

# INSTALLATION INSTRUCTIONS DX EVAPORATORS

August 2008

These instructions are for use by qualified technicians trained and experienced in the installation of HVAC equipment and associated components, and are intended only to advise and assist the installer. Some jurisdictions require these personnel to be licensed. If you do not meet these qualifications do not attempt to install or service this product. It is the contractor's responsibility to be familiar with these instructions and to install and service this product in compliance with the prevailing mechanical codes. Failure to install and service this product in accordance with these instructions and prevailing codes may damage equipment, create a safety hazard, and/or void the warranty.

## COIL PREPARATION

This product has been manufactured to precise standards. However, damage may have occurred during the transit, handling, or storage of this product. Inspect the coil to insure (1) drain connections are tight and openings are clear, (2) straighten any bent or damaged fins, (3) manifolds are intact and not damaged, (4) drain pan has not been damaged or broken, and (5) unused drain connections are capped.

## COILS WITH FLO-RATOR ORIFICES

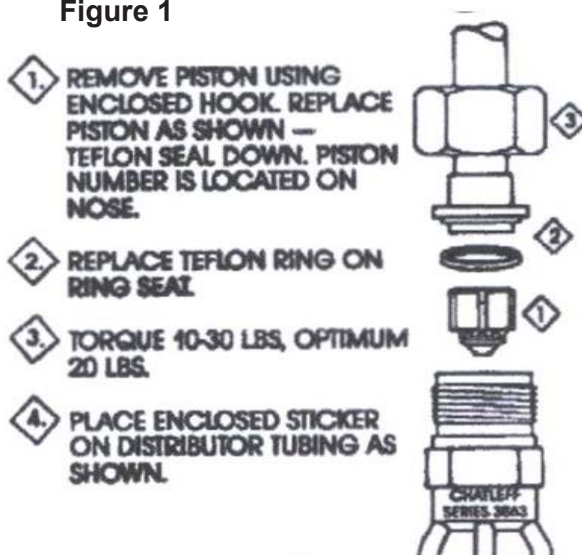
All coils have a refrigerant metering device, either a thermal expansion valve or a bi-directional piston type flo-rator. For proper operation, the piston must be sized to the requirements of the outdoor equipment (AC or heat pump) manufacturer. If not specifically designated at the time of order, this coil will have a factory installed piston nominally sized for the coil. This will stop any immediate damage to the outdoor unit if it is unintentionally started had a piston not been installed. To change to the outdoor equipment manufacturer's piston size, follow these directions. The piston must be sized according to the directions of the outdoor equipment manufacturer.

Failure to install the proper piston can lead to poor system performance and possible compressor damage.

## CHANGING THE PISTON (see figure 1):

1. The piston is located on the front of the coil at the point where the liquid line meets the distributor tubes. The piston is positioned at the hex nut where the 90 degree copper/brass tail piece joins to the coil. Make sure to use a back up wrench when loosening the hex nut to access the piston.
2. Remove the piston shipped with the coil and install the correct piston in the distributor body. It should be free to slide into the distributor body.
3. Do not over tighten the flo-rator body when reassembling. Make sure the Teflon seal is in place. The assembly will not seal without the Teflon ring. Tighten to 20 foot pounds of torque.

Figure 1



## FIELD INSTALLED EXPANSION VALVES

Use only expansion valve kits from the coil manufacturer and install per the instructions packaged in each expansion valve kit. A list of valve kits is shown in table 1.

## **FACTORY INSTALLED EXPANSION / CHECK & EXPANSION VALVES**

The TXV (thermal expansion valve) sensing bulb is shipped attached to the suction line. The bulb must be removed from the line while the suction line is welded to the coil. After the suction line has cooled to room temperature, securely refasten the TXV bulb to the suction in the ten or two o'clock position (preferably on a horizontal run and exterior to the coil plenum or cabinet). The sensing bulb must be in direct contact with the suction line and must be insulated from ambient temperatures. Use the mounting straps provided to secure the bulb. All TXVs may require the addition of a hard start kit, especially if the valve is a non-bleed type of valve. Follow the instructions of the outdoor equipment manufacturer.

## **COIL INSTALLATION**

1. Install up flow cased vertical coils with the base of the coil level.
2. Coils must not be installed on the return side of a gas furnace.
3. Un-cased up flow and horizontal coils must be installed with 1/2 in. fall from back to the front of the coil to insure condensate removal from the coil.
4. Install the condensate drain in accordance with prevailing local codes. Never connect a condensate drain directly to any plumbing drain or vent.
5. **Use Teflon tape ONLY as the thread sealant and hand tighten ONLY.**
6. **If socket/slip connections are used, make sure to use a primer and an all purpose or heavy duty cement.**
7. If a secondary drain is used, install separately from the primary drain and terminate in a highly visible location.
8. Condensate drains must be trapped if installed on the negative pressure (return) side of the air mover (blower).
9. Coils installed above a ceiling or in other locations where damage from condensate overflow could occur, an auxiliary (safety) drain pan is required. The drain line from this safety pan must not be connected to the primary drain line and must terminate prominently.
10. All drain lines must have fall of at least 1/4 in. per foot or horizontal run.
11. Support drain lines adequately and in accordance with prevailing mechanical codes.
12. Insulate drain lines as required to eliminate sweating.
13. Size refrigerant lines in accordance with outdoor unit installation instructions.
14. Circulate dry nitrogen in refrigerant lines while brazing to stop oxidation.
15. Make sure a new liquid line drier is installed in the system.
16. Prior to charging the system, leak check the entire system using an approved method.
17. Dehydrate the entire refrigeration system by pulling a deep vacuum on the system.
18. Make sure the suction line of the refrigerant lines is fully insulated.
19. Seal any air leaks around the coil or in other areas of the duct system.

## **SYSTEM CHARGING**

Charge the refrigeration system in accordance to the outdoor unit manufacturer's installation and charging instructions.

Set the unit air flow to the recommended level. Do not allow the static air pressure drop across the coil to be greater than .3 in. (water column) of resistance. Most systems are designed for approximately 400 CFM per ton of cooling.

As general rules when charging a system:

1. Add refrigerant until the superheat measured at the outdoor unit suction line matches the superheat on the outdoor unit at the ambient temperature.
2. If the superheat is above the chart value, recover refrigerant until the superheat reaches the correct value.
3. If you have high sub-cooling measured at the outdoor unit liquid line, recover refrigerant until the sub-cooling reaches the correct value for the ambient air temperature.
4. The correct values will be found on the charging chart included with the outdoor air conditioner or heat pump.
5. If a charging chart and method are not included with the outdoor unit, contact that manufacturer for specific instructions for the installed unit.

## **SYSTEM CHARGING R-410a SYSTEMS**

Follow the charging instructions included with the outdoor unit. If these are not available contact the manufacturer of the outdoor unit for additional instructions.

## **SYSTEM MAINTENANCE**

Every heating and/or air conditioning system requires maintenance on a regular basis. Homeowner maintenance should be limited to changing air filters in the air distribution system. A trained, experienced, and licensed technician should complete all other maintenance. Many service companies and contractors offer a regular program of periodic maintenance for a nominal cost.

## **HOMEOWNER MAINTENANCE**

Make sure there are always an air filter/s in the air distribution system prior to the air mover anytime the system is operating. Change (clean on some filtering systems) the air filter regularly. A clean air filter is critical to good system performance and long life. A dirty or restricted air filter can damage expensive components in the air conditioning system. There is much difference in air filters. Low cost fiberglass filters are usually not very efficient. More efficient models are available, but it is wise to consult a heating and air conditioning professional before upgrading to a higher efficiency filter. It is important that the filter not add too much resistance to the flow of air in the duct system. An air conditioning professional can make that determination for you.

## **PROFESSIONAL MAINTENANCE**

We recommend the air conditioning and heating system be checked at least twice annually by an experienced heating and air conditioning technician. This will help insure your system is operating safely and at maximum efficiency.

Contact your heating and air conditioning professional if your system is not operating correctly.

Your coil has a limited warranty which does not cover regular maintenance or service labor.

## **RECORD & KEEP THIS INFORMATION** **Coil Model Number**

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**Coil Serial Number**

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**Date Installed**

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**Installing Contractor**

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**Contractor Phone Number**

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The manufacturer makes the following limited warranty for products manufactured for residential applications and installed in the United States and Canada. Products installed in commercial applications are provided a limited one year warranty as outlined below. These limited warranties extend to the original purchaser and any subsequent transferees as long as the product remains at the site of the original installation.

### **Limited One Year Warranty**

Manufacturer warrants to the purchaser, that should this product prove defective within 18 months from the date of manufacture or one year from the installation date (whichever is the shorter of the two periods), due to improper workmanship and/or material and not due to improper installation, Manufacturer will repair or replace, at its option, any defective part without charge for the part. Any replacement parts provided under this limited warranty is warranted only for the remainder of the original warranty period.

This warranty does not include labor or other costs incurred for the servicing, maintenance, replacing, removing, shipping or handling of either defective or replacement parts, or complete unit, except as stated above. These costs may be covered by a separate warranty provided by the selling dealer or contractor. If the manufacturer's serial number is removed from the unit or is not available, then the warranty is null and void.

### **Limited Additional Second thru Fifth Year Indoor Coil and Drain Pan Warranty (Effective 8-1 98)**

During the period from 19 months through 66 months from the date of manufacture, or 13 through 60 months from the date of installation (whichever is the shorter period), should the indoor coil or drain pan prove defective due to improper workmanship and/or material, Manufacturer will furnish a replacement coil or drain pan at no charge, FOB factory. The owner will be responsible for any freight, installation, or handling charges of the installing contractor and/or wholesale distributor. The replacement is warranted for the remainder of the original warranty period.

The Above Warranties are Subject to the Following Conditions:

You must retain your bill of sale or provide other proof of purchase. This limited warranty applies only while the product remains at the site of the original installation (except for mobile home installations) and only to products installed by licensed dealers or contractors as determined by local licensing requirements. This limited warranty applies only if the product is installed and operated in accordance with the manufacturer's instructions and in compliance with applicable local installation and building codes and good trade practices.

This Warranty Does Not Cover Damages Caused By: (A) Accident, negligence, or abuse; (B) operating the product in a corrosive atmosphere containing chlorine, fluorine, or any other damaging chemicals; (C) modification, alteration, repair or service by anyone not properly qualified to perform such service (D) modification, alteration or repair; (E) improper matching or application of the product or components; (F) failure to provide proper maintenance and service to the product according to the manufacturer's instructions; (G) installation or operating the product in a manner contrary to the instructions of the manufacturer; (H) lightning, fluctuations in electrical current or other acts of Nature. This limited warranty also excludes all costs of installation, disconnection, or dismantling the product, parts used in connection with normal maintenance such as filters, and owner required maintenance. Consult the instructions enclosed with the product for information regarding recommended maintenance and service.

Coils which are diagnosed as restricted in the refrigeration circuit are warranted only for a period of 90 days from the date of installation. Refrigeration circuit restrictions caused by a manufacturing defect are evident at start up of the equipment, and for sure in the first 90 days of operation. Restrictions beyond this time period are virtually always caused by installation and charging problems and not manufacturing defects.

To obtain warranty service and/or parts replacement you must notify your selling dealer or contractor of any defect within the applicable warranty period. If you have any questions about service or parts that your selling dealer or contractor cannot answer, please contact the manufacturer.

All Warranties implied by state law, including any implied warranty of merchantability and fitness for a particular purpose, are expressly limited to the duration of the limited warranty set forth above. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. With the exception of any warranty implied by state law as hereby limited, the foregoing express warranty is exclusive and in lieu of all other warranties, guarantee, agreement and similar obligations of manufacturer or seller with respect to the repair or replacement of any product or part.

**In no event shall Manufacturer be liable for consequential or incidental damages.** Some states do not allow the exclusion of incidental or consequential damages, so the above limitation may not apply to you. No person, agent, distributor, dealer or company is authorized to change, modify or extend terms of this warranty in any manner whatsoever. The time within which an action must be commenced to enforce any obligation of Manufacturer arising under this warranty or under any statute, or law of the United States or any states thereof, is hereby limited to one year from the date you discover or should have discovered, the defect. This limitation does not apply to implied warranties arising under state law so the above provision may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Any controversy or claim arising out of or relating to this warranty, or the breach thereof, shall be settled through binding arbitration administered by the American Arbitration Association in accordance with its Commercial Arbitration Rules, and judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. This is the exclusive and sole remedy of Buyer, for any breach of warranty. Pursuit of any legal remedy must occur in the state and county of the manufacturer.