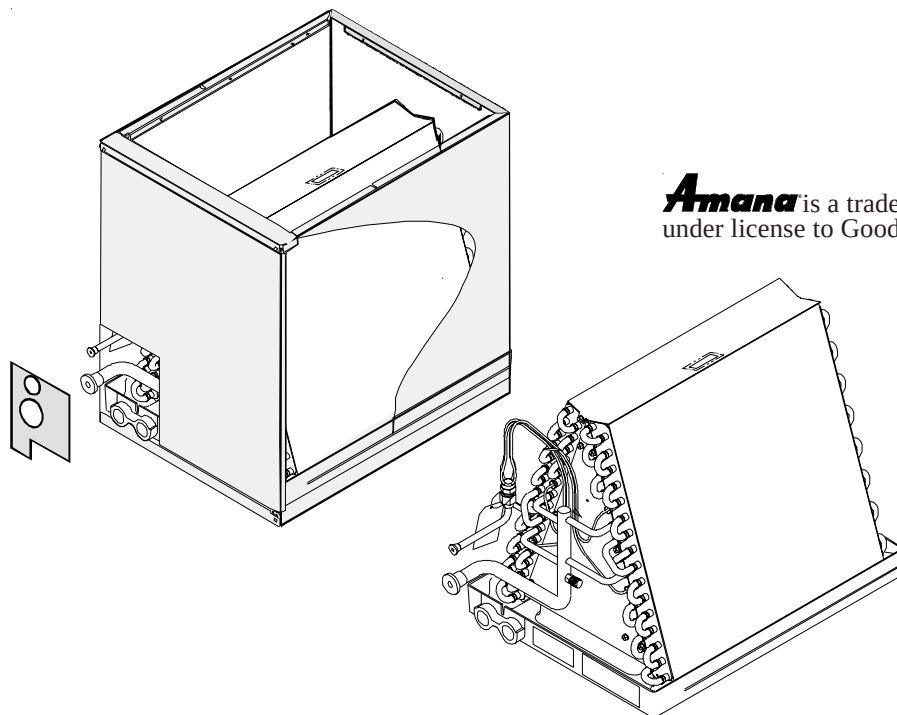
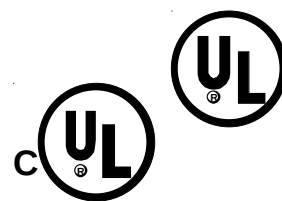


CCA/CHA CASED & UNCASD EVAPORATOR A-COIL INSTALLATION INSTRUCTIONS



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- Only allow **qualified, experienced** technicians to install or service this unit.
- Units must be installed in accordance with Regulations of the National Fire Protection Association and applicable local codes. Where local regulations are at a variance with instructions, installer should adhere to local codes.
- Before connecting tubing, read the outdoor unit installation manual. Pay particular attention to all safety precautions.



RECOGNIZE THIS SYMBOL AS A SAFETY PRECAUTION.

ATTENTION INSTALLING PERSONNEL

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here take precedence.

***NOTE:** Please contact your distributor or our website for the applicable product data book referred to in this manual.

GENERAL

These evaporator A-coils can be installed on a furnace or air handling unit. They are specifically designed to “match up” with Amana® brand condensing units and heat pumps to provide high efficiency heating or cooling. These coils are suitable for either attic or crawl space installations. Some coil models have non-bleed thermal expansion valve (TXV) kits installed. TXVs and flow restrictors give accurate refrigerant control and provide reliable operation over a wide range of conditions. To avoid poor operation or equipment damage, any single-phase reciprocating compressor used with an expansion valve coil must include hard start components. Ensure that the outdoor unit has hard start components or install a hard-start kit. See the Product Data Book applicable to your model* for the proper kit number.

NOTE: It may be necessary to change the factory-installed expansion valve on a CHA**T*C coil in order to match the outdoor unit capacity.

FACTORY SHIPPED		
Coil	TXV	Outdoor Capacity
CHA18T*C CHA24T*C	TXV01A	1-1/2 to 2 tons
CHA30T*C CHA36T*C	TXV02A	2-1/2 to 3 tons
CHA42T*C CHA48T*C CHA54T*C CHA60T*C	TXV03A	3-1/2 to 5 tons

SHIPPING AND HANDLING


WARNING

THIS PRODUCT IS SHIPPED FROM THE FACTORY UNDER HIGH PRESSURE!

TO AVOID PROPERTY DAMAGE, PERSONAL INJURY OR DEATH, RELIEVE PRESSURE **BEFORE** REMOVING THE COPPER CAPS FROM THE MANIFOLD AND DISTRIBUTOR TUBES. TO RELIEVE PRESSURE, DEPRESS THE SCHRAEDER VALVE CORE ON THE MANIFOLD UNTIL PRESSURE IS GONE. FOR MODELS WITH TXV, RELIEVE PRESSURE BY PUNCTURING THE COPPER CAPS WITH AN ALL STEEL AWL.

All units are securely packed in shipping containers tested according to International Safe Transit Association specifications. Upon receipt of the coil assembly, inspect for any damage which may have occurred in transit. If damage is obvious, it should be noted on the carrier's freight bill for inspection and initiation for settlement of claim be made at once. Units are usually shipped F.O.B. factory, and it is the consignee's responsibility to file damage claims. If no damage is found, shipping material should be removed and recycled or properly discarded.

LOCATION REQUIREMENTS

The coil can be installed with zero clearance to combustible materials. Adequate room must be provided for servicing, routing of refrigerant lines, and routing of drain lines including

a drain trap. Do not locate the unit directly on the ground or in an area that may become wet. If installed over a finished ceiling or living space, a secondary drain pan (with drain line) should be positioned under the entire unit. **There are three (3) flanges that ship, unattached, with the CCA and CHA coils**, for use in certain installations. There is also an additional serial plate shipped in the literature bag. The installer can place this serial plate in a convenient visible location on the outside of the unit. Be sure these items are included with your unit.

COIL SIZING

Coils should be sized prior to installation based on recommended matches to the outdoor unit. Refer to sales literature and the ARI directory. Install unit in accordance with Regulations of the National Fire Protection Association and applicable local codes. Where there are variances with the national code, adhere to local codes.

The capacity of the cooling or heating system is obtained from the published ratings.

NOTES:

- For TXV installation, see the Product Data Book applicable to your model for the proper TXV kit:
- For orifice installation, select the orifice size specified by the outdoor unit.

COIL CLEANING (PRIOR TO INSTALLATION)

To obtain optimum performance on initial start-up, the coil assembly must be cleaned with a mild dishwashing detergent or coil cleaner to remove any manufacturing oil residue, dirt, or other foreign substances from the coil finned surfaces. **Do NOT use coil cleaners containing EDTA (Ethylene Diamine Tetracetic Acid).**


CAUTION

TO AVOID THE RISK OF WATER DAMAGE, THE COIL MUST BE INSTALLED PLUMB AND LEVEL. **WHEN THE COIL IS TO BE INSTALLED OVER A FINISHED CEILING OR THE LIKE, AN AUXILIARY DRAIN PAN MUST BE INSTALLED UNDER THE COIL. THE DRAIN PAN MUST HAVE ITS OWN INDEPENDENT DRAIN LINE.**

COIL MOUNTING INSTRUCTIONS

UNCASED COIL

Uncased coils can be installed in furnace plenums. If using either a gas or oil furnace, mount the uncased coil only in the supply air plenum unless otherwise instructed by the furnace manufacturer:

- Refer to the coil assembly dimensions listed in the Product Data Book applicable to your model* to obtain the width, depth and height.
- Cut opening in furnace plenum; dimensions must be large enough to receive the coil assembly. For optimal performance, provide 2" clearance on both sides of the coil to the ductwork.
- Install an inverted sheet metal pan in the furnace plenum, with an opening in the center of the pan matching

*NOTE: Please contact your distributor or our website for the applicable product data book referred to in this manual.

opening in A-coil drain pan. Set coil on top of inverted pan.

4. Fabricate a piece of sheet metal to enclose the front of the furnace plenum. Do not allow the screws to penetrate the coil drain pan or copper tubing. See Figure 1.


CAUTION

IT IS THE INSTALLER'S RESPONSIBILITY TO ENSURE THE COIL IS PROPERLY SUPPORTED.

CASED COIL

Upflow Installations

If either a gas or oil furnace is used, the cased coil must be mounted at the supply air end of the furnace (unless the furnace manufacturer instructs otherwise). The cased coil must be installed with the drain pan down. For proper drainage, the coil must be level. If necessary, shim under the furnace so the furnace and coil cabinet will both be level.

The opening in the base of the casing is designed to mate with the supply air flanges on an upflow Amana® Air Command® furnace.

If the furnace supply air flanges are substantially larger than 20 inches front to back, the installer may need to provide an inverted sheet metal pan. In this situation, the inside dimensions of the pan should fit over the furnace flanges. The opening in the center of the pan should match the opening in the base of the coil cabinet.

If the furnace and coil casing are not of similar widths, the installer will need to do other sheet metal modifications. Fasten the assembly securely, and seal as necessary to reduce air leakage. Do not allow screws to penetrate the coil drain pan or tubing.

The flanges for the back and sides of the coil casing ship unattached. The installer can use a mallet to carefully drive the flanges into place on the top of the coil cabinet.

Counterflow Installations

If a gas or oil furnace is used, the cased coil must be mounted at the supply air end of the furnace (unless the furnace manufacturer instructs otherwise). In other words, the coil must go below most counterflow furnaces. To reduce air leakage, the back of the coil casing should be flush with the back of the furnace.

If possible, the floor opening dimensions should be no smaller than those recommended by ACCA's Manual D. For all installations, the floor opening dimensions must be no larger than the opening in the base of the cabinet. The floor opening must also adequately support both the coil and the furnace. The coil **MUST** be installed with the drain pan down. For proper drainage, the coil must be level. If the floor is not level, the installer may need to shim under the base of the cabinet. After leveling, seal between the cabinet and the floor as necessary to reduce air leakage. Keep all access panels in place while installing the system.

The flanges for the back and sides of the coil casing are shipped unattached. For most counterflow installations,

these flanges should be discarded. They often will not match the opening in the bottom of the furnace.

If the coil cabinet and furnace are not of similar widths, the installer will need to do other sheet metal modifications. Fasten the assembly securely, and seal as necessary to reduce air leakage. Do not allow screws to penetrate the coil drain pan or tubing.

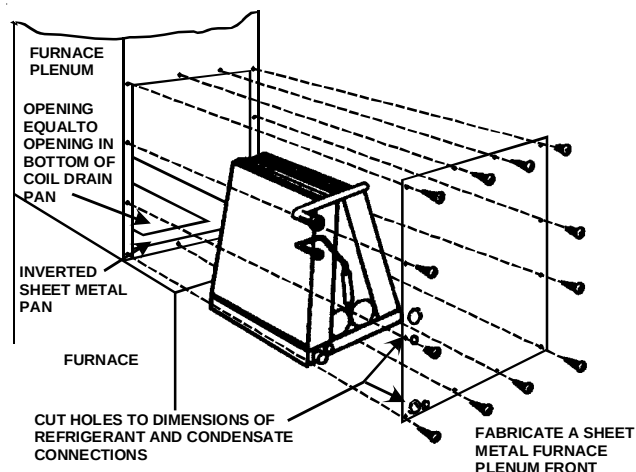


Figure 1
Uncased Coil Mount

FILTERS

FILTER RACK INSTALLATION

To install the one-inch thick filters under the coil drain pan, install two 1/8 inch diameter rods (shipped with Amana® brand two-piece blower section) into holes provided in the bottom of the cabinet, forming an "X" (see Figure 2).

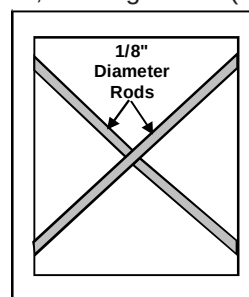


Figure 2
Bottom View of Unit

Replace hex head screws on filter panel with thumb screws shipped with the blower section.

Standard disposable filters fit into the space provided as shown in Table 1.

NOTE: Suggested size is to maximize filter area. Minimum size is largest "standard" size disposable that will fit without allowing bypass air.

	Minimum Filter Size	Suggested Filter Size
Small Cabinet (16-1/2" Wide)	15 x 20	15 x 20
Medium Cabinet (20-1/2" Wide)	15 x 20	19 x 20
Large Cabinet (24-1/2" Wide)	20 x 20	23 x 20

Table 1 - Filter Size

It is not recommended to exceed 0.12 inch W.C. pressure drop across the filter, or inadequate filtration will occur.

NOTE: The shaded area in Table 2 represents when inadequate filtration would occur due to excessive air velocity.

CFM	Small	Medium	Large
600	0.09	0.07	
800	0.12	0.1	
1000	0.15	0.12	
1200	0.19	0.15	0.12
1400	0.22	0.17	0.14
1600		0.2	0.16
1800			0.19
2000			0.22

inches W.C.

Table 2
Approximate Disposable Filter Pressure Drop - Filter @ Drain pan Opening

REFRIGERANT PIPING

JOB SITE BRAZING

See companion outdoor condensing unit instructions for recommendations on field piping of interconnecting refrigerant lines.

Line sizes for runs of fifty feet or less should be based on the line diameters of the outdoor unit. For lengths greater than 50 feet, refer to the product service manual. A field provided adapter may be necessary depending on line size used and connection size.

TRACER GAS

! WARNING

THIS PRODUCT IS SHIPPED FROM THE FACTORY UNDER HIGH PRESSURE! TO AVOID PROPERTY DAMAGE, PERSONAL INJURY OR DEATH, RELIEVE PRESSURE BEFORE REMOVING THE COPPER CAPS FROM THE MANIFOLD AND DISTRIBUTOR TUBES. TO RELIEVE PRESSURE, DEPRESS THE SCHRAEDER VALVE CORE ON THE MANIFOLD UNTIL PRESSURE IS GONE. FOR MODELS WITH TXV, RELIEVE PRESSURE BY PUNCTURING THE COPPER CAPS WITH AN ALL STEEL AWL.

The coil is shipped with a tracer gas charge at 150 psig. This charge serves as an indicator for determining coil leaks. To test for leaks:

1. Remove access panel.
2. Remove cap from Schraeder valve and depress core. A "hiss" should be heard as the tracer gas expels from the coil.

If no "hiss" is heard, the coil has a leak and must be either repaired or replaced. For refrigerant charging information, refer to your outdoor unit installation instructions.

REFRIGERANT CHARGING

Before the coil can be charged, ALL the tracer gas must be expelled from the coil through the Schraeder valve. Remove copper caps from manifold and distributor tubes. Coil and field installed line set must be evacuated prior to charging.

MODELS WITH FACTORY INSTALLED TXV

1. Install TXV equalizer tube onto the Schraeder valve.
2. Torque equalizer tube nut 10-12 ft-lbs. Use a backup wrench to prevent twisting of Schraeder valve when applying torque.

NOTE: A small amount of refrigerant oil may be applied to the equalizer tube to improve seal.

! CAUTION

EXCESSIVE TORQUE CAN CAUSE ORIFICES TO STICK. USE THE PROPER TORQUE SETTINGS WHEN TIGHTENING ORIFICES.

DISTRIBUTOR ASSEMBLY

A restrictor orifice is shipped with the coil; however, certain conditions may require that the orifice be replaced. The orifice is located in the distributor flow control assembly. Outdoor units determine the required orifice size needed to properly run the unit efficiently. Check the Product Data Book applicable to your model* for proper restrictor size. Amana® brand outdoor units are shipped with properly sized orifices. If installing a TXV kit, ensure the outdoor unit is matched up with the appropriate TXV kit. Refer to the Product Data Book applicable to your model* for the correct TXV kit needed to properly run the unit efficiently.

Restrictor Orifice Removal

! CAUTION

DO NOT REUSE OLD WASHERS, SYSTEM LEAK COULD OCCUR.

1. Disassemble the distributor flow control assembly by holding distributor body with a wrench and turning the brass hex nut.
2. Remove and discard the factory-installed restrictor.
NOTE: If the restrictor does not drop out of the distributor body when disassembled, remove using an orifice extractor.
3. Remove existing teflon washer (if present) and discard.

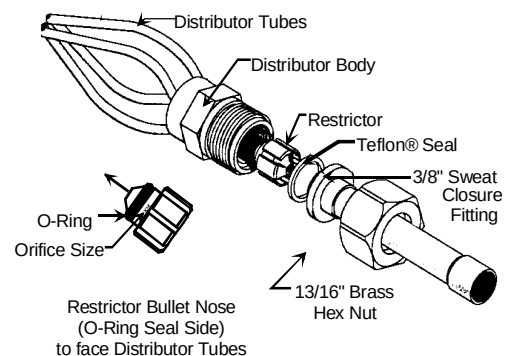


Figure 2
Distributor Flow Control Assembly

Restrictor Orifice Replacement

1. If required, install a new teflon seal as shown in Figure 2.
2. Insert new restrictor fully into the distributor body with smaller end towards the indoor coil as shown in Figure 2. Ensure the restrictor stays inserted in body before connecting mating half.
3. Thread assembly halves together by hand to insure proper mating of threads. Hand tighten until snug.
4. Tighten assembly to 10-12 ft/lbs of torque. Use a suitable torque wrench with properly sized open end wrench adapter. Use a backup wrench to prevent twisting of distributor tubes when applying torque. Care must be taken not to misshape the distributor body.

NOTE: If a torque wrench is not available, mark a line on each part. Then tighten an additional 1/6 turn (or 1 hex flat).

TXV Kit Installation (CCA Only)

This installation can be used on CCA and where required CHA coils to match the outdoor unit capacity.

1. Insert the outlet of the TXV (female fitting) into the distributor body. Connect the assembly halves together and tighten by hand. Install the inlet tube onto the inlet of the TXV (male fitting). Hand tighten the joint.
2. Remove the cap from the Schraeder valve on the vapor manifold. Without kinking, attach the TXV equalizer line to the Schraeder valve. Hand tighten the nut onto the Schraeder valve.
3. Tighten the equalizer connection to 10-12 ft/lbs of torque.
4. Tighten the TXV connections to 15-30 ft/lbs of torque. Use a suitable torque wrench with properly sized open end wrench adapter. Use a backup wrench to prevent twisting of distributor tubes when applying torque.

NOTE: If a torque wrench is not available, mark a line on each part. Then tighten an additional 1/6 turn (or 1 hex flat).



WARNING

FIRE OR EXPLOSION HAZARD

TO AVOID THE RISK OF FIRE OR EXPLOSION, NEVER USE OXYGEN, HIGH PRESSURE AIR OR FLAMMABLE GASES FOR LEAK TESTING A REFRIGERANT SYSTEM.

USE OF OXYGEN, HIGH PRESSURE AIR OR FLAMMABLE GASES CAN CREATE A HAZARD LEADING TO PERSONAL INJURY AND/OR DEATH.

REFRIGERANT PIPE CONNECTIONS

1. Remove access panel.
2. Remove cap from Schraeder valve on manifold assembly and depress valve core to relieve pressure.
3. Unbraid or cut caps from suction and liquid lines. If cutting, cut tubes as close to caps as possible.
4. Cut field tubing off squarely and cut to correct length, deburr.

5. Inspect tubing ends. Tubing must be round and without nicks or dents on tubing surface which is to be brazed to the unit.
6. Repeat steps 1 through 5 for suction line.
7. Braze the tubing.

NOTE: This is a copper to copper joint, use an appropriate brazing alloy (2% minimum silver).



CAUTION

IF THE UNIT HAS A THERMAL EXPANSION VALVE EITHER WRAP THE EXPANSION VALVE AND SENSING BULB WITH A WET RAG, OR USE A THERMAL BLOCK OR SIMILAR HEAT DISSIPATING MATERIAL TO PREVENT DAMAGE TO THE EXPANSION VALVE.

For proper leak test, evacuation, and charging procedures, see the outdoor unit installation manual. Leak testing is to be done on line set only; therefore, do **NOT** use refrigerant from condensing unit for testing leaks or you may need to evacuate system if a leak is detected.

DRAIN CONNECTION

The drain connection on the coil requires a full size drain as it exists on the unit. The connection is 3/4" ID FPT pipe size. The drain line must contain a trap. If a proper trap is not present, the drain pan could overflow.

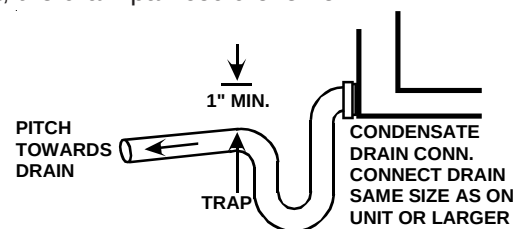


Figure 3
Drain Connection

NOTE: To avoid double trapping, and possibly an overflowing drain pan, it is not recommended to use soft plastic drain lines. **If used, the auxiliary drain must be piped separately from the main drain connection and must contain a trap located below the bottom of the drain pan.**

CONDENSATE SYSTEM MAINTENANCE (QUALIFIED SERVICER ONLY)

As it cools the air, the coil can produce condensation. This water must be drained away properly. At least once a year, a qualified servicer should inspect the drain pan(s) and drain line(s) to confirm that the condensate will drain properly. Some cleaning or adjustment may be required at this time.

HOMEOWNER INFORMATION

AIR FILTER

Air filter(s) must be supplied by the installer. All of the return air must be filtered before it enters the coil. If this coil is installed without filter(s), poor performance, severe equipment damage, and/or loss of warranty coverage could result. These problems could affect both the indoor unit and the outdoor unit.

If possible, discuss filter location and maintenance with the building owner before leaving the job.

FILTER MAINTENANCE

IMPORTANT: To avoid the risk of poor performance, severe equipment damage, and/or loss of warranty coverage, do not operate the coil without clean filter(s) in place.

Filter(s) should be inspected every month, and cleaned or replaced when necessary. It is the user's responsibility to keep the filters clean. Dirty filters are the most common cause of poor heating or cooling performance.

Your air filter or filters could be located in "filter grilles" in your ceiling or walls, or in the blower coil or furnace. The installer of your coil can tell you where your filter(s) are, and how to clean or replace them. If you cannot reach your installer, call another qualified servicer.

COIL CLEANING

An annual air conditioning checkup including a good coil cleaning, leak check and system pressure check will help keep the system operating at peak efficiency. These coil cleanings should be performed by a qualified servicer.

