LANCER INSTALLATION SHEET

ICE BEVERAGE DISPENSERS - SERIES 4500

This basic Installation Sheet is an initial release.

If a complete Installation and Service Manual (for the unit being installed) is required or needed, please refer to the Lancer web site (www.lancercorp.com). All Lancer Manuals and Instruction Sheets are being made available for immediate access on the web site. Or contact Lancer Customer Service for assistance as required.

1. INSTALLATION

WARNING

TO AVOID PERSONAL INJURY OR DAMAGE, DO NOT ATTEMPT TO LIFT A UNIT WITHOUT HELP. FOR HEAVIER UNITS, USE OF A MECHANICAL LIFT MAY BE APPROPRIATE.

IBD UNITS ARE EQUIPPED WITH AUTOMATIC AGITATION. THE UNIT MAY ACTIVATE UNEXPECTEDLY. DO NOT PLACE HANDS, OR FOREIGN OBJECTS INTO THE ICE STORAGE COMPARTMENT.

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

1.1 RECEIVING

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

1.2 UNPACKING

A. Set shipping carton upright on the floor. Cut band and remove. Open top of carton and remove interior packing.
B. Lift carton up and off of the dispenser. Remove wood shipping base from the bottom of the dispenser. (Support dispenser while removing shipping base to prevent damage to the dispenser.)
C. Remove installation parts kits from the ice compartment.
D. Inspect unit and parts for concealed damage(s). If damage exists, notify delivering carrier and file claim against same.

1.3 SELECTING THE LOCATION

A. Select a level, well ventilated, accessible location (convenient to water, soda, and syrup lines and open type drain), a properly grounded electric supply and ensure sufficient clearance for air circulation. ***Sufficient clearance must be provided, if an ice maker is not installed, to allow filling the ice compartment from a five gallon bucket (a minimum of 16 inches is recommended). Lancer does <u>not</u> recommend the use of shaved, flake, nugget, or pellet ice in the dispenser. Dispenser will only operate properly with cube ice.***

B. ***The selected location should be able to support the weight of the dispenser, ice and possibly an ice maker being installed after counter cut out is made.*** Total weight (with ice maker) for the **IBD22 unit, IBD25 unit, IBD30 unit, or IBD44 unit** could exceed 800 pounds (363.6kg).

C. 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 with an FDA approved sealant. ***If an ice maker is to be mounted on top of dispenser, do <u>not</u> install dispenser on legs.***

1.4 CONNECTING TO ELECTRICAL POWER

WARNINGS

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.

BE SURE TO FOLLOW LOCAL ELECTRICAL CODES WHEN MAKING ALL CONNECTIONS. EACH DRINK DISPENSER MUST BE SUPPLIED WITH A SEPARATE ELECTRICAL CIRCUIT. DO NOT USE EXTENSION CORDS WITH THIS UNIT. DO NOT "GANG" TOGETHER WITH OTHER ELECTRICAL DEVICES ON THE SAME OUTLET.

THE KEY SWITCH DOES NOT DISABLE THE LINE VOLTAGE TO THE TRANSFORMER PRIMARY. ALWAYS DISCONNECT ELECTRICAL POWER TO THE UNIT TO PREVENT PERSONAL INJURY BEFORE ATTEMPTING ANY INTERNAL MAINTENANCE. ONLY QUALIFIED PERSONNEL SHOULD SERVICE INTERNAL COMPONENTS OF ELECTRICAL CONTROL HOUSING. MAKE SURE THAT ALL WATER LINES ARE TIGHT AND UNITS ARE DRY BEFORE MAKING ANY ELECTRICAL CONNECTIONS!

A. 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.*
B. Route the power supply cord to a grounded electrical outlet of the proper voltage and amperage rating, and plug in the unit.

1.5 CONNECTING TO WATER SUPPLY LINES

CAUTION

USE A SHARP KNIFE, RAZOR BLADE, OR TUBE CUTTER TO CUT TUBING. TUBING CUT WITH A SAW WILL RESULT IN PLASTIC SHAVINGS WHICH WILL PLUG THE FLOW CONTROLS IN THE DISPENSING VALVE. A FILTER IN THE WATER

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LINE MUST BE USED IF THE WATER SUPPLY CONTAINS ANY APPRECIABLE AMOUNT OF SILT, SAND, OR ANY OTHER DEBRIS. FAILURE TO DO SO CAN RESULT IN EQUIPMENT DAMAGE.

FAILURE TO LIMIT WATER PRESSURE TO 50 PSI (3.52 KG/CM^2) WILL RESULT IN IMPROPER PERFORMANCE OF THE DISPENSER - INSTALL WATER REGULATOR IF NECESSARY.

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 LEAKING INLET WATER CHECK VALVE WILL ALLOW CARBONATED WATER TO FLOW BACK THROUGH THE PUMP (WHEN IT IS SHUT OFF), AND CONTAMINATE THE WATER SUPPLY. A BACKFLOW PREVENTION DEVICE MUST COMPLY WITH ASSE AND LOCAL STANDARDS. *IT IS THE RESPONSIBILITY OF THE INSTALLER TO ENSURE COMPLIANCE.*

A SCREEN OF AT LEAST 100 MESH [100 STRANDS PER 25MM (ONE INCH)] SHALL BE INSTALLED IMMEDIATELY UPSTREAM OF ALL CHECK VALVE TYPE BACKFLOW PREVENTERS USED FOR WATER SUPPLY PROTECTION. THE SCREEN SHALL BE ACCESSIBLE AND REMOVABLE FOR CLEANING OR REPLACEMENT.

A FILTER IN THE WATER LINE MUST BE USED IF THE WATER SUPPLY CONTAINS ANY APPRECIABLE AMOUNT OF SILT, SAND, OR ANY OTHER DEBRIS. FAILURE TO DO SO CAN RESULT IN EQUIPMENT DAMAGE.

DO NOT OPERATE CARBONATOR PUMP WITH WATER SUPPLY SHUT OFF.

A. An adequate potable water supply must be provided. The water supply line must be at least a 3/8 inches (9.525 mm) pipe with a minimum of 20 PSI line pressure, but not exceeding a maximum of 50 PSI. Water pressure exceeding 50 PSI must be reduced to 50 PSI with a pressure regulator.
    1. 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.
    2. Off tastes and excessive silt, sand, or iron require that a water filter be installed in the water supplying the Carbonator. The water filter should be checked periodically, as required by local conditions.
    3. Do not connect to a heated (hot) water source or a water source supplying soft water. This will cause excessive foaming.

B. The Carbonator Pump is equipped with a Strainer and a Tee on the outlet side for a plain water Valve (if required), but a water supply containing any appreciable quantity of silt, fine sand, or other debris requires a Filter ahead of the Unit. The Filter cartridge must be cleaned periodically, depending upon the condition of the water. Failure to do so may starve the Pump and cause it to burn out; thereby, voiding the equipment warranty.

1.6 INSTALLATION OF THE UNIT

A Inspect the counter location where the unit is to be installed. Verify that the counter is strong enough to safely support the weight of the unit being installed (see Section 1.3), after the cutout for the unit is made.
B. Remove Splash Plate and Top Cover.
C. Remove Cover Plate at rear of unit if not a “through the counter” installation.
D. Connect soda and water supply lines to 3/8 inch barb fittings at the front of the unit. Check for leaks. (If dispenser is to operate with all soda valves, connect water line into one of the soda supply lines.)
E. Connect syrup supply lines to the 3/8 inch barb inlet fittings at the front of the unit. Check for leaks.
F. Install the ice bin drain hose; connect the 90° elbow or straight fitting underneath the unit’s base. The ice bin drain is located towards the front of the bin and slightly to the right. Screw the elbow or straight fitting into the cold plate; uncoil and connect the hose. Extend the hose to an open type drain.
G. Connect the hose to the Drip Tray fitting, install the Drip Tray, and extend hose to open type drain.
H. Both 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.*
I. Install Cup Rest and Splash Plate.
J. Connect Power Cord to grounded electrical outlet.
K. Test Motor operation by pushing Ice Chute.
L. Clean and sanitize dispenser (see Section 3).
M. Fill unit approximately half full with ice. Push Chute and check for ice delivery.
N. Finish filling the unit with ice and install Top Cover.
O. Set brix ratio for beverage dispensing valves according to manufacturer’s instructions.

1.7 CONNECTING CO_2

WARNINGS

CARBON DIOXIDE (CO_2) DISPLACES OXYGEN. STRICT ATTENTION MUST BE OBSERVED IN THE PREVENTION OF CO_2 GAS LEAKS IN THE ENTIRE CO_2 AND SOFT DRINK SYSTEM. IF A CO_2 GAS LEAK IS SUSPECTED, IMMEDIATELY VENTILATE THE CONTAMINATED AREA BEFORE ATTEMPTING TO REPAIR THE LEAK.

CO_2 IS A HEAVIER THAN AIR, COLORLESS, NONCOMBUSTIBLE GAS WITH A FAINTLY PUNGENT ODOR. HIGH PERCENTAGES OF CO_2 MAY DISPLACE OXYGEN IN THE BLOOD, PROLONGED EXPOSURE TO CO_2 MAY BE HARMFUL. PERSONNEL EXPOSED TO HIGH CONCENTRATIONS OF CO_2 GAS WILL EXPERIENCE TREMORS WHICH ARE FOLLOWED RAPIDLY BY LOSS OF CONSCIOUSNESS AND SUFFOCATION.

UNDER NO CIRCUMSTANCE SHOULD CO_2 PRESSURE EXCEED 80 PSI (5.6 KG/CM^2). PRESSURE ABOVE THIS LIMIT WILL RESULT IN DAMAGE TO THE SYRUP PUMPS. SHOULD REMOTE SYRUP PUMPS FAIL TO OPERATE PROPERLY AT 70 PSI (4.9 KG/CM^2), THE CO_2 PRESSURE MAY BE REDUCED TO A MINIMUM PRESSURE OF 60 PSI (4.2 KG/CM^2), BUT NO LOWER. TO AVOID POSSIBLE PERSONAL INJURY OR PROPERTY DAMAGE, DO NOT ATTEMPT TO REMOVE

SYRUP TANK COVER UNTIL CO_2 PRESSURE HAS BEEN RELEASED FROM TANK.

CAUTION

TO AVOID PERSONAL INJURY AND/OR PROPERTY DAMAGE, ALWAYS SECURE CO_2 CYLINDERS IN AN UPRIGHT POSITION WITH A SAFETY CHAIN TO PREVENT CYLINDERS FROM FALLING OVER. SHOULD THE VALVE BECOME ACCIDENTALLY DAMAGED OR BROKEN OFF, A CO_2 CYLINDER CAN CAUSE SERIOUS PERSONAL INJURY.

CO_2 REGULATORS CANNOT BE DISASSEMBLED FOR MAINTENANCE WITHOUT SPECIAL EQUIPMENT AND SHOULD BE RETURNED TO LANCER FOR ANY NEEDED REPAIR.

A. If carbonator is not installed, install per manufacturer's instructions.

1. Route dispenser tubing through cutout in counter or route through access in the back of the unit. Leave 12 inches (30 cm) of extra tubing length below counter for servicing and moving the dispenser.
2. Position the CO_2 gas tank in location. Assemble high pressure regulator to CO_2 gas tank and run jumper line to low pressure regulator. Attach the CO_2 gas line to the carbonator by attaching the line from the high pressure regulator to the single check valve marked "gas" on top of the carbonator tank. The setting of the high pressure CO_2 gas regulator should be 90 PSI to 110 PSI.

CAUTION

DO NOT TURN ON THE CO_2 AT THIS TIME.

DO NOT OPERATE PUMP WITHOUT SYRUP AS THIS COULD DAMAGE THE DIAPHRAGM OVER A PERIOD OF TIME. THE GAS LINE TO THE PUMP MUST BE CONTROLLED BY A LOW PRESSURE CO_2 REGULATOR CAPABLE OF BEING SET WITH UP TO 75 PSI (5.28 KG/CM^2) OUTLET PRESSURE.

3. Position the syrup tanks in the desired location. Attach the CO_2 gas lines leading from the low pressure regulator to these tanks. Connect syrup lines from tanks to the appropriate inlets at the right front of the unit. The syrup inlets are identified.
4. Fill with water and pressurize carbonation system per manufacturer's instructions. Actuate each valve until a smooth flow of carbonated water is obtained. Check for leaks.
5. Remove the protective plug from the CO_2 manifold (located on top of mini pumps on left side of unit) and connect the CO_2 supply line using a 1/4 inch elbow (supplied in installation kit.)
6. If dispenser does not have built in syrup pumps, connect directly to the carbonator CO_2 inlet check valve.

NOTE

To check for CO_2 leaks, close the valve on the CO_2 cylinder and observe if the pressure to the system drops with the cylinder valve closed for five (5) minutes. Open the cylinder valve after the check.

7. Mount the water filter assembly (if used) and water regulator in a convenient location.
8. Connect water inlet line to water regulator, to water filter, and then to the water inlet of the carbonator pump on the carbonator.
9. Provide a suitable drain in the plumbing system and attach the one (1) inch (2.54 cm) diameter schedule 40 PVC drains to it. The drip pan drainage outlet is located at the center rear of the unit. The ice water drainage outlet is located at the right front of the unit.
10. Be sure to place the ice trap in the drain outlet inside the ice bin ***before*** filling the cabinet with ice. This device holds the ice away from the drain outlet, allowing the ice water to drain properly.
11. Plug in the transformer box to a standard 15 AMP, 110 VAC, single phase outlet. The unit will internally convert the 110 VAC to 24 VAC.

1.8 OTHER

POURING HOT WATER INTO DRAIN MAY CAUSE THE DRAIN TUBE TO COLLAPSE. ALLOW ONLY LUKE WARM OR COLD WATER TO ENTER DRAIN TUBE. POURING COFFEE, TEA, AND LIKE SUBSTANCES INTO DRAIN MAY CAUSE THE DRAIN TUBE TO BECOME CLOGGED WITH COFFEE OR TEA GROUNDS, OR OTHER SOLID PARTICLES.

2. INSTALLATION OF VALVES (LMV, *LEV*® OR VOLUMETRIC)

2.1 Model 100 valves are factory preset for a flow rate of 3.0 ounces per second; an adjustment may be required.
2.2 Model 145 valves are factory preset for a flow rate of 4.5 ounces per second; an adjustment may be required.
2.3 Model 150 (Volumetric) valves are preset for flows rates of 1.5 oz/sec, 2.25 oz/sec or 3.0 oz/sec based on valve part number. A hand held programmer (Lancer PN 52-1420/02) is required to set ratio on Volumetric Valves.
2.4 Refer to Lancer web site (Installation Manuals 28-0027 for LMV/LEV valves and 28-0301 for Volumetric valves) for information on the following: Installation, Setting flow rate, Setting ratio, Cleaning, Sanitizing, and Troubleshooting.

3. CLEANING AND SANITIZING INSTRUCTIONS

WARNING

IF POWDER TYPE SANITIZER IS USED, IT MUST BE COMPLETELY DISSOLVED WITH WATER PRIOR TO ADDING TO THE SYRUP SYSTEM. THE USE OF HOT WATER WILL HELP DISSOLVE POWDER TYPE SANITIZERS. ENSURE SANITIZING SOLUTION IS REMOVED FROM DISPENSER AS INSTRUCTED. *RESIDUAL SANITIZING SOLUTION LEFT IN SYSTEM COULD CREATE HEALTH HAZARD.*

CAUTION

BE CAREFUL NOT TO GET SANITIZING SOLUTION ON ANY CIRCUIT BOARDS. INSURE ALL SANITIZING SOLUTION IS REMOVED FROM THE SYSTEM.

3.1 GENERAL INFORMATION

NOTE

The cleaning and sanitizing procedures provided herein pertain to the Lancer equipment. If other equipment is being cleaned or sanitized, follow the guidelines established for that equipment. Water lines are not to be disconnected during the cleaning and sanitizing of syrup lines to avoid contamination. *Please note that a fresh water rinse cannot follow sanitization of equipment.* Purge only with the end use product. *This is an NSF requirement.*

A. Lancer equipment (new or reconditioned) is shipped from the factory cleaned and sanitized in accordance with NSF guidelines. 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.

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. Recommended Preparation of Cleaning Solutions.

1. Cleaning solutions (for example, Ivory Liquid, Calgon, etc.) mixed with clean, potable water at a temperature of 90° to 110° 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 four (4) gallons of cleaning mixture should be prepared.
2. 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).

D. Recommended Preparation of Sanitizing Solutions.

1. Sanitizing solutions should be prepared in accordance with the manufacturer's written recommendations and safety guidelines. Follow manufacturer's requirements so that the solution provides 100 parts per million (PPM) available chlorine at a temperature of 90°F to 120°F. A minimum of four (4) gallons of sanitizing solution should be prepared.
2. 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 100 PPM available chlorine.

3.2 AMBIENT PROCESS

A. The ambient process is the most common method for cleaning and sanitizing dispenser equipment. The detergent should be as recommended and the sanitizer should be low pH (7.0) chlorine solution.

B. Disconnect syrup containers and remove product from tubing.

C. Rinse the lines and fittings with clean, room temperature water to remove all traces of residual product.

D. Fill lines with a low-sudsing, non-perfumed, and easily rinsed detergent solution which has been prepared in accordance with the manufacturer's recommendations. Make sure the lines are completely filled and allow to stand for at least ten (10) minutes.

E. Flush the detergent solution from the lines with clean water. Continue rinsing until testing with phenolphthalein shows that the rinse water is free of residual detergent.

F. Fill the lines with a low pH (7.0) chlorine solution containing at least 100 PPM (100 mg/L) available chlorine. Flow sanitizing solution through dispenser until output tests to full 100 PPM concentration. Allow to stand for 15 minutes.

G. Nozzle/Diffuser Sanitizing (***If so equipped***)

Use the following procedure to sanitize the nozzle housing during the dispenser sanitization procedure.

1. **Cleaning Solution** - Prepare a low sudsing, non-perfumed, and easily rinsed detergent solution and clean, potable water at a temperature of 90° to 110°F.
2. **Sanitizing Solution** - Prepare a chlorine solution (less than pH 7.0) containing 100 PPM available chlorine with clean, potable water at a temperature of 90° to 110°F. 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 100 PPM available chlorine.
3. **Cleaning Procedure:**
   a. Disconnect power, so the valve will not be inadvertently activated while cleaning.
   b. Remove nozzle housing by twisting it counter-clockwise and pulling it down. Wash the nozzle housing with the cleaning solution. Immerse the nozzle housing in a bath of the sanitizing solution for 15 minutes.
   c. While the parts are in the sanitizing solution, visually inspect around the nozzle mounting area for syrup residue. Using a cloth or nozzle brush and sanitizing solution, clean this area and the bottom of the nozzle body.
   f. Wipe off the valve shroud assembly and any other areas that may have been splashed by syrup.
   g. Wearing sanitary gloves, remove, drain, and air dry the nozzle housing.
   h. Make certain the nozzle o-ring is in place around the nozzle mounting area on the valve. If necessary, slide a new nozzle o-ring (PN 02-0228) onto the nozzle mounting area. (Wear sanitary gloves while handling the o-ring.) If needed, apply 111 lubricant (or another FDA approved lubricant) to the o-ring.
   i. Wearing sanitary gloves, install the nozzle housing by inserting it into the nozzle body and twisting it clockwise to lock it in place.
   j. Connect power and replace cover.

H. Reconnect syrup containers and ready Unit for operation.

I. Draw drinks to refill lines and flush the chlorine solution from the dispenser. Purge only with the end use product. *This is an NSF requirement.*

J. Taste the beverage to verify that there is no off taste.

4. SPECIFIC ICE COOL MANUALS AVAILABLE ON THE LANCER WEB SITE (BY PART NUMBER)

IBD22, 28-0255/06 **IBD30, 28-0255/06**

IBD25, 28-0417 **IBD44, 28-0420**