible Cause	Solution
The unit over-freezes making the auger movement slow or stopped	• The product Brix is too low	• Check the product Brix and correct
	• The screw setting for the product consistency control system is set too far toward the "+" position	• Reset the screw toward the "-" position to produce a thinner consistency product
	• The limit switch arm is bent away from the gearmotor and prevents contact	• Using pliers, straighten the limit switch arm
	• The level of the product in the bowl is too low, exposing the auger	• Add more product or turn the refrigeration OFF
	• The compressor PC board contacts don't open	• Replace the PC board
The unit is noisy	• The fan motor blades are hitting internal components	• Check and correct
The main power switch is ON. The unit is not running.	• The fuse(s) are blown	• Replace the fuse(s)
	• The pressure cutout switch has activated	• Clean the condenser or add ventilation space around the unit (the cutout switch reset is automatic when the conditions are corrected)
	• Some electrical connections are not complete	• Check the contacts and correct those that are incomplete
	• The main power is not functioning	• Replace the switch
Product is leaking out of the bowl	• One of the bowl seals is not in place	• Replace or reposition the seals
Product is leaking from the dispensing valve	• The dispensing valve has been incompletely or incorrectly replaced in its position	• Reassemble and replace
	• The free movement of the dispensing valve is impeded	• Clean and lubricate the valve and valve cylinder with the lubricant provided with the unit
	• Dispensing valve o-rings are damaged	• Replace the o-rings
Product is flowing into drain tray through drainage tube	• The bell shaped "shaft" seal between the front of the cylinder and the auger hub has not been reinstalled properly	• Find the seal and put it back in place
	• The bell shaped "shaft" seal or the spindle bushing seal is damaged or worn	• Replace the damaged/worn seal and check the condition of the driveshaft.
The auger is not turning	• Auger not turned ON	• Turn auger ON
	• Some electrical connections are not complete	• Check the contacts and correct the ones that are incomplete
	• The gear motor(s) are malfunctioning	• Replace the gear motor(s)
The auger is creating noises as it rotates	• The large red bowl seal is not in position, causing the gear teeth not to mesh	• Check and correct
	• The product Brix is incorrect	• Check the product Brix and correct
	• The bell shaped "shaft" seal has been replaced without lubrication or is damaged	• Replace or clean and lubricate with the lubricant provided with the unit
	• The auger has been incompletely or incorrectly reassembled (ie the auger's gear pins are not properly seated)	• Check and correct

Publication Number: M620919596OPR

Problem	Possible Cause	Solution
There is no light in the merchandising lid or rear merchandising panel	• The light bulb is burnt out	• Replace (See "Changing the light bulb" section in this manual)
	• The 5 Amp fuse between the transformer and the lamp is blown	• Replace
	• The transformer is blown	• Replace
The cover does not fit properly on the bowl	• The bowl is incorrectly positioned (the lower, outside corner is not over the lower, outside base piece)	• Remove bowl and position properly
Bowl not refilling	• Out of syrup	• Replace
	• Out of CO2	• Replace
	• Valves are shut off or blocked	• Open
	• Foam covering probes	• Wait
	• Fill switch in OFF position	• Turn ON
	• Defective syrup pressure switch	• Replace
CO_2 leaking from back of unit	• Defective CO_2 shut off	• Replace
	• Proper function of bowl over pressure discharge solenoids	• If not continuous leak it is normal operation
	• Poor connection	• Repair leak

WARNING: Relief valve venting is normal, a continuous leak is not and must be corrected immediately. Repair the solenoid valve.

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