



Evaporator (DX) Coil Installation, Operation & Maintenance



EVAPORATOR (DX) COIL INSTALLATION, OPERATION AND MAINTENANCE

These are Guidelines for the installation, operation and maintenance of Cancoil direct expansion (DX) cooling coils and have been provided to help insure the proper performance of the coils. These are *general guidelines* that may have to be tailored to meet the specific requirements of any one product. The installation and maintenance of any coil should be performed by a qualified party or individual. Protective equipment such as safety glasses, steel toe boots, and gloves are highly recommended during the installation and routine maintenance of the coil.

RECEIVING INSTRUCTIONS

1. All Cancoil coils are factory tested, inspected and carefully packaged.
2. Upon receipt of equipment, inspect for shortages and damage. Any shortage or damage found during initial inspection should be noted on delivery receipt and signed by the driver. This action notifies the freight carrier that you intend to file a claim. Any damaged equipment is the responsibility of the carrier.
3. Do not return to the manufacturer without receiving approval in the form of a Return Material Authorization (RMA) number.
4. For additional assistance, contact your local Cancoil coil representative.

Installation of Coil

1. Carefully remove the coil from the shipping package to avoid damage to the finned surface area. If a moisture eliminator was purchased, remove it before installation.
2. Proper clearance should be maintained between the coil and other structures such as the fan, filter racks, transition areas, etc.
3. Inspect the refrigerant distributor and verify that the nozzle is in place. The nozzle is generally held in place by a retaining ring or it is an integral part of the distributor itself (see Figure 2 - Distributor). If a hot gas bypass kit was ordered with the coil, the nozzle will be located in it rather than the distributor (see Figure 3 - Hot Gas Bypass Kit).
4. All field brazing and welding should be performed using high quality materials and an inert gas purge (such as nitrogen) to reduce oxidation of the internal surface of the coil.
5. If a hot gas bypass kit was ordered with the coil install it now. Complete installation instructions are in the box that contains the hot gas bypass kit. Align the side port with the hot gas line prior to brazing into place. Wrap valve with wet rag to prevent damage when brazing distributor – see manufacturer's instructions.
6. Connect the suction line and suction connection.
7. Install the expansion valve. Follow the expansion valve manufacturer's recommendations for installation to avoid damaging the valve. If the valve is externally equalized, use a tube cutter to cut off the plugged end of the factory installed equalizer line. Next, use a de-burring tool to remove any loose metal from the equalizer line and attach it to the expansion valve. If the valve is internally equalized, the factory installed equalizer line can be left as is.
8. The expansion valve's remote sensing bulb should be securely strapped to the horizontal run of the suction line at the 3 or 9 o'clock position not more than 18" away from the evaporator and insulated. The bulb must not be located downstream from a trap.



9. Connect the liquid line to the expansion valve. Pressurize the coil, expansion valve assembly and suction connection to 100 psig with dry nitrogen or other suitable gas. The coils should be left pressurized for a minimum of 10 minutes.
10. If the coil holds pressure, the hook-up can be considered leak free. If the pressure drops by 5 psi or less, repressurize the coil and wait another 10 minutes. If the pressure drops again, there are more than likely one or more small leaks, which should be located and repaired. Pressure losses greater than 5 psi would indicate a larger leak, which should be isolated and repaired. Be sure to check valves and fittings as potential sites for leakage or bleed. If the coil is found to be leaking, contact your local Cancoil coil representative
11. Use a vacuum pump to evacuate the coil and any interconnecting piping that has been open to atmosphere. Measure the vacuum in the piping using a micron gauge located as far from the pump as possible (the vacuum at the pump will be greater than the rest of the system). Evacuate the coil to 500 microns or less then close the valve between the pump and the system. If the vacuum holds to 500 microns or less for one minute, the system is ready to be charged or refrigerant pumped down in another portion of the system can be opened to the coil. A steady rise in microns would indicate that moisture is still present and that the coil should be further vacuumed until the moisture has been removed.
12. Failure to obtain a high vacuum is indicative of a great deal of moisture or a small leak. Break the vacuum with a charge of dry nitrogen or other suitable gas and recheck for leaks (soapy water works well). If no leaks are found, continue vacuuming the coil until the desired vacuum is reached.
13. All field piping must be self-supporting.
14. All field braze joints must be leak tested.
15. Refer to Figures 4 - Hot Gas Bypass Kit Installed and Figure 5 - General Diagram, for general piping.
16. If a moisture eliminator was purchased with the coil installed, place the mist eliminator into its brackets. Make sure the mesh is aligned with the coil face area (finned area).

Fin Straightening

Coil fins may have been bent during shipping or servicing, and should be straightened to maintain maximum heat transfer. Reduction of the effective coil surface will correspondingly reduce coil capacity. Always check fin appearance after any handling of the coil and after any servicing is done near the coils.

Fin combs are sized according to number of fins per inch of the coil. For relatively small bends that require only minor repair, other tools may be used to evenly space the fins. Be careful not to damage the coils.

Figure 1 – Connection Diagram

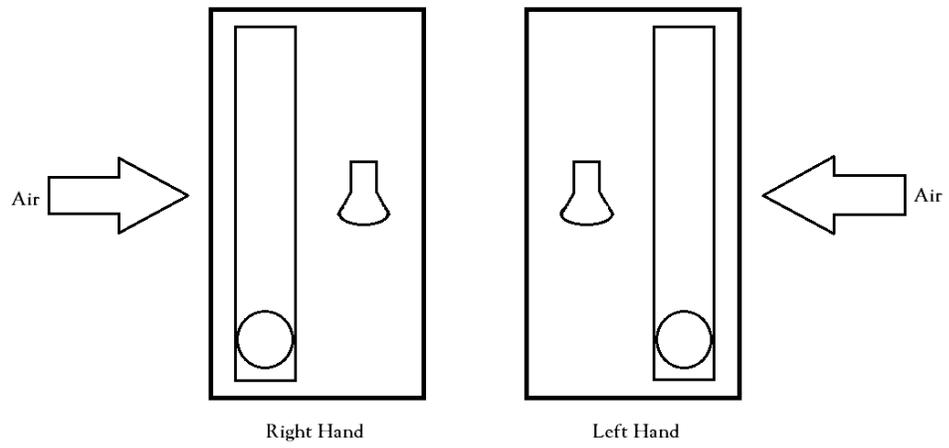


Figure 2 – Distributor

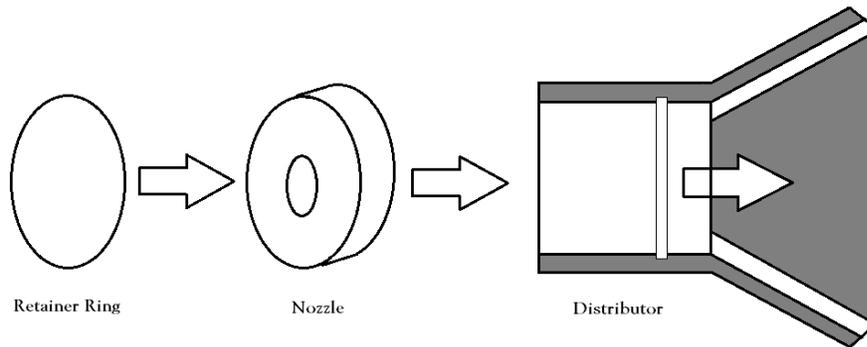


Figure 3 – Hot Gas Bypass Kit

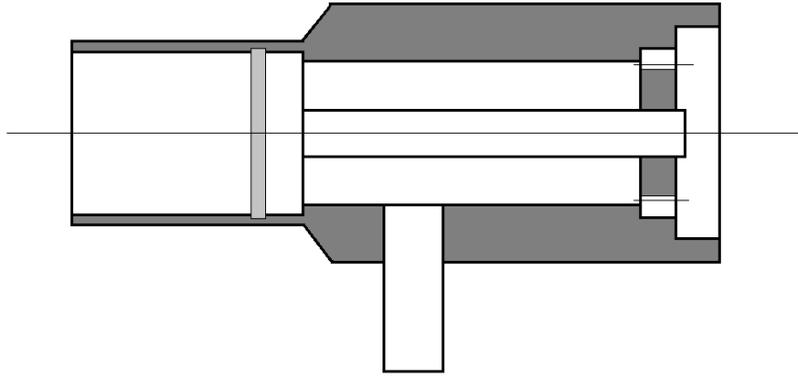


Figure 4 - Hot Gas Bypass Distributor Installed

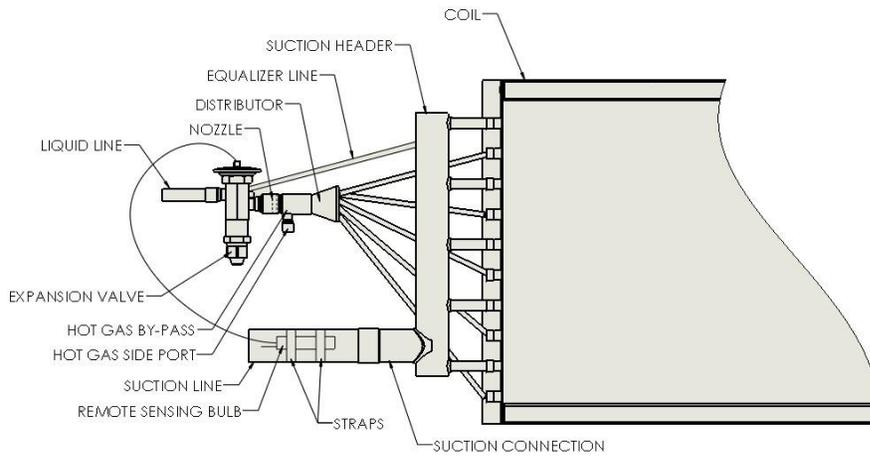
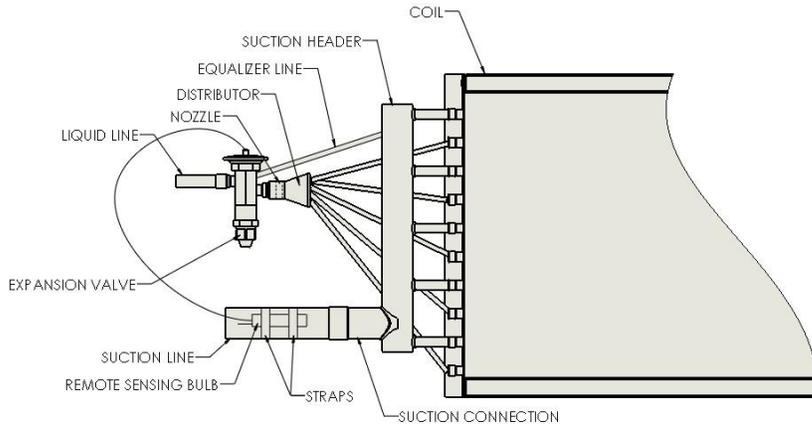


Figure 5 – General Diagram



Operation

1. Proper air distribution is vital to coil performance. Air flow anywhere on the coil face should not vary by more than 20%.
2. Air velocities should be maintained between 200 and 550 feet per minute without a moisture eliminator and between 200 and 750 feet per minute with a moisture eliminator.
3. The drain pan should be designed and installed in a way that does not allow standing water.

Maintenance

1. Filters and moisture eliminators should be inspected on a regular basis and changed as needed. Maintaining clean filters and mist eliminators is a cost-effective way to help maintain maximum coil performance and service life.
2. Periodic inspection of the coil for signs of corrosion and for leaks is recommended. Small leaks can be detected using a Halide torch. Repair and replacement of the coil and the connecting piping, valves, etc., should be performed as needed by a qualified individual(s).
3. Should the coil surface need cleaning, caution should be exercised in selecting the cleaning solution as well as the cleaning equipment. Improper selection can result in damage to the coil and/or health hazards. Clean the coil from the leaving air-side so that foreign material will be washed out of the coil rather than pushed further in. Be sure to carefully read and follow the manufacturer's recommendations before using any cleaning fluid.
4. The use of filter-dryers in the system piping is recommended along with a sight glass that has a moisture indicator. Replace the filter dryer(s) as needed.

Note: Refrigerant conversions are beyond the scope of this manual and should only be performed by qualified parties.



CANCOIL THERMAL CORPORATION

991 John F. Scott Road
Kingston, Ontario, Canada
K7L 4V3

(p) 613-541-1235

(f) 613-541-1239

www.can-coil.com

CANCOIL USA

3144 N. Vermillion St.
Danville, IL 61832, United States

(p) 217-431-8559

sales@cancoilusa.com