INSTALLATION INSTRUCTIONS

Suction Line Assembly & Accumulator P/n 631500284

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Revision Date: January 08, 2015

Revision: C

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

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

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

Contact Information:

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

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Printed in U.S.A.

SAFETY INSTRUCTIONS

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

Safety Overview

- Read and follow **ALL SAFETY INSTRUCTIONS** in this manual and any warning/caution labels on the unit (decals, labels or laminated cards).
- Read and understand ALL applicable OSHA (Occupational Safety and Health Administration) safety regulations before operating this unit.

Recognition

Recognize Safety Alerts

This is the safety alert symbol. When you see it in this manual or on the unit, be alert to the potential of personal injury or damage to the unit.

DIFFERENT TYPES OF ALERTS

DANGER:
Indicates an immediate hazardous situation, which if not avoided, **WILL** result in serious injury, death or equipment damage.

WARNING:
Indicates a potentially hazardous situation, which if not avoided, **COULD** result in serious injury, death, or equipment damage.

CAUTION:
Indicates a potentially hazardous situation, which if not avoided, **MAY** result in minor or moderate injury or equipment damage.

SAFETY TIPS

- Carefully read and follow all safety messages in this manual and safety signs on the unit.
- Keep safety signs in good condition and replace missing or damaged items.
- Learn how to operate the unit and how to use the controls properly.
- **Do not** let anyone operate the unit without proper training. This appliance is **not** intended for use by very young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance.
- Keep your unit in proper working condition and do not allow unauthorized modifications to the unit.

QUALIFIED SERVICE PERSONNEL

WARNING:
Only trained and certified electrical, plumbing and refrigeration technicians should service this unit. **ALL WIRING AND PLUMBING MUST CONFORM TO NATIONAL AND LOCAL CODES. FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR EQUIPMENT DAMAGE.**

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Safety Precautions

This unit has been specifically designed to provide protection against personal injury. To ensure continued protection observe the following:

WARNING:
Disconnect power to the unit before servicing following all lock out/tag out procedures established by the user. Verify all of the power is off to the unit before any work is performed.

Failure to disconnect the power could result in serious injury, death or equipment damage.

CAUTION:
Always be sure to keep area around the unit clean and free of clutter. Failure to keep this area clean may result in injury or equipment damage.

Shipping And Storage

CAUTION:
Before shipping, storing, or relocating the unit, the unit must be sanitized and all sanitizing solution must be drained from the system. A freezing ambient environment will cause residual sanitizing solution or water remaining inside the unit to freeze resulting in damage to internal components.

CO_2 (CO_2 (Carbon Dioxide) Warning

DANGER:
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, particularly in a small area, **IMMEDIATELY** ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentrations of CO_2 gas experience tremors which are followed rapidly by loss of consciousness and **DEATH.**

Power Cord

CAUTION:
If the power cord is damaged, it must be replaced by a special cord available from the manufacturer or its service agent.

Sound Level

CAUTION:
The A-weighted sound pressure level has been determined to be below 70dBA.

Unit Location

CAUTION:
This unit is not designed for use in outdoor locations.

INSTALLATION INSTRUCTIONS

This kit applies to the XRC1444 Remote Condenser X Series Ice Maker.

WORK OVERVIEW

- Disconnect power. Shut off water supply.
- Remove exterior panels. Recover refrigerant in system.
- Disconnect condenser line kit. Disconnect electrical harnesses and remove structural panels.
- Remove existing piping assemblies.
- Place and braze new piping assemblies. Leak test unit.
- Insulate critical components, replace structural panels, and reconnect electrical harnesses.
- Reconnect condenser line set. Evacuate system and recharge with refrigerant.
- Run test unit.
- Replace exterior panels.

Table 1: Parts List

Item No.	Part No.	Description	Qty.
1	630001164	Suction Line Heat Exchange Assembly	1
2	630001147	Liquid Line with Filter	1
3	630001165	Compressor Suction Line Assembly	1
4	630001166	Service Valve & Bracket Assembly	1
5	630001146	Foamed Accumulator Assembly	1
6	169225013	8” Insulation line – 1-1/8” ID	1
7	163506001	Wire Tie - 7"	3
8	630900972	Insulation Tape Kit - Expansion Valve Bulb	2
9	164005001	1/8” POP Rivet – Stainless	1

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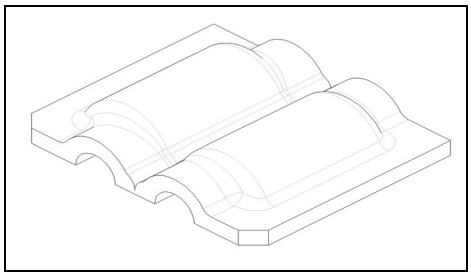

Figure 1. Item 8

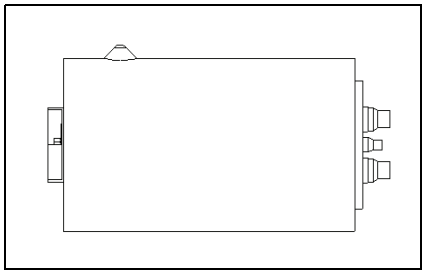

Figure 2. Item 5

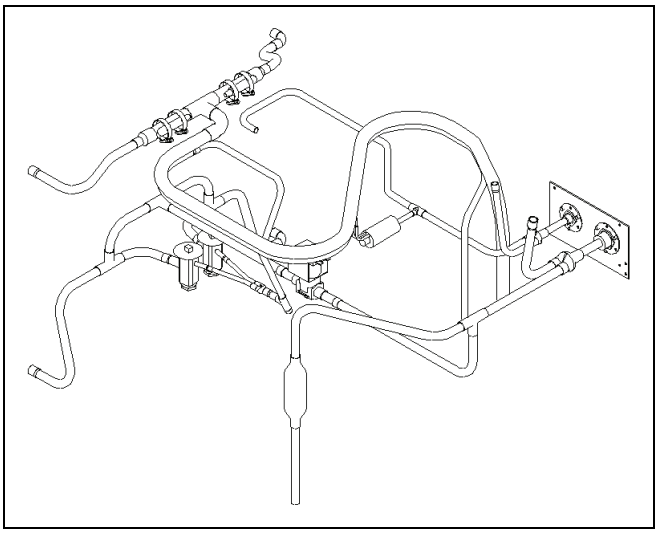

Figure 3. Item 8

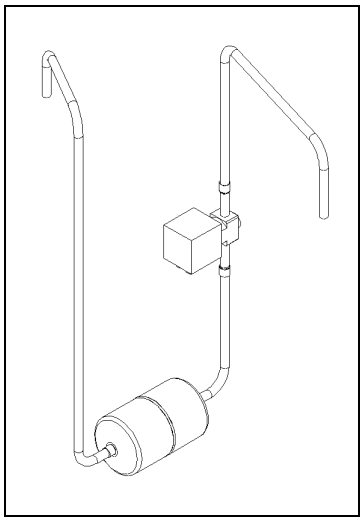

Figure 4. Item 2

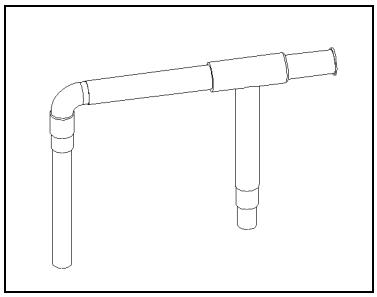

Figure 5. Item 3

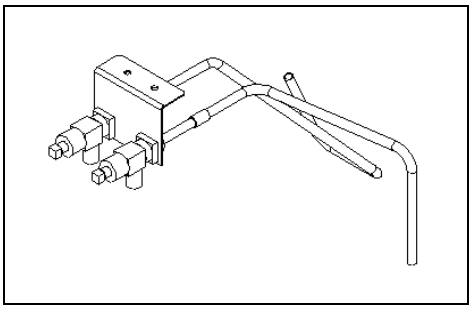

Figure 6. Item 4

GENERAL WORK GUIDELINES

- Read and understand all instructions before starting.
- Disconnect all electrical power from unit prior to beginning work.
- Shut off water supply to unit prior to beginning work.
- Prepare work area so that no brazing material, dirt, metal shavings, or other objects / refuse will enter the ice storage area.
- Save all screws, nuts, bolts, grommets, or other hardware.
- Work is to be performed by a trained, EPA certified refrigeration mechanic.

INSTALLATION INSTRUCTIONS

WARNING:
Disconnect all electrical power from unit.

1. SHUT OFF WATER SUPPLY.
2. Remove the front panel cover (A) top cover (B) and louvered side panel (C) (FIGURE 7).

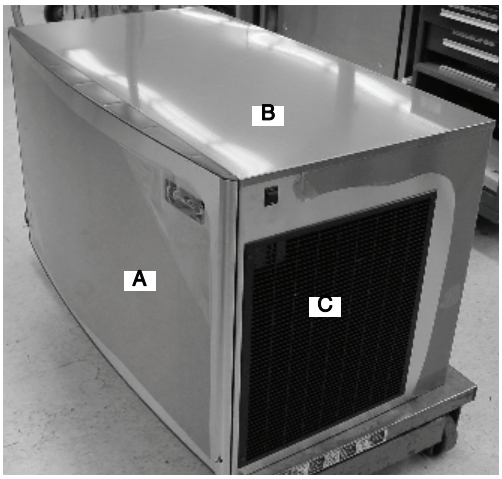

Figure 7.

3. Remove the evaporator splash panel (D) and control box cover (E) (FIGURE 2).
4. The icemaker and accessories should be charged with 250 ounces of R-404A (HP-62).

Regardless of the condition of the refrigerant, it must be recovered (as defined in ARI Standard 740-91) from the system, including the remote condenser and line set.

The refrigerant type and charge are indicated on the serial plate, located on the water pan (F) (FIGURE 8). This charge amount does NOT include that which is normally present in a factory charged condenser or line set.

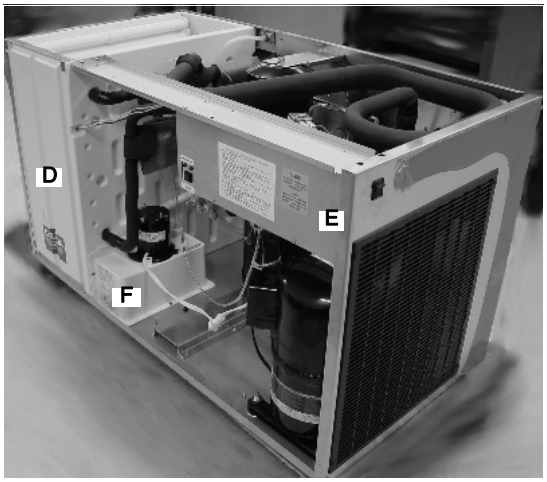

Figure 8.

IMPORTANT:
Use only recovery equipment designated for use with r-404a (hp-62).

Comply with all federal regulations concerning the handling of refrigerants.

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WARNING:
If the compressor has burned-out, there is a refrigerant leak, moisture is present, or contaminates or other non-condensables are in the system, the refrigerant recovered from this unit may NOT be reused in this product until it has been reclaimed to meet ARI Standard 700-88.

5. Drain the evaporator water pans (A)(C) by removing the connection tube behind the metal evaporator support (B) (FIGURE 9).

IMPORTANT:
The water MUST be drained from both the RIGHT and LEFT pan. Failure to do so will cause the pressure transducer (which controls the harvest cycle) to be set improperly on start up.

DO NOT drain the water into the ice storage area, unless the area is completely free of ice.

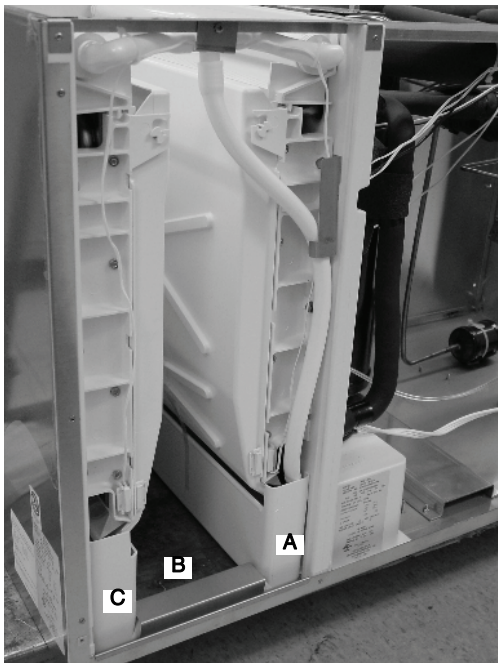

Figure 9.

WARNING:
The water pump motor must be protected from water splash. Do NOT introduce water into the motor housing. Warranty on water pump is VOID if water damaged.

6. Replace the connection tube and metal support when the pans are completely drained.
7. Disconnect the electrical plug from the Water Fill Valve (D) and Water Dump Valve (E) (FIGURE 10).

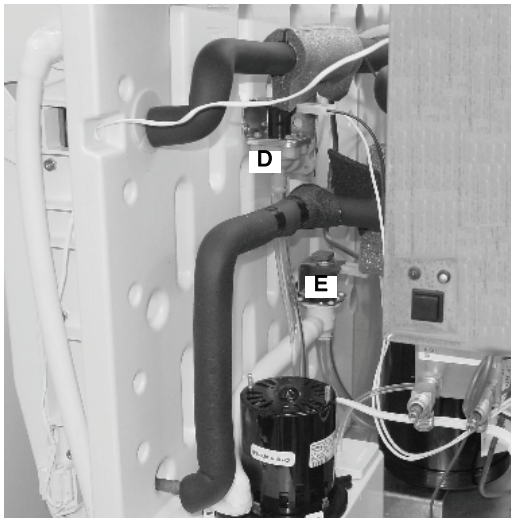

Figure 10.

8. Disconnect the Water Pump plug (F) and Transducer Pressure Hose (G) (FIGURE 11).

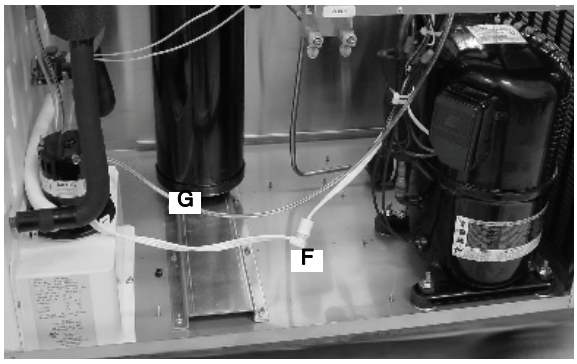

Figure 11.

9. Disconnect the plug from the Hot Gas Solenoid Valve (FIGURE 12).

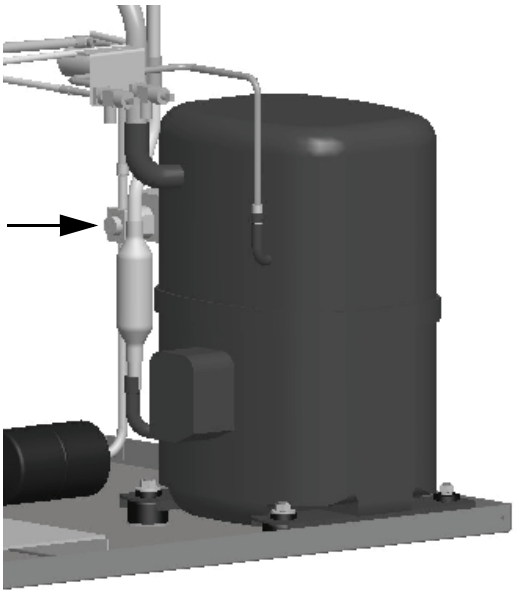

Figure 12.

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10. Remove the junction box cover and disconnect all electrical leads to the compressor (FIGURE 13 & 14).
11. Remove the **ground wire** from the screw post on the chassis, by the compressor.

Figure 13.

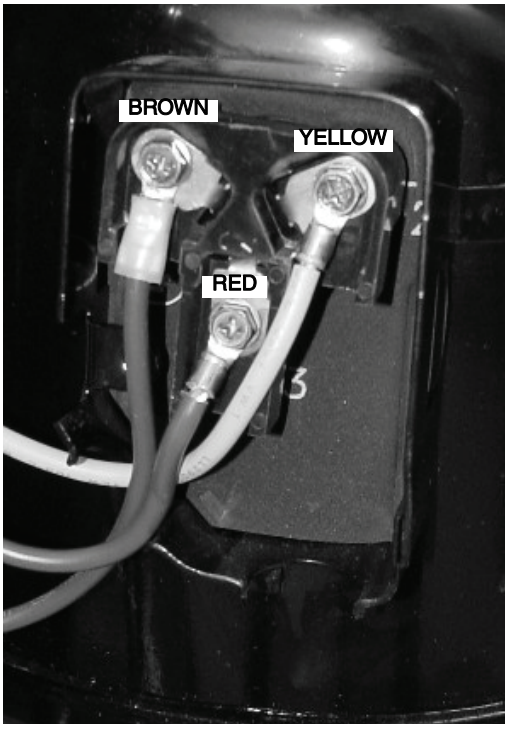

Figure 14.

12. Disconnect and remove the leads from the junction box (FIGURE 15) for the:
    A. Curtain Switches – 2 white low voltage plug harnesses (Control board)
    B. High Pressure Cutout – 2 blue wires (Contactor and #5 pin on control board)
    C. Crankcase Heater – 2 blue wires (line side of contactor)

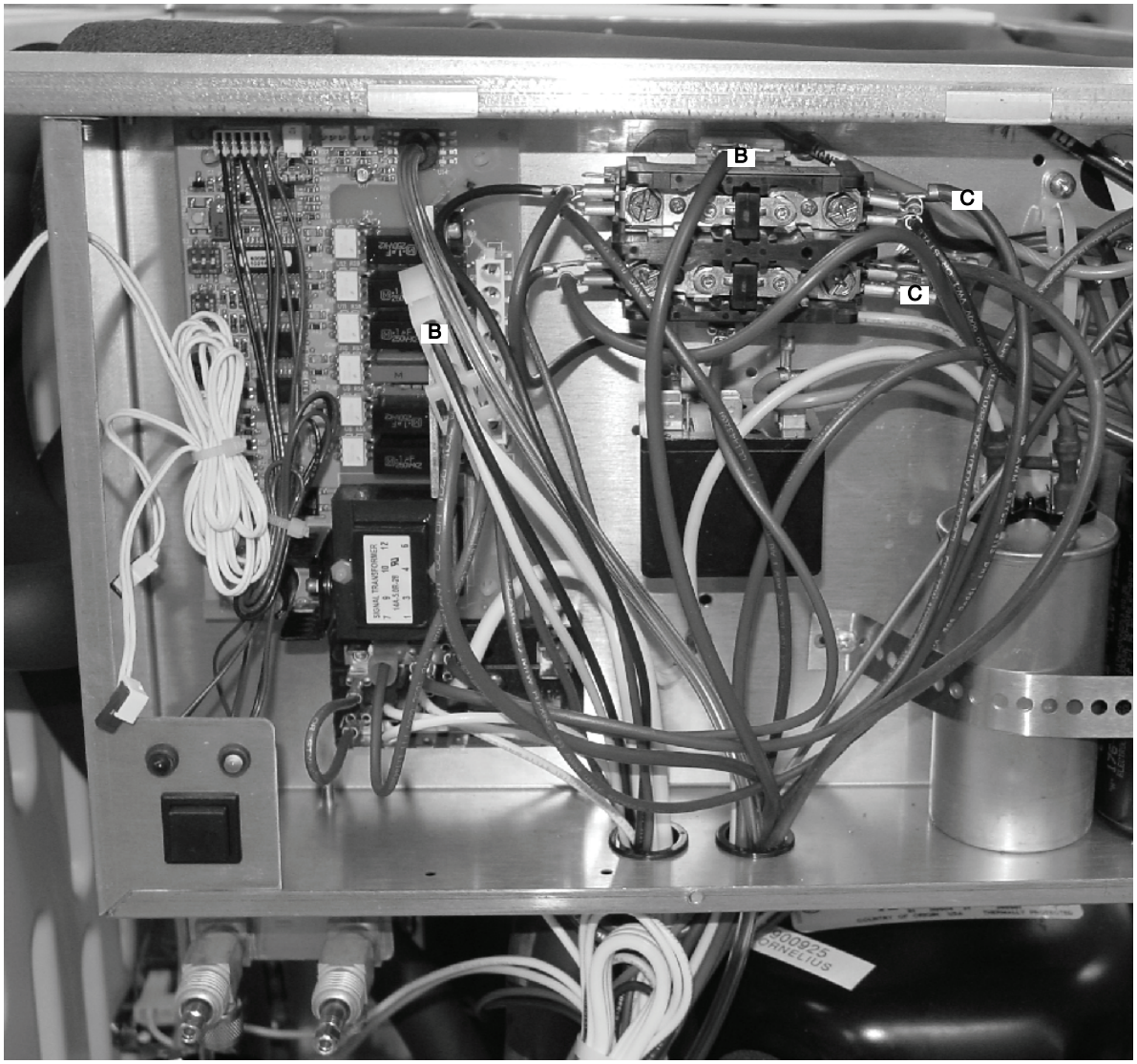

Figure 15.

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13. Remove the 2 screws connecting the service valve bracket (A) to the control box (FIGURE 16).

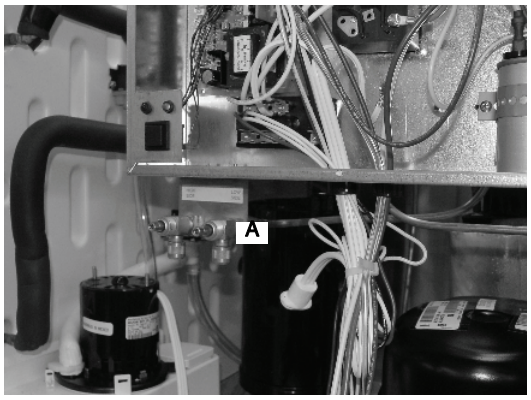

Figure 16.

14. Remove the 2 screws connecting the top support brace (B) to the evaporator bulkhead (FIGURE 17).

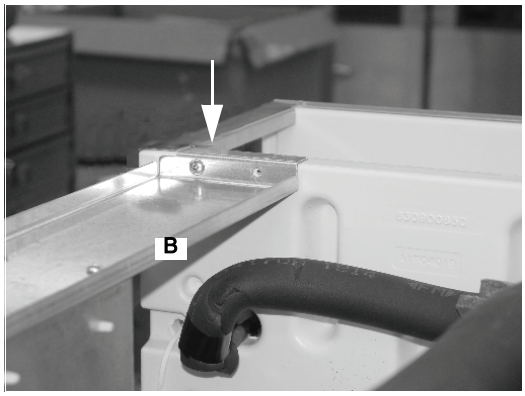

Figure 17.

15. Drill out the rivet attaching the right side panel to the base (FIGURE 18). A 1/8” drill bit is recommended.

Figure 18.

16. Remove the 5 screws attaching the right side panel to the rear panel.

    Remove the 4 screws attaching the Aeroquip valve bracket (A) to the back panel.

    Remove the 4 screws on the back panel at the receiver bracket. (FIGURE 19).

    Remove the 2 screws holding the 2 piping access covers (B) to the wrap panel.

    Remove the 6 screws attaching the back panel to the left wrap panel.

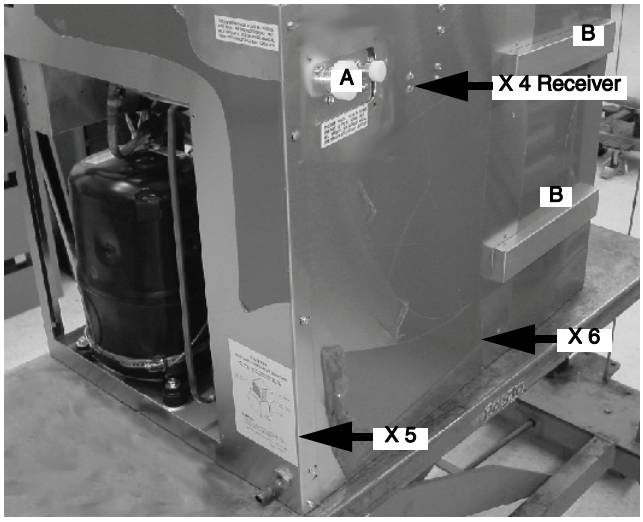

Figure 19.

17. Lift and set aside the right side panel, control box, and support brace assembly.
18. It is not necessary to disconnect the internal water line (connecting the rear panel fitting to the fill valve.) However, if the water supply line (external) inhibits your work on the rear of the unit, it may be disconnected.

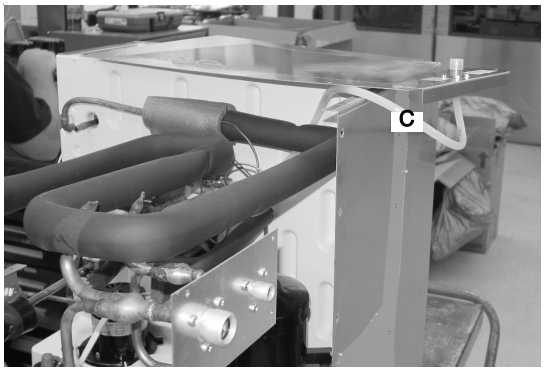

Figure 20.

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19. Remove the bulkhead seals (A) at the front of the evaporator assembly.

    Remove the insulation from the evaporator inlet and outlet lines (FIGURE 21).

    Remove enough insulation to safely disconnect these lines.

WARNING:

i. All plastic, electrical, or sensing components, assemblies, or harnesses must be protected when heating the refrigeration lines.

Failure to take appropriate actions may result in damage to the unit.

ii. The refrigerant in the system should be recovered and the system purged with nitrogen prior to any brazing operations.

Failure to take appropriate actions may cause damage to the unit and result in personal injury or death.

20. If the refrigerant in the system has been fully recovered, open the high side service valve.

    Attach a nitrogen feed (B) to the low side service valve (5-10 psi) (FIGURE 21).

    Open the low side service valve to purge the system with nitrogen. As power to the unit has been disconnected, disassemble the hot gas valve to allow nitrogen to flow through the entire system.

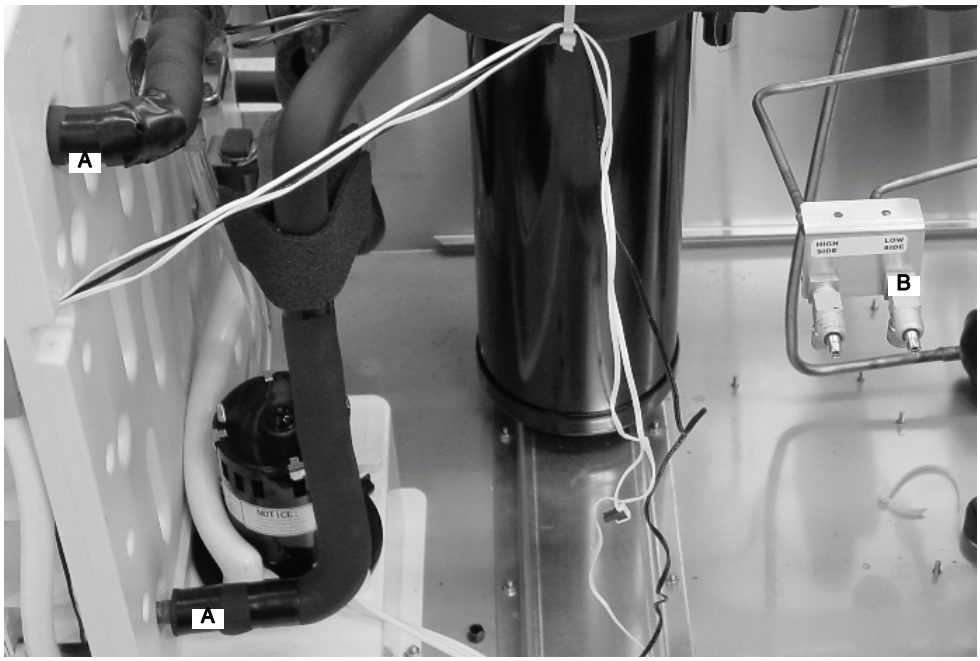

Figure 21.

21. Protecting the water pump and plastic bulkhead from heat, remove the evaporator piping at the bulkhead, leaving the short extension tubes attached (FIGURE 22).

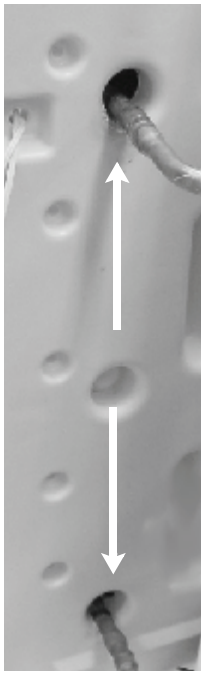

Figure 22.

22. Move the nitrogen feed to the service port (A) on the receiver. Open the service valve.

    Protecting the plastic bulkheads and the water pan, remove the connections to the receiver (FIGURE 23).

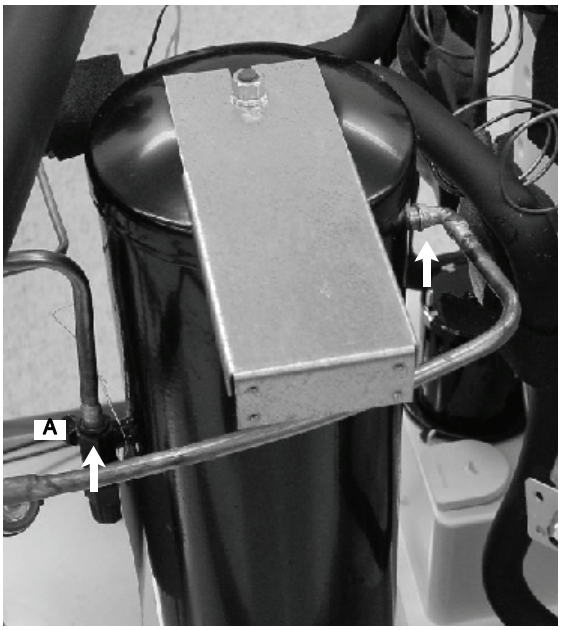

Figure 23.

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23. At the rear of the unit, remove the suction line (A) and the liquid line (C) from the left evaporator. Do not remove the line extensions (B) (FIGURE 24).

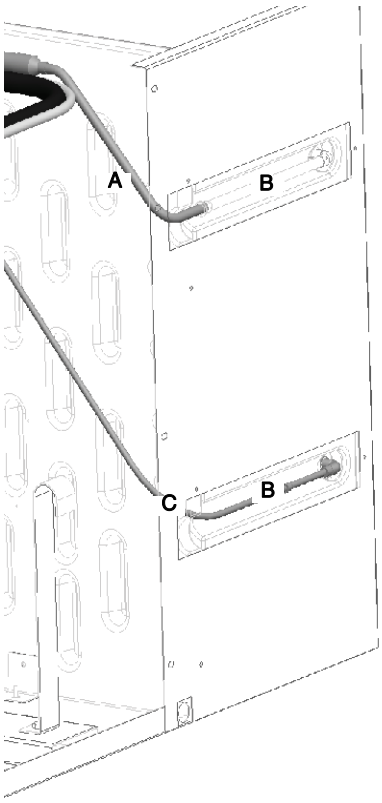

Figure 24.

24. Move the nitrogen feed to the low side service valve. Remove the insulation from the suction inlet (A) (FIGURE 25).
25. Remove the suction line inlet and the compressor discharge line (B) from the compressor.
26. Remove the low side service valve line (C) from the compressor.
27. Disconnect the suction line assembly from the condenser line set at the Aeroquip valves.
28. Remove and discard the suction line assembly, including any accumulator that may be installed.

Figure 25.

29. Place the foamed accumulator assembly orienting the suction line outlet (D) to the right end of the unit (FIGURE 26).

    D – suction outlet

    E – liquid inlet

    F – suction inlet

    G – liquid outlet

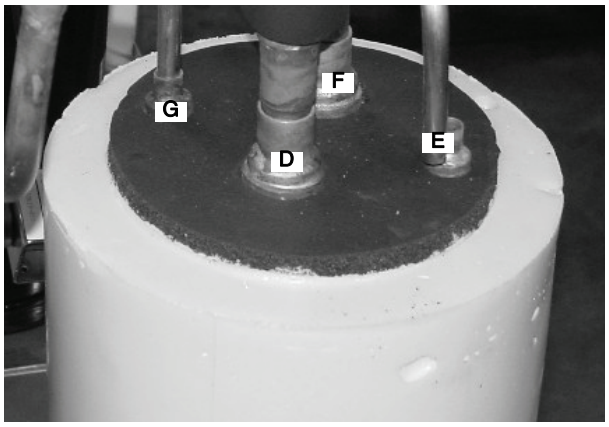

Figure 26.

The suction inlet can be identified by the insertion of a 3/8” probe (FIGURE 27). The baffle on the inlet port will limit travel; the suction outlet will not. Do NOT release the probe into the accumulator.

Do NOT braze new piping assemblies until all components have been placed in the unit.

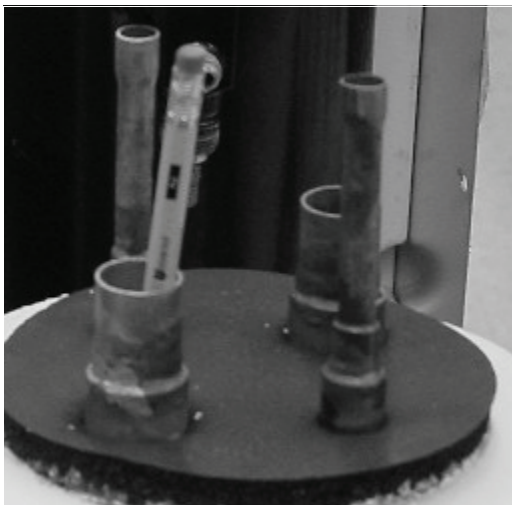

Figure 27.

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30. Place the Heat Exchange Suction Line in the unit. This assembly is the largest, and contains the expansion valves and hot gas solenoid (FIGURE 28).

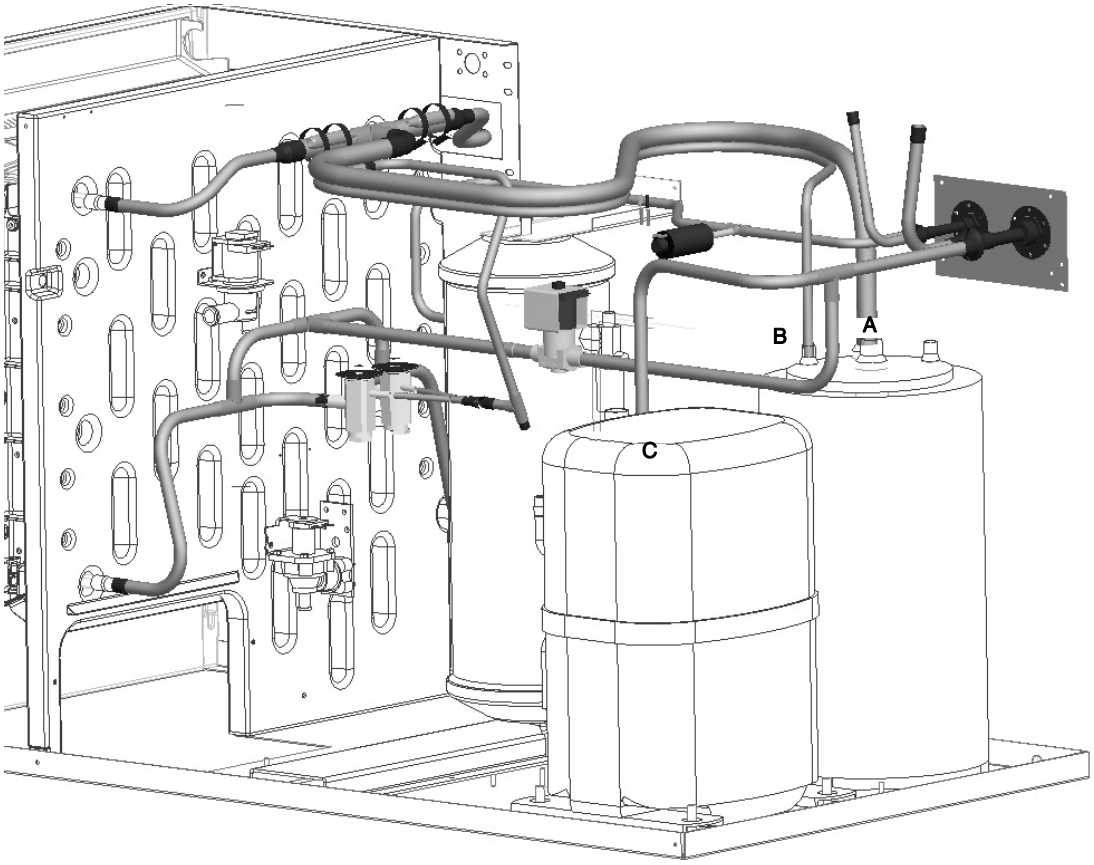

Figure 28.

Connect the tubing to the suction inlet (A) and liquid outlet (B) on the accumulator.

Connect the tubing to the evaporator inlets and outlets, compressor discharge (C), and the receiver inlet port (D) (FIGURE 29).

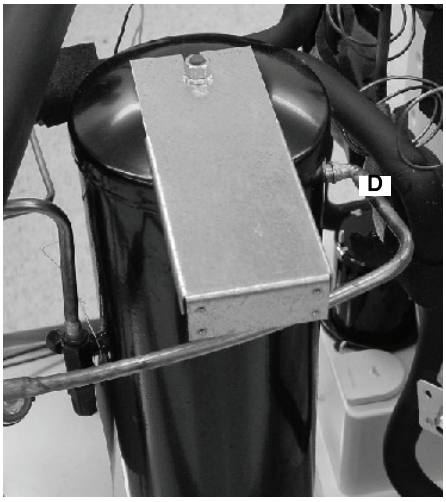

Figure 29.

31. Place the Compressor to Accumulator Suction Line in the unit (FIGURE 30).

    Place in compressor suction inlet (A) and accumulator suction outlet (B). Add the 8” of 1-1/8” insulation at the compressor (A).

    Do NOT connect the condenser line set at this time.

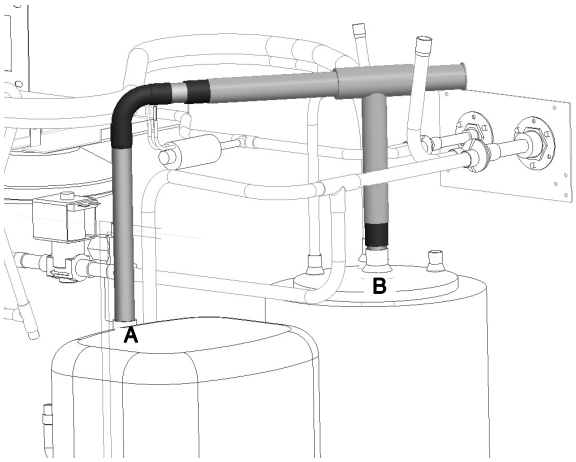

Figure 30.

32. Place the **Liquid Line with Filter Drier** in the unit. This assembly has the filter drier and the liquid line valve.

    Connect the valve side of the assembly to the liquid inlet (A) on the accumulator.

    Connect the filter side to the service port valve (B) on the receiver (FIGURE 31).

33. Place the Service Valve Assembly in the unit.

    Connect the low side pressure tube to the compressor service port (C).

    Connect the high side pressure tube to the Heat Exchange Suction Line just prior to the expansion valves (D) (FIGURE 31-A).

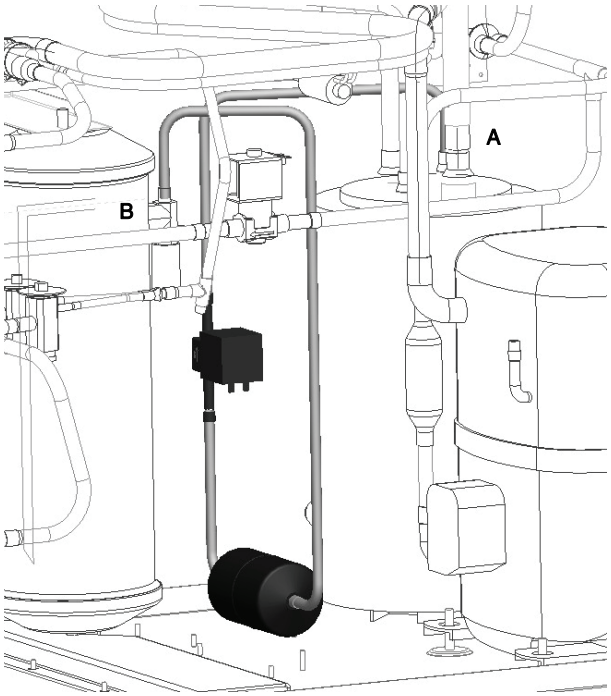

Figure 31.

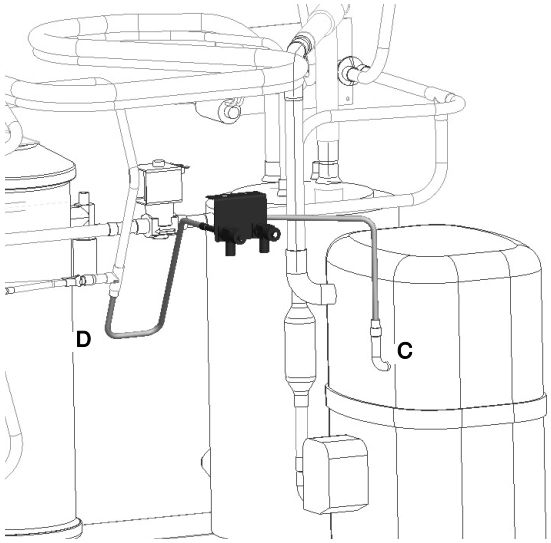

Figure 31A.

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34. Attach the nitrogen feed (8-10 psig) to the receiver service port (A).

    For the receiver connections, use an appropriate flux paste and 45% silver solder to:

    Braze the Heat Exchange Suction Line to the receiver inlet (B).

    Braze the Liquid Line with Filter Drier to the receiver outlet (C) (FIGURE 32).

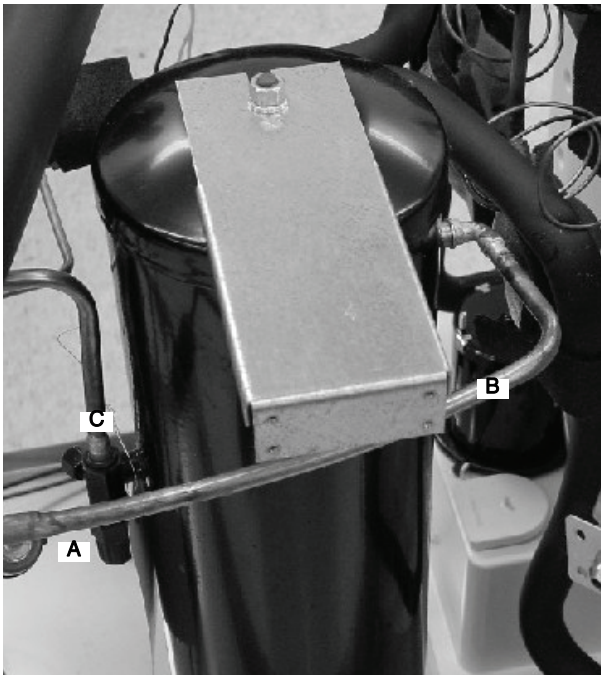

Figure 32.

35. Attach the nitrogen feed to the low side service valve.

    Disassemble the hot gas valve to allow nitrogen to flow through the system.

36. Using clamps or other means, secure the insulation away from the joints, and braze the Heat Exchange Suction Line to the evaporator inlet (D) and outlet (E) (FIGURE 33).

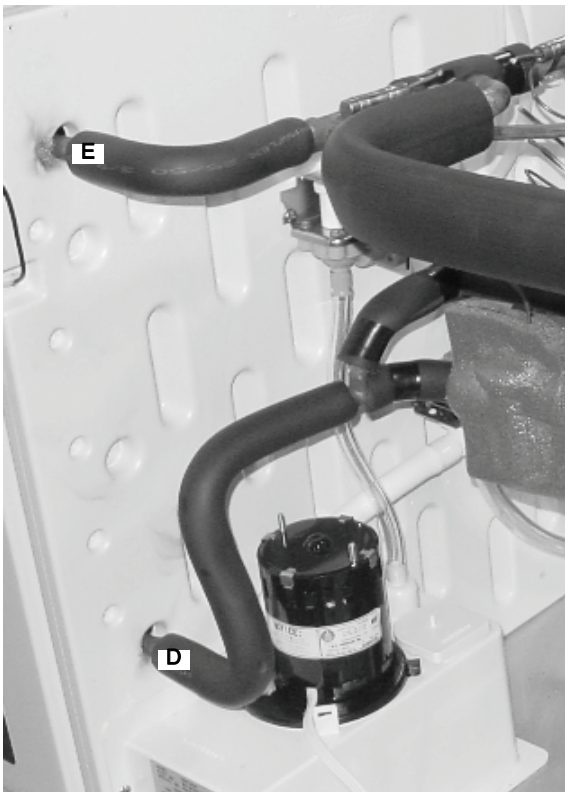

Figure 33.

37. Using clamps or other means, secure the insulation away from the joints, and braze the Heat Exchange Suction Line to the left hand evaporator inlet (A) and outlet (B) (FIGURE 34).

    Protect the evaporator bulkheads during brazing operations.

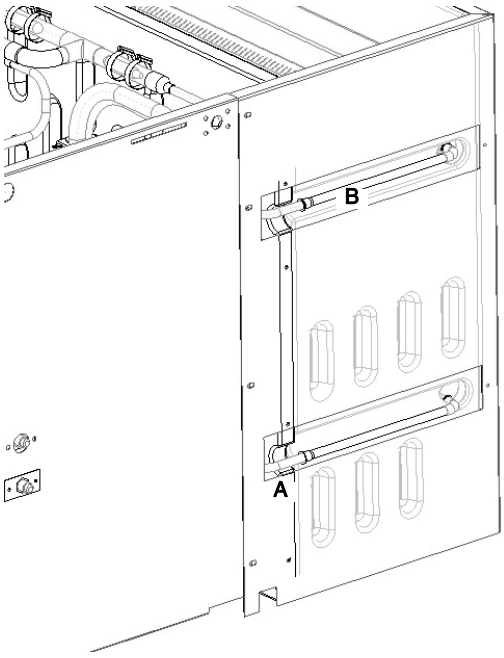

Figure 34.

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38. Secure the insulation away from the joints in order to braze the compressor suction inlet (C) and the compressor discharge (D) lines (FIGURE 35).

CAUTION:
Avoid directly heating the check valve (E) or damage may occur.

Braze the low side service valve onto the compressor service port (F).

Braze the high side service valve onto the liquid line behind the TXV valves (G) (FIGURE 35A).

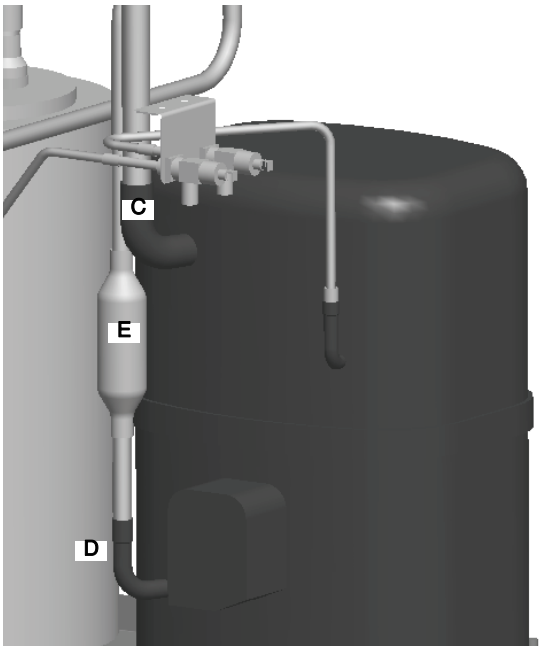

Figure 35.

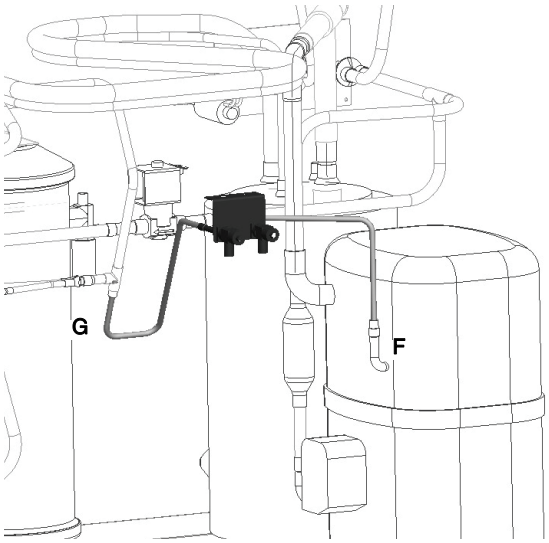

Figure 35A

39. Protecting the Armaflex insulation, as well as the foam insulation on the accumulator, braze the suction inlet (A) and outlet (B) (FIGURE 36).

    Avoid heating the insulation on the accumulator, or damage or fire may occur.

40. Braze the liquid line inlet (C) and outlet (D) to the accumulator (FIGURE 36).

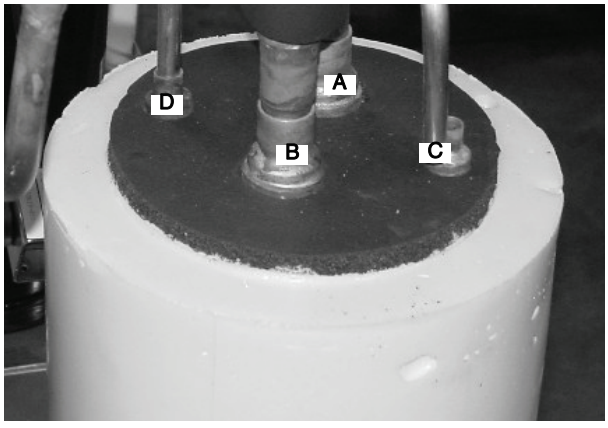

Figure 36.

41. Pinch off and braze shut the charging ports behind the Aeroquip fittings (FIGURE 37).
42. Re-assemble the hot gas solenoid valve. Close the high side service valve.
43. Connect the condenser line set to the Aeroquip fittings.
44. Pressure test the system to 150 psig. The system may not be evacuated or charged with refrigerant until passing a pressure test.

    It will be necessary to use the receiver service port (high side) and the low side service valve to pressurize the system, unless power is brought to the liquid line and hot gas valves.

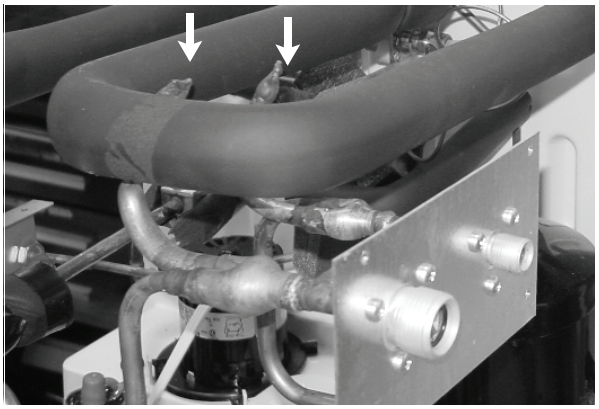

Figure 37.

45. Once the system has passed a leak test, cover the expansion valve bulbs (A) with the insulation tape kits (FIGURE 38).

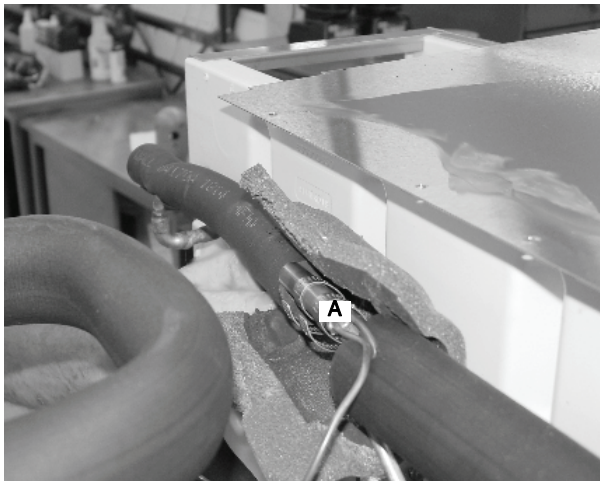

Figure 38.

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46. Replace the bulkhead ring seals at the evaporator inlet and outlet (FIGURE 39).

Figure 39.

47. Remove all tools, loose wiring, solder drippings, dust, dirt, or other foreign objects from the unit interior.
48. Place the back panel in the unit. Attach the Aeroquip bracket with (4) hex head screws (FIGURE 40).

    Do NOT attach to the left side panel at this time.
49. Place the right side panel / brace / electrical box assembly (FIGURE 40).

    Attach the right side panel to the base with the 1/8” stainless POP rivet (FIGURE 41).
50. Replace the 4 hex head screws attaching the rear panel to the receiver bracket.

    Replace the 5 hex head screws attaching the rear panel to the right side panel.

    Replace the 6 hex head screws attaching the rear panel to the left side panel (FIGURE 40).

    Replace the evaporator extension covers with 1 hex head screw each.

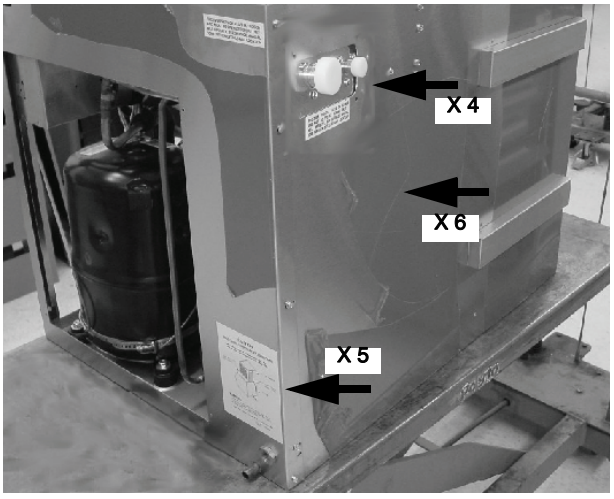

Figure 40.

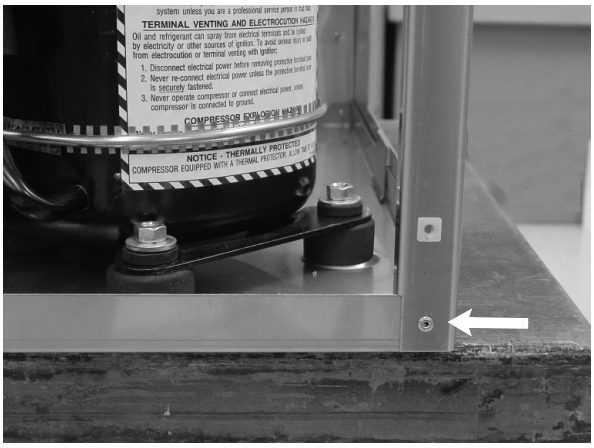

Figure 41.

51. Use 2 hex head screws to attach the service valve bracket (A) to the electrical control box (FIGURE 42).

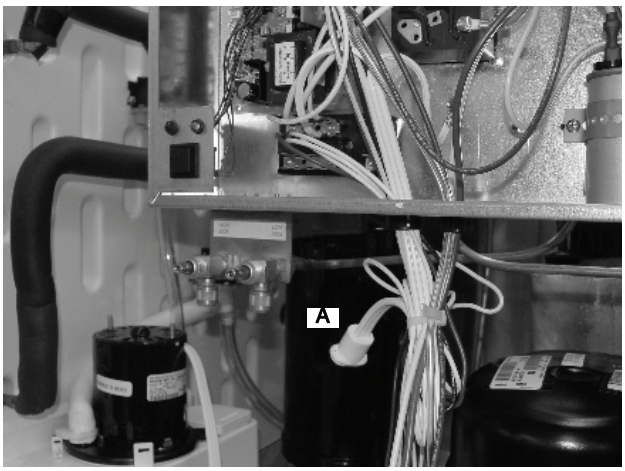

Figure 42.

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52. Attach the support brace (B) to the evaporator bulkhead (C) with 2 Phillips head screws (FIGURE 43).

IMPORTANT:
Verify all electrical connections against the unit wiring diagram.

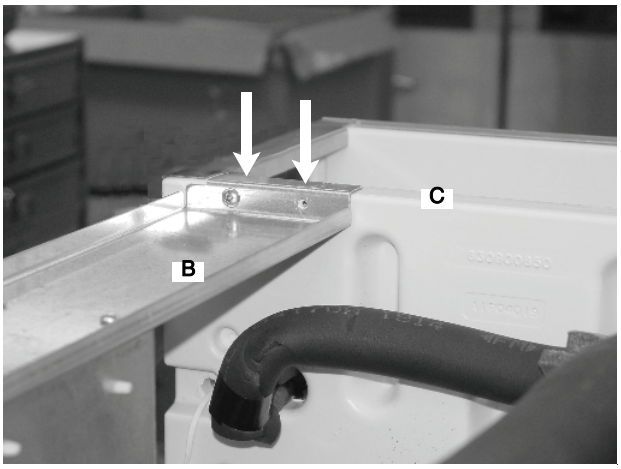

Figure 43.

53. Connect the compressor (FIGURE 44) and replace the junction box cover.

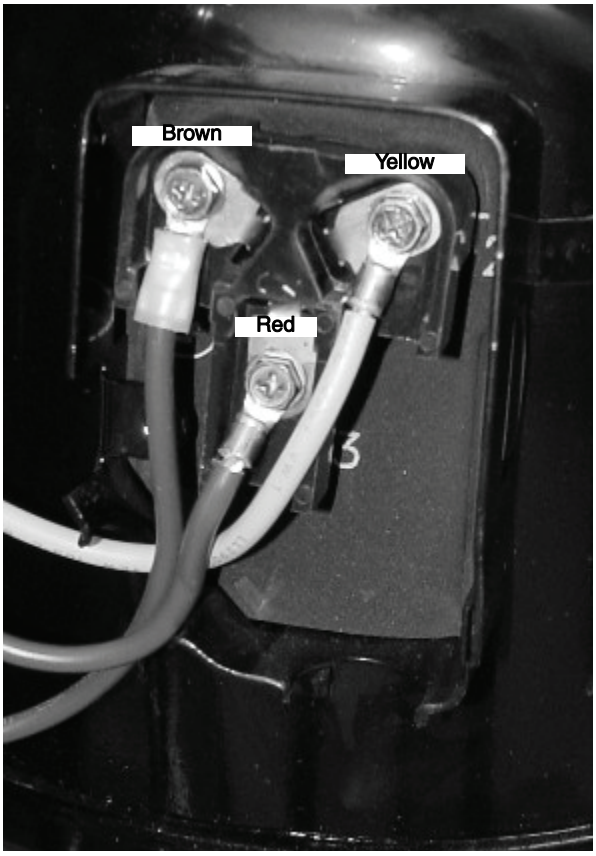

Figure 44.

54. Connect the curtain switches (A) to the control board. Replace the rubber grommet in the control box to protect the low voltage wiring.

    Connect the pressure switch (B) to the #5 pin on the control board, and to the contactor.

    Connect the crankcase heater (C) to the line side of the contactor (FIGURE 45).

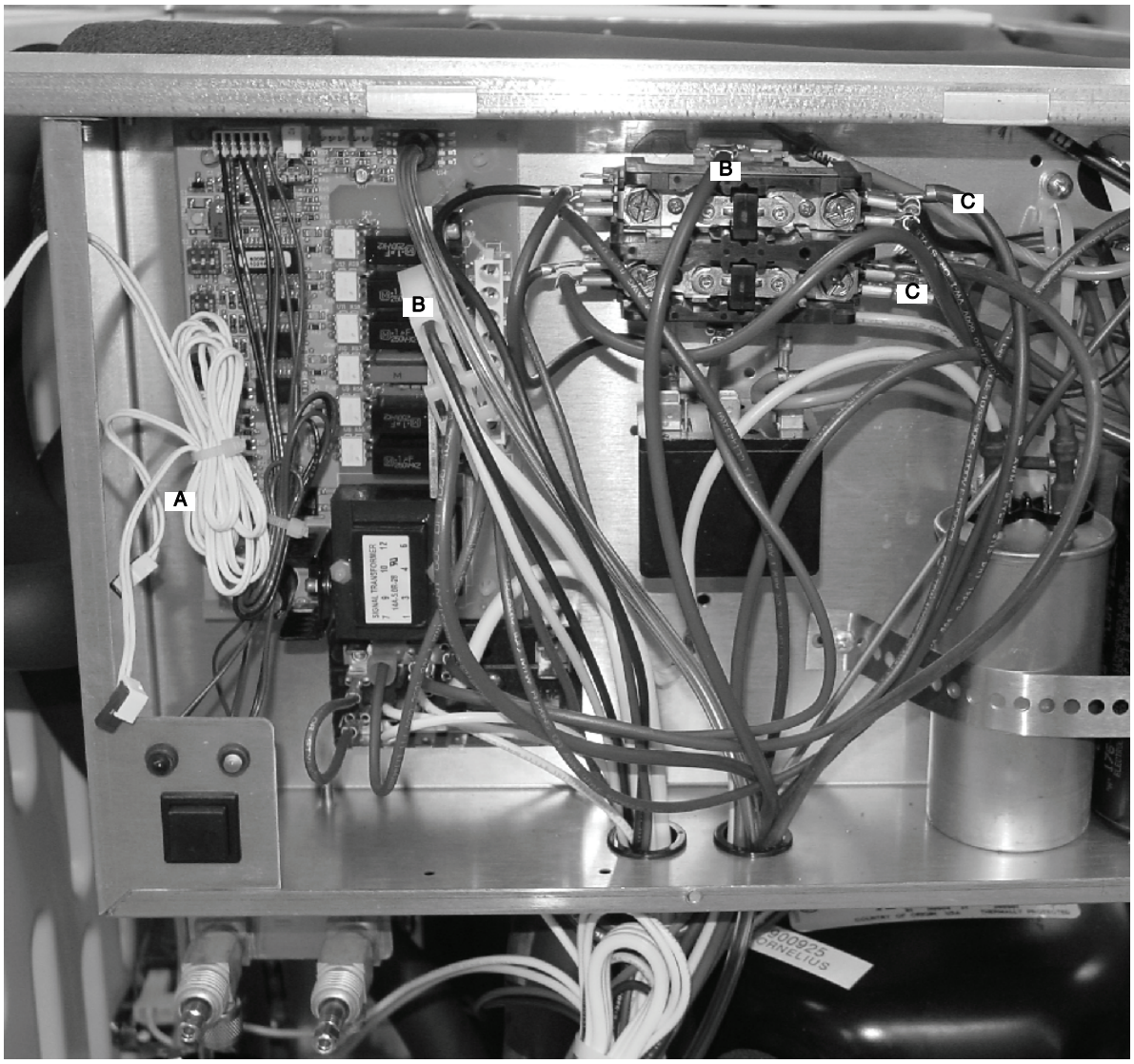

Figure 45.

55. Connect the water fill valve harness (A) (black & white leads) and the water dump valve harness (B) (yellow & white leads) (FIGURE 46).

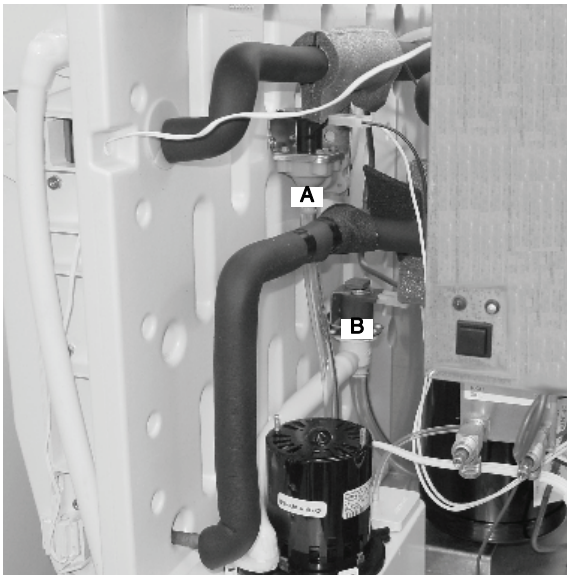

Figure 46.

56. Connect the hot gas valve harness (C) (white & red leads) to the hot gas valve (FIGURE 47).

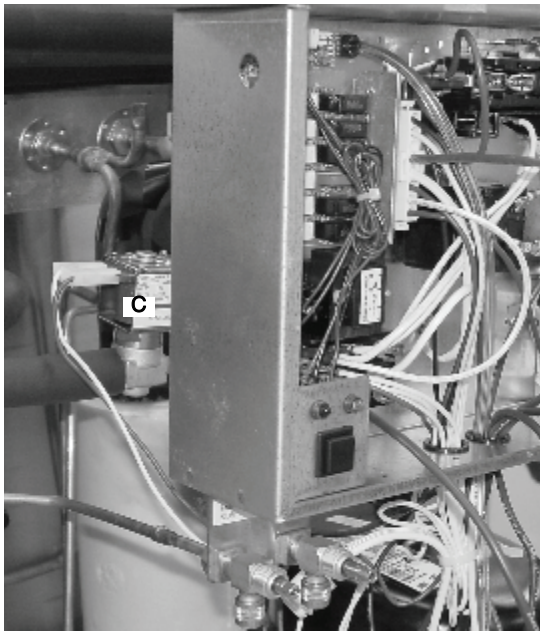

Figure 47.

57. Connect the liquid line valve harness (black & red leads).
58. Connect the pressure transducer tube (D) to the water pan.

    Connect the water pump motor harness (E) (FIGURE 48).

    Do NOT fill the water pan.

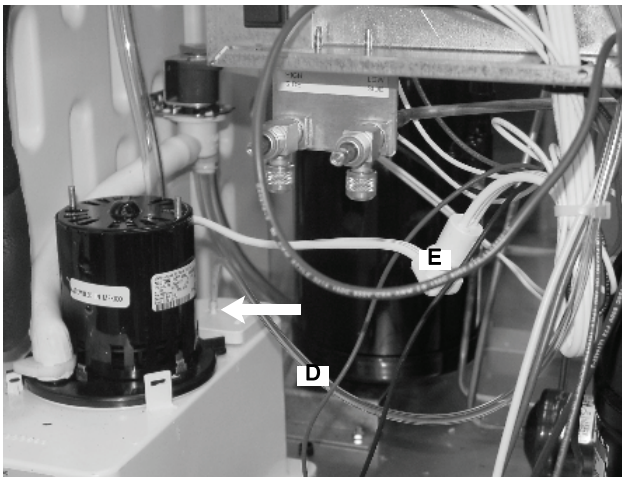

Figure 48.

59. Connect the ground lead from the control box to the base plate, by the compressor.
60. IF the water supply line was disconnected, reconnect at this time.
61. Evacuate the system, in preparation for charging with refrigerant. Recommended pre-charge system state is **150 microns.**

    Do NOT run the compressor with the system in vacuum.
62. TURN ON THE SUPPLY WATER.
63. Crack the system with R-404A (HP-62) on the low side service valve.

Do NOT introduce liquid refrigerant into the low side service valve, or any other part of the system.

Charge the unit with R-404A (HP-62) refrigerant to the specification on the serial plate on the icemaker and on the remote condenser.

It is the policy of Cornelius, Inc. to:

A. Comply with all federal regulations concerning the handling of refrigerants.

B. Allow only virgin or reclaimed refrigerant (as defined by ARI Standard 740-91) to be used as or added to an original system charge.

C. Allow recycled refrigerant to be used only in the system from which it was originally recovered;

and only if that system did NOT have a compressor burn out or refrigerant leak;

and only if moisture, non-condensables, or other contaminants were NOT present in that system.

D. Refrigerant recovered from a contaminated system such as a compressor burn-out, refrigerant leak, or one that has moisture, air, or other non-condensables present, must be disposed of in an appropriate manner and cannot, under any circumstances, be reused in any Cornelius product. If the refrigerant has been reclaimed and meets ARI Standard 700-88, it can be used.

E. The refrigerant used to recharge a Cornelius product must be of the type specified on the serial nameplate of that product. All refrigerants must be weighed into the system so the amount of the charge is known and agrees with the product serial nameplate.

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IMPORTANT:

The service contractor is responsible for determining if the refrigerant is contaminated. It is also their responsibility to assure their recycling equipment and procedures will guarantee that the refrigerant is clean, moisture and non-condensable free and meets the appropriate standard. If the refrigerant is not cleaned to the appropriate standard, the warranty will be voided and the repair will become the responsibility of the service contractor.

Always follow safe and acceptable refrigeration procedures.

64. Once the system has been properly charged, monitor the unit for 3-4 freeze / harvest cycles. Refer to the operating manual for details on proper unit operation and performance.
65. After verify the proper operation of the unit, replace the electrical control box cover (A) using (1) Phillips head screw.

    Replace the evaporator splash panel (B) (FIGURE 49).

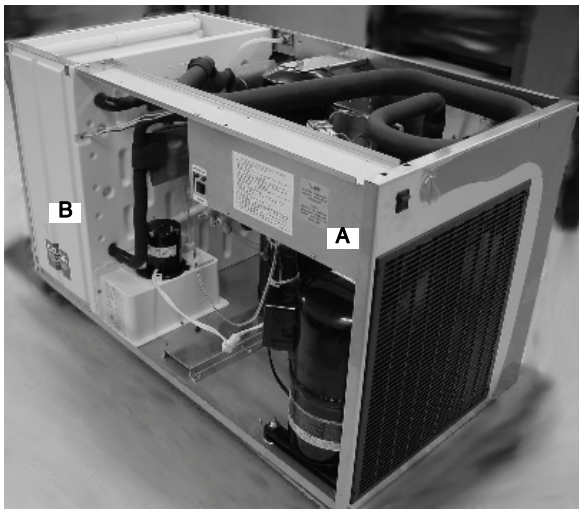

Figure 49.

66. Replace the top cover (C) and the front panel (D). Attach the louvered panel (E) with (4) black, hex head screws(FIGURE 50).

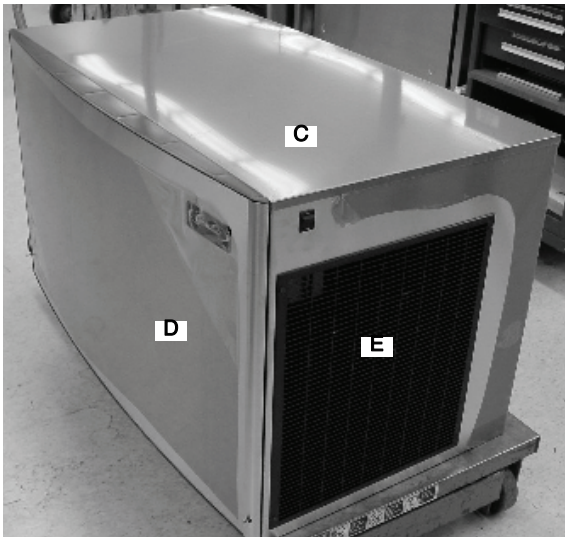

Figure 50.

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