# INSTALLATION INSTRUCTIONS
# AIR CONDITIONING & HEAT PUMP INDOOR COILS

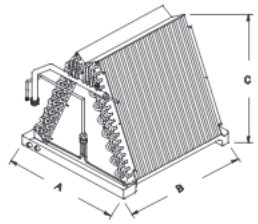
## INTRODUCTION

Vexar coils are designed specifically for use with various models of manufactured housing gas furnaces or electric furnaces in both down-flow and up-flow applications, as long as the coil was manufactured after 03/01/08 as shown in the serial number. A metal pan will be required on up flow oil furnaces.

These instructions are primarily intended to assist qualified individuals trained and experienced in the proper installation of this type of equipment. Some state codes require installation and service personnel to be licensed. Refer to authorities having jurisdiction for additional guidance. Remember that the Clean Air Act of 1990 requires technician certification for handling refrigerant.

NOTE: EFFICIENCY AND CAPACITY RATINGS ARE LISTED IN CURRENT AHRI UNITARY DIRECTORY FOR VEXAR COIL MODEL NUMBERS MATCHED WITH OUTDOOR CONDENSING OR HEAT PUMP UNITS. AIR CONDITIONING COIL MATCHES ARE LISTED IN INDOOR UNIT MANUFACTURER AIR CONDITIONING SECTION. HEAT PUMP COIL MATCHES ARE LISTED IN INDOOR COIL MANUFACTURER HEAT PUMP SECTION. MISMATCHED SYSTEMS MAY NOT WORK PROPERLY AND MAY CAUSE LOSS OF WARRANTY.

| Style Cnet Vexar Model # | Replaces Vexar Model # | Connection | Piston or TXV Device Installed in Coil | Extra Pistons in box for use on other sizes | Operational Range of the metering device (s) (see specific application sheet for outdoor unit match)* | A | B | C | Face Area |
|---|---|---|---|---|---|---|---|---|---|
| 1836QA | 1837QA | QC | TXV (R-22) | N/A | 1.5-3.0 | 18" | 19 5/8" | 14" | 4.0 sq ft |
| 1836SA | 1837SA | SWT | TXV (R-22) | N/A | 1.5-3.0 | 18" | 19 5/8" | 14" | 4.0 sq ft |
| 1848QA | 1848QA | QC | TXV (R-22) | N/A | 2.5-4.0 | 18" | 19 5/8" | 18" | 4.0 sq ft |
| 1848SA | 1848SA | SWT | TXV (R-22) | N/A | 2.5-4.0 | 18" | 19 5/8" | 18" | 4.0 sq ft |
| 1854QA | N/A | QC | TXV (R-22) | N/A | 2.5-5.0 | 18" | 19 5/8" | 18 1/2" | 4.0 sq ft |
| 1854SA | N/A | SWT | TXV (R-22) | N/A | 2.5-5.0 | 18" | 19 5/8" | 18 1/2" | 4.0 sq ft |
| 1856SA | N/A | SWT | TXV (R-22) | N/A | 2.5-5.0 | 18" | 19 5/8" | 24 1/2" | 5.3 sq ft |
| 1856QA | N/A | QC | TXV (R-22) | N/A | 2.5-5.0 | 18" | 19 5/8" | 24 1/2" | 5.3 sq ft |
| 1830Q4A | N/A | QC | TXV (R-410A) | N/A | 1.5-2.5 | 18" | 19 5/8" | 14" | 3.1 sq ft |
| 1830S4A | N/A | SWT | TXV (R-410A) | N/A | 1.5-2.5 | 18" | 19 5/8" | 14" | 3.1 sq ft |
| 1836Q4A | N/A | QC | TXV (R-410A) | N/A | 1.5-3.0 | 18" | 19 5/8" | 18" | 4.0 sq ft |
| 1836S4A | N/A | SWT | TXV (R-410A) | N/A | 1.5-3.0 | 18" | 19 5/8" | 18" | 4.0 sq ft |
| 1843Q4A | N/A | QC | TXV (R-410A) | N/A | 2.5-4.0 | 18" | 19 5/8" | 16.5" | 3.6 sq ft |
| 1843S4A | N/A | SWT | TXV (R-410A) | N/A | 2.5-4.0 | 18" | 19 5/8" | 16.5" | 3.6 sq ft |
| 1854Q4A | N/A | QC | TXV (R-410A) | N/A | 2.5-5.0 | 18" | 19 5/8" | 18 1/2" | 4.0 sq ft |
| 1854S4A | N/A | SWT | TXV (R-410A) | N/A | 2.5-5.0 | 18" | 19 5/8" | 18 1/2" | 4.0 sq ft |
| 1856Q4A | N/A | QC | TXV (R-410A) | N/A | 2.5-5.0 | 18" | 19 5/8" | 24 1/2" | 5.3 sq ft |
| 1856S4A | N/A | SWT | TXV (R-410A) | N/A | 2.5-5.0 | 18" | 19 5/8" | 24 1/2" | 5.3 sq ft |




**CAUTION!**

ALL SWEAT CONNECT COILS ARE SHIPPED FROM THE FACTORY PRESSURIZED WITH NITROGEN. THEY DO NOT CONTAIN ANY HCFC22. ALL QUICK CONNECT COILS ARE SHIPPED WITH A HCFC22 HOLDING CHARGE.

**ATTENTION!**

SOME VEXAR COILS COME WITH A TXV OR THERMOSTATIC METERING DEVICE. HOWEVER, THE SENSOR BULB IS NOT MOUNTED DUE TO POTENTIAL HEAT DAMAGE AND/OR PROPER BULB LOCATION. THEREFORE, AFTER THE SUCTION AND LIQUID LINE HAVE BEEN PROPERLY CONNECTED TO THE COIL THE BULB CAN NOW BE MOUNTED ON THE SUCTION LINE MANY TIMES, DUE TO SPACE LIMITATIONS IN MANUFACTURED HOUSING APPLICATION IT WILL REQUIRE THE SENSOR BULB TO BE MOUNTED VERTICALLY. IF THAT IS THE CASE THE BULB SHOULD BE LOCATED AT LEAST 6" AWAY FROM ANY BEND (ELBOW) AND FASTENED ON THE TUBING SIDE OPPOSITE THE PLANE OF THE BEND. THE BULB SHOULD BE INSULATED USING THERMAL INSULATION TO PROTECT IT FROM THE EFFECTS OF THE SURROUNDING AMBIENT TEMPERATURE (SEE PAGE 6)

**NOTE!**

VEXAR COILS AND OTHER ACCESSORIES INSTALLED WHEN AIR CONDITIONING IS ADDED TO MANUFACTURED HOUSING FURNACES WILL COMPLY TO HUD REGULATIONS REQUIRING THIRD PARTY APPROVALS. EFFICIENCY AND CAPACITY RATINGS ARE REQUIRED BY HUD ARE LISTED IN CURRENT AHRI DIRECTORY FOR VEXAR MATCHED WITH OUTDOOR UNITS. THESE COIL RATINGS ARE BASED ON AIR QUANTITIES CONSISTENT WITH THOSE THAT ARE ENCOUNTERED IN TYPICAL MANUFACTURED HOUSING AIR CONDITIONING APPLICATIONS.

## GENERAL COIL INSTALLATION NOTES

1. All coils are shipped pressurized with either nitrogen or HCFC22. Coils with sweat connections are shipped with a nitrogen holding charge while coils equipped with quick connects are shipped with a HCFC22 holding charge.
   ALL COILS SHOULD BE CHECKED FOR PRESSURE BEFORE INSTALLATION! IF THERE IS NO PRESSURE PRESENT, THE COIL MAY HAVE DEVELOPED A LEAK DURING SHIPMENT AND SHOULD BE RETURNED TO THE POINT OF PURCHASE FOR EXCHANGE.

On a quick connect coil, test for pressure by pushing against the diaphragm located inside the quick connect fitting on the suction manifold. If you are not able to depress the diaphragm, the coil contains a HCFC 22 holding charge.
To test for pressure on a coil equipped with sweat fittings, depress the shrader valve located on the suction manifold.

2. The blower and duct system must be properly sized in order to provide adequate cooling and heating performance. Select the correct motor speed tap on the furnace blower to give the required CFM needed for rated cooling capacity or upgrade the blower assembly to attain the proper CFM. Return air filters of generous size must be provided, in order to avoid contaminating the coil, blower and ductwork, or restricting necessary airflow. Failure to deliver the proper air flow across the indoor coil will cause system and/or component, i.e. TXV, performance problems.
3. It is essential that the indoor coil and outdoor unit be properly matched and charged with the proper amount of refrigerant. Incorrect charge levels will result in inefficient operation. See more details in installation instructions for the outdoor unit.
4. For optimum performance and efficiency of air conditioning or heat pump coils, adjust system charge and/or superheat/subcooling as recommended by outdoor unit manufacturers. Procedures will differ between manufacturers.
5. It is recommended that the coil be sprayed with liquid detergent thoroughly and rinsed thoroughly before installation to assure proper drainage of condensate from the coil fins to eliminate water blowoff and to assure maximum coil performance. If not sprayed, approximately 50 hours of break in time is required to achieve the same results.
6. Always be sure coil is installed level or sloped slightly toward primary and secondary (the higher of the two) drain fittings. If mandated by code, connect both drain lines to open drain, but never to a closed sewer. Pitch drain lines away from drain pan. Always, test drain lines with water before operating. This step is mandatory in all manufactured housing installations. Reduction in size of the drain lines is not recommended and many times not allowed.
7. A WATER TRAP is recommended on all coil applications, but IS REQUIRED ON PULL THROUGH INSTALLATIONS ON ELECTRIC FURNACES. FAILURE TO PROVIDE CAN RESULT IN IMPROPER DRAINAGE OR POTENTIAL SHOCK HAZARD.

**ATTENTION!**

IT IS MANDATORY TO USE AN EMERGENCY AUXILIARY DRAIN PAN WITH ANY COIL OR AIR HANDLER INSTALLED IN AN ATTIC OR ABOVE A FINISHED CEILING. IT MUST HAVE ITS OWN DRAIN LINE (A WATER TRAP IS NOT NECESSARY) WITH ITS OUTPUT INTO AN OPEN DRAIN (NOT A CLOSED SEWER). IT SHOULD ALLOW EASY VISUAL INSPECTION SO THAT IF CONDENSATE FLOW IS SEEN THE HOMEOWNER KNOWS THAT THE COIL DRAIN PAN LINES ARE PLUGGED AND NEED MAINTENANCE

8. Refrigerant piping is critical on any coil installation when the outdoor unit is to be located below the level of the coil. For proper piping design considerations, refer to the guidelines furnished by the manufacturer of the outdoor unit.
9. Check all field installed refrigerant connections with electronic leak detector, halide torch, or soap bubbles.
10. Refer to installation instructions provided with the outdoor unit, gas or electric furnace, and line sets for completion of system installation.

## INSTALLATION WITH ELECTRIC FURNACE:

Typical electric furnace installation consists of a coil without cabinet installed on top of a downflow furnace or the coil inside a cavity on either a downflow or upflow furnace,
The following Vexar installation kits are unique to manufactured housing air conditioning and these kits are required to complete the installation.

1. Filter 1122515 is required when using all Vexar coil models on Nordyne downflow electric furnaces.
2. A Coil Support Bracket and Insulation Kit is required on all Coleman model EBxxA or B electric furnaces (3500.8941).
3. A coil support bracket, less insulation, is required on all Coleman model EBxxC electric furnaces (3500.8941B).
4. Coil cavity for Nordyne electric furnaces are available as an option (9536.7411)

### Installation procedure:

1. Turn off electrical power to the furnace by turning off breaker in house panel. CAUTION: Furnace may be connected to more than one supply circuit. Do not use furnace disconnect only. Check power at furnace to insure power is off.
2. Remove filter at top of furnace cabinet (Nordyne only).
3. Remove refrigerant line knockout at top of furnace (Nordyne only).
4. Install insulation if needed.
5. Attach drain pan gasket provided with coil to underside of coil pan and center evaporator coil on furnace. See figure A on page 4.

6. Attach filters to sides of coil if Nordyne electric.
7. Route low voltage wiring, refrigerant lines and drain tubing through floor penetration.
   WARNING: If drain hose is below 40 Deg F during installation warm before expanding and/or forming.
8. Form 3" deep trap using (field supplied) tape and (provided) flexible drain hose and connect to coil pan drain securing with clamp provided. See figure B on page 4. The most efficient use of drain material is to form a "P" trap under the house. All pull through furnaces must have a condensate trap in the drain line.
9. Connect refrigerant lines per instructions with line set. Make sure to lubricate quick connect threads with refrigeration oil for proper mating. Refer to outdoor unit installation instructions for additional information on line set hook-ups and proper torque values.
10. With the coil in place seal off any openings at top or bottom of furnace to prevent air leakage or air bypass (use silver backed tape provided, if needed).
11. Turn power on to furnace.
12. Replace front door.

**INSTALLATION WITH GAS FURNACE:**

**ATTENTION!**

Do not install any coil in a gas furnace which is to be operated during the heating season without attaching the refrigerant lines to the coil. Possible coil damage will result from excessive refrigerant pressure build up during heating operation.

Typical downflow gas furnace installation consists of a coil without cabinet installed in the cavity of a downflow furnace. Coil with plastic pan is not suitable for upflow oil furnaces.

**Installation procedure:**

1. Turn off electrical power to furnace.
2. Remove the lower front panel of the furnace, and re-route any gas piping in front of coil compartment as required to install coil.

**WARNING!**

Contractor must comply with all local, state, and federal codes and regulations when working with gas piping. Personal injury or death may result from improper installations!

3. Remove the coil cover panel(s).
4. Remove knockouts in front left bottom of furnace for routing of refrigerant lines, low voltage wiring, and condensate drain.
5. Attach drain pan gasket provided, see figure "A", page 4, to underside of coil pan and center coil in coil cavity.
6. Connect drain hose to condensate pan fitting, securing with clamp. See figure "B", page 4.
7. Remove knockouts from coil cover panel(s), cut fiberglass insulation covering openings and reinstall cover.
8. Install silver backed tape provided to cover openings in interior panel door and over refrigerant lines to seal around lines
9. Connect refrigerant lines and make sure all connections are tight and without leaks.
10. Reconnect the gas piping if it was disconnected and seal off any openings at bottom of furnace. National, state and local codes must be followed.
11. Install filter if not located in furnace door.
12. Turn on gas/electrical supply and make final system check.
13. Replace front door.

## SPECIAL CONSIDERATIONS FOR SELECTING HEAT PUMP COILS

The selection of indoor heat pump coils is much more critical than selection of indoor coils for air conditioning units. The differences are as follows:

1. Only indoor coils with expansion/check valve flow control devices may be used with outdoor heat pump units. These devices permit reversing refrigerant flow in the coils when changing from cooling to heating. All expansion valves have a built-in check making them heat pump capable when matched with the proper ARI rated outdoor coil. CAP TUBE OR FIXED RESTRICTOR COILS MUST NOT BE USED WITH HEAT PUMPS.
2. Matching of indoor coils for heat pumps demands that the heat rejection capacity, internal volume, and equivalent metering device of the matched coil be at least equal to that of the smallest internal volume matched coil recommended by outdoor unit manufacturer for that outdoor unit.
3. It is important that selection be based on Mortex recommendation for a specific coil with a specific metering device to be used with an outdoor heat pump unit of a specific make, series, and model number.
4. Failure to conform to proper selection requirements will affect efficiency, charging, and reliability and may result in damage to the system or system components.
5. The matching of specific indoor heat pump coils with specific outdoor heat pump units as certified in the heat pump section of the current ARI Directory will assure proper and efficient operation of heat pump systems. See www.ari.org.

## SPECIAL INSTRUCTIONS FOR CHARGING HEAT PUMP COILS

Specific detailed instructions for refrigerant charging of a heat pump system as recommended by the outdoor unit manufacturer should be followed. These instructions will differ between manufacturers, but in general are as follows:

WITH EXPANSION/CHECK VALVE INDOOR COIL, USE LIQUID LINE SUBCOOLING METHOD IN COOLING MODE. Measure following values from system: liquid line pressure at gauge and liquid line