

INSTALLATION INSTRUCTIONS

Evaporator Coils

Save these instructions for future reference



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.

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. This 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.



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.

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 my be denied.**



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.

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

Manufactured By
Allied Air Enterprises, Inc.
A Lennox International Inc. Company
215 Metropolitan Drive
West Columbia, South Carolina 29170



* 5 0 6 3 9 0 - 0 1 *

INSTALLATION

CAUTION

This coil was manufactured containing a dry air precharge of 20 psi. This pressure **MUST** be relieved through the center of the rubber line 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 AHRI rating. The 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 orifice 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.

IMPORTANT: The proper orifice size is dependent on the indoor coil/outdoor unit combination and application.

1. Consult the outdoor unit information to determine if the indoor unit has the correct orifice installed.
2. If a change of orifice is required, loosen the brass hex nut and separate the tube from the brass hex fitting (see Figure 1).

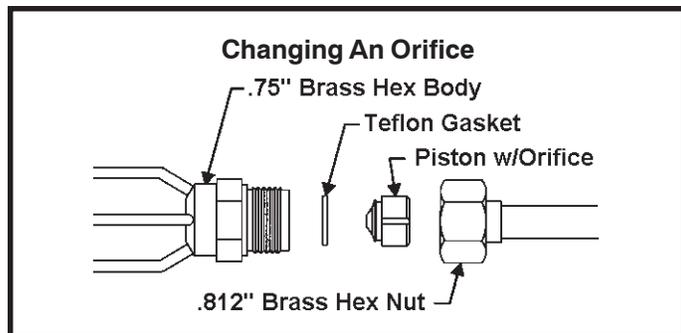


Figure 1

3. Remove the orifice with an orifice extractor tool.
4. Insert the proper orifice into the fitting, seal end first. Make sure the orifice is free to move in the fitting.
5. Replace the brass hex nut. **Be careful not to overtighten the hex nut. Overtightening the brass hex nut will crush the gasket and may result in a system leak or stuck piston.**

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

CAUTION

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 sectionalized heat exchanger and 4" for drum-type or oil-fired furnace exchanger (see Figure 2). Closer spacing may damage the drain pan and cause leaking.

CAUTION

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.

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.

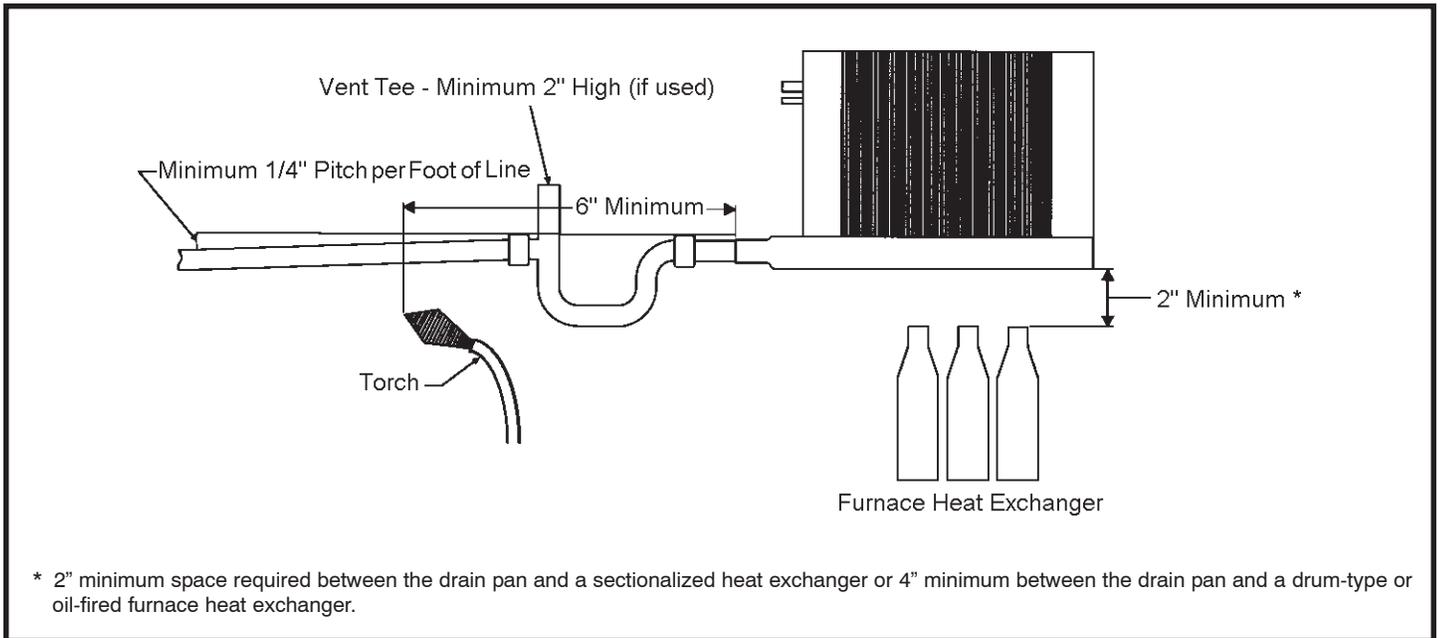


Figure 2

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 is 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 in several counterflow model installations (see Figure 3). A kit, ACFAIRSEAL-1, is available from the local distributor. The kit contains four air seals, enough to complete two (2) 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.

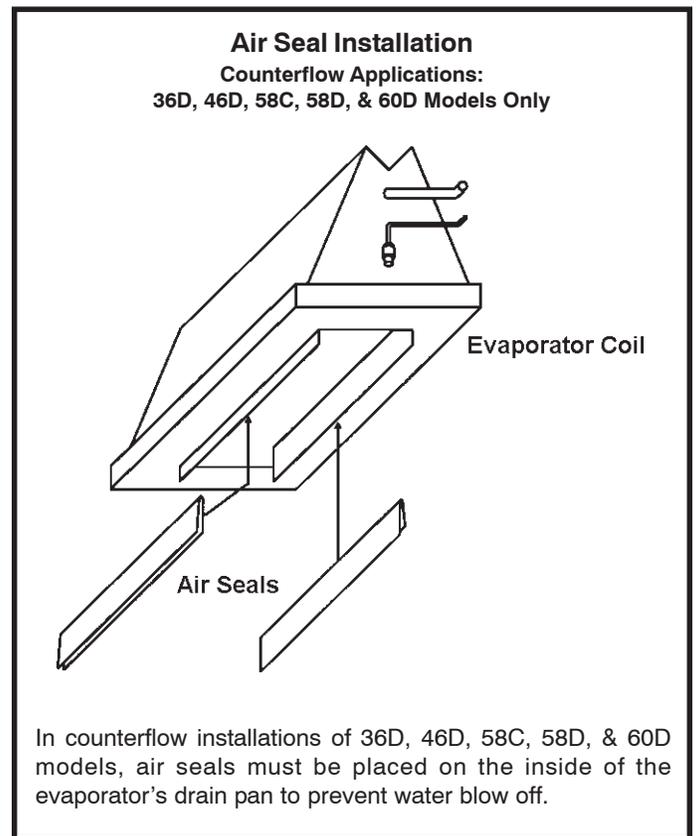


Figure 3

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.

Horizontal Models (Figures 4 and 5)

In horizontal installations (either left-hand and right-hand air discharge), the coil must slope downward 3/4" toward the drain connections.

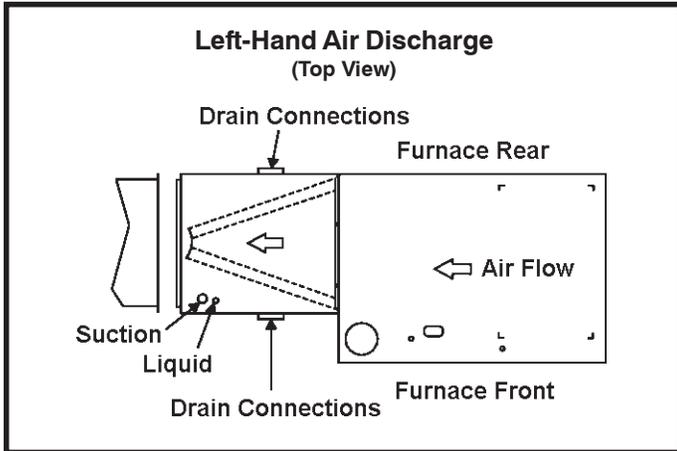


Figure 4

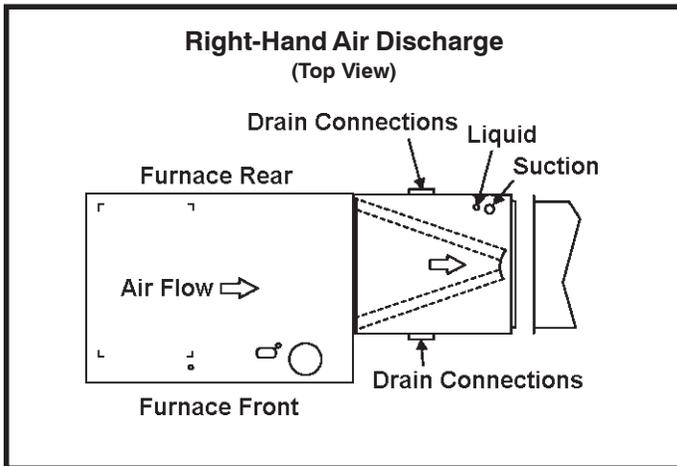


Figure 5

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 reinstalling 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.

**ALLIED AIR ENTERPRISES
EQUIPMENT LIMITED WARRANTY
APPLIES IN U.S.A. AND CANADA ONLY
FAILURE TO MAINTAIN YOUR EQUIPMENT WILL VOID THIS WARRANTY**

COVERED EQUIPMENT

The following Allied Air Enterprises heating and cooling equipment is covered by the Limited Warranty,

Condensing Units: 2SCU13, 4SCU13, 4SCU14, 4SCU16, 4SCU18, 2AC13, 2AC14, 4AC13, 4AC14

Heat Pumps: 2SHP13, 4SHP13, 2SHP14, 4SHP14, 4SHP16, 4SHP18, 2HP13, 2HP14, 4HP13, 4HP14

Gas Furnaces: G1N80, G1D80, G2D80, G1D91, G1D93, G2D93, G2D95, FPBB, CG80, CG90, CG92, CG93, CG95

Oil Furnaces: LBR80, LBF80, LHF80, LUF80, LHR80, RLUF, RLBF, RLBR, RLBU, RLHF, RLHR

Electric Furnaces: EFC, EFV

Evaporator Coils: EC, EU, EH, EM

Air handlers: BCS2, RBCS2

Package Equipment: 2PCE13, 4PCE13, 4PCE15, 2PGE13, 4PGE13, 4PGE15, 2PHP13, 4PHP13, 4PHP15, 2SG13, 2SH13, 2SA13, RGE13, RPGE13, RHP13, RCE13, RPHP13, RPCE13

PARTS and COMPRESSOR COVERAGE

The covered equipment, parts and compressor are warranted by Allied Air for a period of five (5) years from the date of the original installation, when installed in a residential application (which includes homes, duplexes, apartments and condominiums). For non-residential applications, the covered equipment and parts are warranted for a period of one (1) year and compressor is warranted for five (5) years from the date of the original installation. If, during this period, a covered component fails because of a manufacturing defect, Allied Air will provide a free replacement part to the owner through a licensed service contractor utilizing an Allied Air distributor. The purchaser must pay shipping charges and all other costs of warranty service. Allied Air will not pay labor involved in diagnostic calls or in removing, repairing, servicing or replacing parts. Such cost may be covered by a separate warranty provided by the installer.

HEAT EXCHANGER EXTENDED COVERAGE

All covered heat exchangers are warranted by Allied Air for a period of twenty (20) years from the date of original installation, when installed in a residential application. Heat exchangers in all non-residential applications are warranted for a period of ten (10) years.

Heat Exchanger Availability: If a replacement heat exchanger is no longer available for a unit covered by this Limited Warranty, Allied Air will allow a credit toward the purchase of an equivalent Allied Air furnace (at the current suggested distributor's cost).

NOTE: If the date of original installation cannot be verified, the warranty period will be deemed to begin ninety (90) days after the date of manufacture.

EXCLUDED COMPONENTS

The following components are expressly not covered by this Limited Warranty: cabinets, cabinet pieces, air filters, driers, refrigerant, refrigerant line sets, belts, wiring, fuses, oil nozzles, unit accessories and any parts not affecting unit operation

CARE OF EQUIPMENT

All new Allied Air units must be properly installed, operated and maintained in accordance with the unit installation, operation and maintenance instructions provided with each Allied Air unit. Failure to maintain the equipment per Allied Air instructions will void this Limited Warranty.

WARRANTY PROCEDURE

When service or warranty parts are required:

1. Call a local licensed service dealer or contractor.
2. If the installing dealer is unable to provide warranty service, check online at www.alliedair.com.
3. Be prepared to furnish the following information:
 - a. complete model and serial number;
 - b. proof of required periodic maintenance, installation date and location; and
 - c. an accurate description of the problem.

WARRANTY LIMITATIONS

1. This Limited Warranty is void if the covered equipment is removed from the original installation site.
2. This Limited Warranty does not cover damage or defect resulting from:
 - a. flood, wind, fire, lightning, mold, or installation and operation in a corrosive atmosphere, or otherwise in contact with corrosive materials (chlorine, fluorine, salt, recycled waste water, urine, fertilizers, or other damaging substances or chemicals); accident, or neglect or unreasonable use or operation of the equipment including operation of electrical equipment at voltages other than the range specified on the unit nameplate (includes damages caused by brownouts);
 - b. modification, change or alteration of the equipment, except as directed in writing by Allied Air;
 - c. operation with system components (indoor unit, outdoor unit and refrigerant control devices) which are not an ARI match or meet the specifications recommended by Allied Air;
 - d. operation of furnaces with return air temperatures of less than 60°F (16°C) or operation of a furnace field installed downstream from a cooling coil; and
 - e. use of contaminated refrigerant or refrigerant not compatible with the unit.

The installation of replacement parts under the terms of this Limited Warranty does not extend the original warranty period.

Allied Air makes no express warranties other than the Limited Warranty specified above. All implied warranties, including the implied warranties of merchantability and fitness for a particular purpose, are excluded to the extent legally permissible. Should such exclusion or limitation of this Limited Warranty be unenforceable, such implied warranties are in any event limited to a period of one (1) year. Liability for incidental and consequential damages is excluded. Some states do not allow limitation of incidental damages, so these limitations or exclusions may not apply to you. Allied Air will not pay electricity or fuel costs, or increases in electricity or fuel costs, for any reason whatsoever, including additional or unusual use of supplemental electric heat. This Limited Warranty does not cover lodging expenses or labor charges.

Allied Air shall not be liable for any default or delay in performance under this Limited Warranty caused by any contingency beyond its control.

This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

NOTE TO CUSTOMER:

Please complete information below and retain this warranty for your records and future reference.

Outside Unit Model Number: _____ Serial Number: _____ Installed Date: _____

Furnace / Air Handler: _____ Serial Number: _____ Installed Date: _____

Indoor Coil Model Number: _____ Serial Number: _____ Installed Dare: _____

Installing Company Name: _____ Phone: _____

Installing Company Address: _____ State/Province: _____ Zip/Postal Code: _____



215 Metropolitan Drive - West Columbia - SC - 29170

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5-YEAR LIMITED EXTENDED PARTS WARRANTY

Allied Air Enterprises Inc. ("Allied Air") provides its air conditioning and heating products with a Standard Limited Parts Warranty for five (5) years. This additional 5-Year Limited Extended Parts Warranty is in addition to and is intended to supplement Allied Air's Standard Limited Parts Warranty. As such, Allied Air provides for a total of 10-years of limited warranty coverage (Standard Limited Parts Warranty plus additional 5-Year Limited Extended Parts Warranty).

This 5-Year Limited Extended Parts Warranty applies only to the original purchaser of the equipment and cannot be transferred. If during the coverage period, a covered part fails because of a defect in materials or workmanship under normal use and maintenance, Allied Air will provide a free replacement part to the purchaser through a licensed service contractor utilizing an authorized Allied Air distributor. The purchaser must pay shipping costs and all other costs of warranty service. Allied Air will not pay labor involved in diagnostic calls or in removing, repairing, servicing or replacing parts.

EXTENDED COVERAGE -

PARTS/COMPRESSORS

Covered equipment and parts are warranted by Allied Air for a total of **10 YEARS** (Standard Limited Parts Warranty) from installation, except as provided below

HEAT EXCHANGERS

Covered residential heating equipment's heat exchanger is warranted by Allied Air for a LIMITED LIFETIME from date of original installation, except as provided below.

EXCLUDED COMPONENTS -

The following components are expressly not covered by this 5-Year Limited Extended Parts Warranty: cabinets, cabinet pieces, air filters, driers, refrigerant, refrigerant line sets, belts, wiring, fuses, oil nozzles, unit accessories, R-22 compressors, and any parts not affecting unit operation.

REQUIREMENTS FOR EXTENDED COVERAGE-

1. The unit is an Armstrong Air, Air ease, Ducane, or Concord branded unit;
2. The unit is installed in a residential application, which is an owner-occupied single-family residence. No commercial applications are allowed;
3. **The unit is properly registered at www.alliedair.com with Allied Air within 60-days after the original date of installation or occupancy.¹ To register, follow the directions and complete the online warranty registration at www.alliedair.com. For customer inquiries, contact Allied Air at 1-800-448-5872.**
4. The unit is part of a complete ARI matched system and installed by a state certified or licensed contractor in accordance with the unit installation, operation, and maintenance instructions provided with the unit.
5. Coils and air handlers are covered only when they are branded Armstrong, AirEase, Ducane, Concord or ADP and are purchased and newly installed as a system along with a qualifying unit. Except for ADP-branded products, coverage of other third party coils and air handlers are specifically excluded from this 5-Year Limited Extended Parts Warranty.
6. Installation of the unit takes place on or after October 3, 2008.

If this 5-Year Limited Extended Warranty does not apply, then parts are warranted under the Standard Limited Parts Warranty for a period of **5 YEARS** and heat exchangers for **20 YEARS**. If the Standard Limited Parts Warranty periods differ from the original warranty certificate, the periods stated on the original warranty certificate apply.

This 5-Year Limited Extended Parts Warranty does not apply to, and no warranty is offered by Allied Air, on any unit ordered over the internet. Proof of purchase may be required.

Any part replaced pursuant to this 5-Year Limited Extended Parts Warranty is warranted only for the unexpired portion of the limited extended warranty term remaining for the original part. The installation of replacement parts under the terms of this 5-Year Limited Extended Parts Warranty does not extend the warranty period.

Steps for obtaining replacement parts under this 5-Year Limited Extended Parts Warranty:

If you suspect a defect in your equipment, please contact the installer of the unit to obtain assistance. If unsuccessful, please contact an Allied Air dealer or distributor in your area. If unable to obtain local assistance, refer to Allied Air's website (www.alliedair.com) or contact Allied Air at 800-448-5872.

Allied Air is specifically not responsible for:

1. Damage or repairs required as a result of flood, fire, wind, lightning strike (to the home or unit), corrosive atmosphere, contact with corrosive material (chlorine, fluorine, salt, recycled waste water, fertilizers or other damaging substances) or other conditions beyond the control of Allied Air;
2. Use of parts, accessories, or refrigerant not compatible with the unit;
3. Modification, change or alteration of the unit, except as expressly directed in writing by Allied Air;
4. Improper use, accident, neglect or unreasonable use or operation of the unit, including operation of electrical equipment at voltages other than the range specified on the unit nameplate;
5. Operation with system parts (indoor unit, outdoor unit and refrigerant control devices) which are not ARI matched or do not meet the specifications recommended by Allied Air;
6. Damage or repairs required as a consequence of faulty or installation or application;
7. Normal maintenance as described in the installation and operating manual, such as cleaning of coils, filter cleaning and/or replacement and lubrication; and
8. Changes in the appearance or sound of the unit that do not affect its performance.

This 5-Year Limited Extended Parts Warranty is an extension of Allied Air's Standard Limited Parts Warranty. **ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE TERM OF THIS LIMITED EXTENDED WARRANTY.** Some states and provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

ALLIED AIR SHALL IN NO EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO EXTRA UTILITY EXPENSES OR DAMAGES TO PROPERTY. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you

The parties intend this writing as a final expression of their agreement with respect to warranties. Allied Air makes no other warranty beyond that which is expressly contained in this writing.

Allied Air shall not be liable for any default or delay in performance under this warranty caused by any contingency beyond its control, including the unavailability of replacement parts.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state or province to province.

¹ Excludes residents of states or provinces where registration requirements are prohibited, such as California and Quebec. Residents of these states or provinces may either register as noted above or provide proof of when the unit was purchased and installed, such as an original invoice from the contractor with the Owner's name, address, purchase date, serial and model number.