

INSTALLATION AND SERVICE MANUAL FOR FLAVOR SELECT 22 ICE BEVERAGE DISPENSER LANCER SERIES 14400



85-14408-06-2

**ICE BEVERAGE DISPENSER, ABOVE COUNTER
MULTI BRAND, 22 INCH WIDE, 8 BRANDS / 6 FLAVORS,
115V/60Hz**

85-14408N-06-2

**ICE BEVERAGE DISPENSER, ABOVE COUNTER
MULTI BRAND, 22 INCH WIDE, 8 BRANDS / 6 FLAVORS,
115V/60Hz**

PELLET ICE

This manual supersedes and replaces 28-0580, dated 01/18/06.

LANCER

6655 LANCER BLVD. • SAN ANTONIO, TEXAS 78219 USA • (210) 310-7000

FAX SALES

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DATE:	09/05/06
P.N.	28-0580/01

SPECIFICATIONS

DIMENSIONS

22" WIDE

HEIGHT:	39.625 INCHES (1007 mm)
WIDTH:	22.00 INCHES (559 mm)
DEPTH:	30.50 INCHES (775 mm)

TOTAL ICE CAPACITY: 200 LBS (90.7 KG)

DISPENSABLE ICE CAPACITY: 175 LBS (79.4 KG)

COUNTER WEIGHT (WITHOUT ICE): 280 LBS (127.0 KG)

SHIPPING WEIGHT: 310 LBS (140.7 KG)

ELECTRICAL

VOLTAGE:	115
AMPS:	7.0
Hz:	60

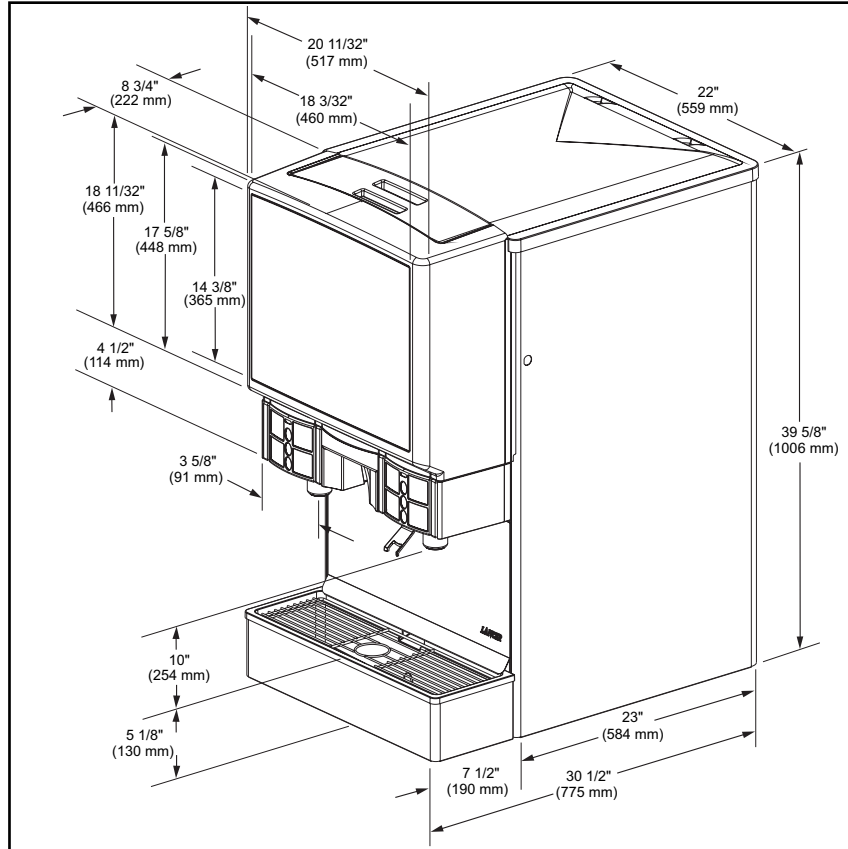
WARNING

THIS UNIT IS EQUIPPED WITH AUTOMATIC AGITATION. IT MAY ACTIVATE UNEXPECTEDLY. DO NOT PLACE HANDS, OR FOREIGN OBJECTS IN THE ICE STORAGE COMPARTMENT.

WHEN UNIT IS BEING SERVICED, CLEANED, OR SANITIZED, UNPLUG DISPENSER FROM THE POWER SOURCE.

NOTE

Lancer does not recommend the use of shaved, flake, nugget, or pellet ice in dispensers not properly equipped to do so.



The FS22 Dispenser, Lancer Series 14400

MANUFACTURERS INTRODUCTION - High Volume Free Standing Fountain Drink Dispenser

The unit is designed with the highest quality components to be user and service friendly. The FS22 is designed to be ready to use out-of-the-box as long as there is a steady water supply, BIB (Bag-In-Box) syrups with their pumps, and a regulated CO₂ supply.

The FS22 features a casted-in cold carbonator within the cold plate. It has a removable probe that regulates the mixture of CO₂ and plain water. The unit is equipped with a pressure (PSI) relief valve and a maintenance-free remote water pump with backflow preventer for the carbonator. The cold plate has been designed and tested to meet the highest performance and health standards. The design allows for a single drain and the ability for up to eight (8) independent brands to be dispensed through two (2) Lancer Multi-Flavor dispense nozzles. A total of six (6) "bonuses" (ambient flavors) may be added to the drink via the flavor injection system on two (2) nozzles. The bonus flavors are plumbed independently to each of the nozzles allowing for a multitude of customer pleasing drink combinations.

Supplier Name: Lancer
Address: 6655 Lancer Blvd
San Antonio, TX 78219
Phone: (800) 729-1500

Local Service Name: _____

Local Service Phone #: _____

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1. INSTALLATION

1.1 RECEIVING

Each unit is completely tested under operating conditions and thoroughly inspected before shipment. At time of shipment, the carrier accepts the unit and any claim for damage must be made with the carrier. Upon receiving units from the delivering carrier, carefully inspect carton for visible indication(s) of damage. If damage(s) exist(s), have carrier note same on bill of lading and file claim with carrier.

1.2 UNPACKING

- A. Set shipping carton upright on the floor.
- B. Cut band and remove.
- C. Open top of carton and remove interior packing.
- D. Lift carton up and off of the dispenser.
- E. Remove wood shipping base from the bottom of the dispenser. (Support dispenser while removing shipping base to prevent damage to the dispenser.)

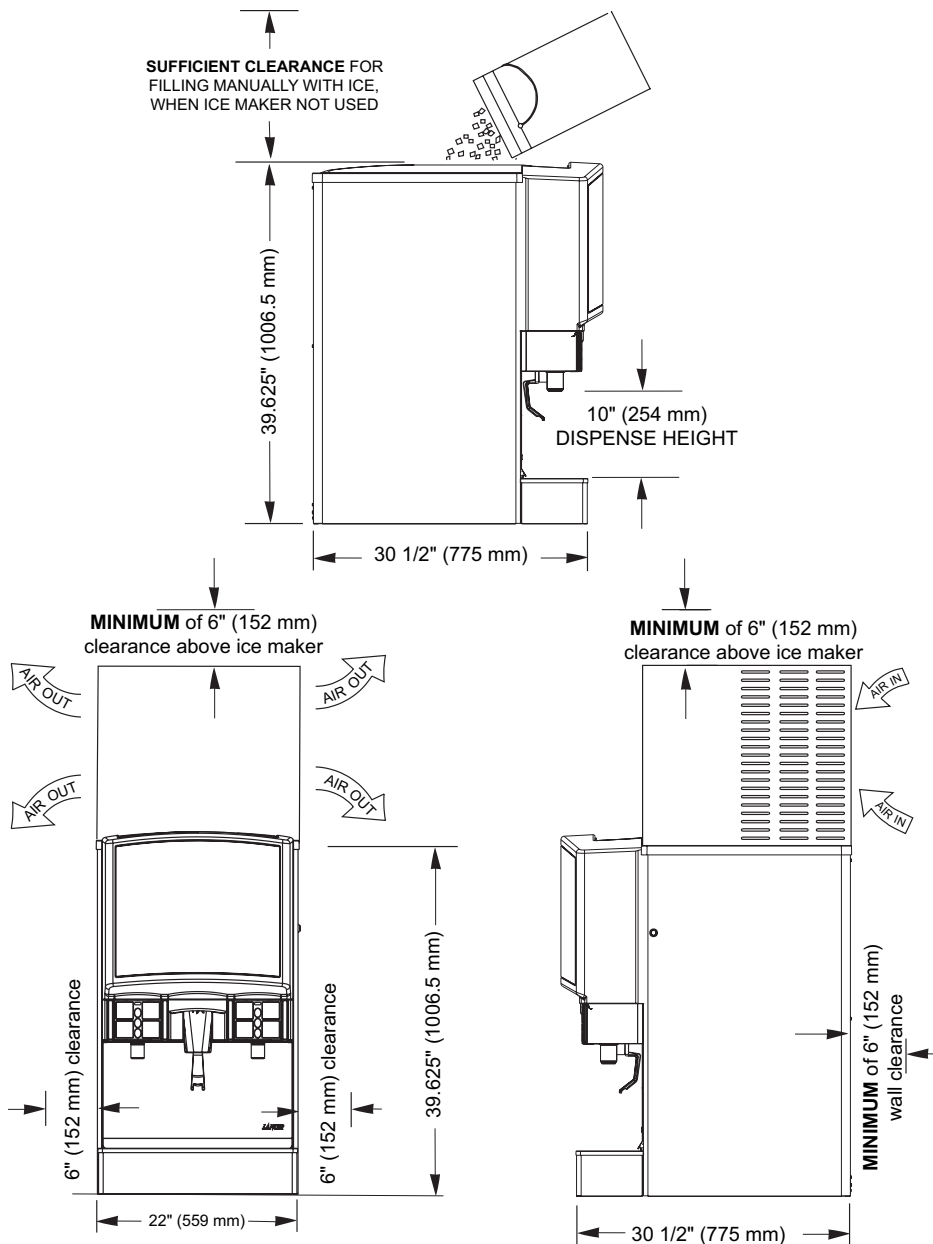


Figure 1

1.3 SELECTING COUNTER LOCATION (SEE FIGURE 1)

WARNING

THIS APPLIANCE MUST BE EARTHED. THIS DISPENSER MUST BE ELECTRICALLY GROUNDED TO AVOID DANGER TO THE OPERATOR. THE POWER CORD PROVIDED HAS A THREE PRONG GROUNDED PLUG. IF A THREE HOLED GROUNDED ELECTRICAL OUTLET IS NOT AVAILABLE, USE AN APPROVED METHOD OF INSURING A PROPER GROUND TO THE DISPENSER.

CAUTION

FAILURE TO DISCONNECT THE MOTOR POWER SUPPLY WILL DAMAGE THE CARBONATOR MOTOR AND PUMP AND VOID THE WARRANTY.

- A. Select a location close to a properly grounded 20 Amp electrical outlet, convenient to an open type drain, access for soda, water, and syrup lines. It should have sufficient clearance above the unit to provide for servicing.
 1. If at all possible, location should be away from direct sunlight or other heat sources.
 2. Connecting lines may be run through access in back of the unit or extend down through a counter cutout.
 3. Check the dispenser serial number plate for correct electrical requirements of unit. *Do not plug into wall electrical outlet unless the current shown on the serial number plate agrees with local current available.*
 4. The counter must support the weight of the dispenser, ice, and possibly an icemaker. *Total weight may exceed 500 pounds (226.8 kg).*
- B. Unit may be installed directly on the countertop or on legs supplied with the unit. If installed directly on the counter, the unit must be sealed to the countertop. ***If an icemaker is to be mounted on top of dispenser, do not install dispenser on legs.***

NOTE

Water pipe connections and fixtures directly connected to a potable water supply must all be sized, installed, and maintained according to Federal, State, and Local laws.

The water supply must be protected by means of an air gap, a backflow prevention device (located upstream of the CO₂ injection system) or another approved method to comply with NSF standards. A backflow prevention device must comply with ASSE and local standards. *It is the responsibility of the installer to ensure compliance.*

- C. **Location must insure sufficient clearance** on sides, top and back of unit is provided for ventilation and air circulation (see Figure 1).
- D. Additionally, if an ice maker is not top mounted on the unit, sufficient clearance should be provided [a minimum of 16 inches (40.6 cm) is recommended] to allow filling the unit with ice from a five (5) gallon (19 liter) container (see Figure 1).

1.4 INSTALLING THE DISPENSER

- A. Remove Cup Rest, Drip Tray, Splash Plate, and Top Cover.
- B. Remove Cover Plate at rear of unit if not a through-the counter-installation.
- C. Connect water supply for carbonator/plain water to the 3/8 inch flare fittings at the front of the unit (See Figure 2).
- D. For the **plain water supply line**, the inlet water **flowing pressure** should be **at least 75 PSI**. ***If the water pressure is lower than 75 psi flowing, a Water Booster system must be used.***

NOTE:

The Lancer Water Booster/Tank, PN MC-163172, is offered as a kit.

The Water Booster must be installed as close as possible to the plain water circuit inlet.

If the water flowing pressure is lower than 75 PSI at the plain water inlet, and a water booster is NOT installed, all water products will not hold a proper flow rate and/or water/syrup ratio. Additionally, flow conditions at the nozzle may be affected, for example, poor nozzle coning and mixing.

- E. For the **soda water supply line**, the inlet water static pressure going into the carbonator pump **should NOT exceed 50 PSI**. If the static water pressure exceeds 50 psi, a water regulator must be installed before the carbonator water inlet.

NOTE:

The Lancer Pressure Regulator, PN 18-0306, is offered.

The regulator must be installed as close as possible to the water carbonator pump inlet.

There is no minimum water pressure value feeding the carbonator. If the water pressure does not exceed 50 psi, but fluctuates over this value (for example, when water usage on other equipment connected to the same water supply causes pressure “spikes”), the use of a water regulator is also required.

- F. Place CO2 Cylinder with regulator in a serviceable location and route CO2 supply line (75 PSI) to the 1/4 inch flare fitting at the front of the unit (See Figure 3). Check for leaks.
- G. Connect syrup supply lines to the 3/8 inch barb inlet fittings at the front of the unit (See Figure 4), using BIB (Bag-In-Box) pumps. Check for leaks.
- H. Connect flavor injection lines to the barb fittings at the front of the unit (See Figure 4). Check for leaks.
- I. Install Drip Tray and extend hose to open type drain.
- J. Drain lines must be insulated with a closed cell insulation. Insulation must cover the entire length of the drain hose, including fittings. The drain should be installed in such a manner that water does not collect in sags or other low points, as condensation will form.
- K. Install Cup Rest and Splash Plate.
- L. Connect Power Cord to grounded electrical outlet.

WARNING:

ICE AUGER AND BIN AGITATION SYSTEM WILL OPERATE AUTOMATICALLY. DO NOT PLACE HANDS OR ANY BODY PARTS WITHIN THE BIN OR IN THE ICE CHUTE.

- M. Test Motor operation by pushing Ice Chute.

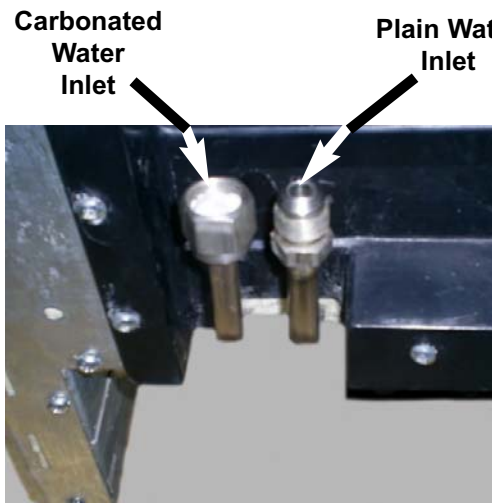
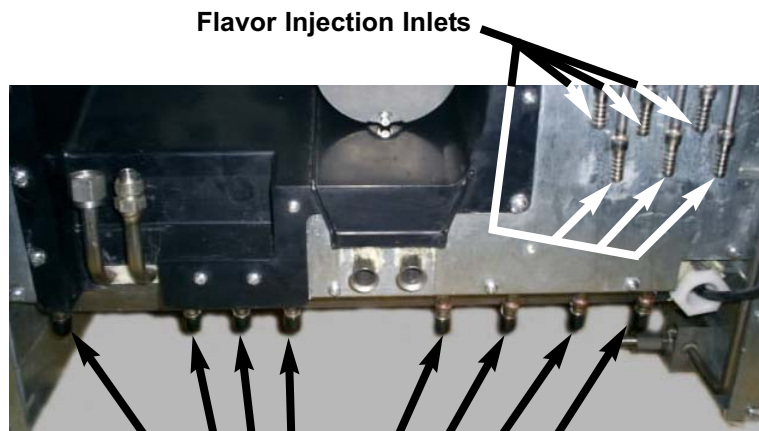
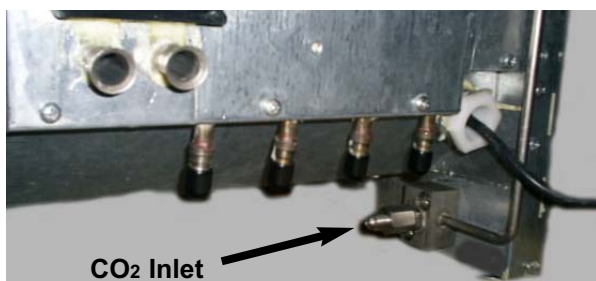


Figure 2



Syrup Connections

Figure 4



CO2 Inlet

Figure 3

- N. Clean and sanitize dispenser (see Section 2).
- O. Fill unit approximately half full with ice. Push Chute and check for ice delivery.
- P. Fill unit with ice.
- Q. Install Top Cover.

NOTE

Lancer does not recommend the use of shaved, flake, nugget, or pellet ice in dispensers not properly equipped to do so.

- R. Set brix ratio for beverage dispensing valves according to manufacturer's instructions.

1.5 OPTIONAL INSTALLATION OF SOLD-OUT DEVICE

- A. An optional Sold-Out Device can be used to automatically shut off the Syrup Pump when the Package(s) is empty. This stops the operation of the Pump and the exhaust of gas until a new syrup package is connected to the Pump.
- B. The Lancer Sold-Out device measures syrup vacuum in the Pump Inlet Line. When the Syrup Package is empty, the Pump increases vacuum causing the device to shut off the gas pressure to stop the Pump. The Lancer Sold-Out automatically resets, after new Syrup Packages are connected.

2. CLEANING AND SANITIZING INSTRUCTIONS

2.1 GENERAL INFORMATION

- A. Lancer equipment (new or reconditioned) is shipped from the factory cleaned and sanitized in accordance with NSF guidelines. This equipment must be cleaned and sanitized after installation is complete, and the operator of the equipment must provide continuous maintenance as required by this manual and/or state and local health department guidelines to ensure proper operation and sanitation requirements are maintained.

NOTE

The cleaning and sanitizing procedures provided herein pertain to the Lancer equipment identified by this manual. If other equipment is being cleaned, follow the guidelines established for that equipment.

- B. Cleaning and sanitizing should be accomplished only by trained personnel. Sanitary gloves are to be used during cleaning and sanitizing operations. Applicable safety precautions must be observed. Instruction warnings on the product being used must be followed.
- C. Water lines are not to be disconnected during the cleaning and sanitizing of syrup lines to avoid contamination.
- D. Do NOT use strong bleaches or detergents. They tend to discolor and/or corrode various materials.
- E. Do NOT use metal scrapers, sharp objects, steel wool, scouring pads, abrasives, solvents, etc., on the dispenser.
- F. Do NOT use hot water above 140°F (60°C). This may damage certain materials.

2.2 REQUIRED CLEANING EQUIPMENT

- A. Cleansers (for example, Ivory Liquid, Calgon, etc.) mixed with clean, potable water at a temperature of 90 to 110 degrees Fahrenheit should be used to clean equipment. The mixture ratio, using Ivory Liquid, is one (1) ounce of cleanser to two (2) gallons of water. A minimum of five (5) gallons of cleaning mixture should be prepared. Any equivalent cleanser may be used as long as it provides a caustic based, non-perfumed, easily rinsed mixture containing at least two (2) percent sodium hydroxide (NaOH). Rinsing must be thorough and use clean, potable water which is also at a temperature of 90° to 110°F.

NOTE

Extended lengths of product lines may require that an additional volume of cleaning solution be prepared.

- B. Sanitizing solutions should be prepared in accordance with the manufacturer's written recommendations and safety guidelines. The solution must provide 50 to 100 parts per million

(PPM) available chlorine. A minimum of five (5) gallons of sanitizing solution should be prepared. Any sanitizing solution may be used as long as it is prepared in accordance with the manufacturer's written recommendations and safety guidelines, and provides 50 to 100 parts per million (PPM) available chlorine. Sanitizing solution is to be purged from line(s) and equipment by flushing with product only until there is no after taste. ***Do not rinse with water.***

NOTE

Please note that a fresh water rinse cannot follow sanitization of equipment. Purge only with the end use product until there is no after taste in the product. *This is an NSF requirement, since residual sanitizing solution left in the system could create health hazards.*

Extended lengths of product lines may require that an additional volume of sanitizing solution be prepared.

C. Other

1. Clean cloth towels.
2. Bucket.
3. Small brush (PN [22-0017](#)) - included with installation kit.
4. Extra nozzle.
5. Sanitary gloves.

2.3 DAILY CLEANING

- A. Carefully remove the nozzle housings by turning counter-clockwise and pulling down from the nozzle body.
- B. Wash the nozzle housings in warm soapy water and rinse with clean warm water.
- C. Wet a clean cloth in warm soapy water.
- D. While the nozzle housing is removed, wipe down the perimeter and end of the nozzle body.
- E. Fill a cup with clean warm water and rinse nozzle body.
- F. Make certain that the nozzle o-ring is not torn or otherwise damaged. If necessary, replace damaged o-ring with LANCER PN [02-0231](#).
- G. Wet the inner surface of the nozzle housing with water and reinstall the nozzle housing by sliding it over the nozzle body and turning clockwise to lock in position.

2.4 ICE BIN CLEANING - START UP AND MONTHLY

- A. Disconnect Dispenser from power source.
- B. Remove Top Cover
- C. Melt out any remaining ice from the bin.
- D. Remove Splash Plate, Drip Tray and front and rear bin covers.
- E. Remove Agitator Pin from Agitator Shaft. Slide Agitator Shaft rearward out of Motor Shaft and pull out of rear Bearing to remove.
- F. Remove Dispensing Wheel from Motor Shaft by sliding rearward.
- G. Remove Dispensing Wheel Shroud.
- H. Using cleaning solution, described in Section 2.2, and a clean cloth or soft brush, clean all removable parts, sides of Ice Bin, Ice Chute, and surface of aluminum casting.
- I. Using hot water, thoroughly rinse away the cleaning solution.
- J. Wearing sanitary gloves, soak a clean cloth towel in sanitizing solution, described in Section 2.2, and wash all surfaces of removable parts, sides of Ice Bin, Ice Chute, and surface of aluminum casting.
- K. Wearing sanitary gloves, reassemble all removable parts.
- L. Fill unit with ice and replace Top Cover.

NOTE

Lancer does not recommend the use of shaved, flake, nugget, or pellet ice in dispensers not properly equipped to do so.

- M. Reconnect Dispenser to power source.

2.5 CLEANING AND SANITIZING BEVERAGE COMPONENTS - FIGAL SYSTEMS

NOTE

Extended lengths of product lines may require more time for flushing and rinsing lines than stated below.

- A. Disconnect syrup lines from syrup containers (for example, quick disconnects, figal containers, etc.).
- B. Connect hose half of syrup line to a syrup tank filled with clean, potable, room temperature water. Connect CO₂ supply hose to tank and pressurize.
- C. Activate valve until water is dispensed. Flush and rinse line and fittings for a minimum of 60 seconds to remove all traces of residual product.

WARNING

TO AVOID POSSIBLE PERSONAL INJURY OR PROPERTY DAMAGE, DO NOT ATTEMPT TO REMOVE SYRUP TANK COVER UNTIL CO₂ PRESSURE HAS BEEN RELEASED FROM TANK.

- D. Disconnect CO₂ supply hose from the water filled syrup tank.
- E. Following the instructions as described in Section 2.2 above, mix appropriate amount of cleaning solution. Fill a tank with this solution. Connect hose half of syrup line to the tank. Connect CO₂ supply hose to tank and pressurize.
- F. Activate valve and draw cleaning solution through lines for a minimum of 60 seconds. This will ensure line is flushed and filled with cleaning solution. Allow line to stand for at least 30 minutes.
- G. Disconnect CO₂ supply hose from the tank.
- H. Connect hose half of syrup line to a tank filled with clean, potable, water at a temperature of 90° to 110°F. Connect CO₂ supply hose to tank and pressurize.
- I. Activate valve to flush and rinse line and fittings for a minimum of 60 seconds to remove all traces of cleaning solution. Continue rinsing until testing with phenolphthalein shows that the rinse water is free of residual detergent.

WARNING

TO AVOID POSSIBLE PERSONAL INJURY OR PROPERTY DAMAGE, DO NOT ATTEMPT TO REMOVE SYRUP TANK COVER UNTIL CO₂ PRESSURE HAS BEEN RELEASED FROM TANK.

- J. Disconnect CO₂ supply hose from the tank.
- K. Following the instructions as described in 2.2 above, mix appropriate amount of sanitizing solution. Fill a tank with this solution. Connect hose half of syrup line to the tank. Connect CO₂ supply hose to tank and pressurize.
- L. Activate valve and draw sanitizing solution through line for a minimum of 60 seconds. This will ensure line is flushed and filled with sanitizing solution. Allow line to stand for at least 30 minutes.
- M. Disconnect CO₂ supply hose from the tank.
- N. Reconnect syrup lines to syrup containers (for example, quick disconnects, figal containers, etc.) and ready unit for operation.
- O. Draw drinks to refill lines and flush the sanitizing solution from the dispenser.

NOTE

Please note that a fresh water rinse cannot follow sanitization of equipment. Purge only with the end use product until there is no after taste in the product. This is an NSF requirement.

- P. Test dispenser in normal manner for proper operation. Taste dispensed product to ensure there is no off-taste. If off-taste is found, additional flushing of syrup system may be required.
- Q. Repeat cleaning, rinsing, and sanitizing procedures for each valve and each circuit.

2.6 CLEANING AND SANITIZING BEVERAGE COMPONENTS - BAG-IN-BOX SYSTEMS

NOTE

Extended lengths of product lines may require more time for flushing and rinsing lines than stated below.

- A. Disconnect syrup quick disconnect coupling from syrup packages and connect coupling to a bag

- valve removed from an empty Bag-in-Box (BIB) package.
- B. Place syrup inlet line in a clean container filled with clean, potable, room temperature water.
 - C. Activate valve until water is dispensed. Flush and rinse line and fittings for a minimum of 60 seconds to remove all traces of residual product.
 - D. Following the instructions as described in 2.2 above, mix appropriate amount of cleaning solution in a clean container. Place syrup inlet line in container filled with cleaning solution.
 - E. Activate valve and draw cleaning solution through lines for a minimum of 60 seconds. This will ensure line is flushed and filled with cleaning solution. Allow line to stand for at least 30 minutes.
 - F. Place syrup inlet line in a clean container filled with clean, potable, water at a temperature of 90° to 110°F.
 - G. Activate valve to flush and rinse line and fittings for a minimum of 60 seconds to remove all traces of cleaning solution. Continue rinsing until testing with phenolphthalein shows that the rinse water is free of residual detergent.
 - H. Following the instructions as described in 2.2 above, mix appropriate amount of sanitizing solution in a clean container. Place syrup inlet line in container filled with sanitizing solution.
 - I. Activate valve and draw sanitizing solution through line for a minimum of 60 seconds. This will ensure line is flushed and filled with sanitizing solution. Allow line to stand for at least 30 minutes.
 - J. Remove bag valve from quick disconnect coupling and reconnect syrup inlet line to syrup package. Ready unit for operation.
 - K. Draw drinks to refill lines and to flush the chlorine sanitizing solution from the dispenser.

NOTE

Please note that a fresh water rinse cannot follow sanitization of equipment. Purge only with the end use product until there is no after taste in the product. This is an NSF requirement.

- L. Test dispenser in normal manner for proper operation. Taste dispensed product to ensure there is no off-taste. If off-taste is found, additional flushing of syrup system may be required.
- M. Repeat cleaning, rinsing, and sanitizing procedures for each valve and each circuit.

3. HOW TO OPERATE AND ADJUST THE LANCER FS22

3.1 NORMAL OPERATION

- A. Fill cup with desired amount of ice.
- B. Place cup under nozzle below desired brand.
- C. Select up to two (2) desired bonus flavors from those available on the keypad, by pressing against the flavor label once. Selection indicator light will illuminate, acknowledging selection(s).
- D. Press and hold brand label to fill cup.
- E. Top off cup as desired

3.2 PROGRAMMING AND SETUP SOFTWARE

A. INTRODUCTION

NOTE:

The following descriptions reflect Firmware Version **V0.161** for the Controller Board and Firmware Version **V1.132** for the Valve Boards. *Lancer reserves the right to make changes and updates as required. If you have any questions regarding the latest versions of programs, please contact your Lancer representative.*

1. The Lancer FS22 has been factory preset to the settings necessary to comply with the brand/ flavor version of the unit requested by the customer.
2. Adjustments or upgrades should only be performed by trained personnel. For any upgrades, an upgrade kit may be purchased. It will include all of the hardware required for the upgrade, including bezels and valves.
3. The valves can be adjusted by scrolling through the menus (see Figure 5) using the **UP** and **DOWN** arrows. By pressing the **ENTER** button, a submenu is revealed. In the submenu, the individual valves can be adjusted to the desired configuration.

INITIALIZATION SCREEN (BOOT UP ONLY)

LANCER FS SERIES
VER. 0.161

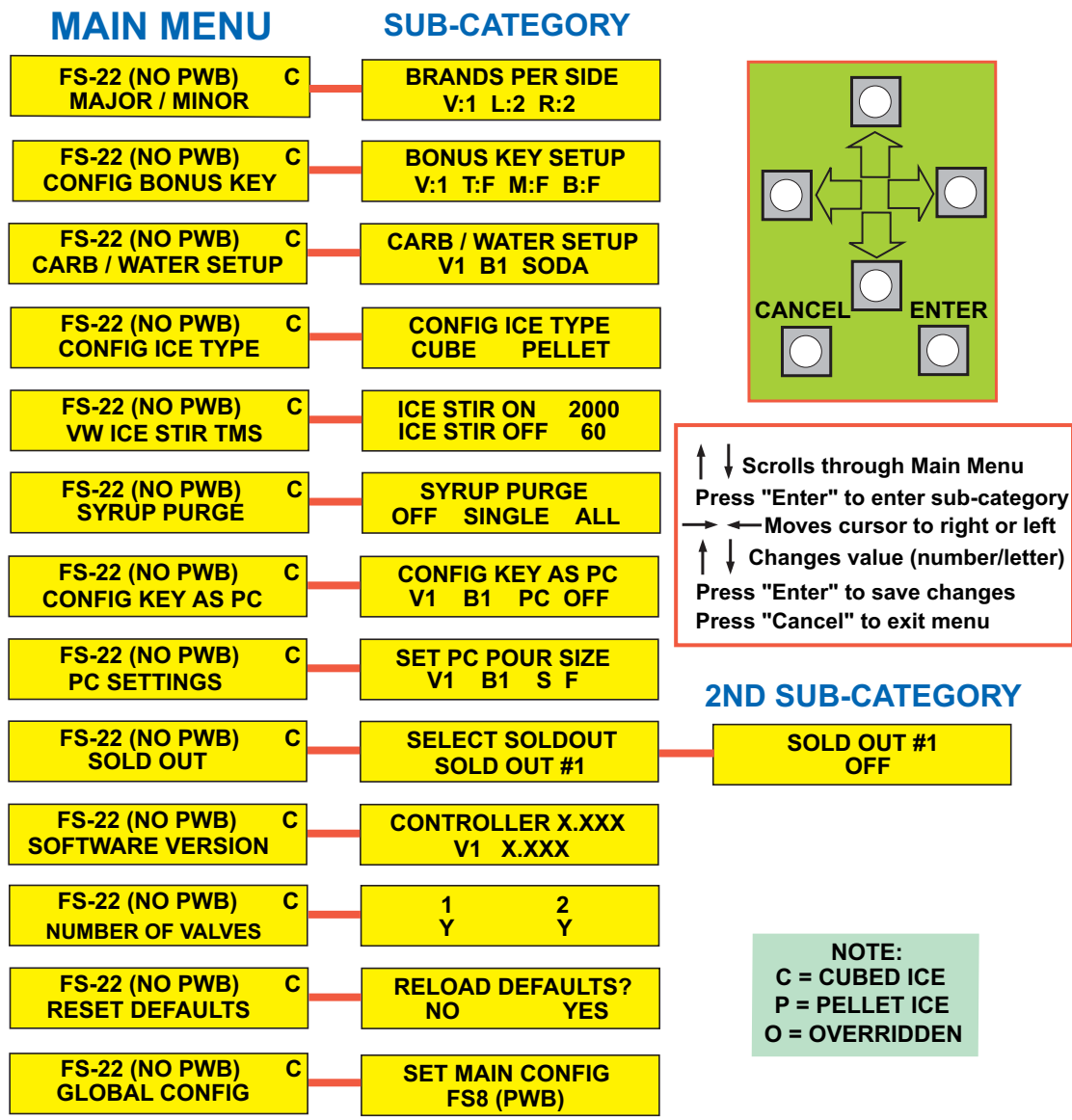


Figure 5

B. MENUS AND SUBMENUS

1. Bonus Flavors

- a. Decide if the bonus flavors will be set to add an injected flavor to the brands or dispense carbonated water/plain water.
- b. Choose the **Valve** number (1-2) by scrolling **UP** and **DOWN** arrows.
- c. Use the **LEFT** and **RIGHT** arrows to shift to the **Top**, **Middle**, or **Bottom** "bonus" flavors categories.
- d. Press the **UP** and **DOWN** arrows under **Top**, **Middle**, or **Bottom** to select it as an injected flavor, carbonated **Soda** water, or plain **Water**.
- e. Press **ENTER** to finalize settings. Panel lights should confirm finalized configurations.

2. Brands
 - a. Decide how the brands will be setup.
 - b. Choose the **Valve number (1-2)** by scrolling **UP** and **DOWN** arrows.
 - c. Use the **LEFT** and **RIGHT** arrows to shift to the **Left** or **Right** categories. The **Left** or **Right categories are set with the assumption that you are looking at them from the front.**
 - d. Press **UP** and **DOWN** arrows under **Left (1-2)** or **Right (1-2)** to select the brand per side as a single or double. For example, for bezel PN 05-2120, V:1 L:1 R:2
3. Soda/Water
 - a. Decide which switch locations will be carbonated and/or non-carbonated drinks.
 - b. Choose the **Valve number (2-3)** by scrolling the **UP** and **DOWN** arrows.
 - c. Use the **LEFT** and **RIGHT** arrows to shift to the number categories (**1-4**). *The number categories correspond to the brand location (per valve) that is being configured.*
 - d. Press the **UP** and **DOWN** arrows under the number to select if that brand will be carbonated **Soda** or non-carbonated plain **Water**. If a single brand per side, only number **1** and/or **3** need to be set.

3.3 PURGING THE CARBONATION SYSTEM

- A. Turn power off.
- B. Turn the pressure adjusting screw on the CO2 regulator counter-clockwise, all the way out.
- C. The relief valve for the built-in carbonator is located on the right hand side behind the dispenser splash plate. Lift the yellow lever on the top of the relief valve until water flows from the holes in the relief valve. Allow pressure on the regulator to drop and then lock the relief valve lever into place.
- D. Turn the pressure adjusting screw on the CO2 regulator clockwise, until there is resistance. Open the CO2 cylinder handle slowly. Turn the CO2 pressure regulator up (clockwise) slowly to 75 PSIG (5.1 bar).
- E. Reconnect the power supply. The remote carbonator pump will activate periodically to fill carbonator with the appropriate amount of water.

NOTE

To check for CO2 leaks, close the valve on the CO2 cylinder and observe if the pressure to the system drops with the cylinder valve closed for five (5) minutes. Open the cylinder valve after check.

3.4 PURGING THE WATER AND SYRUP SYSTEMS

- A. Open a dispensing valve until water and syrup are flowing steadily from the valve.
- B. Repeat procedure "A" for each valve.
- C. Check all of the unit's syrup and water connections for leaks and repair if necessary.
- D. Replace the unit's splash plate and cup rest.

3.5 ADJUSTING WATER FLOW (LFCV®)

- A. The water flow can be adjusted between 2.50 oz/sec (73.9 ml/sec) and 3.75 oz/sec (110.9 ml/sec) on all dispensing valves using the following procedure.
- B. Ice should be on the cold plate for at least one (1) hour before you attempt to brix the valves. The drink temperature should be no higher than 40°F (4.4°C) when the brix is set.
- C. Remove dispenser merchandiser assembly.
- D. Rotate switches panel, forward and down by releasing the two pin latches on its sides.
- E. Rotate light panel, forward and up by releasing the two pin latches on its sides towards the top.
- F. Remove nozzle by twisting counter clockwise and pulling down.
- G. Install Lancer syrup separator (PN 54-0362) in place of nozzle.
- H. Activate dispensing valve to fill separator syrup tube.
- I. Hold a Lancer brix cup under the syrup separator and dispense water and syrup into cup for four (4) seconds. Divide number of ounces (ml) of water in cup by four (4) to determine water flow rate per second.
- J. To obtain the proper flow, remove protective cap, and use a screwdriver to adjust water flow control.
- K. Repeat process for each "water valve". There can be up to six (6) gray "water valves" on this dispenser [up to four (4) carbonated "water valves" and two (2) plain "water valves"].

3.6 WEEKLY ADJUSTING OF WATER TO SYRUP (RATIO) BRUX (LFCV®)

- A. Hold the Lancer brix cup under the syrup separator and activate valve. Check brix.
- B. To obtain the proper brix, use screwdriver to adjust syrup flow control.
- C. Once proper ratio is obtained repeat to verify.
- D. Remove syrup separator (PN 54-0362 installed in Section 3.5.G above).
- E. Install nozzle.
- F. Repeat process for each valve.
- G. Once all of the valves have been brixed, restore switches panel and light panel to their original positions.

3.7 CARBONATOR PUMP MODIFICATIONS

NOTE

The electric, positive displacement, rotary vane pump with replaceable (250 PSI) bypass, is maintenance-free. Only trained personnel should service pump. Additionally, it is not recommended that the pump be used with hard water.

- A. Servicing
 1. Turn unit off.
 2. Remove drip tray and splash plate.
 3. Turn the CO₂ off, activate the relief valve.
 4. Once the pressure has been released, untighten the inlet/outlet nuts into/out of the pump

3.8 PRIMING THE SYRUP PUMP AT THE CORRECT PRESSURE

For the Syrup Pump to operate correctly, it is necessary to remove all air from the system. After all lines to the Syrup Pump and Syrup Packages are connected and CO₂ (or air pressure) is set, the system should be primed as follows:

- A. Disconnect Wire to Soda Solenoid or close Shut Off Valve on soda side so that only syrup will be dispensed when Dispensing Valve is operated.
- B. Operate Valve for five (5) seconds and then release for five (5) seconds. Continue drawing syrup until flow is steady and full.
- C. After priming, look for air pockets in Syrup Inlet or Outlet Lines. Repeat priming to remove any air pockets found.
- D. After priming, replace the Wire to Soda Solenoid or open Soda Shut Off Valve on Dispensing Valve.
- E. Repeat above procedure for all Syrup Pumps.

3.9 REPLENISHING BIB (BAG-IN-BOX) SYRUP SUPPLY

- A. Remove empty Syrup Package from system by turning Collar on Quick Disconnect Coupling counterclockwise.
- B. On a new Package, push in on tab located above perforated opening flap.
- C. After breaking seal on flap, pull the flap up.
- D. Reach in the box and pull the Bag Valve out. Remove the Dust Cap.
- E. Connect the Quick Disconnect Coupling by turning the Collar clockwise until stopped by the Bag Valve.
- F. The Lancer Sold-Out Device will reset automatically.
- G. If air has entered the Syrup System, prime the Syrup Pump following the instructions in Section 3.3

4. TROUBLESHOOTING GUIDE FOR FS22 DISPENSER

TROUBLE	CAUSE	REMEDY
4.1 No product when switch is activated. (Switch panel does NOT light up when activated).	A. Keyswitch is off, or Keyswitch harness disconnected. B. 9-pin valve harness is disconnected. C. Faulty switch assembly. D. No power to unit.	A. Turn Keyswitch "ON" and/or reconnect Keyswitch harness. B. Turn off power , reconnect 9-pin harness, and restore power. C. Replace switch assembly. D. Check internal breaker and incoming power.
4.2 No product when switch is activated (switch panel DOES light up when activated).	A. 25-pin valve harness is disconnected. B. Faulty switch assembly.	A. Turn off power , reconnect 25-pin harness, and restore power. B. Replace switch assembly.
4.3 Push Chute and nothing happens.	A. Dispenser not connected to power source. B. Microswitch defective. C. Wiring Harness not plugged in. D. PC Board defective.	A. Connect Dispenser to power source. B. Replace Microswitch. C. Plug in Wiring Harness. D. Replace PC Board.
4.4 Push Chute. Ice Door opens but Motor does not run.	A. Wiring Harness not plugged in. B. PC Board defective. C. Motor defective.	A. Plug in Wiring Harness. B. Replace PC Board. C. Replace Motor.
4.5 Push Chute. Motor runs but Ice Door does not open.	A. Solenoid not connected to PC Board. B. Solenoid defective. C. PC Board defective. D. Solenoid bracket screwed too low and not opening completely.	A. Connect Solenoid to PC board. B. Replace Solenoid. C. Replace PC Board. D. Unscrew solenoid bracket, raise solenoid and re-screw bracket.
4.6 Push Chute, Ice Door opens, Motor runs, but no ice dispenses, or ice is of poor quality.	A. Dispenser is out of ice. B. Agitator Pin is missing or damaged. C. Poor ice quality.	A. Fill unit with ice. B. Replace Agitator Pin. C. Install water filtration/purification to ice maker supply water.
4.7 Valves do not operate.	A. Keyswitch is off, or Keyswitch harness disconnected. B. Circuit Breaker tripped. C. Unit not plugged in.	A. Turn Keyswitch and/or make sure Keyswitch harness is connected. B. Reset Circuit Breaker. C. Plug in Dispenser.
4.8 Water in Ice Bin.	A. Coldplate Drain is obstructed.	A. Remove Splash Plate to obtain access to Drain tubes and clear accordingly.
4.9 Water leakage around nozzle.	A. Damaged or improperly installed o-ring on Nozzle.	A. If damaged, replace. If improperly installed, adjust.
4.10 Miscellaneous leakage.	A. Gap between parts. B. Damaged or improperly installed O-rings.	A. Tighten appropriate retaining screws. B. Replace or adjust appropriate O-rings.
4.11 Noisy/Cavitating Carbonator Pump	A. Insufficient incoming water supply pressure.	A. Verify incoming supply water pressure to Carbonator Pump is a minimum of 25 psi Carbonator Pump (maximum of 50 psi).

TROUBLE	CAUSE	REMEDY
4.12 Insufficient "Soda" flow. (Carbonated drinks)	<ul style="list-style-type: none"> A. Insufficient CO2 supply pressure. B. Shutoff on mounting block not fully open. C. Foreign debris in Soda Flow Control. 	<ul style="list-style-type: none"> A. Verify incoming CO2 pressure between 70 - 75 psi. B. Open shutoff fully. C. Remove Soda Flow Control from valve and clean out any foreign material to ensure smooth spool movement.
4.13 Insufficient Water flow. (Plain Water drinks)	<ul style="list-style-type: none"> A. Insufficient incoming supply pressure. B. Shutoff on mounting block not fully open. C. Foreign debris in Water flow control. D. Water filtration problem. 	<ul style="list-style-type: none"> A. Verify incoming supply water pressure to Plain Water inlet is a minimum of 70 psi (maximum of 125 psi). B. Open shutoff fully. C. Remove Water Flow Control from valve and clean out any foreign material to ensure smooth spool movement. D. Service water system as required.
4.14 Insufficient syrup flow.	<ul style="list-style-type: none"> A. Insufficient CO2 pressure to BIB pumps. B. Shutoff on mounting block not fully open. C. Foreign debris in syrup flow control. D. Defective BIB Pump. 	<ul style="list-style-type: none"> A. Adjust CO2 pressure to 80 psi (Minimum: 70 psi) for BIB pumps. B. Open shutoff fully. C. Remove Syrup Flow Control from valve and clean out any foreign material to ensure smooth spool movement. D. Replace pump.
4.15 Erratic ratio.	<ul style="list-style-type: none"> A. Incoming water and/or syrup supply not at minimum flowing pressure. B. Foreign debris in water and/or syrup flow control. C. CO2 regulator malfunction. 	<ul style="list-style-type: none"> A. Check pressure and adjust. B. Remove flow control from suspected valve and clean out any foreign material to ensure smooth spool movement. C. Repair or replace CO2 regulator, as required.
4.16 Water only dispensed; no syrup; or syrup only dispensed; no water.	<ul style="list-style-type: none"> A. Syrup BIB empty. B. Water or syrup shutoff on mounting block not fully open. C. Improper or inadequate water or syrup supply. D. CO2 pressure to syrup pump(s) too low. E. Stalled or inoperative BIB pump. F. Kinked line. G. CO2 Regulator malfunction. 	<ul style="list-style-type: none"> A. Replace syrup BIB as required. B. Open shutoff fully. C. Remove valve from mounting block and open shutoffs slightly and check water and syrup supply. If no supply, check dispenser for or other problems. Ensure BIB connection is engaged. D. Check the CO2 pressure to the pump to ensure it is between 70 - 80 psi. E. Check CO2 pressure and/or replace pump. F. Remove kink or replace line. G. Repair or replace CO2 regulator as required.
4.17 Valve will not shut off.	<ul style="list-style-type: none"> A. Debris in solenoid seat. B. Solenoid plunger "sticking" 	<ul style="list-style-type: none"> A. Activate valve a few times to try and free debris. If that doesn't eliminate the problem, remove the solenoid coil and plunger, and clean out any foreign material. B. Replace Solenoid coil.

TROUBLE	CAUSE	REMEDY
4.18 Syrup only dispensed. No water, but CO2 gas dispensed with syrup.	A. Improper water flow to dispenser. B. Carbonator pump motor has timed out. (A message will be displayed on the LCD screen). C. Liquid level probe not connected properly to PCB. D. Faulty PCB assembly. E. Faulty liquid level probe.	A. Check for water flow to dispenser. B. Reset by turning the unit OFF and then ON (by using the Circuit Breaker on the Power Supply, or momentarily unplugging unit). C. Check connections of liquid level probe to PCB assembly. D. Replace PCB assembly. E. Replace liquid level probe.
4.19 Excessive foaming.	A. No ice in bin. B. Incoming water or syrup temperature too high. C. CO2 pressure too high. C. Water flow rate too high. E. Nozzle and diffuser not clean. F. Air in BIB lines.	A. Fill bin with ice , and allow coldplate to re-stabilize. B. Correct prior to dispenser. C. Adjust CO2 pressure downward, but not less than 70 psi. D. Readjust and reset ratio. E. Remove and clean. F. Bleed air from BIB lines.
4.20 Water continually leaking at connections.	A. Loose water connection(s). B. Flare seal washer leaks.	A. Tighten water connections. B. Replace flare seal washer.
4.21 Water leaking from Ice Door.	A. Securing screws loosened. B. Ice Door improperly seated.	A. Tighten screws. B. Reattach door assembly to dispenser.
4.22 Circuit breaker tripping.	A. Valve wire harness(es) shorted to itself or Faucet Plate. B. Controller PCB is bad. C. Secondary wire harness is shorted. D. Power Supply is bad.	A. Detect short by disconnecting valve harnesses from Switch Panel [(4) 25-pin harnesses and (4) 9-pin harnesses]. Restore power. If breaker does NOT trip, then find and replace shorted harness. If breaker still trips, re-install the (8) harnesses, and proceed to Step B, below. B. Detect by disconnecting the white, 5-pin harness from the controller PCB. Restore power. If breaker does NOT trip, then replace controller PCB. If breaker still trips, re-install the white 5-pin harness and proceed to Step C, below. C. Locate short from a motor or solenoid harness, and replace as necessary. D. Detect short by disconnecting ALL harness(es) connected to Power Supply. Restore power. If breaker still trips, replace Power Supply.
4.23 BIB pump does not operate when dispensing valve is opened.	A. Out of CO2, CO2 not turned on, or low CO2 pressure. B. Out of syrup. C. BIB connector not tight. D. Kinks in syrup or gas lines.	A. Replace CO2 supply, turn on CO2 supply, or adjust CO2 pressure to 70-80 psi. B. Replace syrup supply. C. Fasten connector tightly. D. Straighten or replace lines.
4.24 BIB pump operating, but no flow.	A. Leak in syrup inlet or outlet line. B. Defective BIB pump check valve.	A. Replace line. B. Replace BIB pump.

TROUBLE	CAUSE	REMEDY
4.25 BIB pump continues to operate when bag is empty.	A. Leak in suction line. B. Leaking o-ring on pump inlet fitting. C. Defective syrup BIB pump.	A. Replace line. B. Replace o-ring. C. Replace defective pump.
4.26 BIB pump fails to restart after bag replacement.	A. BIB connector not on tight. B. BIB connector is stopped up. C. Kinks in syrup line.	A. Tighten BIB connector. B. Clean out or replace BIB connector. C. Straighten or replace line.
4.27 BIB pump fails to stop when dispensing valve is closed.	A. Leak in discharge line or fittings. B. Empty BIB. C. Air leak on inlet line or bag connector.	A. Repair or replace discharge line. B. Replace BIB. C. Repair or replace.
4.28 Low or no carbonation.	A. Low or no CO ₂ . B. Low water pressure. C. Worn or defective carbonator pump. D. Backflow preventer not allowing water to flow. E. Probe malfunctioning. F. PCB malfunctioning.	A. Check CO ₂ supply. Adjust CO ₂ pressure to 70 psi. B. Need water a booster kit. C. Replace carbonator pump. D. Replace backflow preventer, noting the flow direction arrow (from pump-to-coldplate). E. Replace Probe. F. Replace PCB.

5. EXTRA CAPABILITIES

5.1 AUTOMATIC AGITATION AND RESETTABLE BREAKER

WARNING

THIS UNIT IS EQUIPPED WITH AUTOMATIC AGITATION. IT MAY ACTIVATE UNEXPECTEDLY. DO NOT PLACE HANDS, OR FOREIGN OBJECTS IN THE ICE STORAGE COMPARTMENT. WHEN UNIT IS BEING SERVICED, CLEANED, OR SANITIZED, UNPLUG DISPENSER FROM THE POWER SOURCE.

- A. Resettable breaker switch should not be used as a substitute for unplugging the dispenser from power source to service unit.
- B. Each Series 14400 ice beverage dispenser is equipped with automatic agitation for the ice bin.
 1. The unit is shipped with timing set at two (2) seconds ON every 60 minutes for **cubed** ice.
 2. The unit is shipped with timing set at four (4) seconds ON every 150 minutes for **pellet** ice.

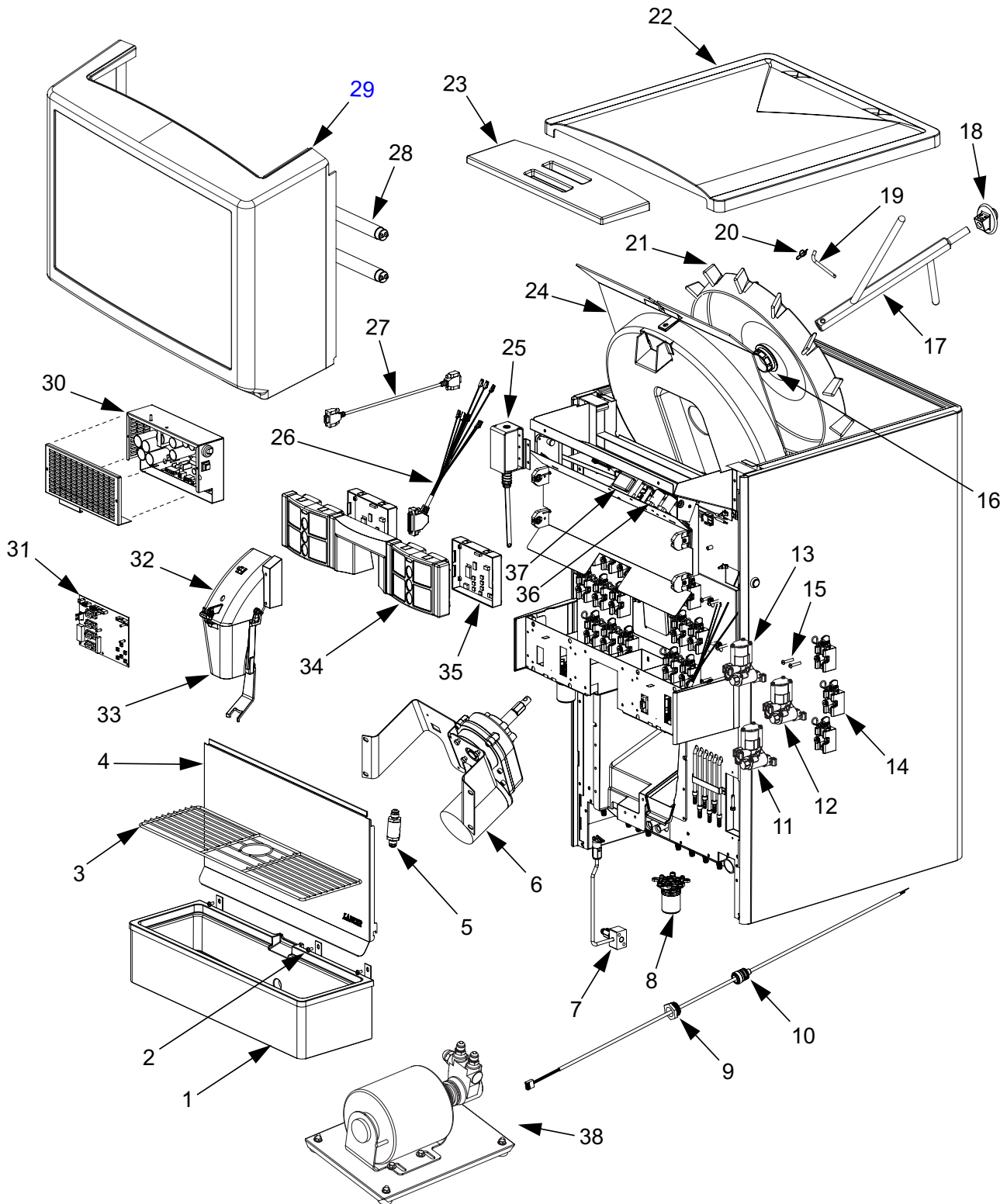
5.3 DIAGNOSTIC

REPROGRAMMING

Only trained technicians should attempt any kind of reprogramming to new firmware version releases.

6. ILLUSTRATIONS AND PARTS LISTINGS

6.1 FINAL ASSEMBLY



6.1 FINAL ASSEMBLY (CONTINUED)

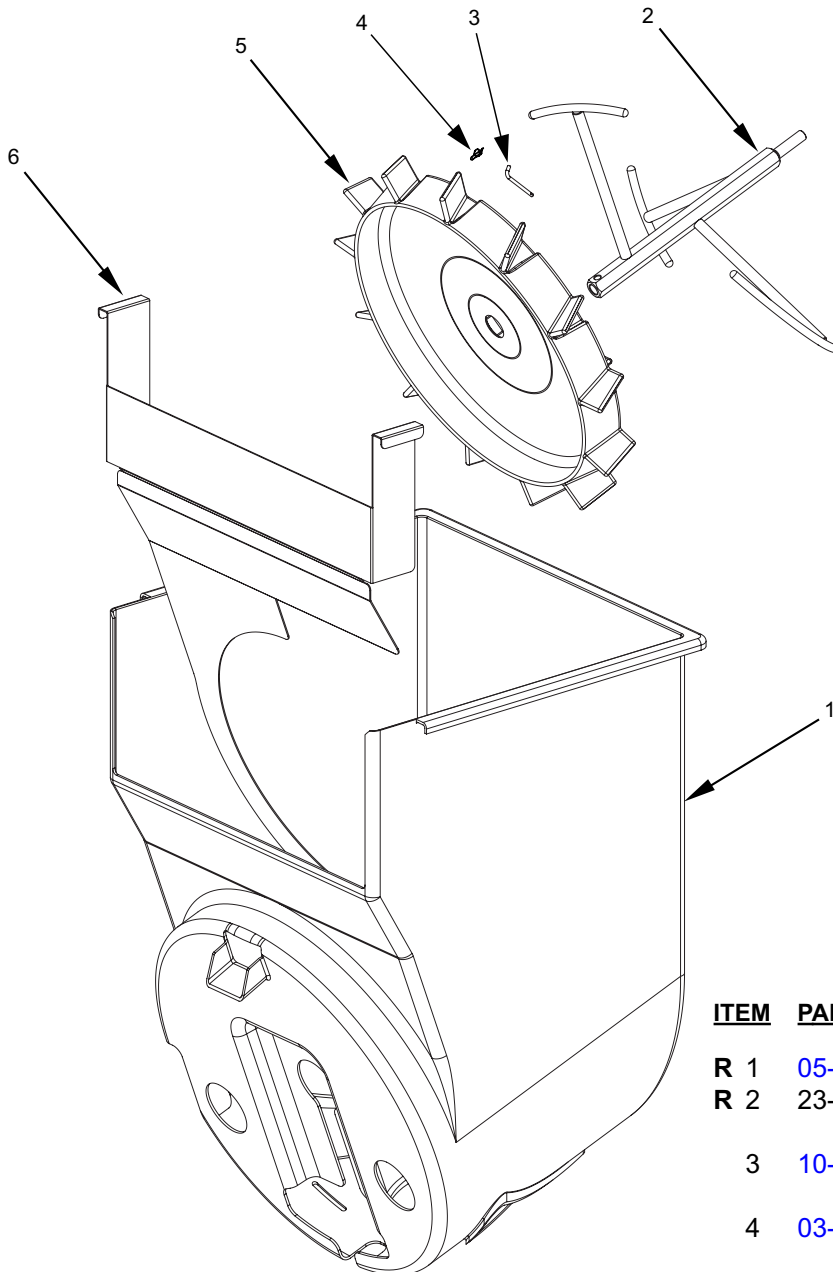
<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Item</u>	<u>Part No.</u>	<u>Description</u>
-	85-14408-06-2	IBD, ACMB, 22", 150#, 8/6, LFCV			
-	85-14408N-06-2	IBD, ACMB, 22", 150#, 8/6, LFCV, Pellet			
R 1	82-3441/01	Drip Tray Assy, IBD22	R 24	05-1309/02-01	Shroud, Dispensing Wheel, MOD, IBD
2	04-0236	Screw, 10-24 x 0.375, PHD, PH, MS, SS	R 25	23-1029	Plunger Assy, Solenoid
3	23-0669/01	Cup Rest, Wire, 22", IBD	R 26	52-2985	Harness, Valve 25-pin, FS-16, Sealed
4	30-9194	Splash Plate, FS-8	27	52-2686	Harness, Control-To-Valve, 9-pin, M/F, FS-8
5	17-0556	Check Valve, Vented, 5/8-18, Watts	R 28	12-0146/01	Lamp, 18", 5W, T8, Daylight
R 6	82-3795	Motor Assy, Gear, 115V, 1/7HP, IBD	29	82-3771	Merchandiser, Assy, FS-22
7	82-3370	CO ₂ Assy, Inlet/P-Off, FS-16	R -	06-2994-01	Graphic, FS-22, Warm Blue
8	54-0289	Nozzle Assy, Multi-Flavor	R -	06-2994-02	Graphic, FS-22, Brilliant Yellow
9	01-2214	Nut, Swivel, Probe, Carb, FS-16	R 30	82-3664	Assy, Switching Power Supply, FS-8
10	52-2751/02	Probe Cord Assy, Carb, FS-16	R 31	52-2820/01	PCB Assy, FS-IBD Controller Board
R 11	82-3020	Valve Assy, LFCV, .2 Syrup Injection, Natural (Spare with Adapter)	32	82-3538	Ice Chute Assy, IBD30, Pellet
R 12	82-3024	Valve Assy, LFCV, 3.0 - 4.5, Soda/Water, Gray (Spare with Adapter)	33	05-2258	Chute, Lower, IC
R 13	82-3023	Valve Assy, LFCV, 3.0 - 4.5, Syrup, Black (Spare with Adapter)	34	05-2058	Bezel, M-Brand, 2L/2R
R 14	82-2317/01	Block Mounting Assy, SGL	35	82-3630	Switch Assy, FS, 2L/2R
15	04-1089	Screw, 10-32 x 1.000, RH, PH/SL	36	12-0104	Starter, with Condenser, IBD
16	02-0406	Seal, Shaft, Motor, IBD	37	12-0188	Ballast, Fluorescent Light, LC-14-20-C
17	23-1373	Agitator Assy, FS/IBD, HEX	38	82-3791	Pump Assy, Remote, FS22, 1/3 HP
18	05-1555	Bearing, Agitator, Rear, IBD			
19	10-0762	Pin, Hex Design, FS-16			
20	03-0368	Retainer, Pin, Agitator, IBD			
R 21	82-3556	Dispensing Wheel Assy, Hex			
22	05-1467	Lid, Back, IBD22, RND			
R 23	05-1476/01	Lid, Front, IBD, RND			

R in margin indicates change

6.2 PELLET ICE ASSEMBLY AND PARTS LISTING

NOTICE:

The Pellet Ice components listed on this Instruction Sheet are to be used ONLY in conjunction with Nugget, Cubelet, or Chewblet ice. LANCER makes no warranty of any kind with regard to these components being used with any other kind of ice.



<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
R 1	05-2325/01	Ice Shroud, IC
R 2	23-1401/01	Agitator Assy, Helical, IC
3	10-0762	Pin, Hex Design, FS-16
4	03-0368	Retainer, Pin, Agitator, IBD
5	82-3651	Dispensing Wheel Assy, Pellet Ice
R 6	30-9801/01	Shield, Nugget, IC

R in margin indicates change

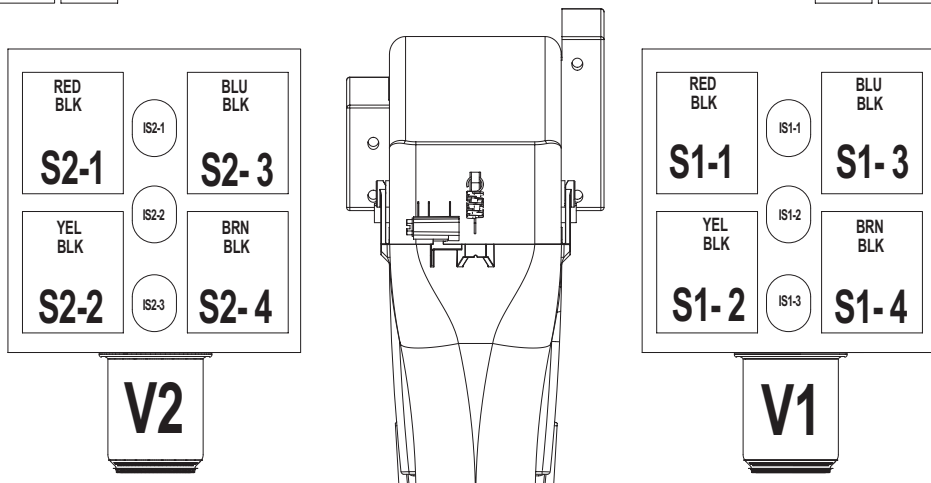
6.4 PLUMBING DIAGRAM WITH VALVE WIRING

VALVE HARNESS DIAGRAM

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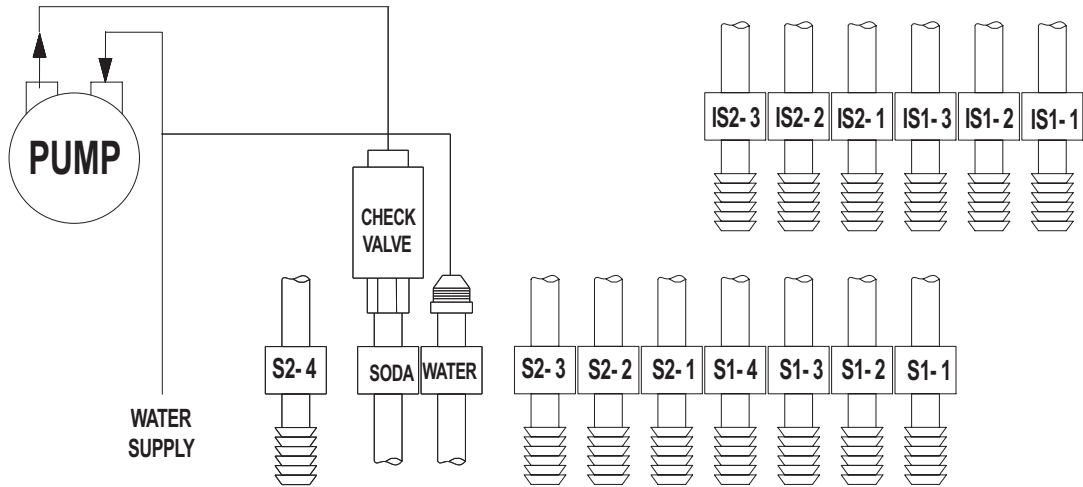
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PLUMBING DIAGRAM

*(Continued from previous page)***Bras Sulamericana LTDA. - Brasil**

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ENG FAX: (210) 310-7096
ACCT FAX: (210) 310-7091
PURCH FAX: (210) 310-7094

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260 10, Mexico
Phone: 011- 52 (878) 782-6600
FAX-Purchase: 011- 52 (878) 782-5401
FAX-Accounting: 011- 52 (878) 782-9240
FAX-Engineering: 011- 52 (878) 782-2302

Warehouse

Eagle Pass Warehouse
1793 Brown Street
Building A-2
Eagle Pass, TX 78852-5423
Phone: 830-757-5770
FAX: 830-757-4381

Lancer North America

USA - Canada Sales

6655 Lancer Blvd.
San Antonio, TX 78219
Phone: (210) 310-7000
SALES FAX: (210) 310-7245
CUSTOMER SERVICE FAX: (210) 310-7250
1-800-729-1500

Georgia Office

1125 Northmeadow Parkway, Suite 116
Roswell, GA 30076
Phone: (770) 343-8828
FAX: (770) 475-8646
1-800-729-1750

Lancer Authorized Distributors

Advanced Beverage Solutions (ABS)

100 N. Gary Avenue, Suite C
Roselle, IL 60172
Phone: (847) 524-1707
(877) 814-2271
FAX: (847) 524-1710
www.absone.com

Bevco

6900 Camille Avenue
Oklahoma City, OK 73149
Phone: (405) 672-7770
800-460-4238
FAX: (405) 672-7443
e-mail: sales@bevcoinc.com

Joe Kirwan Company

119 White Oak Lane
Old Bridge, NJ 08857
Phone: (732) 679-1900
FAX: (732) 679-9236
e-mail: sales@jikirwan.com

L & M Beverage Equipment Co. Inc.

12510 Santa Fe Trail Drive
Lenexa, KS 66215
Phone: (913) 888-8988
FAX: (913) 888-9137
e-mail: L7mco@aol.com

(Update #68 - as of July 17, 2006)

Ernest F. Mariani Company

614 West 600 South
Salt Lake City, UT 84104
Phone: (801) 359-3744
FAX: (801) 531-9615
e-mail: febell@efmco.com, or
clay@efmco.com

Mark Powers & Company, Inc.

P.O. Box 72
1821 Henry Street
Guntersville, AL 35976
Phone: (256) 582-6620
FAX: (256) 582-8533
e-mail: sales@markpowers-and-company.com

Maurer Supply, Inc.

843 Rainier Avenue South
Seattle, WA 98144
Phone: (206) 323-8640
FAX: (206) 323-9286
e-mail: maurersupply@qwest.net

Simgo Ltd.

5122 Timberlea Blvd.
Mississauga, Ontario L4W 2S5
Canada
Phone: 905-602-5800
FAX: 905-602-5804
e-mail: simgo@simgo.com

Simgo (B.C.) Ltd.

16-8125 - 130th Street
Surrey, B.C. V3W 7X4
Canada
Phone: 604-590-4022
FAX: 604-590-1601

Lancer Europe

Web Site: www.lancereurope.be

Belgium - European Central Office

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e-mail: Vladimir.Demkin@ornet.ru
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Lancer Middle East/Africa
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Cairo, Egypt
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FAX: 2-02-49-33-914
Mobile Phone (GSM): 2-010-500-4007
e-mail: elsayed_lancer@msn.com

Lancer Authorized Distributors

Complete Beverage Services, Ltd.

Republic of Ireland and Northern Ireland
Gortrush Industrial Estate
Omagh County Tyrone
Northern Ireland
Office: 44-1662 250 008
FAX: 44-1662-252-991

DispenseTech - South Africa

P.O. Box 17495
Sunward Park, 1470
South Africa
Phone: 27-11-397-7455
FAX: 27-11-397-7648
e-mail: david@dispensetech.co.za

Lancer Latin America

Latin America Sales

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San Antonio, TX 78219
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1-800-729-1500
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Lancer Authorized Distributors

PromoVen, S.A. - Argentina

Contact: Rafael Mendoza
Juncal 858 - Piso 3 Depto. "L"
(1062) Buenos Aires
Argentina
Phone: (54.11)4394.7654
FAX: (54.11)4394.1193
e-mail: promoven@fibertel.com.ar
depositopromoven@fibertel.com.ar

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Please refer to the Lancer web site (www.lancercorp.com) for information relating to Lancer Installation and Service Manuals, Instruction Sheets, Technical Bulletins, Service Bulletins, etc.