

# INSTALLATION INSTRUCTIONS

## Evaporator Coils



### WARNING

The equipment covered in this manual is to be installed by trained and experienced service and installation technicians. Improper installation, modification, service, or use can cause electrical shock, fire, explosion, or other conditions which may cause personal injury, death, or property damage. Use appropriate safety gear including safety glasses and gloves when installing this equipment.

### WARNING

Installation and servicing of air conditioning equipment can be hazardous due to internal refrigerant pressure and live electrical components. Only trained and qualified service personnel should install or service this equipment. Installation and service performed by unqualified persons can result in property damage, personal injury, or death.

### WARNING

The outdoor unit contains refrigerant under pressure. Do not puncture tubing or other unit parts or expose unit parts to high temperatures. Such actions can result in property damage, personal injury, or death.

### WARNING

Before performing maintenance operations on system, turn off all main power switches to indoor and outdoor units. Turn off accessory heater power switch if applicable. Electrical shock could cause personal injury or death.



**Read this entire instruction manual, as well as the instructions supplied in separate equipment, before starting the installation. Observe and follow all warnings, cautions, instructional labels, and tags. Failure to comply with these instructions could result in an unsafe condition and/or premature component failure.**

These instructions are intended as a general guide only for use by qualified personnel and do not supersede any national or local codes in any way. The installation must comply with all provincial, state and local codes as well as the National Electrical Code N.F.P.A. No. 70 (U.S.) or Canadian Electrical Code No. 22.1 (Canada). Compliance should be determined prior to installation.

### Inspection of Shipment

Upon receipt of equipment, carefully inspect it for possible shipping damage. If damage is found, it should be noted on the carrier's freight bill. Take special care to examine the unit inside the carton if the carton is damaged. Any concealed damage discovered should be reported to the last carrier immediately, preferably in writing, and should include a request for inspection by the carrier's agent.

If any damages are discovered and reported to the carrier **DO NOT INSTALL THE UNIT, as claim may be denied.**

**Check the unit rating plate to confirm specifications are as ordered.**

Manufactured By  
**A.A.C.**

**A *Lennox International Company***  
421 Monroe Street  
Bellevue, OH 44811

## INSTALLATION

### ⚠ CAUTION

#### ! A CAUTION

This coil was manufactured containing **must be** air precharge of 20 psi. This pressure **er line** relieved through the center of the rubber seal plugs before removing the plugs.

Please read these instructions completely before beginning evaporator coil installation.

The blower and duct system must be properly sized in order to provide adequate cooling and heating performance. Select a furnace blower output of 350-450 CFM per 12,000 BTUH of cooling. All air passing over the evaporator coil must be filtered. **Use return air filters of generous size to avoid contaminating the coil, blower, and ductwork, or restricting necessary air flow.**

Evaporator coils are matched to specific condensing units to obtain an ARI rating. The flator orifice piston installed on each coil is chosen for the BTUH capacity of the coil. The factory installed orifice piston size is stamped on the flator body, and is identified with a label on the front of the coil. **The piston size must match the size called for on the refrigerant charging table found on the condensing unit.** Failure to install the proper orifice piston can lead to poor system performance and possible compressor damage. A selection of replacement orifice pistons is available from the distributor.

Before installation, carefully wash the coil finned areas with a coil cleaning product to remove shipping and handling contamination.

### ⚠ CAUTION

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When an air conditioning unit is used in conjunction with a furnace, the evaporator coil must be installed in the discharge (supply) air. Do not install an evaporator coil in the return air; excessive condensation will occur within the furnace.

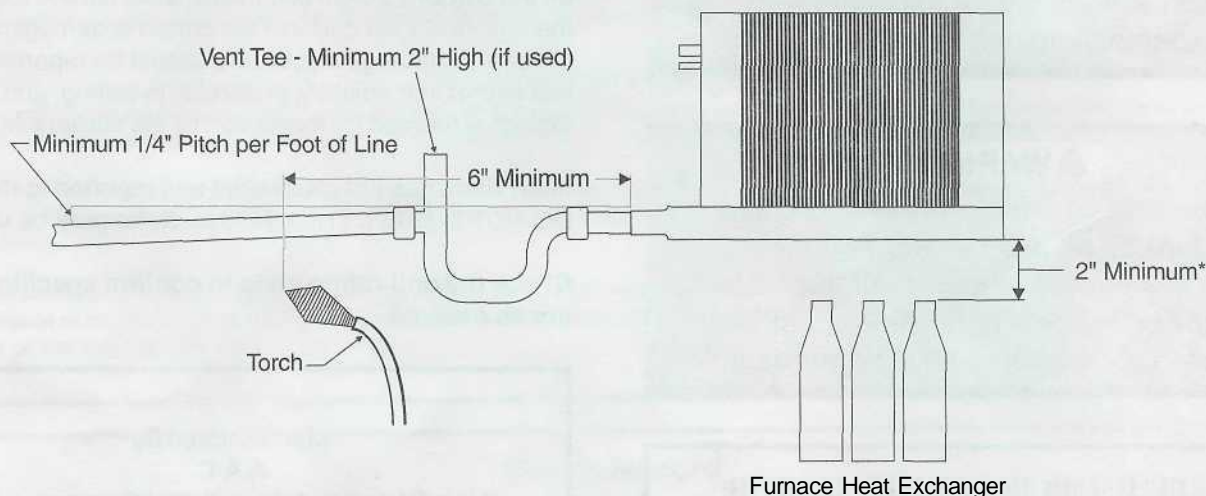
The "A" Coil drain pan is high quality engineering polymer with a maximum service temperature of 500° F. However, adequate space must be provided between the drain pan and the furnace heat exchanger. At least a 2" space is required for a fictionalized heat exchanger and 4" for drum-type or oil-fired furnace exchanger (see Figure 1). Closer spacing may damage the drain pan and cause leaking.

The horizontal coil drain pan is made of a high quality engineering polymer with a maximum service temperature of 150° F. This material has proven to be entirely satisfactory for use as a drain pan material with horizontal gas furnace. The horizontal coil for bidirectional airflow, for the convenience of refrigerant and drain line installation.

### ⚠ CAUTION

#### [ A CAUTION I

When the coil is installed in an attic, above a finished ceiling, or any instance where condensate overflow would result in property damage, a secondary drain pan must be provided by the installer. The secondary drain pan must be connected to a drainage system separate from the primary condensate drain.



\* 2" minimum space required between the drain pan and a fictionalized heat exchanger or 4" minimum between the drain pan and a drum-type or oil-fired furnace heat exchanger.

Figure 1



Be sure that the coil is installed level or with a slight slope toward the drain connection to ensure proper condensate disposal. Long drain runs or negative air pressure conditions in the coil housing or plenum can create the need for a vent tee in the drain line near the coil. The auxiliary drain should be routed to empty at a location easily visible, so that any condensate flow from that line can be seen, investigated, and the problem corrected.

**A brazing/soldering torch must not be used on the drain lines closer than 6" to the drain pan.** Use the torch on fittings away from the pan and then thread the line into the pan fittings. The drain pan is equipped with a primary (larger hole) and auxiliary pipe connection each of which are 3/4" NPT. The drain lines should be no smaller than this size. A horizontal run of condensate drain lines should have a minimum drop of 1/4" per foot of run, so as to properly empty.

Use thread sealant on drain pan fittings. Install drain line hand tight. **Do not over torque.**

### Upflow Models

When using an uncased coil, if the supply opening of the furnace is larger than the drain pan in either direction, any existing gap must be closed off to prevent bypass of air around the coil and drain pan. Use sheet metal angles wide enough to support the coil and attach them to the inside of the plenum.

If the bottom of the duct connection extends below the apex of the coil, then the supply air duct should be ducted off both sides of the plenum.

### Counterflow (Downflow) Models

Air seals must be placed on the inside of the evaporator's drain pan to prevent water blow off (see Figure 2) in all counterflow model installations. A kit, ACFAIRSEAL-1, is available from the local distributor. The kit contains four air seals, enough to complete two counterflow installations.

All supply duct must be ducted below the drain pan. The drain connection should be kept 4" to 6" above the floor line to allow for rotation of a pipe fitting and for pitch of a drain line to a floor drain.

It is not recommended that any coils be used in a counterflow model if the system is located directly over objects which could be damaged by condensate, such as in an installation on a second floor over a finished ceiling. If such a location is unavoidable, it is suggested that a watertight, galvanized auxiliary pan at least 2" deep and at least 2" larger in all directions than the supply plenum be installed beneath the supply plenum. A separate drain line from the auxiliary pan to an open drain should be provided. This open drain should be visible so that any water coming from the auxiliary drain can be seen as an indicator that the primary drain is plugged.

### Installing Line Sets

Only clean, dry, refrigeration-grade copper tubing should be used for interconnecting refrigerant lines. Selection of correct tubing size is referenced in the Product Specifications catalog.

Copper tubing should be brazed to the copper stubs at the coil and at the condensing unit while flowing an inert gas, such as nitrogen, through the joints during heating to prevent oxide formation inside the tubing which could clog the flatorator piston.

To avoid damage to rubber grommets in cabinet, assemble refrigerant lines to coil. Then remove both grommets from panel by sliding over lines and away from source of heat. Braze refrigerant line connections and let cool before re-installing grommets.

Evaporators equipped with nonbleed expansion valves **must** be used with condensing units which either have a scroll type compressor or have hard start capability.

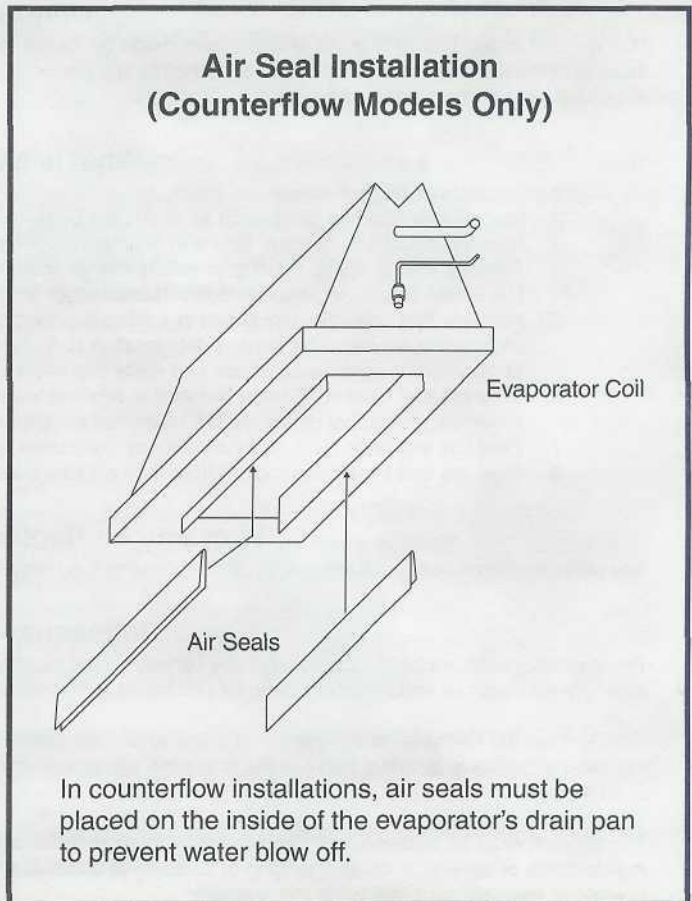


Figure 2

## Limited Warranty

August 1, 1997

*This warranty gives you specific legal rights and you may have other rights which vary from state/province to state/province.*

**Warrantor: Armstrong Air Conditioning Inc., 421 Monroe St., Bellevue, OH 44811**

Armstrong Air Conditioning Inc. products are available under the following names: Air Ease, Armstrong Air, American Aire, Concord

Subject to the limitations stated in this warranty, we warrant to the first buyer for use the residential heating, cooling or heat pump unit, when installed, operated and maintained as required by this warranty, to be free of defects in workmanship or material for a period of five years (1 year for commercial equipment) from the time of installation. We will replace any defective component without cost or expense to you except for the costs of delivery and labor for removal and replacement of the defective component.

### Warranty Begins

The warranty period begins when the installation is complete and the product is ready to operate. You must be able to verify this date whenever a warranty claim is made. Original bill of sale, installer's invoice or other similar document will suffice. If the beginning date cannot be verified, we will consider warranty coverage to begin six months after the date the product was shipped from our factory.

### Limitations on Implied Warranties

Implied warranties of merchantability or, to the extent applicable, fitness for a particular purpose are limited to five years, the same duration as the basic limited written warranty provided herein. Some states/provinces do not allow limitations on how long an implied warranty of merchantability or fitness lasts, so the above limitations or exclusions may not apply to you.

### Only Warranty

This written Limited Warranty is the only warranty made by the warrantor; this warranty is in lieu of and excludes all other warranties, express or implied. The warrantor does not authorize any person to provide any other warranty or to assume for it any further obligation in connection with the warranted product.

### What is NOT Covered

1. Cabinets or cabinet pieces.
2. Normal maintenance items such as filters, fan belts, fuses or other consumable items.
3. Damage caused by misuse, failure to maintain properly, accidents or acts of God.
4. External wiring, piping, venting or attachment of accessory products not integral to our product, including without limitation, humidifier, air cleaner, vent damper, thermostat or other mechanical devices not manufactured by the warrantor.
5. Products that have been operated in a corrosive atmosphere where a concentration of acids, halogenated hydrocarbons or other corrosive elements causes deterioration to metal surfaces or integral components. NOTE: Operation in a corrosive atmosphere is considered abuse and voids this warranty.
6. Products that have NOT been installed in accordance with our published installation instructions, applicable local, state/provincial or national codes, ACCA published standards.
7. Products that have NOT been installed by competent, qualified installers.
8. Products that have been moved from their original place of installation.

### Warranty on Replacement Components

Any replacement component furnished by us will assume the remaining (unused) portion of the Limited Warranty.

### Consequential Damages

The warrantor shall not be responsible for any consequential damages caused by any defect in the product. Some state/provinces do not allow the exclusion or limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

NOTE: After the first year, in the event that a gas or oil heat exchanger is no longer being manufactured by the warrantor, the warrantor will allow a credit equal to the then current wholesale price of an equivalent heat exchanger towards the purchase of a new Armstrong gas or oil furnace.

This product must be installed, used and cared for in accordance with the instruction manual. You are responsible for required periodic maintenance or service, such as changing or cleaning of air filters and lubrication or cleaning of components. Failure to properly install, operate or maintain your unit voids this warranty.

### Owner Record

Model # \_\_\_\_\_ Serial # \_\_\_\_\_ Installation Date \_\_\_\_\_  
**INSTALLED BY:**  
Dealer \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone # \_\_\_\_\_ License # \_\_\_\_\_