These instructions must be read and understood completely before attempting installation.

It is important that the Blower and Duct System be properly sized to allow the system to operate at full capacity. Poorly designed systems will not give satisfactory cooling or economy. They may even shorten the service life of the compressor in the outdoor unit.

Safety Labeling and Signal Words

DANGER, WARNING, CAUTION, and NOTE

The signal words DANGER, WARNING, CAUTION, and NOTE are used to identify levels of hazard seriousness. The signal word DANGER is only used on product labels to signify an immediate hazard. The signal words WARNING, CAUTION, and NOTE will be used on product labels and throughout this manual and other manuals that may apply to the product.

DANGER – Immediate hazards which will result in severe personal injury or death.

WARNING – Hazards or unsafe practices which could result in severe personal injury or death.

CAUTION – Hazards or unsafe practices which may result in minor personal injury or product or property damage.

NOTE – Used to highlight suggestions which will result in enhanced installation, reliability, or operation.

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WARNING

ELECTRICAL SHOCK HAZARD

Failure to turn off electric power could result in personal injury or death.

Before installing or servicing system, turn off main power to the system. There may be more than one disconnect switch, including accessory heater(s).
INSTALLATION

EBA and EBD Coils are designed for Upflow application only (refer to Figures 3 & 4). Using these coils in other configurations may result in excessive water blow-off.

EBA Loose Coils are shipped with a metal collar plate approximately the same size as the drain pan. The collar plate must be installed between the drain pan and the furnace or air handler cabinet to prevent condensation inside the cabinet. Position the collar plate as shown in Figure 1, with the flanges pointing down, towards the furnace or air handler cabinet. Size the plenum or fabricate spacers to seal against the outside of the collar and prevent air bypass.

<table>
<thead>
<tr>
<th>Figure 1</th>
<th>EBA Collar Plate</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Collar Plate under drain pan" /></td>
<td><img src="image2.png" alt="Flanges down" /></td>
</tr>
</tbody>
</table>

EBD Cased Coils are designed to fit furnaces and air handlers of the same width with no modifications. When an EBD Cased Coil is applied to a narrower or wider furnace or air handler, a field fabricated adapter is required. Refer to Figure 2 for examples of field fabricated adapters.

![Adapters for Coils Wider or Narrower than Furnace or Air Handler](image3.png)

**CAUTION**

**PRODUCT DAMAGE HAZARD**
Failure to follow this caution may result in product damage.

When a narrower coil is installed on a wider gas furnace (upflow, downflow, or horizontal), a field fabricated adapter must create 3" minimum space between furnace and coil to allow airflow to distribute evenly.

When a loose coil is installed on any GAS furnace, the drain pan must be at least 2" away from the furnace heat exchanger to avoid drain pan damage.

When a loose coil is installed on any OIL furnace, the drain pan must be at least 5" away from the furnace heat exchanger to avoid drain pan damage.

**CAUTION**

**PROPERTY DAMAGE HAZARD**
Failure to follow this caution may result in property damage.

A field fabricated auxiliary drain pan, with a separate drain is REQUIRED for all installations over a finished living space or in any area that may be damaged by overflow from a restricted main drain pan. In some localities, local codes require an auxiliary drain pan for ANY horizontal installation.
NOTE: When coil is used in a heat pump application with electric heat, coil must be installed upstream of the electric heater (refer to Figure 3). This prevents electric heat from driving up refrigeration system pressure during heating cycle.

Figure 3

Heat Pump Coil Position Relative to Electric Heat

NOTE: When coil is installed with a Heat Pump in conjunction with a fossil fuel heating system, a Fossil Fuel Kit must be used. Refer to Product Specification literature for kit part number.

CONDENSATE DRAIN

Coil is provided with two ¾" NPT condensate drain connections. The connection with the larger internal opening is the primary drain, and the connection with the smaller internal opening is the secondary (overflow) drain. Condensate drain lines should be installed in a manner that does not obstruct access to the filter. Use PVC fittings on the plastic condensate pan. Finger tighten plus 1½ turns. Do not over-tighten. Use pipe dope.

If coil is located in or above a living space where damage may result from condensate overflow, a separate ¾" drain must be provided from secondary (overflow) 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 secondary (overflow) drain indicates a plugged primary drain — unit requires service or water damage will occur.

1. Connect drain lines to the appropriate drain connections. Drain lines should not be smaller than the drain connections (¾").

2. NOTE: Traps must be used when the coil is installed on the return air side of the system. When coil is installed on the supply side (outlet air) it is not necessary to install traps and better drainage is usually achieved without traps. Install properly sized condensate traps in the drain lines as close to the coil as possible. Install drain lines below the bottom of the drain pan and pitch the drain lines down from the coil at least ¼ inch per foot of run. Horizontal runs over 15 feet long must also have an anti-siphon air vent (stand pipe), installed ahead of the horizontal run. An extremely long horizontal run may require an oversized drain line to eliminate air trapping. Refer to Figure 5 for minimum trap dimensions.

3. Route to the outside or to a floor drain. Check local codes before connecting to a waste (sewer) line.

4. Prime all traps, test for leaks, and insulate drain lines where sweating could cause water damage.

5. If a gravity drain cannot be used, install a condensate pump. Install the pump as close to the indoor section as possible.

Figure 5

Recommended Condensate Trap
WASTE LINE CONNECTION

If the condensate line is to be connected to a waste (sewer) line, an open trap must be installed ahead of the waste line to prevent escape of sewer gases (refer to Figure 6).

⚠️ WARNING ⚠️

EXPLOSION HAZARD
Failure to provide trap could result in personal injury, death, or property damage.
Provide trap with air gap in drain line when connecting to waste (sewer) line. Refer to Figure 6.

REFRIGERANT LINE CONNECTIONS

⚠️ WARNING ⚠️

PERSONAL INJURY HAZARD
Failure to relieve pressure in the coil could result in personal injury.
Wear eye protection.
Coil is factory charged with 15 psi nitrogen. Pierce the centers of both rubber tubing plugs to relieve pressure before removing plugs.

NOTE: Factory nitrogen charge may escape past rubber plugs during storage. This does not indicate a leaking coil nor warrant return of the coil.

Size and install refrigerant lines according to information provided with outdoor unit. Coil connection tube sizes are shown in Figure 7. Route refrigerant lines to the coil in a manner that will not obstruct service access to the unit or removal of the filter.

1. Remove cabinet door. Remove tubing plate with rubber grommets and slide plate with grommets onto the refrigerant lines (field line—set), away from braze joints.
2. Remove rubber plugs from coil stubs using a pulling and twisting motion. Hold coil stubs steady to avoid bending or distorting.
3. Wrap TXV and nearby tubing with a heat-sinking material such as a wet cloth.
4. Fit refrigerant lines into coil stubs. Wrap a heat-sinking material such as a wet cloth behind braze joints.
   NOTE: See outdoor unit Installation Instructions regarding requirements for installation of a filter–drier in the liquid line close to the indoor coil.
5. Braze using a Sil–Fos or Phos–copper alloy.
6. After brazing, allow joints to cool. Slide tubing plate with rubber grommets over joints. Position tubing at center of each grommet to ensure an air seal around the tube (refer to Figure 8).
Strainer screen is factory installed inside the liquid tube stub (TXV tube). Leave the strainer screen in place during installation (refer to Figure 9).

| Figure 9 | Strainer Screen |
|----------|-----------------
| ![Strainer Screen](image) |

**REFRIGERANT METERING DEVICE**

EBD and EBA coils have a factory installed hard shut-off TXV designed only for use with R-22 refrigerant. Use only with outdoor units designed for R-22.

TXV is factory set and not field adjustable.

**CAUTION**

**PRODUCT DAMAGE HAZARD**

Failure to follow this caution may result in product damage.

Braze with Sil–Fos or Phos–copper alloy on copper–to–copper joints and wrap a wet cloth around rear of fitting to prevent damage to TXV.

**CHECK AND ADJUST AIR FLOW**

**WARNING**

**ELECTRICAL SHOCK HAZARD**

Failure to shut off electric power could result in personal injury or death.

Before adjusting blower speed, shut off electric power to the furnace or blower module.

It is important that the correct amount of air (CFM) flows through the coil. The installer must determine the required CFM based on the characteristics of the specific system (such as system size, ducting, components, and accessories). In general, 400 CFM per ton is the nominal required value, with a range of 350 – 450 CFM per ton.

**Check Static Pressure Drop and CFM Across Coil**

The amount of air (CFM) is related to a pressure drop. To determine the CFM, measure the pressure drop using an inclined manometer (sometimes called draft gauge or air flow gauge).

1. The coil should be dry and clean. The air filter must be clean and in place. All registers open. DO NOT run the outdoor unit when checking air flow.
2. Run the blower on cooling speed.

3. Using the manometer (draft gauge or flow gauge), measure the static pressure drop across the dry coil and compare it to the numbers in Figure 10.
4. Find the corresponding CFM in Figure 10.

**Adjusting Air Flow**

If CFM is too low, increase the blower speed and measure the static pressure drop again. Determine CFM from Figure 10.

If CFM is too high, reduce the blower speed and measure the static pressure drop again. Determine CFM from Figure 10.

**NOTE:** Change blower speed as shown in the instructions for the furnace or air handler.

**NOTE:** It may not be possible to obtain a gauge reading exactly the same as shown in Figure 10. This is due to variations in duct systems and blower speeds.

If the motor is at the highest speed and the CFM is still not high enough, replace the blower and/or motor with a larger size.

If the unit has an adjustable belt driven blower, use an ammeter to check the motor current draw. If the current draw is higher than the motor name plate amps, replace the motor with one of greater horsepower.
### INSTALLATION INSTRUCTIONS

**TXV Coils: EBD, EBA**

#### START-UP PROCEDURE

Refer to outdoor unit Installation Instructions for refrigeration system start-up instructions and refrigerant charging method details.

---

### Figure 10

<table>
<thead>
<tr>
<th>Coil Size</th>
<th>CFM Across Coil</th>
<th>Static Pressure Drop Across Coil (Inches Water Column)</th>
<th>Coil Size</th>
<th>CFM Across Coil</th>
<th>Static Pressure Drop Across Coil (Inches Water Column)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>18B 1½ tons</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500 700</td>
<td>0.096 0.161</td>
<td>0.096 0.161</td>
<td></td>
<td>1200 1400 1500 1600</td>
<td>0.129 0.168 0.189 0.211</td>
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<tr>
<td>600 800</td>
<td>0.127 0.166</td>
<td>0.140 0.176</td>
<td></td>
<td>1300 1500 1600</td>
<td>0.148 0.180 0.203 0.228</td>
</tr>
<tr>
<td><strong>24B 2 tons</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>700 900</td>
<td>0.134 0.200</td>
<td>0.141 0.215</td>
<td></td>
<td>1400 1500 1600</td>
<td>0.148 0.203 0.228</td>
</tr>
<tr>
<td><strong>24F 2½ tons</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>0.118 0.146 0.176</td>
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<td>0.114 0.130 0.146</td>
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<tr>
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</tr>
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<td>1400 1500 1600</td>
<td>0.182 0.211 0.228</td>
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<tr>
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<td>0.106 0.129 0.154</td>
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<td>0.181 0.281</td>
<td>1700</td>
<td>0.273 0.283</td>
<td></td>
</tr>
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<td><strong>36B 3 tons</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>900 1000</td>
<td>0.122 0.143</td>
<td>0.129 0.154</td>
<td></td>
<td>1500</td>
<td>0.192 0.196</td>
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<tr>
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<tr>
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<tr>
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<td></td>
<td>2200</td>
<td>0.363 0.419</td>
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