

INSTALLATION INSTRUCTIONS

Evaporator Coil

These instructions must be read before any installation.

⚠ WARNING

Your safety and the safety of others are very important. We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.

⚠ This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others.

All safety messages will follow the safety alert symbol and signal word. These signal words mean the following:

DANGER You can be killed or seriously injured if you don't immediately follow instructions.

WARNING Indicate a potentially hazardous situation, which, if not avoided, could result in death or serious injury.

CAUTION Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. Caution may also be used to alert against unsafe practices.

NOTICE Indicates a statement of company policy as the message relates directly or indirectly to the safety of personnel or protection of property.

IMPORTANT More detailed information concerning the statement of company policy as the message relates directly or indirectly to the safety of personnel or protection of property.

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.



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Save these instructions for future reference

General

Evaporator coils are designed for use with AC condensing units or heat pump units. These instructions are intended as a general guide and do not supersede local codes in any way. Consult with local authorities having jurisdiction before installation. This installation must comply with all local and state laws as well as national electrical codes for the U.S. or Canada where applicable.

Verify the efficiency performance requirements, such as SEER, EER, and/or HSPF, are appropriate with the matched condensing or heat pump units. Check outdoor unit manufacturer for proper line sizing.

⚠ WARNING

Coils are shipped with a 10 psi dry air holding charge. Puncture rubber plug on suction line to release charge before removing plugs. The absence of pressure does not verify a leak. Check the coil for leaks before installing or returning it to your wholesaler.

Inspection of Shipment

Before installation, inspect the coil for any shipping damage. Notify the carrier or the distributor of any damaged equipment; **do not install a damaged coil**.

Installation

⚠ 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

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.

Air Leakage

All indoor cabinets **MUST** be taped after installation to seal against any air leaks. System performance and efficiency will be reduced if air leakage exists.

Air Filters

Properly-sized air filters **MUST** be installed on all return air ducts. If air filters are not used or maintained regularly as required, equipment damage can occur, system capacity and efficiency will be reduced and the warranty coverage may be void.

Filter Dryer

A new filter dryer **MUST** be installed on all systems. The filter dryer is typically shipped with the outdoor unit; if not, add one. Do not install more than one filter dryer in the system; it can reduce the system capacity and efficiency.

Metering Device

The indoor coils are shipped with either a piston or expansion valve (TXV) based on the coil model. The selection of the metering device type and size must follow the outdoor unit technical specification and the AHRI listing.

Pistons

The piston shipped with the indoor coil may not be the correct size for the outdoor unit being installed. The outdoor unit specification gives the correct size and the correct piston is usually shipped with the outdoor unit.

To replace the piston with another piston, perform the following procedure:

1. Loosen the piston housing hex nut on coil liquid tube. Use **TWO** wrenches to avoid damage to the distributor tubes.
2. Replace the existing piston with the new piston
3. Always use a new Teflon O-ring
4. Re-assemble the housing and torque to 10-20 ft-lb using **TWO** wrenches

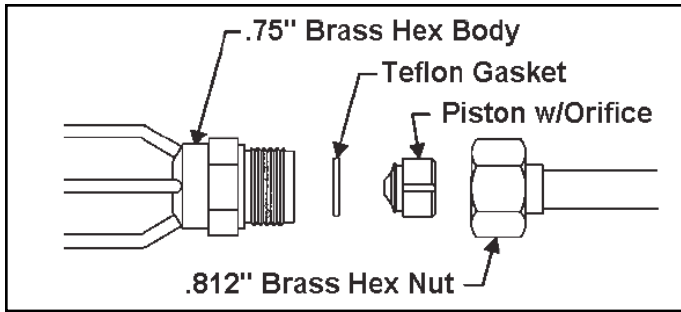


Figure 1. Changing an Orifice

Expansion Valves (TXV)

Factory shipped coils with installed TXV are available. TXV kits are also available to convert a piston-shipped coil to a TXV coil; the kit part number is specific to the outdoor model (see the outdoor unit technical specification).

For proper TXV installation, follow the installation instruction provided with the TXV kit in addition to the following procedure:

1. Loosen the piston housing hex nut on coil liquid tube. Use **TWO** wrenches to avoid damage to the distributor tubes.
2. Replace the existing piston with the new TXV
3. Always use a new Teflon O-ring
4. Re-assemble the housing and torque to 10-20 ft-lb using **TWO** wrenches
5. Connect the external equalizer tube to the equalizer port on the suction line and tighten to 8 ft-lb
6. Attach the TXV bulb at the 10 to 2 o'clock position on the suction line outside the cabinet no more than one foot from the coil
7. Insulate the bulb

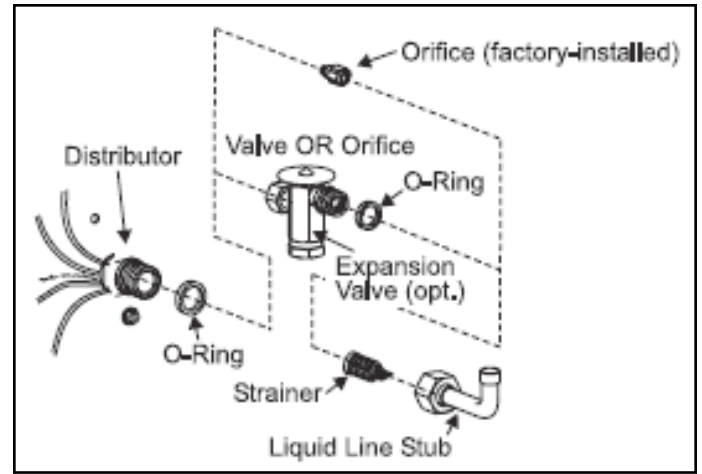


Figure 2. Metering Device Installation

Refrigerant Line Sets

- Line set size must be selected per the outdoor unit instructions
- Brazed connections **MUST** be purged with nitrogen during brazing
- Service valves **MUST** be wrapped with wet rag during brazing
- Line sets **MUST** be sealed at all times until brazed to prevent contaminants
- Suction line **MUST** be insulated

System Vacuum

After brazing and before releasing/adding charge into the system, the system **MUST** be evacuated to at least 500 microns with a refrigeration vacuum pump. After evacuation, shut off the pump and monitor the vacuum gauge to ensure that the system is holding the vacuum. When it is time to release the charge from the outdoor unit into the system, always slowly open the suction service valve first before opening the liquid service valve.

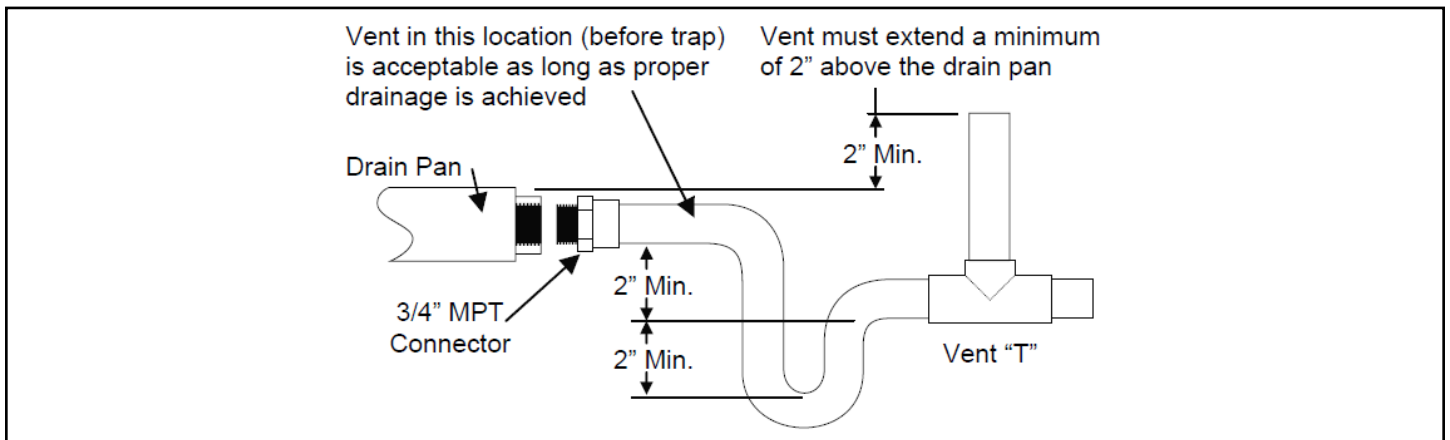


Figure 3. Condensate Drain

System Charging

The system **MUST** be charged per the outdoor unit installation instructions.

Condensate Drain

Coils are equipped with multiple drain connections. Determine the drain connections to be used and note the difference between the primary (green) and secondary (red) openings. Drain plugs are provided for all openings; remove and discard the appropriate plugs with 1/2" drive ratchet and verify that remaining plugs are tight (2.5 ft-lbs). Attach drain line to pan with 3/4" male pipe thread PVC fittings. Hand tight is adequate - **do not over tighten and do not reduce drain line size.**

Route drain line(s) so they will not be exposed to freezing temperatures and do not interfere with accessibility to the coil, air handling system or filter. The drain should be pitched downward 1" per 10" with a 2" trap as close to the coil as possible. If line makes a second trap, or has an extended run before termination, a vent tee should be installed after the trap closest to the pan. See Figure 3.

If the coil is located in or above a living space where damage may result from condensate overflow, a separate 3/4" drain must be provided from the secondary drain connection. Run this drain to a place in compliance with local installation codes where it will be noticed when unit is operational. Condensate flowing from the secondary drain indicates a plugged primary drain. Prime the trap with water. Test line for leaks. Test water flow with unit in operation. An auxiliary drain pan should also be installed under the unit as specified by most local building codes.

Upflow Installation

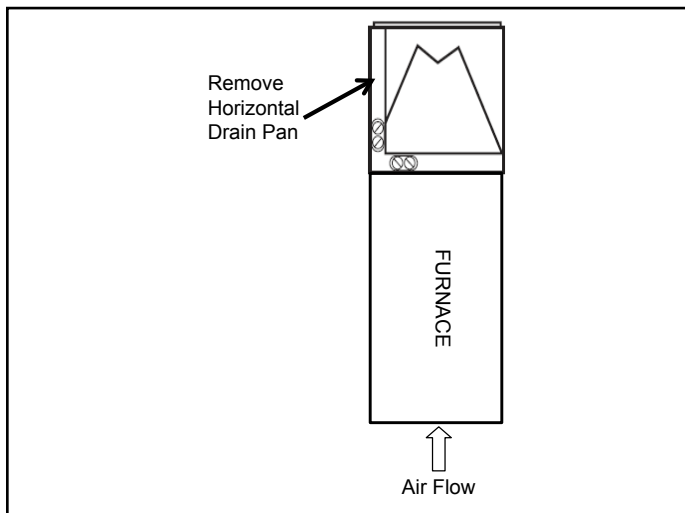


Figure 4. Upflow Installation

- When the indoor coil is installed with a furnace unit, it is highly recommended to use the same width coil as the furnace
- Install coil with slight slope towards the drain connection

- Remove auxiliary (horizontal) drain pans from the coil cabinet for upflow installation

⚠ WARNING

The drain pan is made of material that can withstand 450°F. However, the clearance between the furnace and the drain pan must be 4 inches for an oil furnace or 2 inches for a gas furnace.

- Apply foil face tape around the entire cabinet to prevent air leaks and insulate the suction line

Downflow Installation

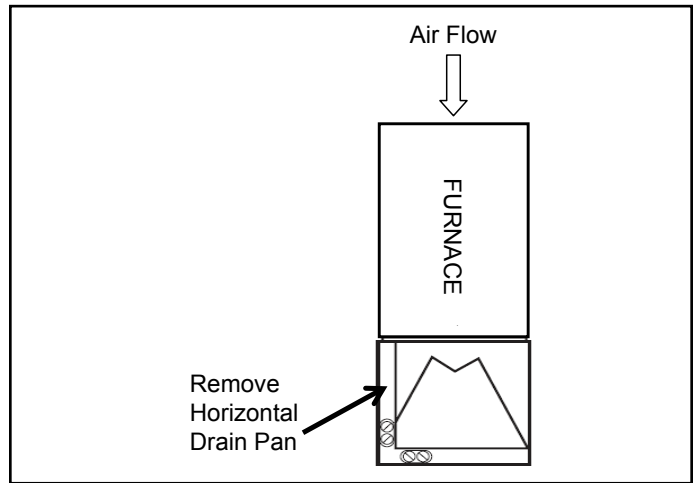


Figure 5. Downflow Installation

- When the indoor coil is installed with a furnace unit, it is highly recommended to use the same width coil as the furnace
- Install coil with slight slope towards the drain connection
- Remove auxiliary (horizontal) drain pans from the coil cabinet for downflow installation
- Airflow face velocity above 350 ft/min is not recommended due to potential for water blow-off

⚠ WARNING

Water shields must be installed on all downflow applications on the inside of the drain pan on both sides of the coil (downflow kit).

⚠ IMPORTANT

Use foil face tape to secure the top edge of the coil insulation to the cabinet to prevent delamination and air flow blockage.

- Apply foil face tape around the entire cabinet to prevent air leaks

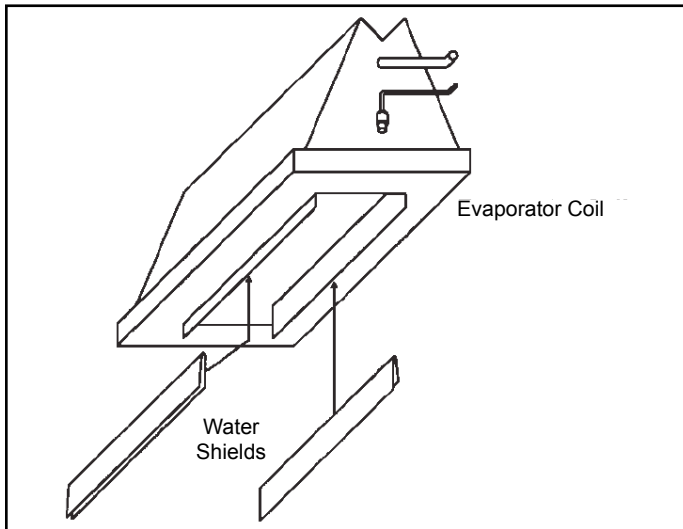


Figure 6. Water Shield Installation

Horizontal Installation

- For installation above ceilings, a secondary drain pan with overflow switch must be installed and must comply with local codes
- When the indoor coil is installed with a furnace unit, it is highly recommended to use the same width coil as the furnace
- Install coil with slight slope towards the drain connection and level with the furnace
- Do not remove auxiliary (horizontal) drain pans from the coil cabinet. Position the drain pan according to the horizontal position installation (right or left position). It is most preferred and most efficient that the outlet of the furnace be facing the bottom of the coil instead of the top of the coil

- Install splash guard at the coil outlet as shown (included with horizontal coils)
- Air flow should be set for 350 CFM per ton or as rated for the matched system

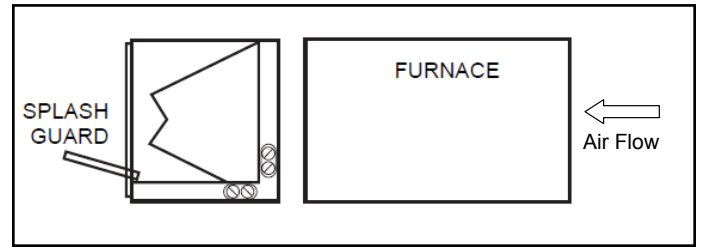


Figure 7. Horizontal Left Installation

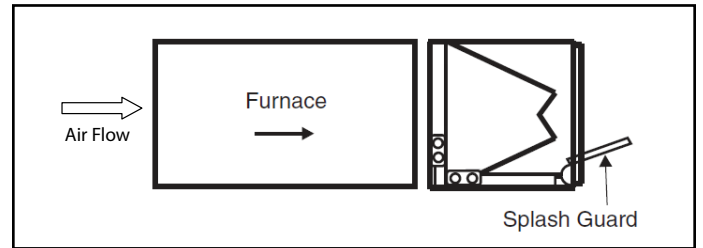


Figure 8. Horizontal Right Installation

Horizontal Conversion (Right or Left)

See Figure 10

- Remove front panels (1) and slide coil outside the cabinet
- Remove horizontal pan (3) and re-install on the opposite side
- Remove top plate (4) and reverse the position of the diverter plate (5) as shown. This will allow the water to slope downwards towards the middle of the coil inside the horizontal drain pan

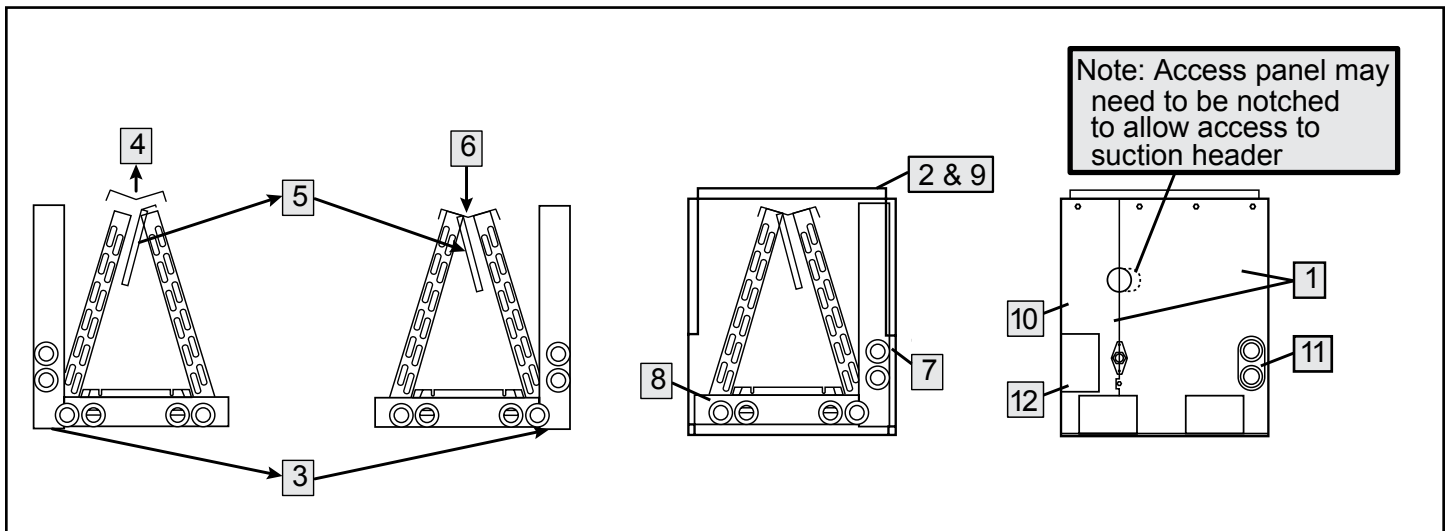


Figure 10. Horizontal Conversion

▲ CAUTION

The water diverter plate (5) must be positioned downwards facing the direction of air flow. Failure to do so can cause water blow off and possible structure damage.

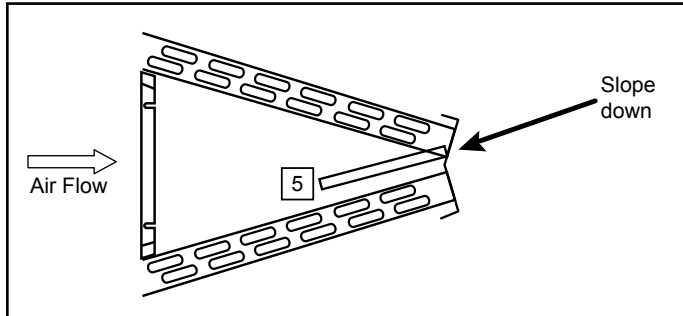


Figure 9. Position Water Diverter Plate

- Replace the top plate (6) and seal any air gaps
- Cut front flange (7) and fold back to allow access to the horizontal drain connections
- Install the coil back into the cabinet and the piping panel (10)
- Knock out new access openings for the drain lines (11)
- Install the door and seal any unused holes (8 & 12) to prevent air leakage
- Install splash guard at the coil outlet as shown to prevent water blow off

Splash Guard Installation

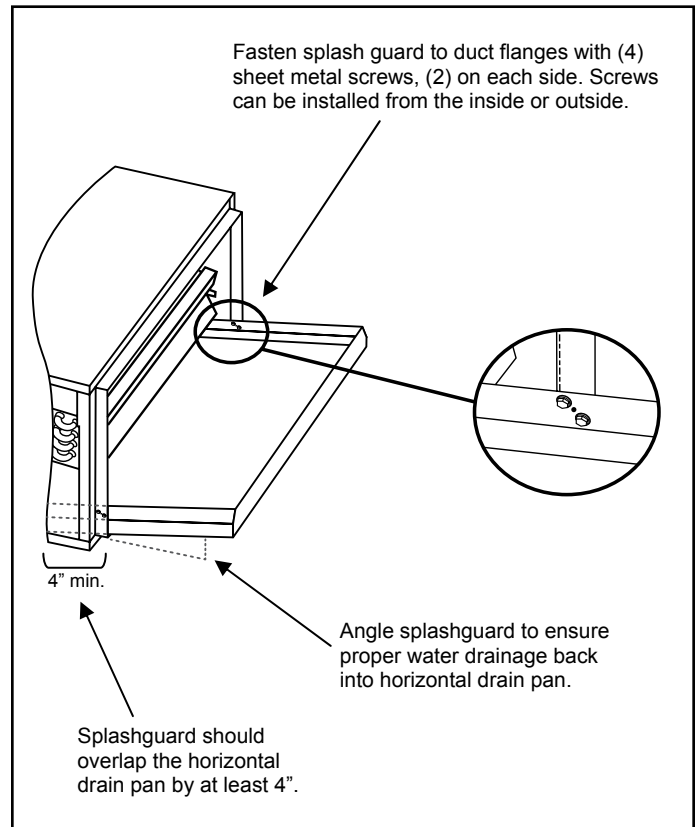


Figure 11. Splash Guard Installation

- Apply foil face tape around the entire cabinet to prevent air leaks and insulate the suction line