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INSTALLATION INSTRUCTION

COPPER EVAPORATOR COIL KIT (P/N 185216000) ON UNIVERSAL 750 PRE-MIX DISPENSER

IMPORTANT: Only qualified Personnel should install this Kit.

INTRODUCTION

The purpose of this kit is to replace the original expanded aluminum evaporator, which also doubles as the water bath tank, with a new copper tube style evaporator. The old aluminum evaporator remains in place as the water bath tank only.

A new anode and refrigeration system dual inlet strainer/dryer are also included with the kit and *must* be installed.

Retain these instructions as part of your equipment manual.

UNPACKING THE KIT

Unpack and inspect the kit. Make sure Loose-Shipped Parts are present and in good condition (see Figure 1).

Table 1. Loose-Shipped Parts

Item No.	Part No.	Name	Qty.
1	319238088	Suction Line Ass'y	1
2	186843000	Anode	1
3	187969000	Sheet Metal Screw, Phil Pan Hd, Type "A" Alum; No. 10 by 1/2-in.	1
4	185215000	Copper Evaporator Coil	1
5	319225000	Coil Spacer	4
6	320389000	Thread Rolling Screw, Phil Pan Hd, No. 6-32 by 1/4-in.	4
7	960050	Rubatex Insulation, 6-ft. long	1
8	2601	Strainer Dryer, Dual Inlet	1
9	189159001	Instructions	1

REQUIRED SUPPLIES AND EQUIPMENT

Supplies required are as follows:

Brazing alloy "Phos-Copper", "Silfos" or equivalent is required for copper-to-copper connections. These alloys contain about 15% silver.

Brazing alloy. "Easy-flow" or equivalent is required for copper-to-steel connections. This alloy contains about 50% silver.

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Flux for use with copper-to-steel connections.

Principal equipment needed for installing this kit is listed in the following table. Equivalent items may be substituted.

REQUIRED EQUIPMENT

Item No.	Name and Description	Use
1	Torch, Oxy-fuel (acetylene, propane, etc.)	Brazing
2	Torch Tips size No. 2 or 3	Brazing
3	Vacuum pump and gaging with 50-micron blank-off pressure. Alternately a pump having 28.5; HD minimum.	Removing air from system
4	Refrigerant recovery system	Removing refrigerant from system
5	Charging cylinder, visual indicating type with a refrigerant R-12 or R-502 scale and temperature correction curve, or a closed container with an accurate scale. Charging equipment must be accurate to .025 oz.	Charging the reworked system
6	Pinch-off tool	To seal process lines after charging
7	Ammeter, clamp-on type 0–50 amp range	To measure power
8	Voltmeter, 0–300 VAC	To measure line voltage
9	Ohmmeter, 0–10 and 100,000 ohms	To check resistance of electrical circuitry
10	Leak detector, capable of detecting at least 1/2-ounce/year.	To detect refrigerant leaks
11	Dry Nitrogen (–75° F dewpoint)	To purge system before charging
12	Tap line valve (2)	To make connection to refrigerant recovery system

DISASSEMBLY

1. Disconnect electrical power to the unit.
2. Melt ice bank and drain the tank.
3. Remove four screws securing unit top cover, then lift cover straight up off unit.

   Unit with sealed evaporator tank only.

   A. Disconnect agitator motor ground wire and power cord.

   B. Disconnect product inlet line swivel nut connectors from product coil line fittings on agitator motor and cover assembly. *MAKE SURE LINES ARE LABELED FOR IDENTIFICATION SO THAT THEY MAY BE RECONNECTED TO PROPER FITTINGS ON COVER ASSEMBLY.*

   C. Remove hex nuts securing product coil line fittings to cover assembly.

   D. Remove screws securing cover assembly to unit, then lift cover straight up to remove. *BE CAREFUL NOT TO LOSE RUBBER WASHERS ON COIL FITTINGS.*

E. Pull ice bank control sensing bulb up out of holder in product coil basket and lay off to one side. *BE CAREFUL NOT TO KINK CAPILLARY TUBE.*

F. Disconnect anode wire from evaporator tank, then remove anode from holder in product coil basket. Discard old anode.

Unit Without sealed evaporator tank.

G. Disconnect agitator motor power cord.

H. Pull ice bank control sensing bulb up out of holder in product coil basket and lay off to one side. *BE CAREFUL NOT TO KINK CAPILLARY TUBE.*

I. Disconnect anode wire from evaporator tank, then remove anode from holder in product coil basket. Discard old anode.

J. Remove two screws on each side securing agitator motor to evaporator tank.

4. Disconnect product lines from back of dispensing valves sleeves. *MAKE SURE LINES ARE LABELED FOR IDENTIFICATION SO THAT THEY MAY BE RECONNECTED TO PROPER VALVES.*

5. Remove shank nuts from back of dispensing valves sleeves. Remove valves and sleeves, spacers, plate, and plate gasket from unit.

6. Unit without sealed evaporator tank.

   A. Pull unit product inlet lines up through unit cabinet far enough to allow product coil basket and agitator motor to be lifted up and out of evaporator tank.

   B. Very carefully, lift product coil basket and agitator motor up out of evaporator tank and lay them off to one side.

7. Unit with sealed evaporator tank.

   A. Very carefully, lift product coil basket up out of evaporator tank and lay them off to one side. **IMPORTANT: If evaporator tank has hole in it allowing water to leak to inside of unit, hole may be repaired by using locally procured two-part epoxy patch.**

8. Facing front of unit (dispensing valve side), remove left and rear lower access grilles for access to refrigeration system.

9. Remove drip tray from unit.

10. Remove four screws above and three screws below lower front access grille securing front panel to unit.

11. Remove three screws above and one screw below lower left access grille securing left-side panel to unit.

12. Remove five screws securing left (facing dispensing valve side of unit) side corner securing front and left-side panels together.

13. Pull left and front side panels apart in preparation to route new SUCTION LINE ASS'Y (item 1) copper lines from lower part of unit to inside of evaporator tank.

Removal of Refrigerant. In starting work, be advised that the following warnings, cautions and notes are directly applicable:

WARNING: to avoid possible fatal electric shock or serious injury, disconnect electrical power from the unit before starting kit installation.

WARNING: To avoid electrical shock even after electrical power has been disconnected from the Unit, discharge the start capacitor by momentarily touching both terminals at the same time using an insulated screwdriver.

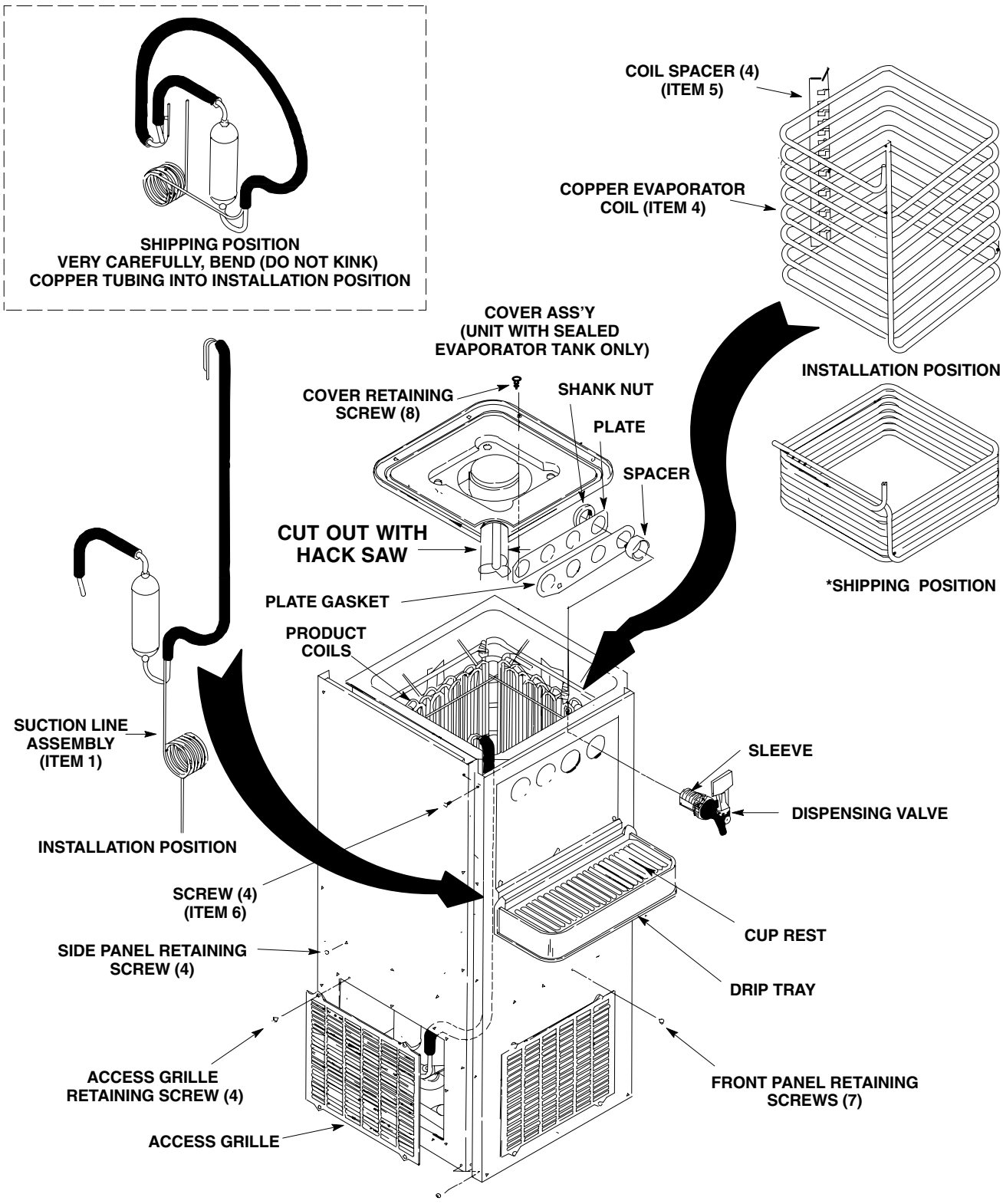

FIGURE 1. PARTS LOCATION

WARNING: To avoid eye injury, wear protective glasses or goggles while working with refrigerant or brazing.

DO NOT VENT REFRIGERANT TO ATMOSPHERE

NOTE: Work in a well-ventilated area. Refrigerant is not toxic, but will displace air. Fumes from brazing contain toxic gases.

1. Remove refrigerant from the unit as follows:
2. At the compressor, install a tap line in the suction process line.
3. At the dual inlet drier, install a second tap line valve on the discharge process line.
4. Connect the tap line valves to the refrigerant recovery system and draw off the refrigerant.

KIT INSTALLATION

1. *Very carefully* (see Figure 1), bend COPPER EVAPORATOR COIL (item 4) long tube from shipping position to installation position. BE VERY CAREFUL DURING BENDING NOT TO KINK TUBE.
2. Install COIL SPACERS (item 5) on COPPER EVAPORATOR COIL (item 4).
3. Very carefully, install copper evaporator coil assembly in evaporator tank with coil inlet and outlet tubes positioned in corner where front and side panels are separated.
4. Cut old evaporator coil refrigeration tubes off 2-inches below evaporator tank aluminum tubes inside lower part of unit. Pinch off or plug tubes.
5. Remove old suction line assembly, including accumulator and old dual-inlet strainer dryer, from inside unit.
6. Very carefully (see Figure 1) bend SUCTION LINE ASS'Y (item 1) from shipping position to installation position. BE VERY CAREFUL DURING BENDING NOT TO KINK TUBE.
7. Place new SUCTION LINE ASS'Y (item 1) in position inside unit. Larger suction line and capillary tube to be routed from lower part of unit up through opened corner to inside of evaporator tank.
8. Place large suction line inside line leading up from bottom of copper evaporator coil. Place capillary tube in line leading from top side of evaporator coil.
9. Using proper soldering procedure, solder copper evaporator coil tube connections.

CAUTION: STRAINER DRYER, DUAL INLET (item 8) must be installed in horizontal position to avoid premature compressor failure.

NOTE 1–Cap tube must not be cut off more than 2-inches. (NOTCH WITH FILE AND BREAK OFF.)

NOTE 2–Cap tube must not be inserted into drier opening more than 1/2-inch.

NOTE 3–Drier must not be uncapped more than 10 minutes before brazing into system.

WARNING: To avoid possible personal injury, do not apply heat to a charged system.

10. Connect "dry" nitrogen (–75° F dewpoint minimum) into refrigeration system to purge system. *DO NOT PURGE WITH CO_2.*

11. Purge system at least 10-minutes with dry nitrogen prior to brazing.

12. Adjust nitrogen flow until a very small amount (less than 1-psi) of nitrogen is flowing through refrigeration system.

13. While nitrogen is slowly flowing through refrigeration system, solder in lower part of suction line assembly into system. STRAINER DRYER, DUAL INLET (item 8) must be installed during soldering operation.

14. Disconnect dry nitrogen from refrigeration system, then clean all flux from brazed joints with cold water.

LEAK CHECK

Leak check system including newly brazed joints. If joint is suspected of a leak, tape envelope made of poly over joint to trap leaking refrigerant. Wait 10-minutes, then use leak detector to check air inside envelope for traces of refrigerant.

DO NOT VENT REFRIGERANT TO ATMOSPHERE

CHARGING

1. Pressurize refrigeration system to saturation with clean dry R-12 refrigerant gas.

2. Exhaust refrigerant and evacuate. If high-vacuum pump is used, evacuate to at least 200-microns (preferably 100-microns) prior to charging.

3. Charge refrigeration system with 10-ounces of clean dry R-12 refrigerant.

ASSEMBLY

1. Push corner of unit (side and front panel) together.

2. Install THREAD ROLLING SCREWS (item 6) in first four holes (top to bottom) to secure corner. *NEW SCREWS ARE SHORTER IN LENGTH THAN ORIGINALS AND WILL NOT PUNCTURE REFRIGERATION TUBES ROUTED UP THROUGH CORNER OF UNIT.*

3. Install remaining screws removed in disassembly steps 10 and 11 securing front and side panels to unit.

4. Unit without sealed evaporator tank.

    A. Very carefully, place product coil basket and agitator motor in unit. Pull excess unit product inlet lines back down through unit cabinet.

    B. Secure agitator motor in unit with four screws (two each side).

    C. Place ice bank control sensing bulb in product coil basket holder. *BE CAREFUL NOT TO KINK CAPILLARY TUBE. COIL EXCESS TUBE AND PLACE IN A SAFE AREA.*

    D. Install new ANODE (item 2) in product coil basket holder.

    E. Connect anode wire to evaporator tank using aluminum SHEET METAL SCREW (item 3).

    F. Connect agitator motor power cord.

    G. Install dispensing valves, plate gasket, and plate on unit and secure with shank nuts.

    H. Connect product coils product lines to backs of dispensing valves sleeves.

5. Unit with sealed evaporator tank.

    A. Very carefully, place product coils basket in unit.

B. Place ice bank control sensing bulb in product coils basket holder. *BE CAREFUL NOT TO KINK CAPILLARY TUBE. COIL EXCESS TUBE AND PLACE IN A SAFE AREA.*

C. Install new ANODE (item 2) in product coil basket holder.

D. Connect anode wire to evaporator tank using aluminum SHEET METAL SCREW (item 3).

E. Install dispensing valves, plate gasket, and plate on unit and secure with shank nuts.

F. Connect product lines to back of dispensing valve sleeves.

G. Make sure rubber washers are in place on tank coil line fittings.

H. Remove water fill plug from water fill hole in agitator motor and cover assembly.

I. Using hack saw (see Figure 1), cut out corner of cover assembly water fill hole enough to fit over lines connected to new copper evaporator coil.

J. Very carefully, place agitator motor and cover assembly in unit. Secure cover assembly in unit with screws.

K. Secure product coil line fittings to cover assembly with hex nuts.

L. Connect agitator motor ground wire and power cord.

M. Connect product inlet line swivel nut connectors to product coil line fittings on cover assembly.

IMPORTANT: Install RUBATEX INSULATION (item 7) on copper tubing as follows:

A. Cut rubatex insulation to length for length of tubing to be insulated.

B. Remove paperback from cut piece of insulation.

C. Lay insulation length wise along copper tubing, then wrap insulation on tubing.

6. Using RUBATEX INSULATION (item 7), wrap accumulator from insulating tubing on bottom of accumulator to solder connection on compressor. *MAKE SURE REFRIGERATION PLUMBING AND ITS COMPONENTS DO NOT INTERFERE WITH CONDENSER FAN.*

7. Using RUBATEX INSULATION (item 7), wrap suction line assembly tubes where they enter evaporator tank.

8. Fill water tank with clean water to top of stainless steel coils located in coil basket. *USE LOW-MINERAL-CONTENT WATER WHERE A LOCAL WATER PROBLEM EXISTS.*

9. Install unit top cover and secure with four screws.

10. Install lower access grilles on unit.

11. Install unit drip tray.

TESTING

Test run unit to ensure it builds an ice bank (43 lbs.) and shuts off.