*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.*

INSTALLATION AND SERVICE MANUAL

FOR THE

SLIMLINE II, JUICE DISPENSER

SPECIFICATIONS

DIMENSIONS:

Width	9 1/8 inches	(232 mm)
Depth	24 9/32 inches	(617 mm)
Height (with legs)	27 3/4 inches	(705 mm)

WEIGHT:

Shipping	106 pounds	(48 kg)
Empty	92 pounds	(42 kg)
Operating	122 pounds	(55 kg)

ELECTRICAL REQUIREMENTS (Running):

115 VAC 60 Hz 5 Amps

WATER REQUIREMENTS:

- Minimum flowing pressure of 25 PSI (1.76 kg/cm^2) at a flow rate of three (3) ounces (88.7 ml) per second.
- Connection 5/8 inch - 18 male flare (3/8 inch flare).

COMPRESSOR: 1/4 HP

CONCENTRATE CONTAINER CAPACITY:

Containers (2)	112 ounces (3.3 L)
Concentrate Container	
Constant Temperature	37°F (1.7°C)
Ice Bath Water Capacity	1.5 gallon (5.7 L)
Ice Bank	6.5 pounds (3 kg)

DRINK CAPACITY:

Four (4) per minute under 45°F (7.2°C) at 75°F (23.9°C) ambient and inlet water.
Two hundred (200) six (6) ounce (177.4 ml) drinks.

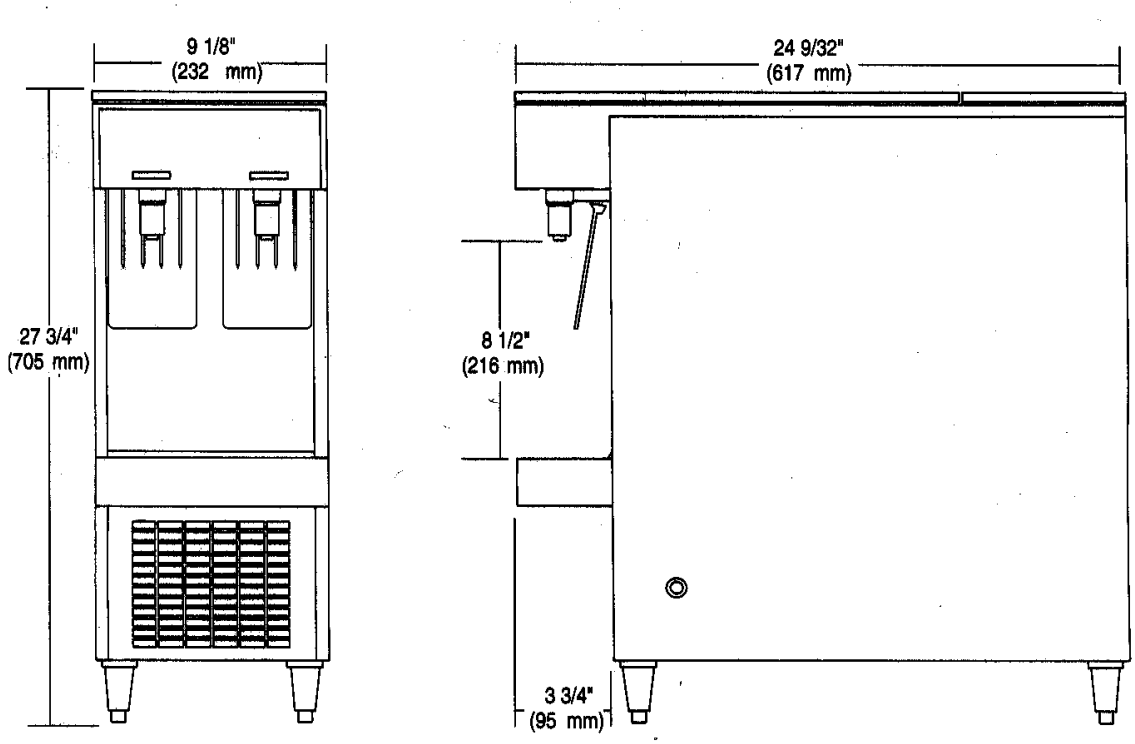
This manual supersedes Installation and Service Manual 28-0028/04, dated 04/27/05

6655 LANCER BLVD. • SAN ANTONIO, TEXAS 78219 USA • (210) 310-7000
FAX SALES
• NORTH AMERICA – 210-310-7245 • INTERNATIONAL SALES – 210-310-7242 • CUSTOMER SERVICE – 210-310-7242 •
• LATIN AMERICA – 210-310-7245 • EUROPE – 32-2-755-2399 • PACIFIC – 61-8-8268-1978 •
FAX Engineering: • 210-310-7096

REV: 03/31/06
P.N. 28–0028/05

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)



1. INSTALLATION

1.1 RECEIVING

Each unit is completely tested under operating conditions and thoroughly inspected before shipment. At the 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(s) for visible indication(s) of damage. If damage exists, have carrier note the same on the bill of lading and file a claim with the carrier.

1.2 UNPACKING

A. Cut band and remove from shipping carton.
B. Carefully, remove top portion of carton by lifting up.
C. Remove top inner carton pad from inside of packing box.
D. Remove package containing four (4) legs (PN 81-0112) (shipped in drip tray).
E. Lift unit by plywood shipping base and remove lower portion of carton.
F. Remove plywood shipping base from unit by removing screws from bottom. This is best done by moving the unit so that one side extends past the edge of the counter top or table, allowing access to screws on bottom of plywood shipping base.

NOTE

If unit is to be transported, it is advisable to leave unit secured to plywood shipping base.

G. Assemble legs (PN 81-0112) to unit by tilting unit. *DO NOT LAY UNIT ON ITS SIDE OR BACK.*
H. Inspect unit for concealed damage and if evident, notify delivering carrier and file a claim against same.
I. Remove accessory kit of loose parts from drip tray (contents listed below).

PART NO.	PART DESCRIPTION	QUANTITY
• 22-0017	Brush	1
• 05-0017	Flare Seal Washer	2
• 54-0038	Dispensing Nozzle	2
• 81-0126	Keys (for Key Switch)	2
• 49-0226	Inlet Water Shut Off	1

1.3 SELECTING COUNTER LOCATION

A. Select a location close to a properly grounded electrical outlet and water supply that meet the requirements as listed in the SPECIFICATIONS (see Cover page).

CAUTION

FAILURE TO MAINTAIN THE PROPER CLEARANCE SPACE WILL CAUSE THE COMPRESSOR TO OVERHEAT AND RESULT IN PREMATURE COMPRESSOR FAILURE.

B. Condenser air is drawn in on the bottom and front of the unit and discharged out the rear of the unit. A minimum of two (2) inches (5.08 cm) must be maintained between the back of the unit and the wall.

1.4 CONNECTING TO WATER SUPPLY

A. Flush water supply line thoroughly.
B. Remove drip tray by pulling up slightly and away from unit. Remove dispensing paddles by squeezing together at top and pulling down.
C. Remove splash plate by pulling bottom up slightly, and then out from unit.
D. Remove air intake panel by pulling up and outward.

CAUTION

USE A BACKUP WRENCH TO PREVENT DAMAGE TO STRAINER.

E. Connect the inlet water shut off to water inlet fitting on bottom of unit, using a flare seal washer.
F. Connect other end of the water tube assembly to water supply line, using a flare seal washer. Open valve on water supply and check for leaks.
G. Replace splash plate, air intake panel, drip tray and dispensing paddles.

1.5 FILLING UNIT WITH WATER

A. Remove both lids from top of unit.
B. Disconnect check valves (feed line) from top of concentrate containers by holding container down and pulling straight up on the check valve (yellow). Lift out concentrate containers by their handles.
C. Remove yellow plug from agitator deck.
D. Using a funnel or tube, fill with water until water flows out of overflow hole into concentrate container compartment. The overflow water will drain into the drip tray.

NOTE:

Facing the front of the unit, the overflow hole is in the rear wall of the concentrate container compartment.

E. Replace yellow plug.

1.6 CONNECTING TO ELECTRICAL POWER

WARNING

THIS UNIT MUST BE PROPERLY ELECTRICALLY GROUNDED TO AVOID POSSIBLE FATAL ELECTRICAL SHOCK OR SERIOUS INJURY TO THE OPERATOR. THE POWER CORD IS PROVIDED WITH A THREE PRONG GROUNDED PLUG. IF A THREE-HOLE GROUNDED ELECTRICAL OUTLET IS NOT AVAILABLE, USE AN APPROVED METHOD TO GROUND THE UNIT.

DO NOT USE EXTENSION CORDS WITH THIS UNIT. DO NOT "GANG" TOGETHER WITH OTHER ELECTRICAL DEVICES ON THE SAME OUTLET.

Plug unit power cord into electrical outlet. Compressor and condenser fan motor will run until unit builds a complete ice bank. Agitator motor will run continuously.

1.7 PURGING UNIT OF AIR

A. Turn key switch ON.
B. Using a cup, activate each dispensing valve until a steady flow of water is obtained.
C. Turn key switch OFF.

1.8 LOAD MINUTE PAKS®

A. Remove lid over concentrate compartment.
B. Minute Paks® ***must*** be completely thawed and shaken thoroughly before loading.
C. Load each Minute Pak® per the flavor label on the front of the unit.
D. Replace check valves (yellow elbow) in concentrate containers using a rotating movement while pushing down.
E. Replace lid on top of unit.

1.9 PRIMING CONCENTRATE PUMPS

A. Turn key switch ON.
B. Depress the Sold Out Reset button.

NOTE

An initial eight (8) to ten (10) ounces (236.6 ml to 295.7 ml) of water will be dispensed before the concentrate/water mixture reaches the spout.

C. Hold cup under spout and depress the dispensing paddle.

1.10 ADJUST WATER TO CONCENTRATE RATIO (°BRIX)

A. Install dispensing nozzle.
B. Inlet water is distributed through a common water system with the regulator pressure preset at 25 PSIG. With a proper water source, each spout will dispense approximately 1.2 ounces (35.5 ml) of water per second (see SPECIFICATIONS on Cover page). When mixed with concentrate (5 to 1 ratio), the finished drink will be dispensed at 1.5 ounces (44.3 ml) per second.
C. Because the ratios are factory preset electronically, they may require an adjustment at time of

installation depending on the product being dispensed. This can be accomplished by using a refractometer as follows:

1. Dispense a 5 or 6 ounce (147.9 or 177.4 ml) cup of product and discard.
2. Dispense a 5 or 6 ounce (147.9 or 177.4 ml) cup of product and stir thoroughly.
3. Using a refractometer, read the ratio (°Brix). Adjust as necessary as explained in step D below and re-Brix.

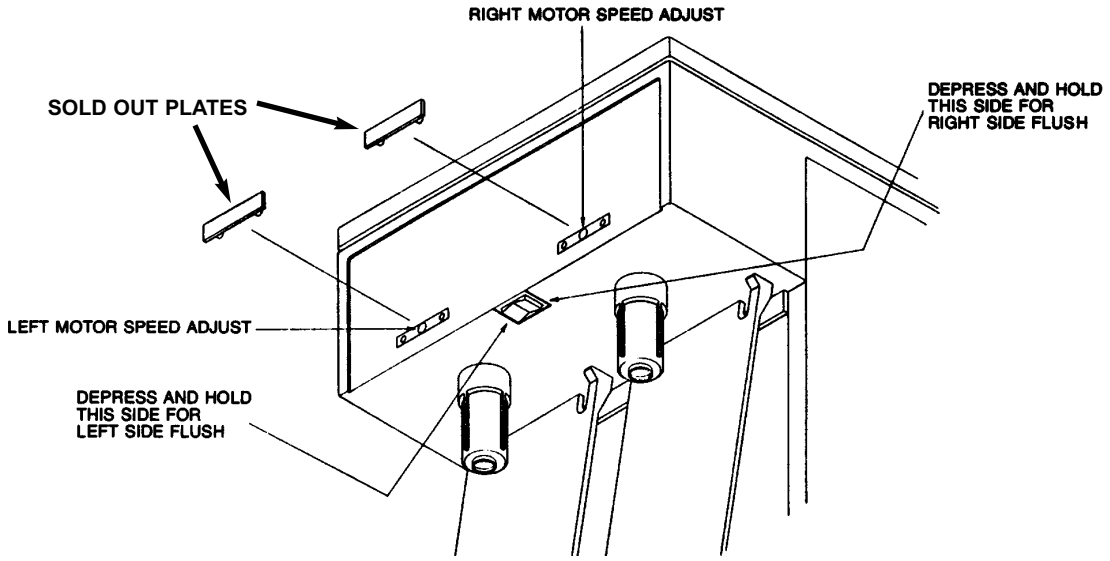
D. To adjust the °Brix, remove the Sold Out Plates from the front panel. Use a standard (straight) slot pocket screwdriver inserted *CAREFULLY* through the hole in the front panel and adjust the °Brix (motor speed) controls (see Figure 1).

To adjust the °Brix, turn the adjusting control as follows:

Decrease °Brix (less concentrate).....Clockwise
Increase °Brix (more concentrate).....Counter Clockwise

E. To set unit that has not been factory preset for a certain product, adjust °Brix and change product plate on front panel.

F. In some locations, the water supply pressure may be so low (or may fluctuate so much) that a 25 PSIG flowing water pressure cannot be maintained. As a result, the unit will not dispense a product at the proper °Brix. In this event, the regulated water pressure should be reduced below the local inlet water supply pressure so that a proper °Brix can be maintained. Reducing the regulated water pressure will reduce the finished product flow rate. Normally the minimum recommended setting is 25 PSIG flowing. To reset regulator, refer to Section 7.8 K-Q. Readjust °Brix as necessary.



Motor Speed Controls and Flush Switch
Figure 1

2. OPERATING UNIT

2.1 CHANGING PRODUCT

A. Remove nozzle from spout and clean.
B. Flush unit until only water is dispensed from spout (see Section 1.9).
C. Remove lid from top of unit.
D. Remove the Minute Pak® from the unit. Replace with Minute Pak® containing new flavor.
E. Replace lid and nozzle.
F. Depress the Sold Out Reset button.
G. Depress dispensing paddle with cup until a steady flow of pre-mixed product is obtained. Unit is now ready to dispense. Install nozzles and check °Brix (see Section 1.10).

NOTE

If the new product requires a different mixing ratio, see Section 1.10 (°Brix).

2.2 OPERATING SLIMLINE II JUICE DISPENSERS WITH SOLD OUT FEATURE

A Loading a New Package

A. Remove Top Cover and Splash Tray over Pump Assemblies (see Figure 2).
B. Minute Pak® - Remove check valve from empty package and remove package; load new package and replace check valve (see Figure 3). *Thoroughly shake Minute Pak® before loading* (see Figures 4 and 5).
C. Press red reset button next to the pump for the product just loaded (see Figure 6). The Product Out lights will turn off.
D. Replace Splash Tray and Top Cover.
E. Prime pump by dispensing approximately eight (8) ounces of product from the nozzle or until there are no air bubbles present in the concentrate tube.(see Figure 7).

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Figure 7

B. Intermittent Lock out

Every precaution has been taken to produce a Sold Out Feature which will operate properly with all of the Minute Maid® products. However, it is possible that an individual machine may lock out inadvertently. Should the machine lock out while product remains, simply press the "RESET" button.

If the machine continues to lock out, check the following:

- *Make sure that the package is thoroughly shaken and that the pump has been fully primed (no air*

bubbles present in concentrate tubing).

- ***Concentrate Tubes*** *- if the tubes are heavily stained from the product, the tube(s)* ***must*** *be changed out.*
- ***Air Leaks*** *- check that the concentrate tubes fit snugly onto the check valves and pump connections. If there is doubt as to the integrity of the connection, replace the tubing. Check the fit of the check valves into the concentrate container or Minute Pak®; it should be snug and require effort to remove. If the o-rings are worn, they must be replaced. Inspect the check valves to be sure that they are not missing internal parts. If so, replace the check valves. Perform the test procedure in Section 2.3.C (below), once all parts have been inspected and/or replaced.*

C. Test Procedure

Should you desire to determine if the Sold Out Feature is working, you may perform the following procedure:

1. Load Product into machine.
2. Press "RESET" button.
3. Dispense for 20 continuous seconds.

NOTE:

The 20 second continuous dispense is ONLY required for testing.

4. The Sold Out Feature should now be armed. To test, remove the check valve from the concentrate package. Then dispense until lock out alarm sounds (this simulates an empty package).
5. When alarm sounds, replace the check valve and press "RESET" button to return to monitoring condition.
6. If alarm does not sound, repeat test procedure. If alarm does not sound after repeating the test procedure several times, contact the Service Center.

D. Disabling of Sold Out Feature

The Sold Out Feature can be disabled by pressing the "Flush" button three (3) times (in rapid succession). The dispenser will follow with three (3) short beeps.

E. Enabling of Sold Out Feature

Press the "RESET" button to enable the Sold Out Feature. Dispenser will follow with three (3) short beeps.

2.3 CLEANING AND SANITIZING INSTRUCTIONS

For optimum dispenser performance and highest drink quality, please follow the instructions listed below for cleaning your dispenser.

CAUTION

DO NOT USE ANY POWDERS OR ABRASIVE CLEANING COMPOUNDS THAT WILL DAMAGE FINISH.

A. Daily

1. Flush each valve of dispenser until clear water flows from the nozzle.
2. Remove drip tray and cup rest. Wash drip tray and cup rest thoroughly with warm, soapy water using a mild detergent. Rinse thoroughly with clean, warm water and reinstall drip tray and cup rest to dispenser.
3. Wipe down dispenser to remove any product residue.

WARNING

REMOVE SANITIZING SOLUTION FROM DISPENSER AS INSTRUCTED. RESIDUAL SANITIZING SOLUTION LEFT IN SYSTEM COULD CREATE HEALTH HAZARD.

CAUTION

DO NOT SOAK NOZZLES IN CHLORINE SOLUTION OVERNIGHT. THIS WILL CAUSE NOZZLES TO SWELL AND PLASTIC WILL BEGIN TO DETERIORATE.

B. Weekly

1. Flush each valve of dispenser until clear water flows from the nozzle.
2. Turn off water supply to dispenser.
3. Remove lid and wash thoroughly with warm, soapy water using a mild detergent. Rinse thoroughly with clean, warm water.
4. Lift up on the check valve (white or yellow elbow) to remove it from the Minute Pak®.
5. Remove Minute Pak® from dispenser.
6. Remove nozzles and disassemble (see NOZZLE ASSEMBLY instructions). Wash thoroughly with warm, soapy water using a mild detergent. Rinse thoroughly with clean, warm water and replace. DO NOT SOAK NOZZLES IN CHLORINE SOLUTION OVERNIGHT. THIS WILL CAUSE NOZZLES TO SWELL AND PLASTIC WILL BEGIN TO DETERIORATE.
7. Fill the specially marked sanitizing container with 80 ounces of COOL chlorinated sanitizing solution (Diversol CX, or equivalent) minimum 100 PPM available chlorine, but not to exceed 200 PPM; replace sanitizing container in dispenser.
8. Replace check valve in sanitizing container.
9. Activate valve for two (2) minutes ensuring concentrate lines are full of solution. Let solution stand for five (5) minutes without dispensing.
10. Perform a second two (2) minute dispense and let stand for an additional five (5) minutes.
11. Activate valve until the sanitizing solution empties from the sanitizing container.
12. Remove check valve from sanitizing container, remove container, and pour out excess sanitizing solution.
13. Repeat for each valve.
14. Reinstall Minute Pak®, and replace check valves.
15. Run concentrate through valves to remove traces of 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. This is an NSF requirement.

16. Remove drip tray and cup rest. Wash thoroughly with warm, soapy water using a mild detergent. Rinse thoroughly with clean, warm water.
17. Wipe the dispenser with a clean damp cloth, taking care to remove all product residue.
18. Replace drip tray, and cup rest.
19. Turn on the water supply to the unit.
20. Reinstall lid.
21. Prime dispenser by holding cup under spout and activating the valve until a concentrate/water mix is dispensed.

3. PRINCIPLES OF OPERATION

3.1 WATER SYSTEM

Inlet water is distributed through the strainer to the regulator which reduces the inlet water pressure to 25 PSIG. Water is fed from the regulator through a stainless steel tube (embedded in the insulation of the tank assembly) and into the copper water coil where it is chilled to below 40°F (4.4°C). Water is then fed past a vacuum breaker through a stainless steel tube (embedded in the insulation of the tank assembly) to the front of the tank assembly and into the water solenoids. When a dispensing valve is activated, the corresponding water solenoid opens allowing water to pass into the spout and mix with concentrate.

3.2 CONCENTRATE SYSTEM

When the dispensing valve is activated, concentrate is drawn from the bottom of the concentrate container up the integral dip tube and through the check valve and concentrate tube to the inlet of the concentrate pump. It is metered by volume and pumped into the spout where it mixes with the water. The temperature of the concentrate does not effect the °Brix as long as it is above 32°F (0°C). The volume output of the concentrate pump is controlled electronically and can be adjusted to change the °Brix.

3.3 CONCENTRATE LOW LEVEL INDICATOR SYSTEM

The dispenser is equipped with an infrared sensor on each concentrate tube that senses the difference in light density that is passed through the tube. The unit reads juice characteristics and obtains a measurement (Learn Mode). If the unit senses a change in density, indicating a bubble or lack of concentrate while dispensing, the unit will go into Lock-Out Mode. When the unit is in Lock-Out Mode, it will disable the valve and turn on the Sold-Out LED. It will also beep if you depress the dispense button while in Lock-Out Mode. To enable dispensing, reload the concentrate container and press the reset button. This will clear the lock-out and put the unit into Learn Mode.

NOTE:

The Lock-Out Mode can be cleared by cycling power (key switch). When power is restored, the unit will not go into Learn Mode.

A. If the flush switch is depressed, the unit will go into flush wait mode. In this mode, the unit will not lock out. Nine (9) seconds of dispensing [in three (3) second continuous intervals] will take the unit out of Flush Wait Mode.
B. If the valve does not dispense for over one hour, the unit will go into Inactivity Wait Mode. In this mode the unit will not lock out. It will stay in this mode until a three (3) second continuous dispense occurs.
C. The unit enters Learn Mode when the reset switch is depressed. The unit will beep once when entering Learn Mode. (**Note:** If the reset switch is depressed and the unit does not beep, it is already in Learn Mode). This clears the lock-out (shuts off the red LED, disables audible alarm, and enables dispensing).
D. Pre-learn dispense - The unit will wait for 15 seconds of dispensing [in three (3) second increments]. This delay ensures that concentrate is in the sensor region of the tube before learning the concentrate.
E. Learn -The unit will "learn" the characteristics of whatever is in the sensor region of the tube when a dispense (of at least one second) occurs after the pre-learn dispense is finished.

NOTE:

If the flush button is pressed after the reset/learn button, the unit will have to clear the Flush Wait Mode before it will learn the concentrate. The Flush Wait Mode is cleared by three (3) dispenses of at least three (3) seconds each. Since the pre-learn dispense requires five (5) dispenses of at least three (3) seconds each, it should have no effect on the learn unless several seconds of dispensing occur in the pre-learn dispense mode before the flush switch is pressed. In a worst case scenario, it could take an additional nine seconds of dispensing before the learn occurs if the flush switch was pressed just before the pre-learn dispense was finished.

F. The unit may be put into or out of Disable Lock-Out Mode by depressing the flush switch three (3) times in less than two (2) seconds. When entering/leaving Disable Lock Out Mode, the unit will beep three (3) times. In Disable Lock Out Mode, the dispenser will operate without the Low Level/Sold Out features.

3.4 ELECTRONIC CONTROL SYSTEM

WARNING

THE KEY SWITCH DOES NOT DISABLE THE HIGH VOLTAGE (115 VAC) TO THE TRANSFORMER PRIMARY.

The electric cord supplies 115 VAC to the compressor, condenser fan motor, agitator motor and control transformer. Each component has circuit protection with an automatic reset feature. The only manual reset is a 0.5 AMP circuit breaker on the primary side of the control transformer, accessible on the bottom right of the control box behind the splash plate. The control transformer secondary is switched by the key switch and supplies power to the pump motors, solenoids and paddle sensors via the control printed circuit board (PCB).

All the logic functions and voltages required to operate the entire dispensing/flushing system are provided by the control PCB. There is only one (1) motor speed control circuit, but this circuit has two (2) available speed settings. This allows only one dispensing station to operate at a time, but enables each station to dispense at a different °Brix. There are three (3) light emitting diodes (LEDs)

visible through the three holes in the control box behind the splash plate. These LEDs assist with Troubleshooting and Servicing (see Section 8).

3.5 DISPENSING PADDLE SYSTEM

The dispensing paddle has an integrally sealed permanent magnet which activates the sensor behind the splash plate when the paddle is depressed. This causes the electronic system to activate the water solenoid and concentrate pump, allowing the unit to dispense product. The dispensing paddles are removable (without tools) for cleaning. Paddles can be removed by squeezing the top edges of each paddle together.

3.6 FLUSH SYSTEM

Depending upon which flush system is activated, a water solenoid opens to allow only water to flow (see Figure 1). The water flush cleans concentrate from the spout and nozzle. For further cleaning instructions, refer to Section 2.3.

3.7 REFRIGERATION SYSTEM

An ice bank is formed and maintained on the copper tube evaporator located in the water bath compartment of the tank assembly. Water is continually circulated by the agitator motor across the ice bank and around the copper water coil. Water temperature is maintained at 32°F (0°C). Because the water compartment and concentrate compartment are an integral aluminum die casting, the concentrate compartment is maintained at a constant 35°F (1.7°C) temperature. When product is dispensed, water is drawn through the copper water coils and chilled. As the ice bank is depleted, the ice bank control senses that the ice is melting and causes the compressor and condenser fan motor to start. When the ice bank is rebuilt, the control shuts off the compressor and condenser fan motor. The compressor and condenser fan motor will operate periodically even though no drinks are being dispensed, in order to maintain the ice bank. If the unit is unplugged or power disrupted while operating, the compressor will not restart for a period of time during which the refrigerant pressures equalize [approximately five (5) minutes]. This feature protects the compressor from premature failure.

4. RELOCATING OR SHIPPING UNIT

4.1 REMOVING AN OPERATING UNIT

A. Perform FLUSH operation on each side of unit until a clean stream of water is being dispensed.
B. Remove Minute Paks®.

CAUTION

IF UNIT IS TO BE TRANSPORTED OR STORED WHEN AMBIENT TEMPERATURE IS 32°F (0°C) OR LOWER, STEPS C AND D MUST BE PERFORMED TO PREVENT THE WATER SYSTEM FROM FREEZING AND DAMAGING THE UNIT. DO NOT USE CO_2 GAS TO PURGE WATER FROM UNIT AS IT WILL CAUSE A HEALTH HAZARD.

C. Shut off inlet water supply. Disconnect inlet water tube from bottom of unit. About six (6) ounces (177.4 ml) of water will drain out of the unit as the vacuum breaker opens, allowing air into system.
D. Depress each dispensing paddle. This allows additional air into the system and will cause a few more ounces (ml) of water to drain from unit.
E. Turn key switch OFF.
F. Unplug unit power cord from electrical outlet.
G. Remove agitator deck (see Section 6.11), and using plastic tubing, siphon water out of ice bath compartment. It will be necessary to pour about 12 ounces (354.8 ml) of warm water *(do **NOT** use extremely hot water)* into the ice bath compartment to completely melt the ice bank. Drain the remaining water and replace agitator deck and secure with nuts.
H. Remove drip tray and cup rest. Clean and reinstall. Wipe exterior surfaces of unit with a clean damp cloth.

4.2 TRANSPORTING UNIT

The best method of handling and transporting a unit is to remove the legs and secure the unit to a plywood shipping base. If it is to be handled and transported with the legs assembled to the unit, special care should be taken not to damage unit. *DO NOT LAY UNIT ON SIDE OR BACK.*

4.3 SHIPPING UNIT

If a unit is to be shipped by a common carrier, it must be secured to the plywood shipping base and repacked in the original carton with the inner packaging material. *For this reason, it is wise to retain the original packing material.*

5. PERIODIC MAINTENANCE

5.1 LUBRICATION

All motors are lubricated for life and require no maintenance lubrication.

5.2 CLEANING WATER STRAINER

A. Remove splash plate, drip tray, and air intake panel.
B. Close inlet water shut off valve.
C. Remove plug from strainer on regulator assembly and remove strainer screen.
D. Clean strainer screen with water. Inspect for holes or other deterioration.
E. Replace cleaned or new strainer screen. Do **NOT** overtighten strainer plug.
F. Open inlet water shut off valve.
G. Replace splash plate.

5.3 CLEANING CONDENSER

A. Unplug unit power cord from electrical outlet.
B. Remove splash plate, drip tray and air intake panel.
C. Clean condenser with a small brush.
D. Replace splash plate, drip tray and air intake panel.
E. Plug unit power cord into electrical outlet.

5.4 CLEANING CONCENTRATE CONTAINER COMPARTMENT

CAUTION

DO **NOT** USE ANY POWDER OR ABRASIVE CLEANING COMPOUNDS THAT WILL DAMAGE FINISH.

Use only warm water and damp cloth.

6. REPAIR AND REPLACEMENT

NOTE:

See Figure 8 for Electrical Parts Location.

6.1 MAIN CONTROL PCB REPLACEMENT

WARNING

THIS UNIT MUST BE PROPERLY ELECTRICALLY GROUNDED TO AVOID POSSIBLE FATAL ELECTRICAL SHOCK OR SERIOUS INJURY TO THE OPERATOR. THE POWER CORD IS PROVIDED WITH A THREE PRONG GROUNDED PLUG. IF A THREE-HOLE GROUNDED ELECTRICAL OUTLET IS NOT AVAILABLE, USE AN APPROVED METHOD TO GROUND THE UNIT.

A. Turn key switch OFF and UNPLUG the unit power cord from electrical outlet.
B. Remove the paddles, drip tray, and splash plate.
C. Remove the control box cover by removing the Phillips screw in the front.
D. Disconnect all wiring harness connectors from the PCB by grasping the housings. Do **NOT** try to remove by pulling the wires.
E. Use a straight slot screwdriver to turn the four (4) plastic latches 1/4 turn, counterclockwise.

CAUTION

PLACE THE BAD PCB IN THE ANTI-STATIC SHIPPING BAG. THE CONTROL PCB IS **NOT** FIELD REPAIRABLE AND MUST BE RETURNED TO LANCER CORPORATION FOR REPAIR. *ANY ATTEMPT TO FIELD REPAIR WILL VOID ANY WARRANTY.*

PCBs MUST BE PACKAGED IN PROTECTIVE PLASTIC SHIPPING BAG WHEN HANDLED, STORED, TRANSPORTED OR SHIPPED. FAILURE TO DO SO MAY CAUSE DAMAGES TO THE PCB

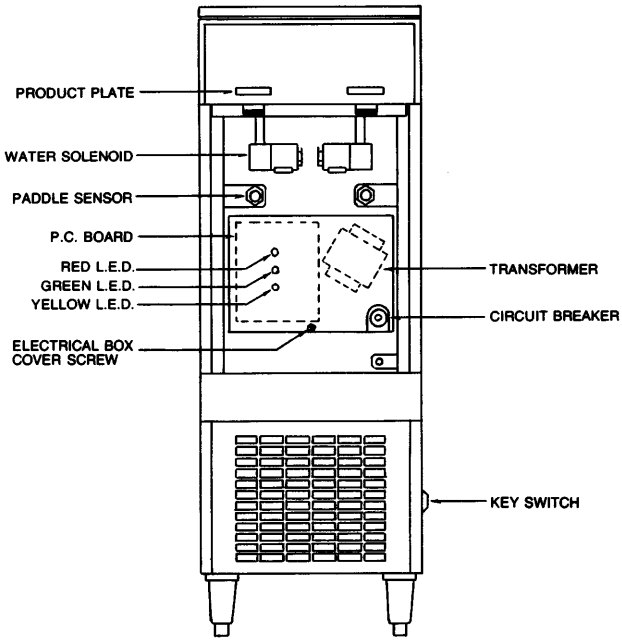
F. Lift the bad control PCB off the stand-offs.
G. Remove the new control PCB from the anti-static plastic bag and install on the four (4) plastic stand-offs with the connectors toward the left side of the control box.
H. Turn the plastic latches 1/4 turn clockwise to secure the control board to the control panel.
I. Reconnect all harnesses to their respective location on the PCB.
J. Install the control box cover, splash plate, drip tray and paddles.
K. Adjust ^{o}Brix as required.

6.2 MOTOR SPEED CONTROL/FLUSH SWITCH PCB REPLACEMENT

A. Follow procedures in Section 6.13 to remove the Top Cover Assembly.
B. Remove the seven (7) screws holding the bottom plate.
C. Locate the new Motor Speed/Flush Switch PCB and the new harness assembly (9-wire, with two connectors on each end).

1. Install the new PCB onto the Lower Cover in the same position as the old PCB, with the harness connectors pointed to the rear of the cover. Hold the PCB at an angle, making sure the LEDs are in position behind the u-shaped protrusions at the front of the Lower Cover, and slide the PCB into position. Take care to not distort or bend the LEDs.
2. Connect one end of the new harness to the PCB at the designated positions (6-pin to 6-pin, 3-pin to 3-pin), with the locking tabs of each housing facing down.
3. Press the grommet on the harness into position at the rear of the Cover.

D. Replace the Lower Cover into position on the bottom of the Top Cover Assembly. Replace the seven (7) screws removed above.
E. Replace the Top Cover Assembly.
F. Adjust ^{o}Brix as required.



Location of Electrical Parts
Figure 8

6.3 TRANSFORMER REPLACEMENT

A. Perform Steps A, B, and C in Section 6.1 above.
B. Disconnect the two (2) 0.250 inch FAST-ON connectors from the transformer primary (male connectors).
C. Disconnect the 2-pin connector on the transformer secondary leads (yellow wires) from the key switch wire harness.
D. Remove the two (2) nuts holding the transformer to the bottom plate.
E. Remove the transformer by lifting it off the mounting studs.
F. Install the new transformer by reversing above procedure.

6.4 CIRCUIT BREAKER REPLACEMENT

A. Perform Steps A, B, and C in Section 6.1 above.
B. Disconnect the two (2) 0.250 inch FAST-ON connectors from the back of the circuit breaker.
C. Carefully pry, or break, the locking ring from the circuit breaker and push the circuit breaker through the front control panel.
D. Install the new circuit breaker by reversing above procedure.

6.5 PADDLE SENSOR

A. Turn key switch OFF.
B. Remove both dispensing paddles and the drip tray.

C. Remove splash plate.
D. Unplug sensor from harness.
E. Loosen nut on back of sensor.
F. Remove sensor from bracket.
G. Install new sensor and adjust so that sensor face is about 1/8 inch (3.2 mm) from splash plate.
H. Replace splash plate.
I. Replace dispensing paddles and drip tray.
J. Turn key switch ON.

NOTE

Sensors are sealed units and cannot be repaired. If the sensor is shorted (burned out), the PCB will shut off automatically. When the sensor is replaced, the PCB will automatically reset.

6.6 CONCENTRATE PUMP AND MOTOR

CAUTION

THE MOTOR IS A FACTORY SEALED UNIT AND IS NOT FIELD REPAIRABLE. ANY ATTEMPT TO FIELD REPAIR WILL VOID WARRANTY.

A. Replacement

1. If concentrate pump will operate, depress FLUSH mode until a clear stream of water is dispensed.
2. If concentrate pump will not operate, proceed to Step 3.
3. Turn key switch OFF.
4. Remove check valve from concentrate container by pulling up.
5. Remove spout by loosening nut (turn counter clockwise) and pulling spout down. *Do **NOT** lose O-Ring* between spout and threaded adaptor.
6. Remove elbow retainer.
7. Remove inlet elbow by pulling up.
8. Remove concentrate pump by pulling out of pump support.
9. Replace new concentrate pump by reversing above procedure.
10. Turn key switch ON.
11. Readjust °Brix (see Section 1.10).

B. Repair

1. Remove the four (4) knurled screws on top of pump face plate.
2. Remove face plate and clean with water. If any inner surface exposed to the impeller is grooved or severely worn, replace the damaged parts.
3. Remove the impeller and clean with plain water. *DO **NOT** use pliers or other sharp instruments to remove the impeller.* Be careful not to scratch or deface inner concentrate pump body. If the impeller is cut, nicked or severely worn, replace.

CAUTION

IF CONCENTRATE PUMP IS NOT PROPERLY ASSEMBLED, IT CAN CAUSE A PUMP MOTOR OVERLOAD CONDITION AND WILL CAUSE THE CONTROL PCB TO GO INTO OVER CURRENT LIMITING (YELLOW LED ON WHILE TRYING TO DISPENSE).

4. Remove four (4) Phillips screws and separate concentrate pump body from motor to expose the shaft seal (black). The shaft seal must be replaced if the inner cylindrical (seal/shaft) surface and/or the outer cylindrical (seal/pump body) surface is grooved, scratched or excessively worn. If the seal has failed prematurely, it is advisable to replace both the seal and pump body. Clean only with plain water.

   a. To replace seal, carefully press seal out of body.

CAUTION

USE ONLY LANCER LUBE. USE OF OTHER GREASE, LUBRICANT OR COMPOUNDS MAY CAUSE OFF TASTE, ODOR AND/OR DAMAGE TO UNIT AND WILL VOID WARRANTY.

   b. Lubricate inside and outside of seal with Lancer lube (PN 15-0046). Press seal into body until completely seated.

5. Coat motor shaft and boss at base of shaft with Lancer lube. Carefully assemble pump body to motor using a rotating motion so as not to damage shaft seal. Replace screws and tighten evenly, 1/4 turn after finger tight. *DO NOT TIGHTEN EXCESSIVELY.*
6. Install impeller, being careful to flex all impeller arms in a clockwise fashion (motor shaft will rotate counter clockwise). Align the flats on the shaft and impeller and gently push impeller onto the shaft until seated against back pump body surface. Operate the concentrate pump (by using a test kit or depressing the paddle with the water supply OFF) for a few seconds to properly seat the impeller.
7. Replace o-ring, face plate and four (4) knurled screws. The sequence in which the screws are tightened should be in a rotational manner, so that the face plate is tightened evenly (in order of 3, 6, 9, and 12 o'clock positions). *DO NOT TIGHTEN EXCESSIVELY.*

6.7 WATER SOLENOID VALVE

A. Turn key switch OFF.
B. Close inlet water shut off valve.
C. Remove splash plate.
D. If solenoid is leaking, remove nut on end of coil and remove coil. Unscrew armature housing and remove spring and armature. Check for foreign matter or wear. If foreign material is present, open water supply and flush. Reassemble.
E. If coil is detective, remove wiring harness by pulling off quick connect terminals. Replace coil and reassemble.
F. If solenoid valve is defective, replace complete assembly.

6.8 REGULATOR ASSEMBLY

A. Unplug unit power cord from electrical outlet.
B. Remove drip tray, dispensing paddles, splash plate and air intake panel.
C. Close inlet water shut off valve.
D. Remove tube assembly from inlet of regulator assembly.

CAUTION

USE A BACKUP WRENCH TO PREVENT DAMAGE TO STRAINER.

E. Loosen nuts on outlet fitting.
F. Loosen nut on back of regulator assembly.
G. Remove regulator assembly.
H. Repair or replace defective parts. Use approved thread sealant.
I. Replace regulator assembly and connect inlet water shut off, being careful to include flare seal washer.
J. Tighten nuts on stainless steel outlet tube 1/4 turn after finger tight. Open inlet water shut off valve and check for leaks.
K. Remove cap on test connection on front of repaired or new regulator and connect test gauge.
L. Turn key switch ON.
M. Depress flush switch.
N. Adjust water pressure to 25 PSIG flowing, while holding the flush switch.
0. Remove test gauge and replace test connection cap.
P. Reassemble unit.
Q. Check °Brix and adjust as necessary (refer to Section 1.10).

6.9 ELECTRONIC ICE BANK CONTROL (EIBC)

WARNING

DISCONNECT FROM POWER SOURCE BEFORE BEGINNING THIS PROCEDURE. WATER BATH MUST BE DRAINED AND ICE BANK MUST BE COMPLETELY MELTED.

A. Remove two screws retaining Rear Lid over Agitator Deck and remove Lid.
B. Remove Agitator Deck (see Sec. 6.11).
C. Remove the screws holding the ice bank control to the bracket on the Agitator Deck and remove the control. Save screws for reinstallation.
D. Remove cover from electronic ice bank control.

E. Disconnect ice bank probe lead from control board.
F. Remove three leads from ice bank control, noting which lead goes to the Junction Box (HOT IN) and which lead goes to the Compressor (HOT OUT). The third lead goes to Agitator Motor. The lead going to the Compressor is on Pin 1 of the Agitator/IBC connector and the lead going to the Junction Box is on Pin 3 (see Wiring Diagram, Sec. 9.1, page 18).
G. Remove the screws holding the bracket on the replacement electronic ice bank control housing and discard the bracket and screws.
H. Remove the cover of the replacement control. Connect lead from Compressor to screw terminal marked "HOT OUT". Connect lead from Junction Box and Agitator Motor to terminal marked "HOT IN" (see Wiring Diagram, Sec. 9.1, page 18).
I. Plug the Probe Lead into the connector on the PCB.
J. Check all connections, and install Control Housing Assembly Cover. Tie all leads together, ensuring that all leads are clear of any rotating equipment.
K. Mount new control to the Agitator Deck bracket, using the screws removed in Step C above.
L. Replace Agitator Deck (see Sec. 6.11) and refill Water Bath.
M. Reconnect to power source. When power is supplied to the EIBC, there is a five (5) minute delay before Compressor start-up. The Power Indicator Lamp should be illuminated and visible through the Control Housing Assembly Cover. When the Compressor starts, the Power Indicator Lamp will turn off.
N. Replace Rear Lid over Agitator Deck and the two screws.
O. Conduct operational check of unit.

6.10 AGITATOR MOTOR

WARNING

DISCONNECT THE POWER CORD FROM THE ELECTRICAL OUTLET.

A. Remove lid over agitator deck.
B. Unplug wiring harness from agitator deck.
C. If unit has an ice bank, remove seal and pour about 12 ounces (354.8 ml) of warm water *(**NOT HOT**)* into retainer.
D. Remove agitator deck from unit. Rotate deck over. Remove three (3) screws holding motor to agitator deck.
E. Disconnect agitator motor from wiring harness and remove.
F. Remove propeller from shaft of agitator motor. Inspect propeller to be sure no blades are broken or damaged.
G. Replace agitator motor and propeller by reversing above procedure.

6.11 AGITATOR DECK

WARNING

DISCONNECT FROM POWER SOURCE BEFORE BEGINNING THIS PROCEDURE. WATER BATH MUST BE DRAINED AND ICE BANK MUST BE COMPLETELY MELTED.

A. Remove two screws retaining Rear Lid over Agitator Deck and remove Lid.
B. Disconnect Agitator/IBC connector at top inside corner of dispenser.
C. Remove foam plug from hole around ice bank probe lead.
D. Remove two nuts retaining Agitator Deck to the Tank.
E. Lift Agitator Deck out enough to access the two screws retaining the Ice Bank Control Housing to the bracket on the Agitator Deck. Remove the two screws, and lift out the Control. Remove the Control cover and disconnect the ice bank probe from the Control board. The Agitator Deck can now be completely removed from the unit.
F. Installation is reverse of removal. Make sure Agitator Deck is fully seated into position and all excess probe lead is pulled through to the top of the Deck and is not in contact with the Agitator Motor shaft.

6.12 WATER COIL CAGE ASSEMBLY

WARNING

DISCONNECT THE POWER CORD FROM THE ELECTRICAL OUTLET.

A. Close inlet water shut off valve.

B. Remove agitator deck.
C. Remove water from ice bank compartment.
D. Loosen two (2) tubing nuts on water coil.
E. Remove water coil assembly.
F. Replace defective water coil.
G. Reassemble water coil assembly in tank by reversing above procedure. Tighten water coil tubing nuts 1/4 turn after finger tight.
H. Open inlet water shut off valve and check for leaks.
I. Refill ice bank compartment to overflow port.
J. Replace agitator deck and lid.

6.13 TOP COVER

A. Flush both sides of unit.
B. Turn key switch OFF.
C. Remove both lids.
D. Remove check valves from concentrate tubes.
E. Remove concentrate containers.
F. Remove three (3) screws holding top cover to frame at front of unit, directly behind splash plate.
G. Loosen three (3) screws (do NOT remove) holding top cover to frame at rear of unit.
H. Remove paddles, drip tray, splash plate and air intake plate.
I. Remove the control box cover.
J. Unplug electrical connectors to each pump housing, noting which is left and right.
K. Unplug motor speed/flush switch wiring harness from PCB (middle wire harness).
L. Remove motor speed/flush switch wire bundle from wire clamp on inside surface (left) of wrapper.
M. Disconnect water solenoids by unscrewing the white plastic nut located directly above the solenoid coil. Take care not to lose the o-ring at the joint of the connection.
N. Gently lift top cover off of dispensing unit, being careful not to tangle the wire leads to the motors or PCB motor assembly.
O. To reassemble, reverse above procedure.

6.14 WRAPPER

A. Unplug unit power cord from electrical outlet.
B. Remove top cover.
C. Remove drip tray, paddles, air inlet panel and splash plate.
D. Remove eight (8) screws on front of unit (four on each side).
E. Remove wire cluster from wire clamp on inside of wrapper.
F. Disconnect key switch wiring harness connectors inside main control PCB box, two (2) 2-pin connectors - one connector located at bottom of the PCB and the other connector coming from the transformer secondary leads.
G. Loosen legs by turning counter clockwise.
H. Spread wrapper at front of unit slightly on each side in order to clear frame. Push wrapper toward back of unit until wrapper is free of frame.
I. To reassemble, reverse above procedure, being sure that cutout for power cord in rear of wrapper seats properly. Clean only with damp clean cloth or approved, non-abrasive spray or liquid stainless steel cleaner.

6.15 CONDENSER FAN MOTOR

WARNING

DISCONNECT THE POWER CORD FROM THE ELECTRICAL OUTLET.

A. Unplug unit power cord from electrical outlet.
B. Remove top, lids and top cover.
C. Remove wrapper.
D. Disconnect fan motor electrical cord.
E. Remove four (4) nuts holding fan motor bracket to base of unit and remove from unit.
F. Clean condenser with a brush.
G. Remove fan motor from bracket.

CAUTION

USE CARE TO **NOT** BEND FAN BLADES.

H. Remove fan blade from fan motor.
I. To reassemble, reverse above procedure.

7. TROUBLESHOOTING

Causes are listed in order of probability.

	TROUBLE	CAUSE	REMEDY
7.1	No water or concentrate on either side.	A. Key switch OFF. B. Unit not connected to electrical outlet. C. Electrical circuit breaker on control box assembly tripped. D. Power supply electrical breaker tripped or fuse blown. E. Wiring harnesses not connected to transformer cabinet assembly. F. Sold Out has locked out valves.	A. Turn key switch ON. B. Connect unit power cord to electrical outlet. C. Reset circuit breaker by depressing button on control box. D. Reset breaker or replace fuse. If problem persists: 1. Check unit for electrical short (wiring, compressor, fan motor, etc.). 2. Electrical circuit overload. Switch to another circuit. E. Connect wiring harness to transformer cabinet assembly. F. Check product levels and reset Sold Out.
7.2	No water or concentrate on one side only.	A. Control PCB defective. B. Sensor not adjusted properly in relation to paddle. C. Sensor not connected to wiring harness. D. Defective sensor. E. Water solenoid valve defective and concentrate pump not properly installed in pump support, or defective. F. Defective paddle. G. Sold Out has locked out valves.	A. Replace control PCB. B. Adjust sensor to move it closer to paddle. C. Connect sensor to wiring harness. D. Replace sensor. E. Repair or replace water solenoid valve and properly install concentrate pump in pump support or replace same. F. Replace paddle. G. Check product levels and reset Sold Out.
7.3	Water only - no concentrate.	A. Out of concentrate. B. Check valve not properly installed in concentrate container. C. Concentrate pump not properly installed in pump support. D. Concentrate pump defective. E. Check valve clogged. F. Large lumps in concentrate. G. Air leak caused by defective o-ring on check valve or pump inlet fitting. H. Control PCB defective. I. Concentrate tube kinked.	A. Refill concentrate container. B. Push check valve all the way into concentrate tank. C. Properly install (push in) concentrate pump in pump support. D. Repair or replace concentrate pump. E. Remove and clean check valve. F. Defrost concentrate. G. 1. Replace both o-rings on check valve. 2. Replace concentrate tube. H. Replace control PCB. I. Remove kink in tube.
7.4	Concentrate only - no water either side.	A. Inlet water shut off valve turned OFF. B. Inlet water strainer dirty/ clogged.	A. Turn inlet water shut off valve ON. B. Remove strainer and clean.

(Section 7.4 continued on next page)

TROUBLE		CAUSE	REMEDY
(Section 7.4 continued from previous page)			
		C. Water coils frozen.	C. Replace ice bank control. Check umbrella check valve in vacuum breaker and replace if necessary.
		D. Water regulator not properly set and not passing water.	D. Connect test gauge to each water regulator and reset to proper pressure.
		E. Water solenoid valve not connected to wiring.	E. Connect wiring harness to water solenoid valves.
		F. Control PCB defective.	F. Replace control PCB.
7.5	Concentrate only - no water on one side only.	A. Defective control PCB. B. Water solenoid valve not connected to wiring harness. C. Defective coil on water solenoid. D. Defective water solenoid valve.	A. Replace control PCB. B. Connect wiring harness to water solenoid valve. C. Replace coil. D. Repair or replace water solenoid valve.
7.6	No flush water either side; system dispenses normally.	A. Motor speed/flush switch PCB bad. B. Main PCB bad.	A. Replace motor speed/flush switch PCB. B. Replace main PCB.
7.7	No flush water - one side only; normal dispense both sides.	A. Motor speed/flush switch PCB bad. B. Main PCB bad.	A. Replace motor speed/flush switch PCB. B. Replace main PCB.
7.8	Water drips from spout when drink is NOT being dispensed.	A. Defective water solenoid valve.	A. Repair or replace water solenoid valve.
7.9	Air leaking into concentrate tube and/or concentrate pump.	A. Air leaking into check valve from flush and/or concentrate tube. B. Air leaking into pickup tube of concentrate container. C. Air leaking into elbow. D. Air leaking into concentrate pump at elbow. E. Air leaking into concentrate pump.	A. Push tube onto check valve. Replace tube if necessary. B. Replace two o-rings on exterior of check valve. C. Push concentrate tube onto elbow. Replace tube if necessary. D. Replace two o-rings on elbow. E. 1. Replace face plate o-ring. 2. Replace seal in concentrate pump body.
7.10	Ratio cannot be adjusted low enough (or °Brix high enough).	A. Regulated water pressure too high. B. Concentrate pump defective. C. Control PCB defective. D. Air leaking into concentrate tube. E. Defective regulator. F. Motor speed/flush switch PCB defective.	A. Use test gauge and adjust water pressure to 25 PSIG. B. Repair or replace concentrate pump. C. Replace control PCB. D. Refer to Section 7.9. E. Repair or replace regulator. F. Replace.
7.11	Ratio cannot be adjusted high enough (or °Brix low enough).	A. Regulated water pressure too low. B. Water strainer clogged. C. Defective regulator. D. Defective or clogged water solenoid valve.	A. Use test gauge and adjust water pressure to 25 PSI. B. Clean strainer. C. Repair or replace regulator. D. Repair or replace water solenoid valve.
7.12	°Brix varies from drink to drink.	A. Inlet water supply pressure and/or flow too low.	A. Correct water supply must be made available.

(Section 7.12 continued on next page)

TROUBLE	CAUSE	REMEDY
(Section 7.12 continued from previous page)		
	B. Use of other equipment on same water supply causes water supply pressure and flow to vary. C. Defective control PCB. D. Defective concentrate pump. E. Frozen lumps of concentrate in concentrate container. F. Check valve clogged. G. Air leaking into concentrate tube. H. Defective water regulator.	B. Remove other equipment from water supply or provide alternate water supply. C. Replace control PCB. D. Repair or replace concentrate pump. E. Defrost concentrate. F. Clean check valve. G. Refer to Section 7.9. H.Repair or replace regulator.
7.13 Water continually overflows into drip tray.	A. Machine just installed. Small amount of overflow is normal as ice forms. B. Loose or defective water coil.	A. Condition is normal. Should stop when dispenser refrigeration cycles “OFF”. B. Turn water supply “OFF” and contact Phone Fix® for service Dispatch.
7.14 Compressor starts and continues to run until freeze up and will NOT cut off.	A. Faulty ice bank control.	A. Replace ice bank control.
7.15 Warm drinks.	A. Casual drink. Product warming in lines between use. B. Hot incoming water supply (from HOT water supply or heater). C. No ice bank, defective ice bank control. D. Low refrigerant supply. E. No ice bank; defective condenser fan motor. F. No ice bank; compressor does not run or runs for a few minutes and stops.	A. Check temperature on second drink. Product temperature should be 38-44°. B. Switch to cold water supply. C. Replace ice bank control. D. Repair leak and recharge. E. Replace condenser fan motor. F. Refer to Sections 7.17 - 7.21.
7.16 Compressor does NOT start (no hum), condenser fan motor does not run and no ice bank.	A. Power supply electrical breaker tripped or fuse blown. B. Defective ice bank control. C. Improper or loose wiring.	A. Reset breaker or replace fuse. If problem persists: 1. Determine reason and correct. 2. Electrical circuit overloaded; switch to another circuit. B. Replace ice bank control. C. Correct Wiring. Refer to wiring diagram.
7.17 Compressor does NOT start (no hum), no ice bank, but condenser fan motor runs.	A. Defective compressor relay or overload. B. Defective compressor. C. Improper or loose wiring. D. Low Voltage.	A. Replace compressor relay or overload. B. Replace compressor. C. Correct wiring. Refer to wiring diagram. D. Measure voltage across common and run terminal on compressor. Voltage must not drop below 90% of rated voltage.
7.18 Compressor does NOT start, but hums.	A. Improper or loose wiring.	A. Correct wiring. Refer to wiring diagram.

(Section 7.18 continued on next page)

TROUBLE	CAUSE	REMEDY
(Section 7.18 continued from previous page)		
	B. Low voltage.	B. Measure voltage across common and run terminal on compressor. Voltage must not drop below 90% of rated voltage.
	C. Starting relay defective.	C. Replace starting relay. Be sure to use correct relay. Failure to use correct relay will cause compressor failure.
	D. Defective compressor.	D. Replace compressor.
7.19 Compressor starts and does switch OFF of start winding (will only run for a few seconds) before internal overload switches compressor OFF.	A. Low voltage.	A. Measure voltage across common and run terminal on compressor. Voltage must not drop below 90% of rated voltage.
	B. Excessively high refrigerant, high side pressure.	B. This is normal if unit is unplugged from electrical outlet, then immediately plugged back into electrical outlet before refrigerant pressure has time to equalize. After about five (5) minutes, compressor will start automatically and run.
	C. Defective compressor.	C. Replace compressor.
7.20 Compressor starts and runs a short time, but shuts OFF on overload.	A. Improper or loose wiring.	A. Correct wiring. Refer to wiring diagram.
	B. Low voltage.	B. Measure voltage across common and run terminal on compressor. Voltage must not drop below 90% of rated voltage.
	C. Excessively high refrigerant, high side pressure and suction return gas hot.	C. 1. Defective condenser fan motor. Replace. 2. Dirty condenser. Clean.
	D. Compressor running too hot.	D. Refrigerant leak. Repair and recharge.
	E. Defective compressor.	E. Replace compressor.
7.21 Concentrate low level indicator ON, but concentrate container still has concentrate remaining.	A. Sensor needs resetting.	A. Press RESET button next to pump.
	B. Defective Main PCB.	B. Replace Main PCB.
	C. Sensor on concentrate tube dirty and not making contact.	C. Clean sensors with damp cloth.
	D. Sensor wiring harness not connected.	D. Connect.
	E. Concentrate tubes badly stained.	E. Replace concentrate tubes.
	F. Faulty sensor.	F. Replace sensor.
	G. Concentrate has stratified.	G. Remove and thoroughly shake Minute Pak®.

NOTES:

8. TROUBLESHOOTING USING PCB 12 VOLT (GREEN), MOTOR OVER CURRENT (YELLOW), AND MOTOR (RED) DIAGNOSTIC LIGHTS

The red LED indicates that the transformer, circuit breaker and the basic DC power supply system are operative. This unregulated DC voltage of 18V-22V is used for the pump motor voltage and the input to the +12VDC regulator on the main control PCB.

The green LED indicates the output of the 12 VDC regulator is normal. This voltage is used for all solenoids and the PCB circuits. The 12V regulator can **SHUT DOWN** from excess current or excess temperature but will automatically start operating again when the problem is removed. An example would be a shorted left dispense solenoid coil. The green LED would be on until the left paddle was depressed, which would cause the green LED to go **OUT** until the paddle was released. Left flush, right flush and right dispense would be normal and the green LED would be **ON** before and during dispense.

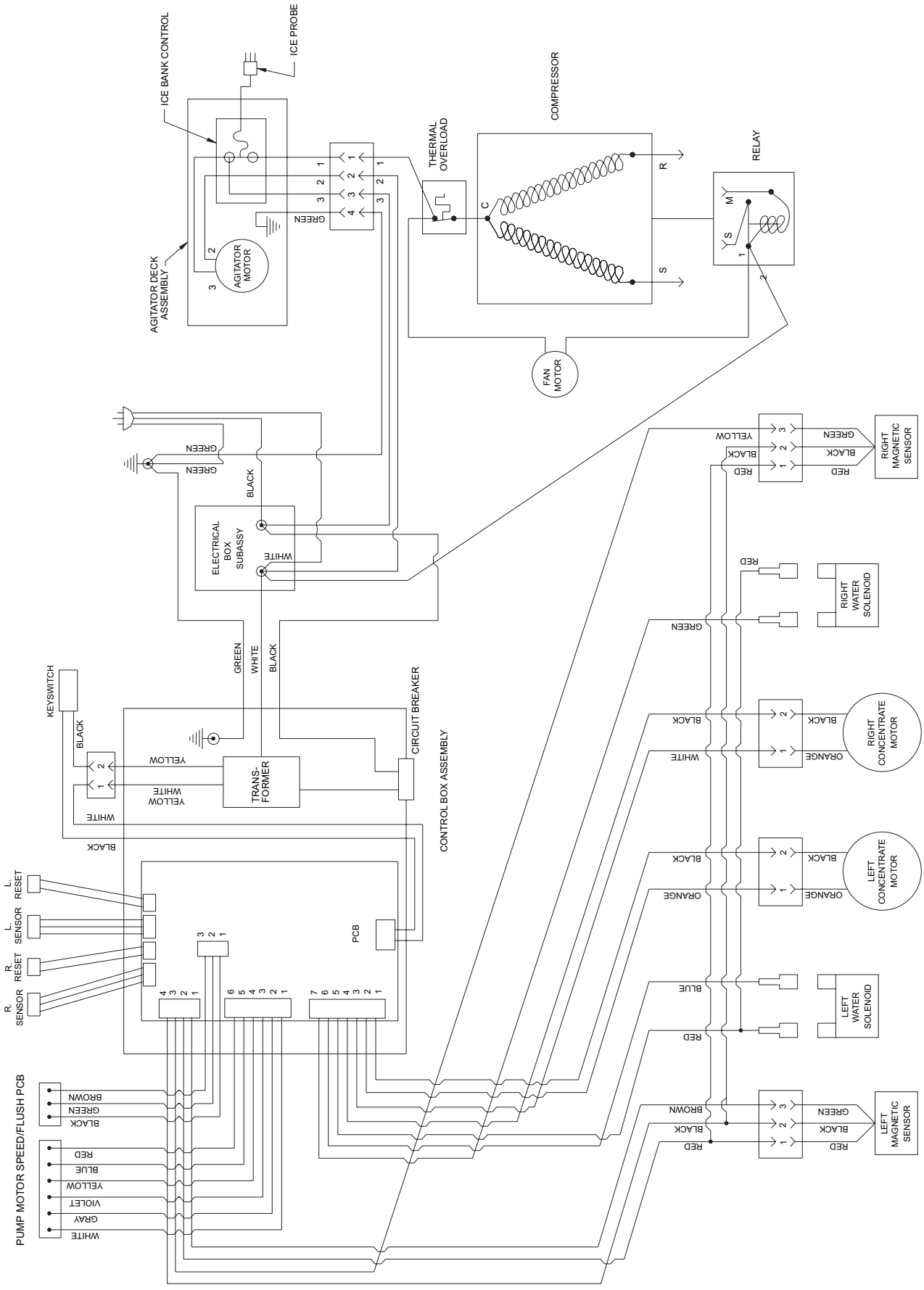
The yellow LED indicates a motor over current condition when lighted. This could be caused by a faulty motor, pump or a grounded motor lead. Normally, the yellow LED will flash **ON** the instant a paddle is pushed, then go **OUT** immediately. This is caused by a high in-rush current to get the motor initially started.

*The following are some typical diagnostic light conditions and the possible problems associated with these conditions. All conditions are with the key switch in the **ON** position and the power cord plugged in.*

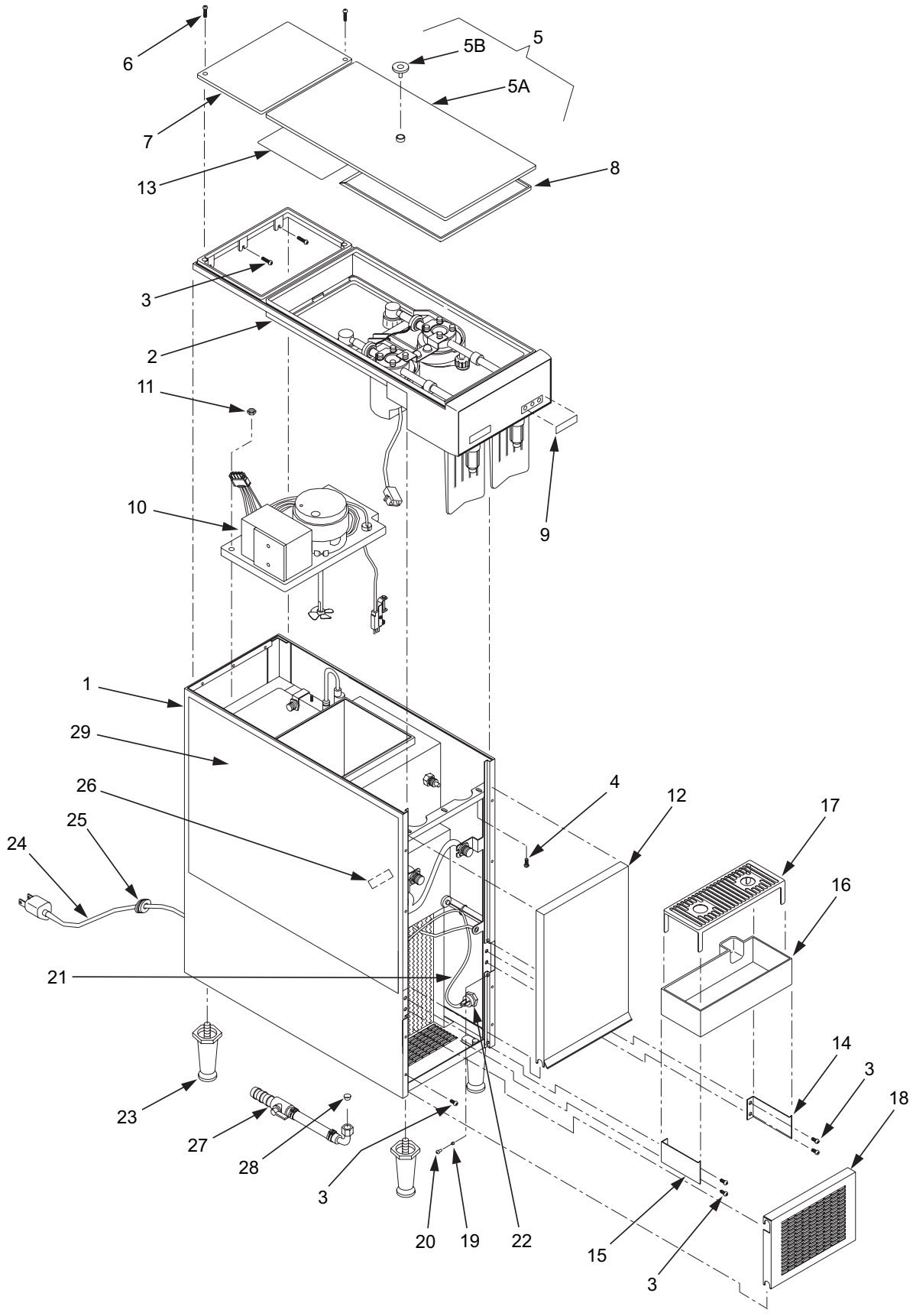
LIGHTS			STATUS	PROBLEM
GREEN	YELLOW	RED		
ON	OFF	ON	Key switch ON.	Normal operations.
OFF	OFF	ON	Key switch ON. Not trying to dispense product.	1. Wiring short of +12 volts to ground. 2. Defective control PCB.
ON	OFF	OFF	Key switch ON. Not trying to dispense product.	Defective control PCB.
OFF	OFF	OFF	Key switch ON. Not trying to dispense product.	1. Defective transformer or control box. 2. Breaker tripped on front panel. 3. Transformer wiring harness not connected to control PCB.
OFF	OFF	ON	Key switch ON, trying to dispense product or flush. Green ON when not trying to dispense.	Shorted (defective) solenoid.
ON	OFF	OFF	Key switch ON, trying to dispense product.	Defective control PCB.
ON	OFF	ON	Key switch ON, trying to dispense product but concentrate pump does not operate. Water does dispense.	1. Wiring harness not connected to pump support. 2. Defective control PCB.
ON	ON	ON	Key switch ON, trying to dispense product but concentrate pump does not operate. Water does dispense.	1. Defective or overloaded pump or motor. 2. Shorted motor connector. 3. Short in wiring harness.

9. ILLUSTRATIONS, PARTS LISTINGS, AND WIRING DIAGRAM

9.1 WIRING DIAGRAM



9.2 TOP LEVEL ASSEMBLY

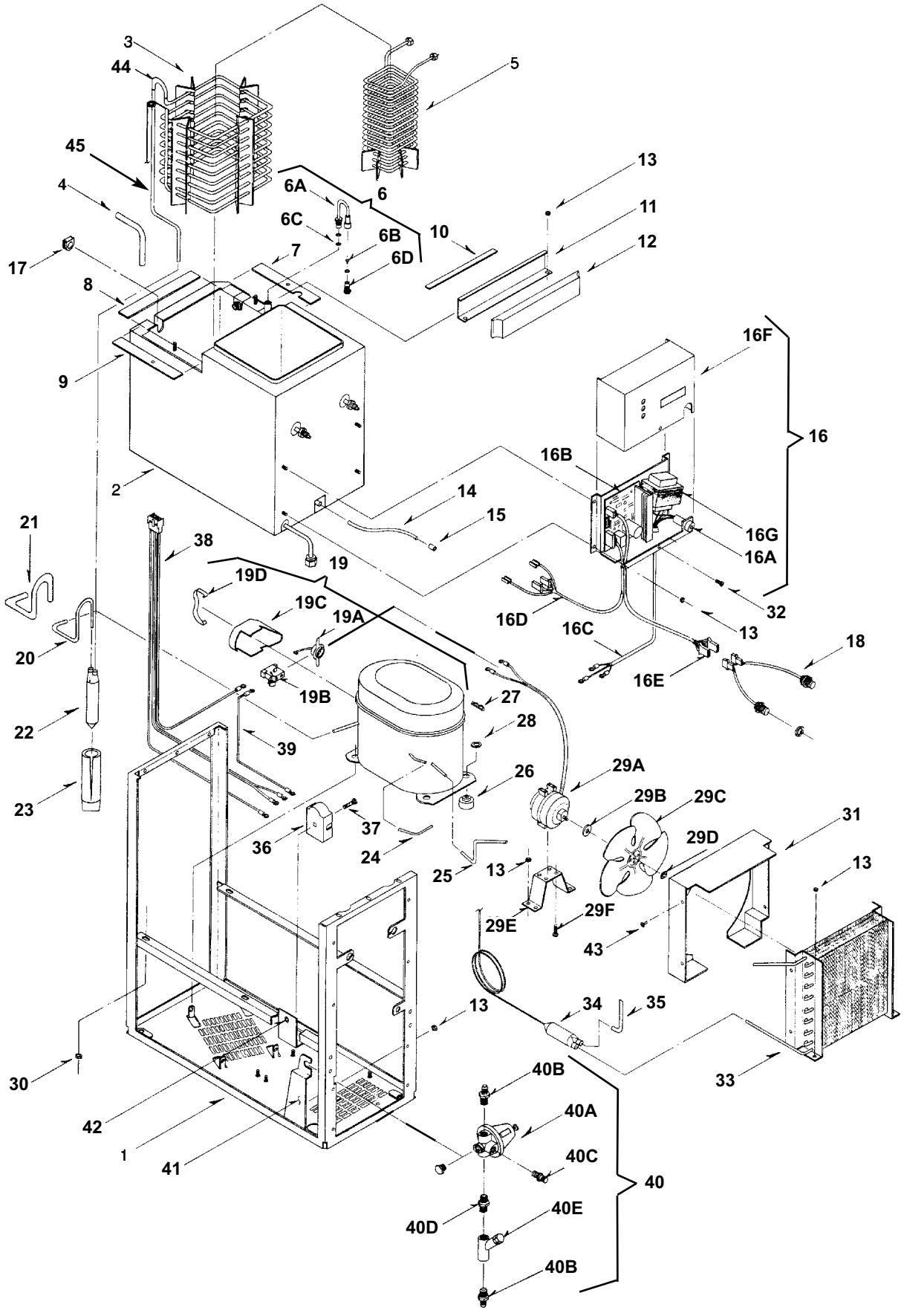


9.2 TOP LEVEL ASSEMBLY (CONTINUED)

	ITEM	PART NO.	DESCRIPTION
	1	30-0493	Wrapper
	2	82-0493	Cover Assy (See Section 9.4)
	3	04-0477	Screw
	4	04-0397	Screw
	5	82-0647/01	Lid Assy
	5A	05-0441/01	Lid, Large
	5B	82-1128	Knob Assy
	6	04-0784	Screw
	7	05-0440/01	Lid, Small
	8	05-0439	Splash Tray
	9	05-1338/01	Sold Out Plate (Clear)
	10	82-0481/01	Agitator Deck Assy (See Section 9.5)
	11	04-0297	Nut
R	12	30-0495	Splash Plate
R	13	06-0343	Priming Label
R	14	30-0508	Bracket, Right
R	15	30-0507	Bracket, Left
R	16	05-0437	Drip Tray
R	17	30-6212	Cup Rest
R	18	30-0494	Air Intake Plate
R	19	04-0187	Spacer
R	20	04-0429	Rivet
R	21	52-0596	Wiring Harness, Key Switch
R	22	12-0097	Lock Assy, Key Switch
R	23	81-0112	Leg
R	24	52-0005	Power Cord Assy
R	25	13-0025	Strain Relief
R	26	13-0058	Wire Fastener
R	27	49-0226	Tube Assy, Inlet Water
R	28	05-0017	Flare Seal Washer
R	29	06-1229	Graphic, Left
	-	06-1230	Graphic, Right
	-	06-1231	Graphic, Back
R	-	06-2818L	Label, Sold Out, LH
R	-	06-2818R	Label, Sold Out, RH
R	-	06-2817	Label, Sold Out, Reset
R	-	82-3430	Sanitation Container

NOTE: **R** in margin indicates change or revision

9.3 FOAMED TANK/COMPRESSOR ASSEMBLY

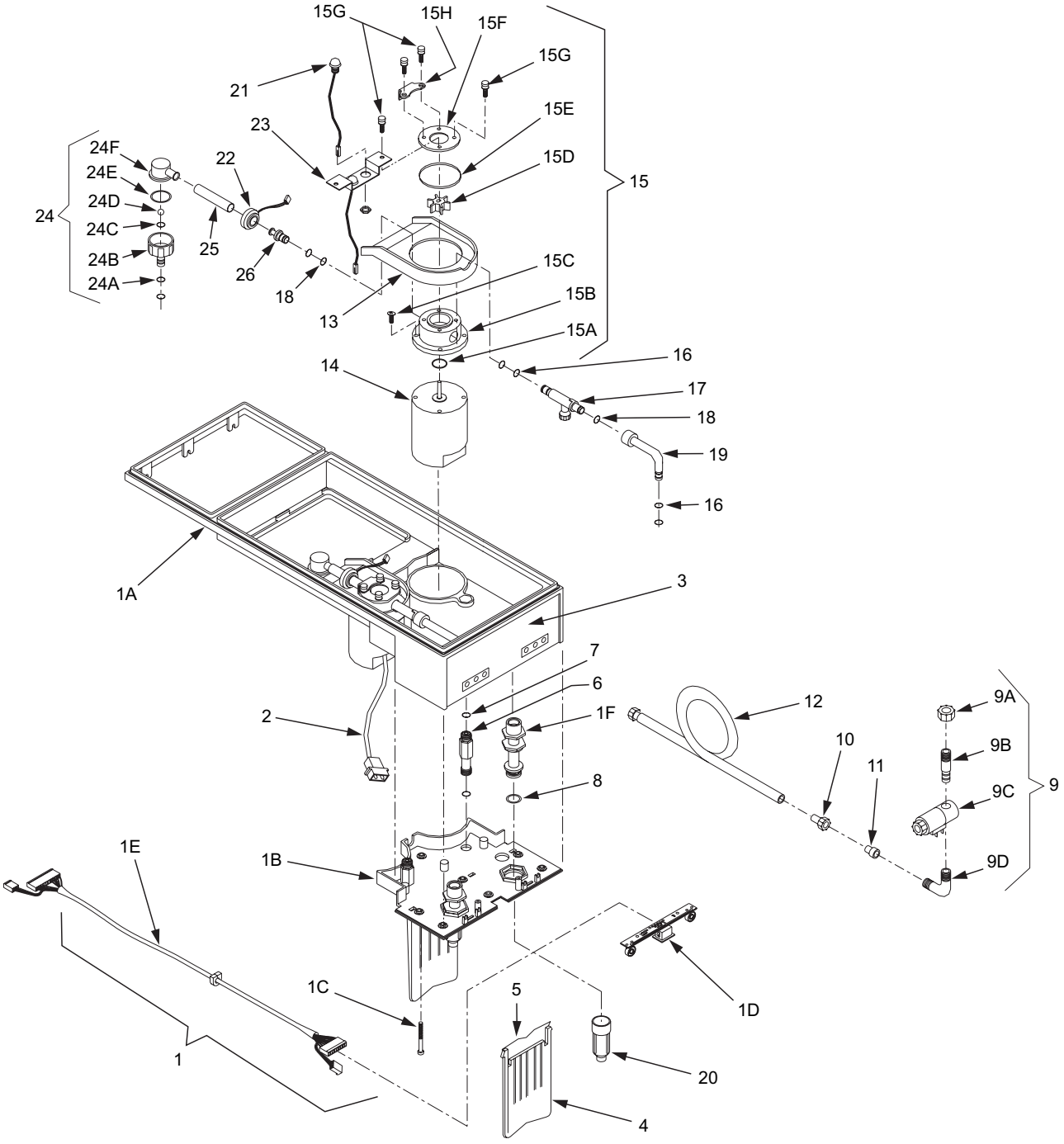


9.3 FOAMED TANK/COMPRESSOR ASSEMBLY (CONTINUED)

ITEM	PART NO.	DESCRIPTION
1	51-0540/02	Frame Assy
2	82-0480	Foamed Tank Assy
3	23-0415	Evaporator Assy
4	50-0082	Insulation
5	48-0258	Water Coil Assy
6	17-0408	Vacuum Breaker Assy
6A	48-0059	Vacuum Breaker
6B	02-0110	Umbrella Check Valve
6C	02-0005	O-Ring
6D	01-0789	Cap
7	50-0152	Tape Insulation, Right Side
8	50-0155	Tape Insulation, Back
9	50-0153	Tape Insulation, Left Side
10	50-0154	Tape Insulation, Front
11	51-0506	Bracket, Tank Insulation
12	50-0144	Tank Insulation, Rear
13	04-0297	Nut
14	08-0194	Drain Tube
15	01-0450	Support Tube
16	52-0636/01	Control Box Assy (115V/60Hz)
16A	11-0066	Circuit Breaker
16B	52-2766	Main Control PCB Assy
16C	52-0599	Power Input Cable Assy
16D	52-0597	Motor/Solenoid Harness
16E	52-0598	Paddle Input Harness
16F	30-0490	Control Box Cover
16G	25-0026	Transformer, 115V/60Hz
17	02-0176	Grommet
18	52-0145	Sensor Sub-Assy
19	83-0045	Compressor Assy, 1/4 HP, 115V/60Hz
19A	12-0150	Overload (115V/60Hz)
19B	12-0026	Start Relay (115V/60Hz)
19C	13-0066	Terminal Cover
19D	03-0040	Bale Strap
20	47-3038	Compressor-to-Accumulator Tube
21	50-0292	Insulation
22	51-0543	Accumulator
23	50-0028	Boot
24	47-0725	Charge Tube
25	47-3037	High Side Tube
26	02-0114	Compressor Grommet
27	03-0150	Compressor Clip
28	04-0537	Washer
29	52-0642	Fan Motor Assy (115V)
29A	91-0032	Fan Motor (115V)
29B	02-0034	Silencer
29C	07-0389	Fan Blade
29D	04-0060	Nut
29E	30-6474	Fan Motor Bracket
29F	04-0059	Screw
30	04-0220	Nut
31	30-0484	Shroud
32	04-0061	Screw
33	23-0955	Condenser
34	23-0982	Dryer Cap Tube
35	47-0344	Process Tube

ITEM	PART NO.	DESCRIPTION
36	54-0062	Electrical Box Sub-Assy
37	04-0070	Screw
38	52-0152	Agitator Harness Assy
39	52-0149	Lead Assy #2 Junction
40	18-0053	Regulator Assy
40A	18-0201	Regulator
40B	01-0111	Brass Adaptor
40C	17-0405	Valve
40D	01-1143	Hex Nipple
40E	17-0486	Strainer
41	30-0482/01	Regulator Bracket
42	04-0075	Nutsert
43	04-0072	Rivet
44	48-0240	Tube, U-Bend
45	47-0434/01	Tube, Evaporator/Accumulator
--	18-0207	Regulator Repair Kit (For Item 40A)

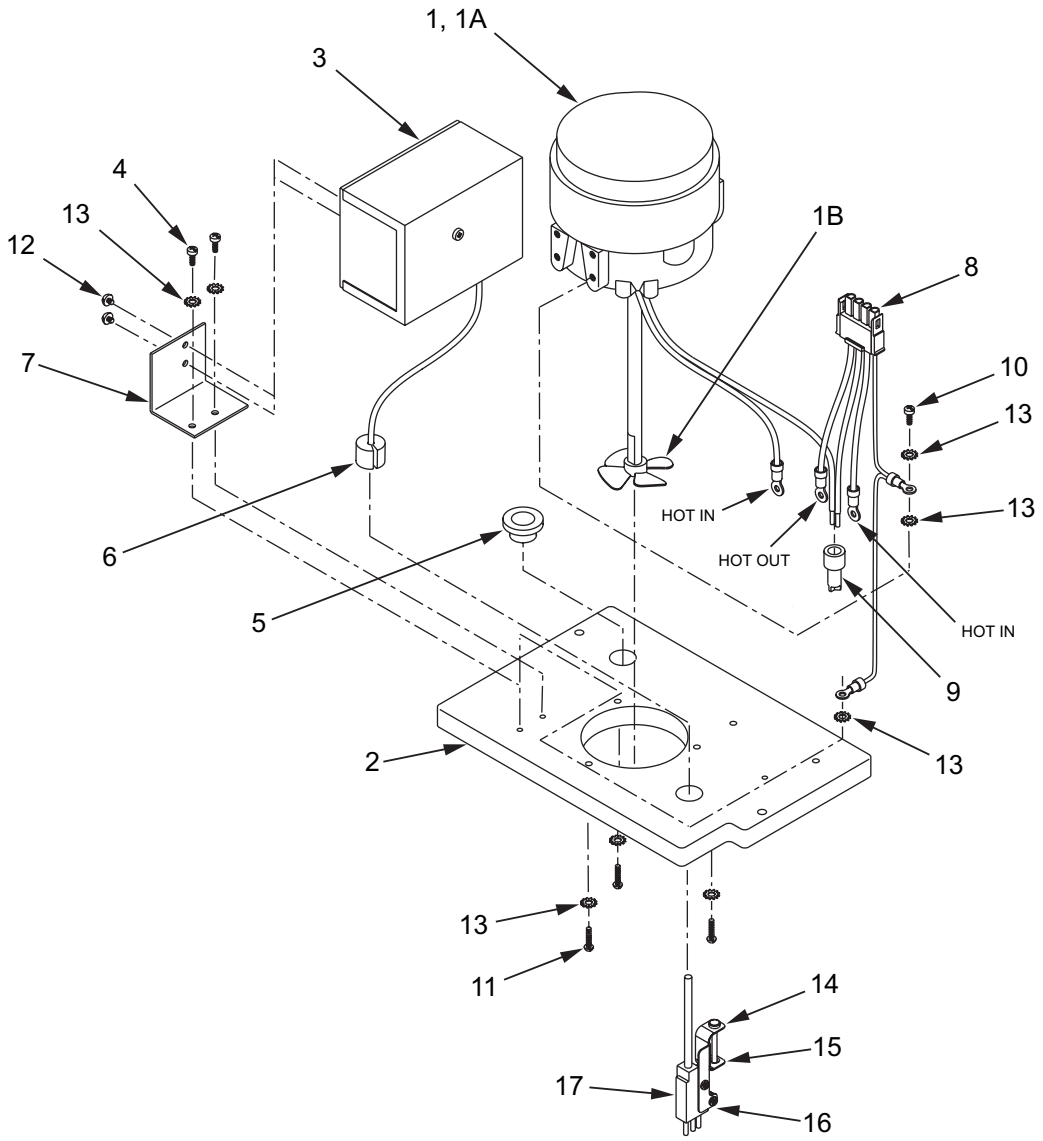
9.4 TOP COVER ASSEMBLY



9.4 TOP COVER ASSEMBLY (CONTINUED)

ITEM	PART NO.	DESCRIPTION
1	82-0493/01	Top Cover Assy
1A	54-0047/01	Top Cover, Sub Assy
1B	05-0438	Bottom Plate
1C	04-0397	Screw
1D	52-2782	Motor PCB Assy
1E	52-2784	Motor/Flush Harness Assembly
1F	05-0443	Front Fitting
2	52-0142	Motor Harness Assy
3	06-0342/01	Label, Front
4	54-0019	Paddle Assy
5	03-0061	Spring
6	05-0453	Solenoid Inlet Fitting
7	02-0005	O-Ring
8	02-0109	O-Ring
9	17-0515/01	Solenoid Assy, LH
--	17-0516/01	Solenoid Assy, RH
9A	05-0448	Nut
9B	01-1218	Solenoid Fitting
9C	17-0077	Solenoid Valve
9D	01-0821	Elbow Fitting
--	81-0413	Filter Screen for Solenoid
--	82-0189	Repair Kit, Solenoid
10	01-0798	Nut
11	05-0379	Plastic Ferrule
12	08-0323	Tube (Solenoid to Tank)
13	05-0476	Pump Shield
--	86-0004	Pump Assy, Complete with Motor (Items 14 and 15)
14	91-0013	Pump Motor Assy
15	82-1483	Pump Body Assy
15A	04-0166	Seal
15B	82-0179	Pump Body Assy
15C	04-0169	Screw
15D	05-0132	Impeller
15E	02-0090	O-Ring
15F	05-0134	End Cap
15G	04-0207	Thumb Screw
15H	03-0183	Retainer, Pump Fitting
16	02-0089	O-Ring
17	54-0020	Spout Assy
18	02-0109	O-Ring
19	05-0442	Nozzle Fitting
20	54-0038	Nozzle Assy
21	52-2279	Switch Assy, Reset, with Harness
22	82-2831	Sensor Assy, Low Level, OJ
--	52-2267	Harness Assy, Jumper, Low Level Sensor
--	06-2337	Label, Low Level, Harness ID
23	30-9119	Bracket, Switch, Reset, Slimline with Sold Out
--	52-2793	Harness Assy, Jumper, Reset Switch
--	13-0176	Fitting, Bulkhead, Water Tight, HEYCO 3210
--	02-0155	O-Ring, for 13-0176
24	17-0370	Check Valve Assy
24A	02-0089	O-Ring
24B	05-0456	Body Fitting
24C	02-0115	O-Ring
24D	14-0004	Ball
24E	02-0103	O-Ring
24F	05-0425	Check Valve Cap
25	08-0193	Concentrate Tube
26	05-0446/01	Adaptor Fitting

9.5 AGITATOR DECK ASSEMBLY



ITEM	PART NO.	DESCRIPTION
1	52-0635	Agitator Motor Assy, 115V/60Hz
1A	91-0033	Agitator Motor, 115V/60Hz
1B	05-0404	Propeller
--	04-0412	Washer, Rubber (Agitator Motor Shaft)
2	05-0393/01	Agitator Deck
3	52-1882-01	Electronic Ice Bank Control
4	04-0470	Screw, 6 - 19 x 0.500
5	04-0062	Fill Hole Plug
6	02-0041	Seal
7	30-8656	Control Bracket
8	52-0670/02	Harness Assy

ITEM	PART NO.	DESCRIPTION
9	11-0051	Splice
10	04-0059	Screw, 8 - 36 x 0.375
11	04-0424	Screw, 8 - 36 x 0.750
12	04-0148	Screw, 10 - 32 x 0.250
13	04-0491	Star Washer
14	04-1261	Screw, 6 - 32 x 1.375
15	30-8241	Probe Bracket
16	04-0394	Screw, 6 - 32 x 0.500
17	52-1897	Ice Bank Probe

(Continued from previous page)

Lancer Chile Ltda. - Chile
Contact: Heriberto Concha
Vicuna mackenna 3019, San joaquin
Santiago, Chile
Phone: 56-2-5521657
FAX: 56-2-5521961
e-mail: lancerchile@lancer.tie.cl

Lancer Pacific
Web Site: www.lancerpacific.com

Australia

Lancer Pacific Pty Ltd
5 Toogood Avenue
Beverley 5009
PO Box 331
Welland 5007
South Australia
Phone: 61-8-8268-1388
FAX: 61-8-8268-1978
e-mail: joe-thorp@lancer-pacific.com.au
(Managing Director, Lancer Pacific)
steve-sotiriou@lancer-pacific.com.au
(for Fountain/soft drink)
bill-cadd@lancer-pacific.com.au
(for Draught Products)

New South Wales / ACT

Lancer Pacific Pty Ltd
Unit 8, 2 Holker Street
Newington 2127
New South Wales
Australia
Phone: 61-2-9648-6840
FAX: 61-2-9648-6850
e-mail: darren-castle@lancer-pacific.com.au

Victoria / Tasmania

Lancer Pacific Pty Ltd
55 Keele Street
Collingwood 3066
Victoria
Australia
Phone: 61-3-8415-1920
FAX: 61-3-8415-1929
e-mail: shane-devlyn@lancer-pacific.com.au

Queensland / Northern Territory

Lancer Pacific Pty Ltd
Unit 27, 256-258 Musgrave Road
Coopers Plains 4108
Queensland
Australia
Phone: 61-7-3274-5700
FAX: 61-7-3875-1805
e-mail: brett-thomson@lancer-pacific.com.au

Western Australia

Lancer Pacific Pty Ltd
24 Ernest Clark Road
Canning Vale 6155
Western Australia
Ph: 61-8-9455-2722
Fax: 61-8-9455-2455
Email: ross-kleinhanss@lancer-pacific.com.au

New Zealand

Lancer Pacific Ltd
9 O'Rorke Street
Onehunga, Auckland
POBox 12-523
Penrose, Auckland
New Zealand
Phone: 64-9-634-3612
Mobile Phone: 64-21-745-389
FAX: 64-9-634-1472
e-mail: mike-peffers@lancer-pacific.com.au
mark-hooper@lancer-pacific.com.au

Lancer Authorized Distributors

Indonesia

P.T. Dikarunia Sejahtera - Indonesia
Jl. Gelong Baru Tengah #1A
Tomang, Jakarta, Barat 11440
Indonesia
Phone: 62-21-5694-3245
FAX: 62-21-560-6889
e-mail: dikarunia@cbn.net.id

Philippines

RBP Industrial Sales, Inc. - Philippines
Unit 20, 2/F, Facilities Centre Bldg.
548 Shaw Blvd
1552 Mandaluyong City
Philippines
Phone: 632-531-1221/1215/1289
FAX: 632-531-1271
e-mail: rbpsales@pldtdsl.net
rbp@pldtdsl.net

Lancer Asia

International Sales
6655 Lancer Blvd.
San Antonio, TX 78219
Phone: (210) 310-7000
FAX: (210) 310-7242
1-800-729-1500
e-mail: asia@lancercorp.com

Hong Kong
Patrick Co - Director Asia
Flat A, 24/F., Houston Industrial Bldg.
32-40 Wang Lung Street
Tsuen Wan, N. T., Hong Kong
Phone: 852-94302585
FAX: 852-24082605
e-mail: patrickco@lancer-asia.com

Lancer Authorized Distributors

Shanghai Freser International Co Ltd. - China
1856, Hu Tai Road
Shanghai, 200436, China
Phone: 86-21-5650-3555
FAX: 86-21-5650-2666
e-mail: daniel@freser.com.cn

Freser (HK) Company Ltd - Hong Kong
Flat A, 24/F., Houston Industrial Bldg.
32-40 Wang Lung Street
Tsuen Wan, N. T., Hong Kong
Phone: 852-2408-2595
FAX: 852-2408-2605
e-mail: freserhk@netvigator.com

Hayakawa Sanki - Japan
Hayakawa Sanki, Inc.
1-13-13, Kayaba-cho
Nihonbashi, Chuo-ku
Tokyo, 103-0025
Japan
Phone: 03-5651-1481
FAX: 03-5651-1445
e-mail: toshi@hayakawa-sanki.co.jp

Tahoe Corporation - Korea
Tahoe Corporation
2FL, 835-66 Yocksam-dong
Kangnam-Ku
Seoul, Korea
Phone: 82-2-557-5612, -5614
FAX: 82-2-557-5615
e-mail: tahoepark@empal.com

Freser (MALAYSIA) SDN. BHD. - Malaysia
No. 31, Jalan TPP 5/13, Taman
Perindustrian Puchong, Seksyen 5,
47100 Puchong, Selangor, Malaysia
Phone: 60-3-8061-6666
FAX: 60-3-8062-1007
e-mail: freser@tm.net.my

Freser (S) Pte Ltd - Singapore
621 Aljunied Road
#02-09 Lipo Building
Singapore 389834
Phone: 65-6746-8191
FAX: 65-6746-8196
e-mail: fresersin@pacific.net.sg

Freser International Corporation - Taiwan
No. 76, Gui-Sui Street
Taipei 103, Taiwan R.O.C.
Phone: 886-2-2553-1555
FAX: 886-2-2553-2742
e-mail: herman@intl.freser.com.tw

Freser Makasan International Co., Ltd - Thailand
Freser Makasan International Co., LTD.
Navanakorn Industrial Estate Zone 4
95/3 Moo 13, Klongnung, Klongluang
Patumthani 12120, Thailand
Phone: 662 520-3457 (Automatic, 7 lines)
FAX: 662 529-3840
e-mail: komsan@makasan.co.th

Lancer - Indian Sub-Continent

India
Shabbir Shafiqui - Area Manager
India and Sub-Continent
B-7, Pannalal Silk Mill Compounds
78, LBS Marg, Bhandup (W)
Mumbai 400-078, India
Phone: 91-22-25966665
Cell No: 91-9867554152
FAX: 91-22-5637-4018
e-mail: shafiquis@vsnl.com

Lancer Authorized Distributors

Western Refrigeration Ltd - India
B-7, Pannalal Silk Mill Compounds
78 L.B.S. Marg, Bhandup (W)
Mumbai 400-078, India
Phone: 91-22-25966665
91-22-25962253
FAX: 91-22-25962257
e-mail: parmeet@westernequipments.com

Bengal Marketing Company - Bangladesh
Skylark Point (6th Floor)
Room #G-2
24/A Bijoy Nagar,
Dhaka-1000, Bangladesh
Phone: 880-2-934-2987
FAX: 880-2-935-0127
e-mail: bmc@dhaka.agni.com

Dynamic Equipment - Pakistan
Dynamic Equipment and Controls (Pvt.) Ltd.
F-1/23, Canal Cottages, Block-D.
New Muslim Town.
Lahore. Pakistan.
Phone: 0092-42-583-6737
0092-42-583-6787
FAX: 0092-42-586-7924
e-mail: info@dynamic-eqpt.com.pk
m.ateeq@dynamic-eqpt.com.pk

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.

Directory of USA - Canada Offices, International Offices, and Authorized Distributors

Corporate Office
6655 Lancer Blvd. • San Antonio, Texas 78219 • 210-310-7000 • 1-800-729-1500 • FAX 210-310-7250

Lancer USA Manufacturing Locations

Foster Road Facilities
6655 Lancer Blvd
San Antonio, TX 78219
Web Site: www.lancercorp.com
Phone: (210) 310-7000
MFG FAX: (210) 310-7088
ENG FAX: (210) 310-7096
ACCT FAX: (210) 310-7091
PURCH FAX: (210) 310-7094

Lancer FBD
5620 Business Park
San Antonio, TX 78218
Phone: (210) 666-0544
FAX: (210) 666-2044

Remanufacturing
6655 Lancer Blvd
San Antonio, TX 78219
Phone: (210) 310-7256
FAX: (210) 310-7261
1-800-729-1550

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@jkirwan.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

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

(Update #67 - as of January 20, 2006)

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
Lancer Europe, S.A.
Mechelsesteenweg 592
B-1930 Zaventem
Belgium
Phone: 32-2-755-2390
FAX: 32-2-755-2399
e-mail: info@lancereurope.be

England
Managing Director
Contact: Paul Haskayne
Lancer G.B. Llp.
Unit 9 Prosperity Court, Midpoint 18
Middlewich CW10 OGD
Cheshire, United Kingdom.
Phone: 441606837711
FAX: +441606832705
e-mail: phaskayne@lancergb.co.uk

Hungary
H-2100 Gödöllõ
Isaszegi út 67
Hungary
Phone: 36-28-417-179
FAX: 36-28416-881
e-mail: bodolai@compuserve.com

Egypt / Middle East
Elsayed Moniem - Regional Manager
Lancer Middle East/Africa
7 Mubarak Street
East Ain Shams 11311
Cairo, Egypt
Phone: 2-02-49-35-395
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

Lancer International Sales, Inc.
Representation Office
Kashirskoe shosse, 65 (1), Office 505
Moscow 115583 Russia
Mail: Moscow, 115551, Mail Box #2, Russia
Mobile Phone: 7-495-991-7778
Office Phone: 7-495-727-4063
Office FAX: 7-495-727-4064
e-mail: vdemkin@ktv.ru
lancer@online.ru

Lancer Authorized Distributor

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
6655 Lancer Blvd.
San Antonio, TX 78219
Phone: (210) 310-7000
1-800-729-1500
FAX: (210) 310-7245
e-mail: latinamerica@lancercorp.com

Lancer de Mexico, S.A. de C.V.
Contact: Carlos Robles
Calle Lerdo De Tejada #544 PTE.
Col. Las Villas
San Nicolas De Los Garza, N.L.
Mexico C.P. 66422
Phone: (52)-81-83-05-81-00
Phone: (52)-81-83-05-81-01
Phone: (52)-81-83-05-81-02
FAX: (52)-81-83-05-81-09
e-mail: Carlos.robles@lancer.com.mx

PEL SudAmerica - Ecuador
Lancer Sales Company
Contact: Luciano Lopez
Luis De Beethoven #N4756
Y Capitan Rafael Ramos
Sector Las Acacias
Quito, Ecuador
Phone: (5932) 2406346, 2407289, 2400937
FAX: (5932) 2405371
e-mail: Llopez@ecnet.ec

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

Bras Sulamericana LTDA. - Brasil
Contact: Fabio Queiroz
Rua. Dr. Ladislau Retti, 1400
Parque Alexandre
Cotia Sao Paulo - Brasil
CEP: 06714-150
Phone: 55-11-4612-1122
FAX: 55-11-4612-2219
e-mail: fabio.queiroz@bras.com.br

(Continued on reverse)