

Installer's Guide

Replacement Coils

Includes coil models:

COL32944 COL34089 COL34462
COL32945 COL34090 COL34463
COL32946 COL34091 COL34464
COL32947 COL34092 COL34465
COL32948 COL34093 COL34466
COL32949 COL34094 COL34467
COL32950 COL34095 COL34468
COL32951 COL34096 COL34469
COL32952 COL34097 COL34470
COL32953 COL34098 COL34471
COL33006 COL34099 COL34472

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

Introduction

Read this manual thoroughly before operating or servicing this unit.

This document is customer property and is to remain with this unit. Return to the service information pack upon completion of work.

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:



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



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



Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

⚠ WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury.

All field wiring **MUST** be performed by qualified personnel. Improperly installed and grounded field wiring poses **FIRE** and **ELECTROCUTION** hazards. To avoid these hazards, you **MUST** follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.

⚠ WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury.

Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, **MUST** follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- Before installing/servicing this unit, technicians **MUST** put on all PPE required for the work being undertaken (Examples: cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). **ALWAYS** refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, **ALWAYS** refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.
- If there is a risk of energized electrical contact, arc, or flash, technicians **MUST** put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, **PRIOR** to servicing the unit. **NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

⚠ WARNING**Follow EHS Policies!**

Failure to follow instructions below could result in death or serious injury.

- All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.
- Non-Trane personnel should always follow local regulations.

⚠ WARNING**Cancer and Reproductive Harm!**

This product can expose you to chemicals, including lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠ WARNING**Safety Hazard!**

Failure to follow instructions below could result in death or serious injury or property damage.

This unit is not to be used by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.

Do not allow children to play or climb on the unit or to clean or maintain the unit without supervision.

⚠ WARNING**Refrigerant under High Pressure!**

Failure to follow instructions below could result in an explosion which could result in death or serious injury or equipment damage.

System contains oil and refrigerant under high pressure. Recover refrigerant to relieve pressure before opening the system. See unit nameplate for refrigerant type. Do not use non-approved refrigerants, refrigerant substitutes, or refrigerant additives.

⚠ WARNING**Live Electrical Components!**

Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

When it is necessary to work with live electrical components, have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks.

⚠ WARNING**Fire Hazard!**

Failure to follow instructions could result in equipment damage or injury.

In systems using flammable refrigerants, observe all safety instructions and markings on the air handler. Ensure all safety devices are in place and functional. Do not puncture refrigerant tubing. Repair with trained professionals only and dispose properly in accordance with federal and local regulations.

⚠ CAUTION**Coil Damage!**

Failure to follow instructions below could result in minor to moderate injury or coil damage.

Confirm coil is pressurized with 8–12 psi dry air and factory-checked for leaks. Carefully release the pressure by removing the rubber plug on the liquid line. If no pressure is released, check for leaks.

⚠ WARNING**System Charge!**

Failure to follow instructions below could result in abrupt release of system charge and could result in serious injury or property damage.

When opening the suction and liquid line service valve, turn the valve stem counterclockwise only until the stem contacts the rolled edge. Do not apply torque.

⚠ CAUTION**Sharp Edges!**

Failure to follow instructions below could result in minor to moderate injury or property damage.

Be careful of sharp edges on equipment or any cuts made on sheet metal while installing or servicing.

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Introduction

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Revision History

- Updated document to reflect current visual standards.
- Updated image titles to reflect correct models.

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General

These instructions are designed for installing a replacement coil into a previously installed air handler.

The air handler may be installed in one of the following orientations: upflow, downflow, horizontal left, or horizontal right.

Actual air handler units and coil configurations may differ from models depicted.

Notes:

- All legacy Apex coils will be replaced with square-cut coils. See [Figure 1, p. 6](#) and [Figure 2, p. 6](#).
- Upflow drain pan hidden for clarity.

Figure 1. Square cut coil

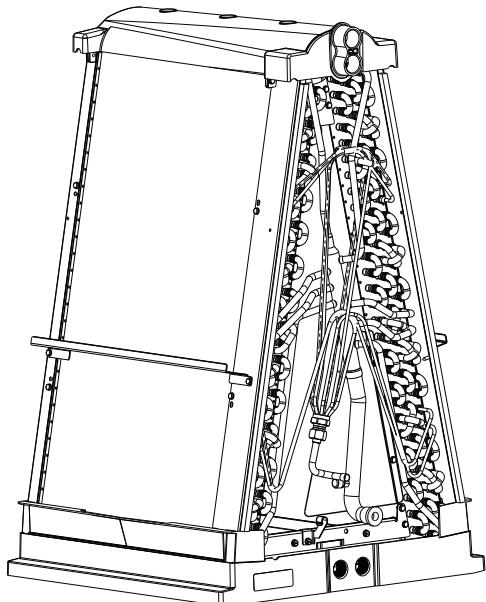
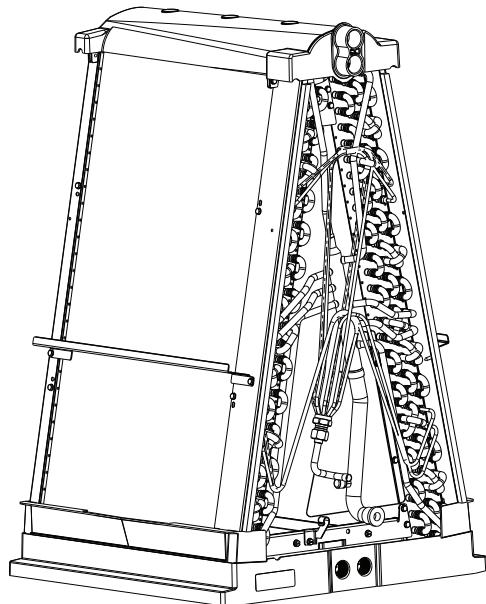


Figure 2. Legacy apex coil



Preparation

⚠ WARNING

Fire Hazard!

Failure to follow instructions could result in equipment damage or injury.

In systems using flammable refrigerants, observe all safety instructions and markings on the air handler.

Ensure all safety devices are in place and functional.

Do not puncture refrigerant tubing. Repair with trained professionals only and dispose properly in accordance with federal and local regulations.

1. Pump down or recover the refrigerant in the system.
2. Turn off high voltage power to the unit.

3. Remove the condensate drain lines from the indoor coil. Be prepared to catch any water that might be in the drain line and drain pan.
4. Disconnect the refrigerant lines to the indoor coil. Be sure to protect the refrigerant lines so debris does not enter the piping system.
5. Remove the air handler's front panels. Retain all screws to reinstall panels in a later step.

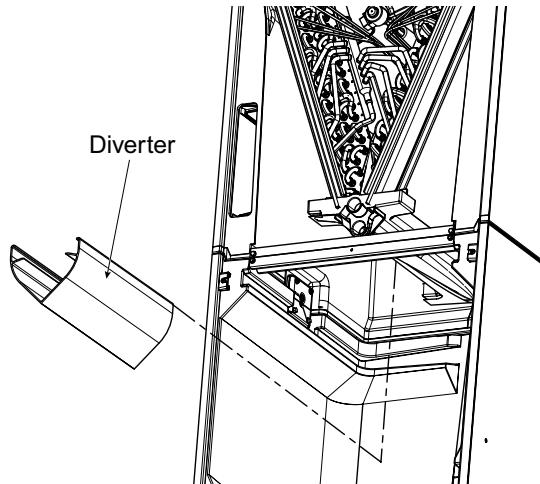
Note: For air handlers with a CDA in the front panel, disconnect the plug to the display assembly before removing the front panel.

Existing Coil Removal

1. If equipped, disconnect wires to EEV motor and temperature sensors inside the coil assembly.
2. If equipped, remove and discard the airflow diverter from the bottom of the upflow drain pan. Grip the plastic diverter by using your thumbs to spread the top of the diverter slightly outwards, then pull down. See [Figure 3, p. 8](#).

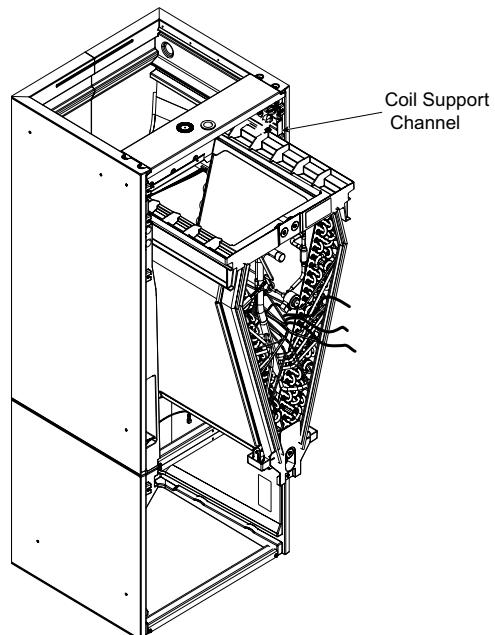
Note: Blower may be removed to make it easier to remove the air diverter as shown in [Figure 3, p. 8](#). Follow steps in Installer's Guide to remove the blower.

Figure 3. Remove coil airflow diverter



3. If equipped and installed on the coil, disconnect the refrigerant leak detection sensor by unclipping it from the assembly and set aside. Take care not to snag the refrigerant sensor wiring harness before removing the coil.
4. Slide coil assembly out of unit using built-in coil support channels and set aside. See [Figure 4, p. 8](#).

Figure 4. Remove coil assembly



TXV Replacement Coil Procedure

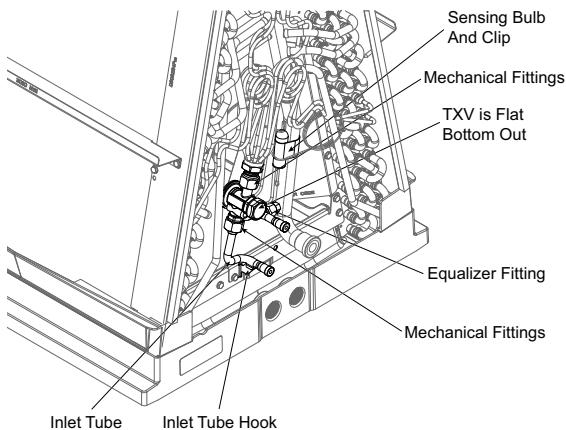
Note: If your system has an EEV, skip to section “[EEV Replacement Coil Procedure](#),” p. 10.

TXV Removal from Existing Coil

Note: See [Figure 5](#), p. 9.

1. Remove TXV sensing bulb from vapor line. Discard used bulb insulation.
2. Retain TXV bulb clip to install later. Disconnect TXV equalizer fitting.
3. Remove and discard inlet tube from TXV. New inlet tube is provided with replacement coil.
4. Using a back-up wrench, disconnect TXV outlet fitting from distributor assembly. Remove TXV from coil.
5. Retain TXV to install on replacement coil. Protect the TXV assembly set so that debris does not enter.

Figure 5. Complete TXV coil assembly

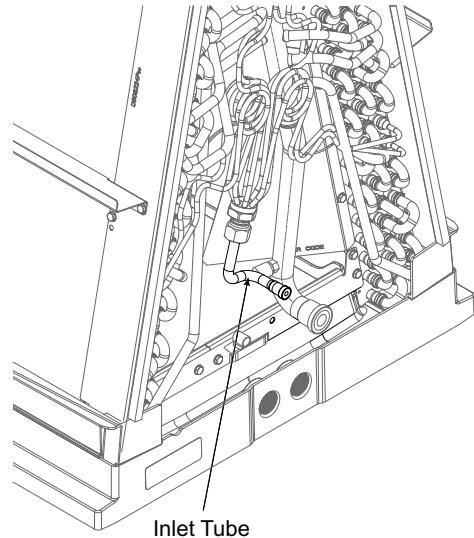


TXV Installation on Replacement Coil

1. Remove new inlet tube from distributor by loosening mechanical fitting on distributor with back-up wrench. See [Figure 6](#), p. 9.

2. Remove existing O-rings from the outlet of the TXV and from the new inlet tube and replace with new O-rings supplied with the replacement coil.
3. Install TXV assembly and hand tighten the mechanical fitting. TXV should be in the orientation shown in [Figure 5](#), p. 9. Use back-up wrench and tighten assembly firmly. Do not over tighten.
4. Install new inlet tube on the TXV and hand tighten the mechanical fitting. Inlet tube should be in the orientation shown in [Figure 5](#), p. 9 such that it clips to the inlet tube hook. Use back-up wrench and tighten assembly firmly. Do not over tighten.
5. Install external equalizer and hand tighten the fitting. Use back-up wrench and tighten assembly firmly. Do not over tighten.
6. Install TXV sensing bulb on the copper portion of the suction manifold using the existing bulb clip. Wrap the sensing bulb with new insulation provided with the replacement coil. Use tie wrap to secure insulation.

Figure 6. Replacement TXV coil assembly



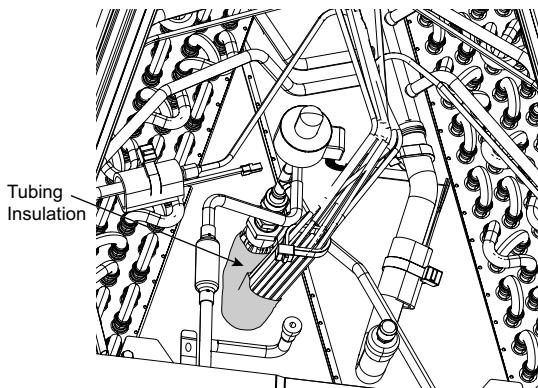
EEV Replacement Coil Procedure

Note: If your replacement coil shipped with an EEV and stepper motor attached, skip to Step 5. of section "EEV Flow Control Installation on Replacement Coil," p. 10.

EEV Flow Control Removal from Existing Coil

1. Before removing flow control assembly, carefully cut any retaining wire ties or unscrew any retaining brackets that hold the assembly or any wiring to the coil.
2. Remove evaporator temp (ET), gas temp (GT), and saturation temp (ST, if equipped) temperature sensors by carefully unclipping from coil assembly. If temperature sensors are not the self-insulating type, discard temperature sensor insulation. New insulation is provided with replacement coil.
3. If equipped, slide the distributor tubing insulation as far back on the distributor lines as possible so that the mechanical fitting is visible. See Figure 7, p. 10.
4. Remove EEV flow control assembly by loosening the mechanical fitting using a back-up wrench. See Figure 9, p. 10.
5. Remove and keep distributor insulation if equipped.
6. Retain EEV flow control assembly and EEV stepper motor to install on replacement coil. Protect the assembly set so that debris does not enter.

Figure 7. Slide insulation

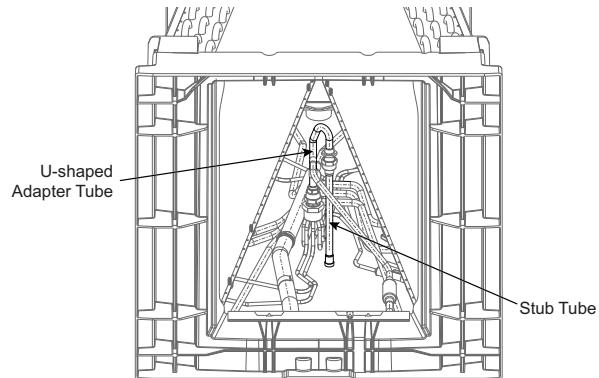


EEV Flow Control Installation on Replacement Coil

1. Remove tubing adaptor assemblies from replacement coil as follows:
 - a. If existing flow control assembly is oriented such that EEV stepper motor is in front of distributor fitting, remove the stub tube assembly using a back-up wrench. See Figure 8, p. 10.

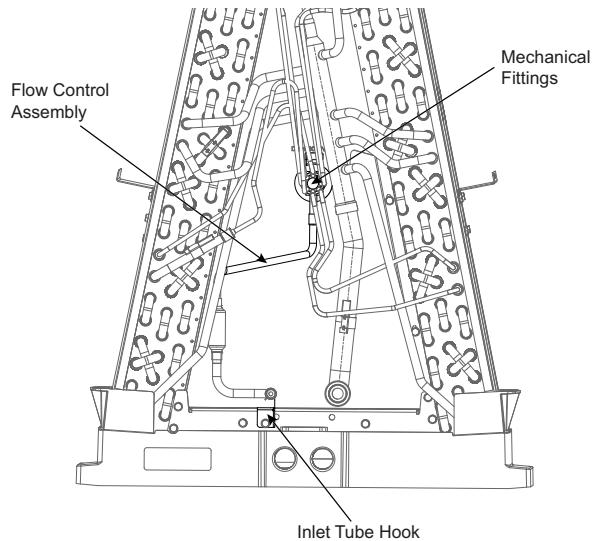
- b. If existing flow control assembly is oriented such that EEV stepper motor is behind distributor fitting, remove both the stub tube and U-shaped adaptor assemblies using a back-up wrench. See Figure 8, p. 10.

Figure 8. Stub tube and U-shaped adapter tube assemblies



2. If distributor insulation is retained, install by sliding over U-shaped adaptor assembly.
3. Using a back-up wrench, install the EEV assembly to the replacement coil. Take care not to over tighten these fittings, as they may become deformed and cause leaks. Inlet tube should be in the orientation such that it clips to the inlet tube hook. See Figure 9, p. 10

Figure 9. EEV coil assembly



Notes:

- Correct tightening of the couplings is very important. Under or over-tightening may result in a coupling leak.
 - If equipped, the check valve of the liquid assembly should be in the location shown relative to the gas line as shown in [Figure 10, p. 11](#).
 - For some flow control assemblies, small adjustments to the distributor and tubes are needed. Use care when bending tubes to not cause any kinks or ruptures.
4. If equipped, slide the distributor insulation tubing over distributor fittings.
 5. Clip the temperature sensors to the replacement coil assembly at the locations shown in [Figure 11, p. 11](#), [Figure 12, p. 11](#), [Figure 13, p. 11](#), [Figure 14, p. 12](#), or [Figure 15, p. 12](#). The wire entry side of the temperature sensor should be oriented upward such that water running down the wire will not collect at the wire entry.

Figure 10. Check valve location

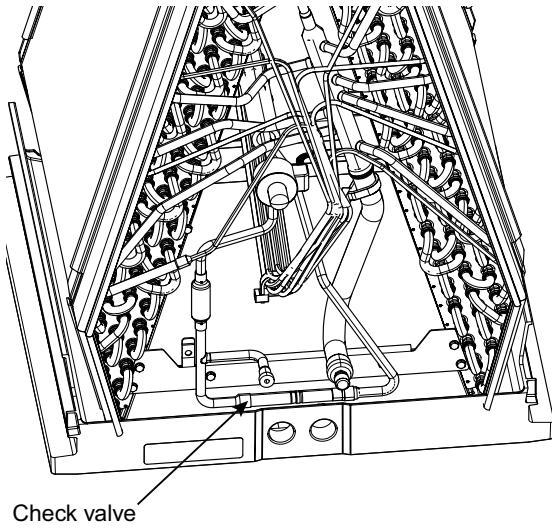


Figure 11. Sensor locations for COL32953, 34099, 34472

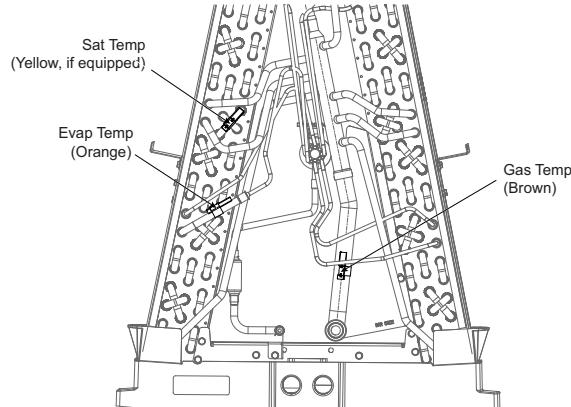


Figure 12. Sensor locations for COL33006, 34098, 34471

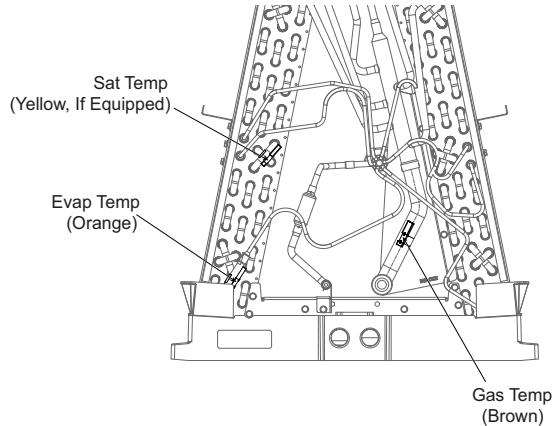
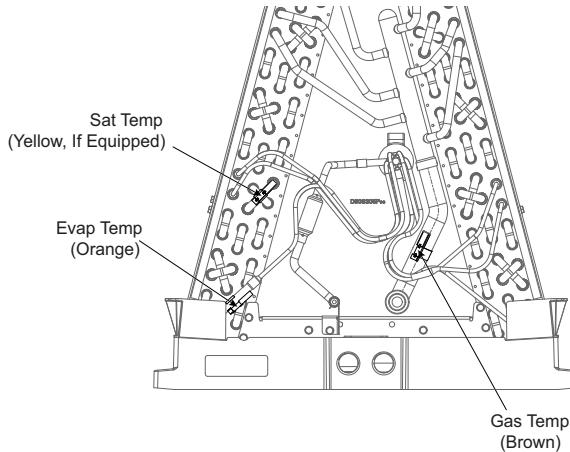


Figure 13. Sensor locations for COL32951, 34097, 34470



EEV Replacement Coil Procedure

Figure 14. Sensor locations for COL32948, 34096, 34469

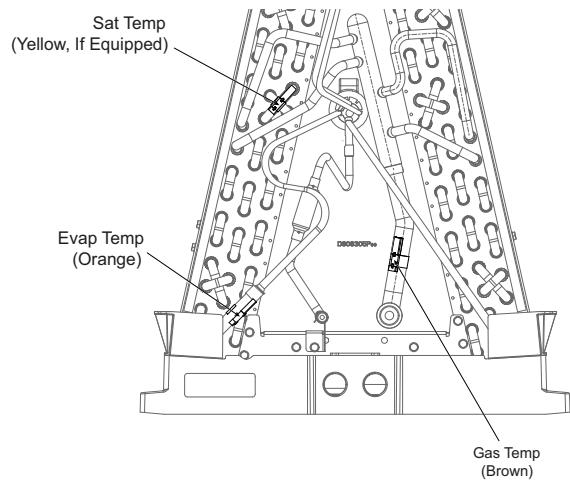
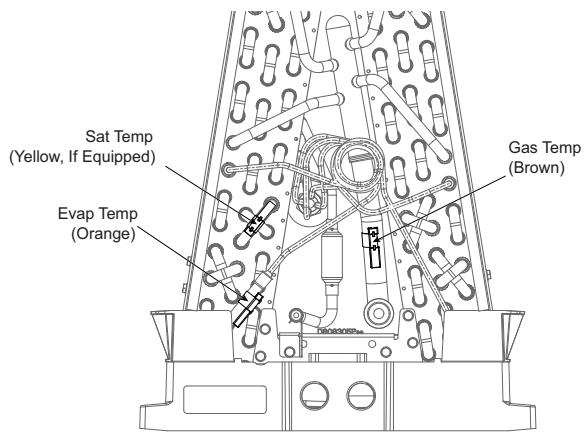
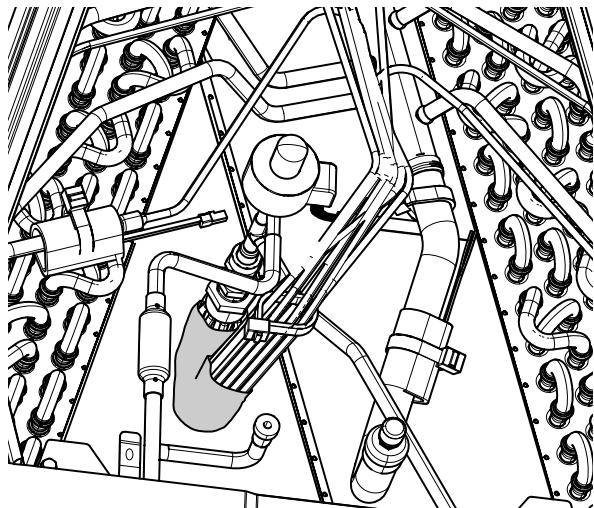


Figure 15. Sensor locations for COL32945, 32947, 34094, 34095, 34467, 34468



6. If temperature sensors are not the self-insulating type, place supplied insulation over the sensor and secure with tie wrap as shown in Figure 16, p. 12.

Figure 16. Coil and sensors with insulation

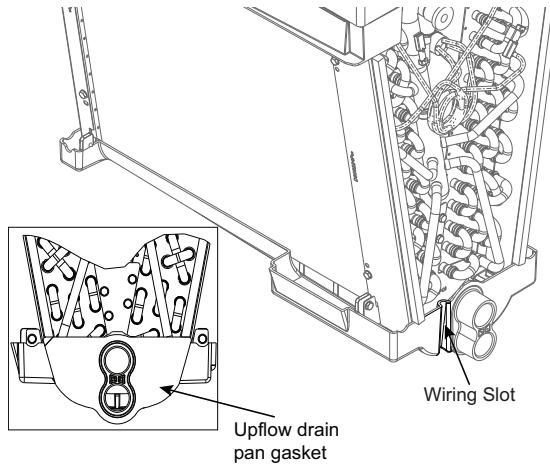


7. Neatly route temperature sensor and EEV stepper motor wiring on coil assembly using field-supplied wire ties to attach wiring to tubing.

Important: In a downflow installation, the wires must be pulled tight to avoid contact with the electric heater.

8. Route wires through slot in front of upflow drain pan. Secure wires by applying upflow drain pan gasket (included in doc pack) to front of upflow drain pan. See Figure 17, p. 12.

Figure 17. Upflow pan wiring slot with insulation hidden



Installing and Reconnecting Replacement Coil

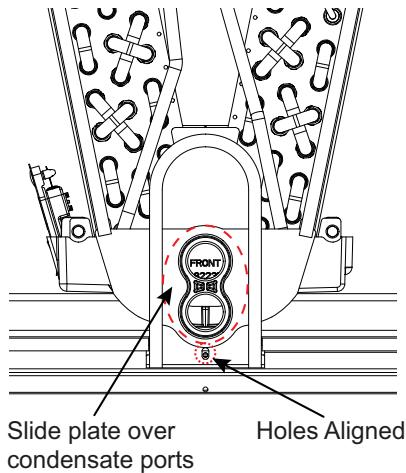
Replacing the Coil in the Air Handler

1. Put the new coil assembly in the air handler using care not to damage any of the coil components.
2. If equipped and installed on the coil assembly, reinstall refrigerant leak detection sensor in same location as it was on the existing coil.
3. If equipped, reconnect the sensor wires and EEV stepper motor wiring. Use field-supplied wire ties to hold any slack in the cabinet wiring harness.

Note: *Wet rags must be applied to all braze joints before and during heating to prevent overheating of internal coil components.*

4. Remove rubber plugs from the suction and liquid lines.
5. Reconnect the field refrigerant piping.
6. Slide new seal plate onto upflow drain pan condensate port connections. Use the seal plate which allows the retaining bracket screw clearance hole to align with the engagement hole in the unit. See [Figure 18, p. 13](#).
7. Reconnect condensate drain piping.
8. Reinstall front panels of the unit.
9. Install front panel retaining bracket.

Figure 18. Seal plate installation



Refilling Refrigerant System (R-22 or R-410A Systems)

1. Pressure test the refrigerant system using dry nitrogen. Test all connections for leaks to ensure integrity of the refrigerant piping system.
2. Pull a vacuum on the refrigerant system to 500 microns or less.

3. Refill the system with new refrigerant or release the charge from the outdoor unit to the refrigerant piping system.
4. Start outdoor unit and set refrigerant charge per the outdoor unit installation instructions.

Refilling Refrigerant System (R-454B Systems)

After completion of field piping for split systems, the field pipework shall be pressure tested with nitrogen and then vacuum tested prior to refrigerant charging, according to the following requirements:

1. Pressure test:
 - a. Using dry nitrogen, pressurize the field piping and indoor coil to the lower of the maximum operating pressures listed on the name plates of the indoor and outdoor units (likely 600 psi).
 - b. The test pressure after removal of the pressure source shall be maintained for at least one (1) hour with no decrease of pressure indicated by the test gauge, with the test gauge resolution not exceeding 30 psi.
 - c. Check for leaks by using a soapy solution at each field-made joint.

Note: *Remove nitrogen pressure and repair any leaks before continuing.*

2. Vacuum test:

Important: *Do not open the service valves until the refrigerant lines and indoor coil leak check and evacuation are complete.*

- a. Evacuate until the micron gauge reads no higher than 350 microns, then close off the valve to the vacuum pump.
- b. Observe the micron gauge. Evacuation is complete if the micron gauge does not rise above 500 microns in one (1) minute and 1500 microns in ten (10) minutes.
- c. Once evacuation is complete, blank off the vacuum pump and micron gauge, and close the valve on the manifold gauge set.
- d. All procedures for charging the system with refrigerant shall be according to the instructions provided by the manufacturer of the outdoor unit.

Important: *Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks.*

After charging the system, all indoor field-made joints of the field piping shall be checked for refrigerant leaks using an electronic leak detector calibrated for R-454B having a sensitivity of 5 grams per year or better.

Notes

About Trane and American Standard Heating and Air Conditioning

Trane and American Standard create comfortable, energy efficient indoor environments for residential applications. For more information, please visit www.trane.com or www.americanstandardair.com.

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