

AIR HANDLER UNITS KITS & ACCESSORIES

508826-01
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DOWNFLOW INSTALLATION KIT

INSTALLATION INSTRUCTIONS FOR DOWNFLOW KIT USED TO MODIFY AIR HANDLER UNITS FOR DOWNFLOW APPLICATION (31U56)

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional HVAC installer or equivalent, service agency, or the gas supplier.

⚠ CAUTION

As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

⚠ WARNING



Electric Shock Hazard. Can cause injury or death. Unit must be grounded in accordance with national and local codes.

Line voltage is present at all components when unit is not in operation on units with single-pole contactors. Disconnect all remote electric power supplies before opening access panel. Unit may have multiple power supplies.

General Information

⚠ IMPORTANT

Refer to AHU IOM for blower performance and instructions to change blower speed.

This kit is used to modify air handler units for use in downflow applications. The procedure requires that the installer remove the evaporator coil and reinstall it for downflow air discharge application.

FIGURE 1 shows the air handler unit as configured at the factory. As shipped, the units are ready for installation in either upflow or horizontal right-hand air discharge applications.

FIGURE 2 shows the air handler unit after re-configuring for installation in downflow air discharge applications.

NOTE – A downflow combustible floor base is **not required** for the applicable air handler.

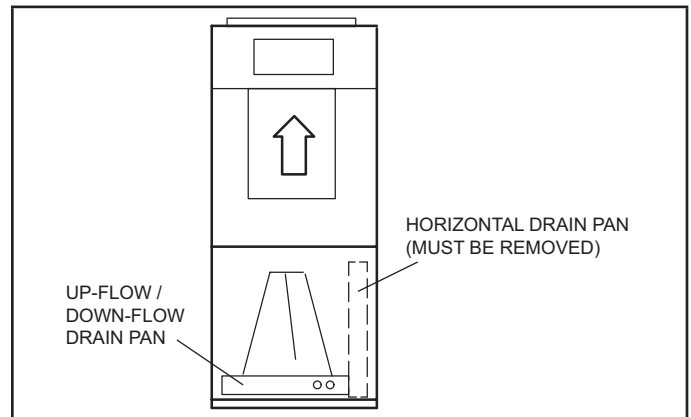


FIGURE 1.

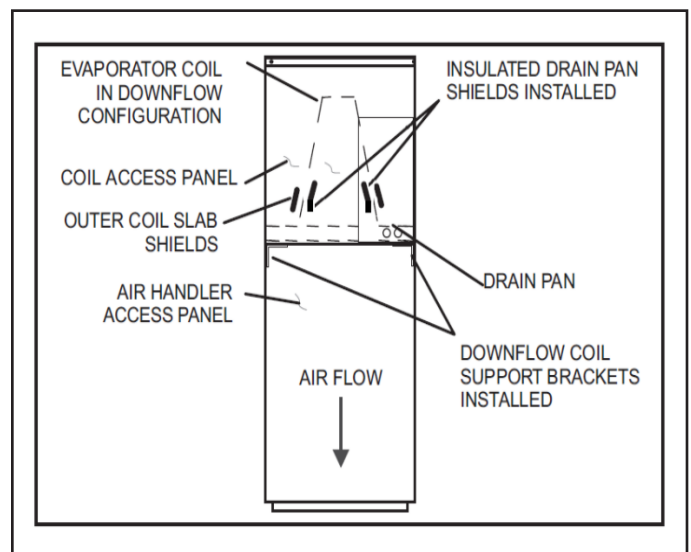


FIGURE 2.

Shipping and Packing List

TABLE 1

AIR HANDLER SIZES	1-1/2, 2, 2-1/2 and 3 ton	3-1/2, 4 and 5 ton	Figure 3 Parts
Catalog Number	31U56		
Part Number	629468-01		
Part Description	Quantity		
Pre-cut insulating foam for drain pan	1 EA	1 EA	A
Insulated downflow coil support brackets	2 EA		B
Insulated inner drain pan drip shields	2 EA		C
Non-insulated outer coil slab shields	2 EA		D
Front and rear insulated air seal plates	2 EA	2EA	E
Tapping screws (#8 x 1" AB hex washer HD) for downflow coil support brackets	6 EA		F
Pre-cut insulating foam tape for delta plates (16" long)	2 EA		G
Insulating foam tape for coil suction manifold (12")	1 EA		H
Screw (8-18 X 1/2) for outer coilslab shield	4 EA		J
Pre-cut inslulaitng foam for drain pan - between coil and drain pan	2 EA		K

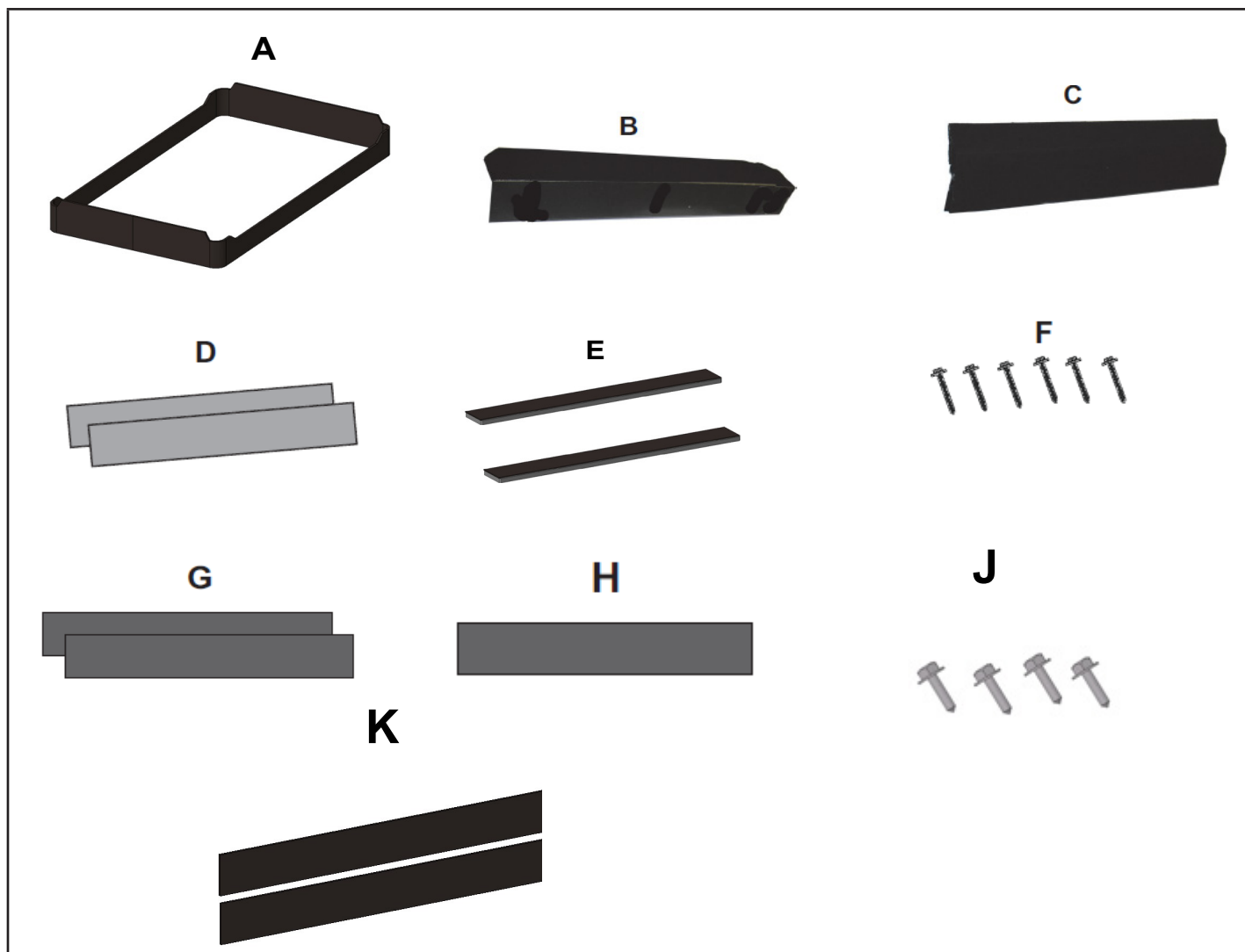


FIGURE 3.

Installation

REMOVING COIL FROM HOUSING

⚠ CAUTION

Be certain all power has been disconnected from the air handler before beginning work.

⚠ WARNING

Excessive Weight Hazard - Use two or more people when moving and installing the unit. Failure to do so can result in back or other type of injury.

- 1 - Remove air filter.
- 2 - Remove the piping panel, coil access panel, and the blower access panel. Keep all panels and screws; these will be re-used when reassembling.
- 3 - Remove horizontal drain pan mounting bracket (FIGURE 4). This bracket will not be reinstalled for downflow air discharge applications.

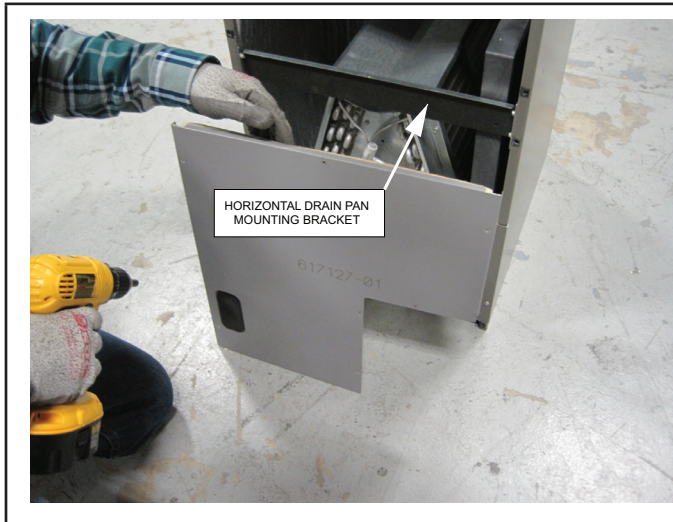


FIGURE 4.

- 4 - Carefully slide the coil and the horizontal drain pan assembly from the air handler cabinet (FIGURE 5). Discard the horizontal drain pan which is not used in this application.

MODIFYING INDOOR COIL

- 1 - Remove the drain pan from the coil by removing four delta plate screws, two in the front and two in the rear. See FIGURE 6 (front).
- 2 - Arrange the coil so it is laying on the rear delta plate.
- 3 - Working from the bottom of the coil, install provided insulating foam tape (Part G, two each) to the rear delta plate of the coil (FIGURE 7).

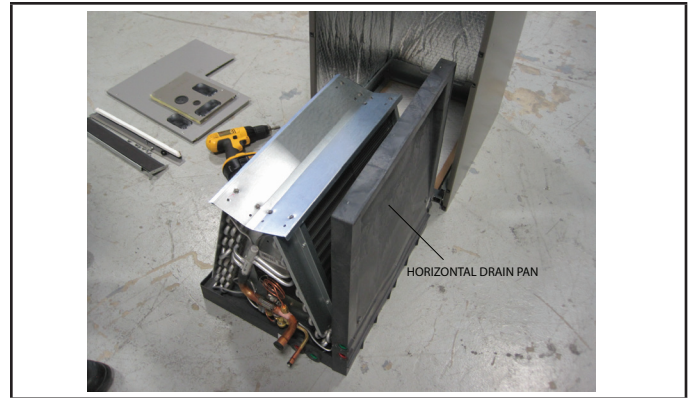


FIGURE 5.

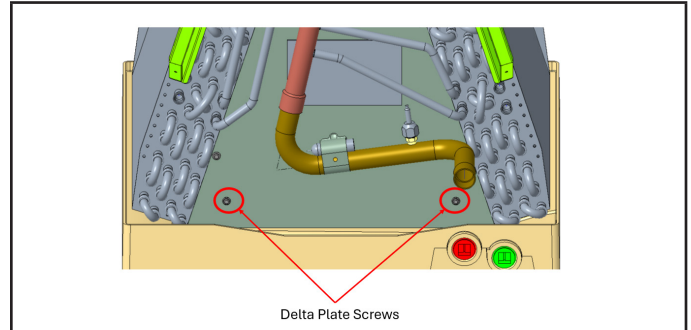


FIGURE 6.



FIGURE 7.

NOTE – Foam tape may need to be trimmed to fit certain delta plates.

MODIFYING DRAIN PAN

- 1 - Install the kit provided insulating foam tape (Part A) and (Part K, two each) to the drain pan (FIGURE 8)

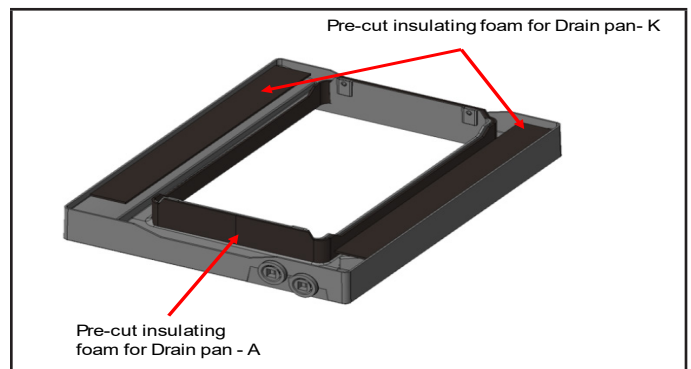


FIGURE 8.

INSTALL INNER INSULATED DRAIN PAN DRIP SHIELDS

- 1 - Place the insulated drain pan (FIGURE 8) on a stable surface, facing up.
- 2 - Stand the coil upright and lower it onto the drain pan, pushing down as required to fully contact coil surfaces with the pan (FIGURE 9). Re-install the the four delta plate screws.



FIGURE 9.

- 3 - Arrange the coil so it is laying on the rear delta plate.
- 4 - Working from the bottom of the coil, install provided insulated drain pan drip shields (part C, two each). The shields slide into place between the inner coil slab and the drain pan (FIGURE 10 and FIGURE 12).

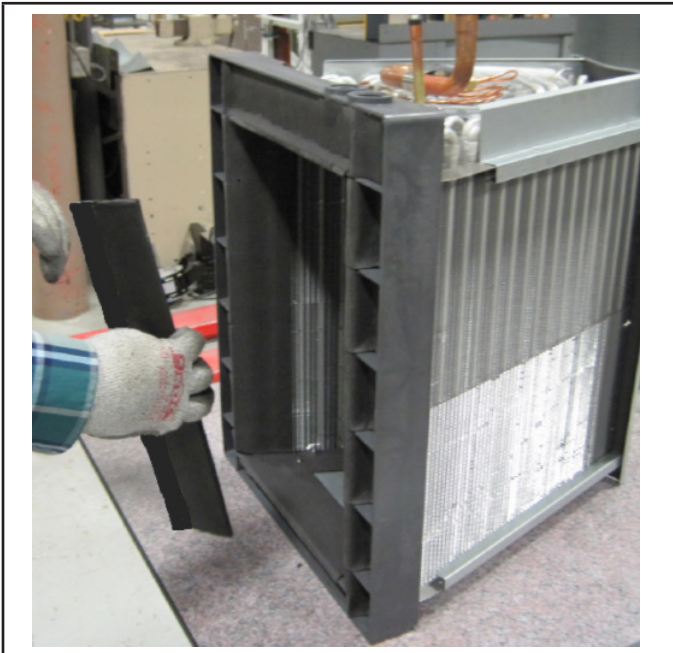


FIGURE 10.

NOTE - Fully insulated side of drain pan drip shield faces away from coil slab.

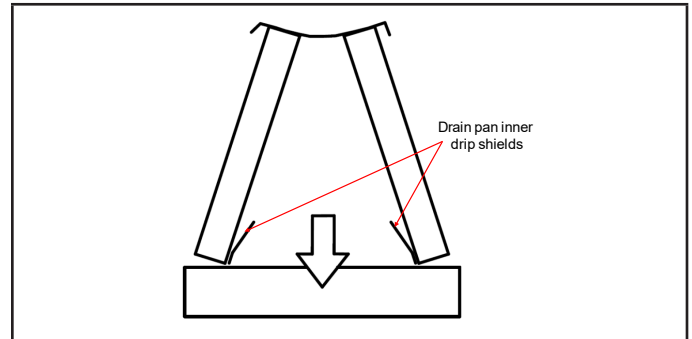


FIGURE 11.



FIGURE 12.

INSTALL OUTER COIL SLAB SHIELDS

- 1 - Arrange the coil / pan assembly so it is upright.
- 2 - Slide provided shields (part D, two each) behind the return bend and hairpin shields, then slide further down to rest on drain pan (FIGURE 13, FIGURE 14 and FIGURE 15).



FIGURE 13.

- 3 - After Installing the provided slab shields (part D, two each) using provided four #8-18 X 1/2" screws (part J) to lock the movement of shield See FIGURE 14
- 4 - Leave the TXV sensing bulb in the factory-installed position inside the cabinet. If necessary, the bulb can be insulated using extra foam tape (FIGURE 16).

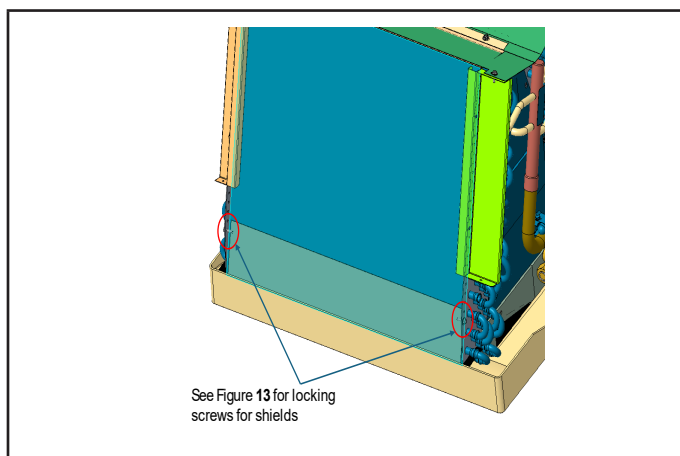


FIGURE 14.

NOTE – Failure to install all shields can result in condensate blow-off and subsequent damage to the building and its contents.

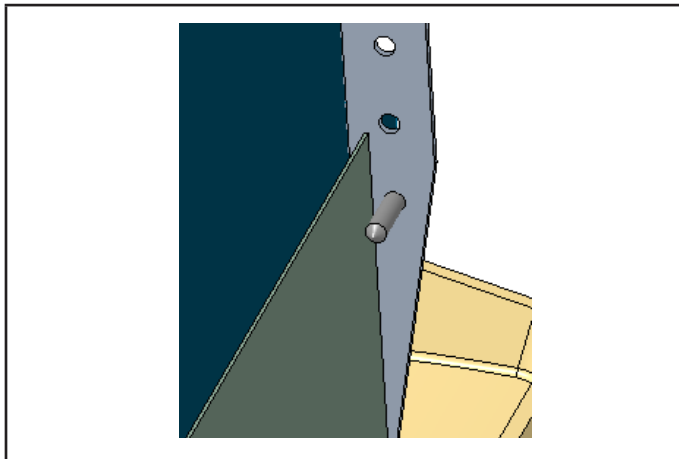


FIGURE 15.

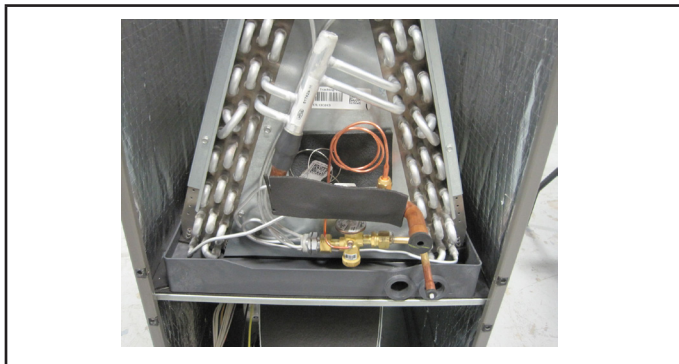


FIGURE 16.

MODIFYING AIR HANDLER HOUSING

- 1 - Install the provided insulated coil support brackets (part B, two each) using provided six #8-18 x 1" screws (part F) to the inner sides of the cabinet with the insulating foam facing up (FIGURE 17). Do not fully tighten screws at this time.

NOTE – It will be necessary to push the screws through the foil-faced insulation inside the cabinet to install support brackets.



FIGURE 17.

- 2 - Position the Front and rear insulated air seal plates onto the downflow coil support brackets, ensuring that the seals seat against the sides and back of the air handler cabinet and that a seal will occur when the access panel is reinstalled (FIGURE 17 and FIGURE 18).

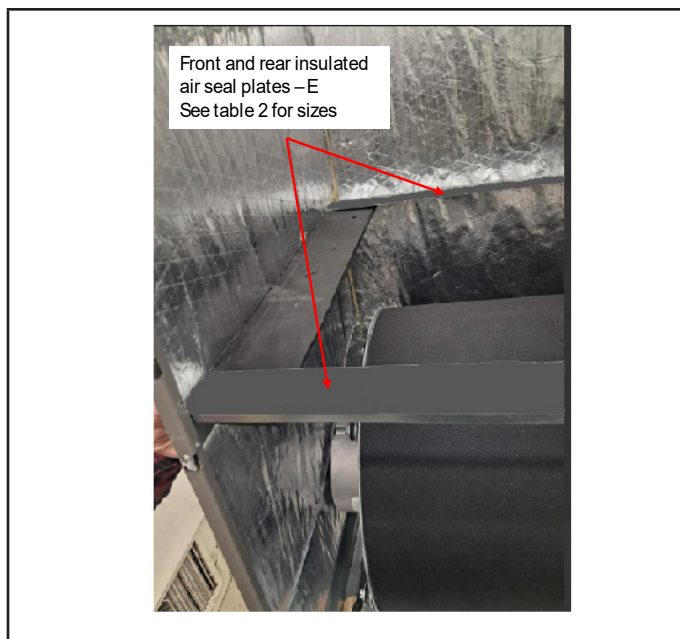


FIGURE 18.

- 3 - Tighten the screws attaching the insulated coil support brackets to the air handler cabinet (installed in step 1).
- 4 - The table below lists the Front and rear insulated air seal plates (part E) size for each unit.

CBK43UHET	Cabinet Size	Qty
-018, -024, -030, -036	18.5"	2 EA
-042, -048, -060	21.5"	2 EA

COMPLETION OF DOWNFLOW CONFIGURATION

- 1 - Remove the bracket (not used in downflow) before installing coil See FIGURE 22.
- 2 - Install evaporator coil / pan assembly onto the downflow coil support brackets (FIGURE 19).

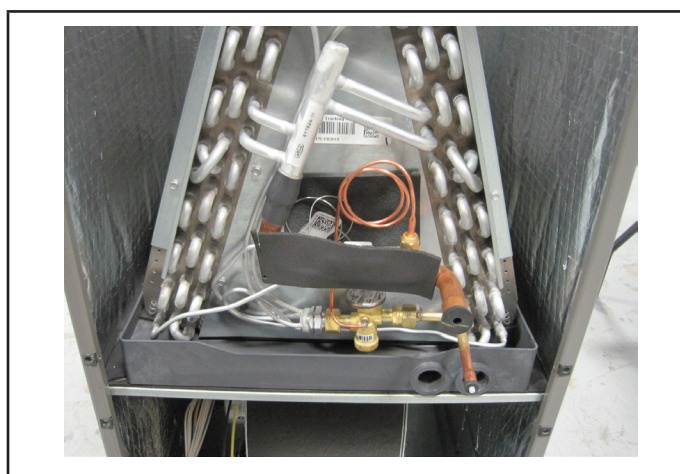


FIGURE 19.

- 3 - Uninstall the filter rails at the top of the cabinet and flip them for downflow configuration (FIGURE 20 and FIGURE 21).

- 4 - Reinstall the connection panel making sure that the openings are properly aligned with the refrigerant lines

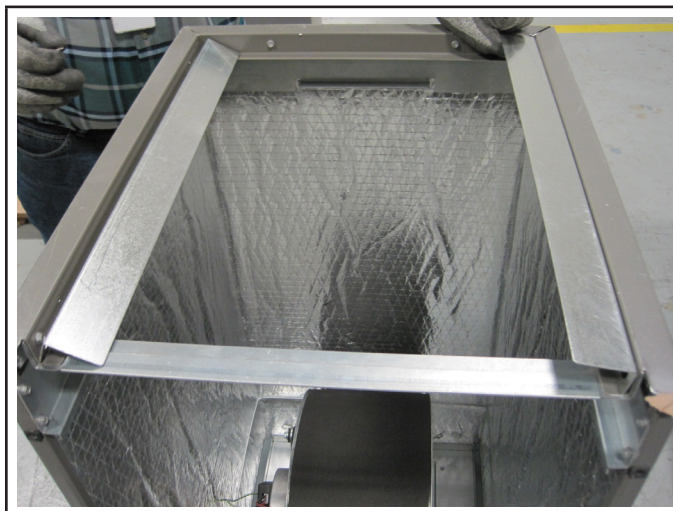


FIGURE 20.

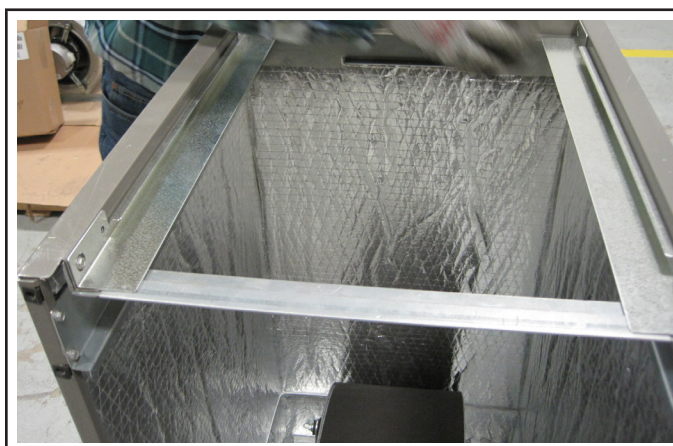


FIGURE 21.

- 5 - Reinstall and fasten the blower panel in the inverted position.
- 6 - Reinstall and fasten the access panel.
- 7 - Install converted air handler onto floor opening. Apply sealant as required.
- 8 - Install air filter and replace filter door.

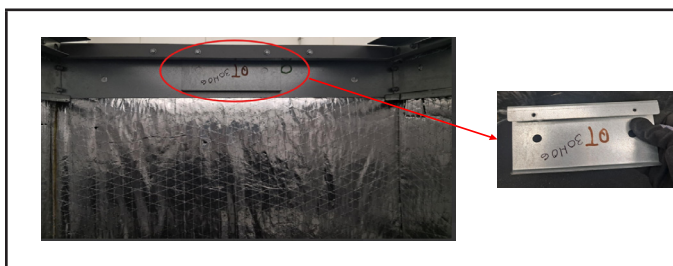


FIGURE 22.

Airflow – Blower Speed

! IMPORTANT

All models should be set to high speed in the downflow configuration. Refer to AHU IOM for blower performance and instructions to change blower speed.

SLOPING THE UNIT

Make sure the unit is sloped (similar to the slope shown in FIGURE 23) so that the drain pan will empty completely without water standing in the pan.

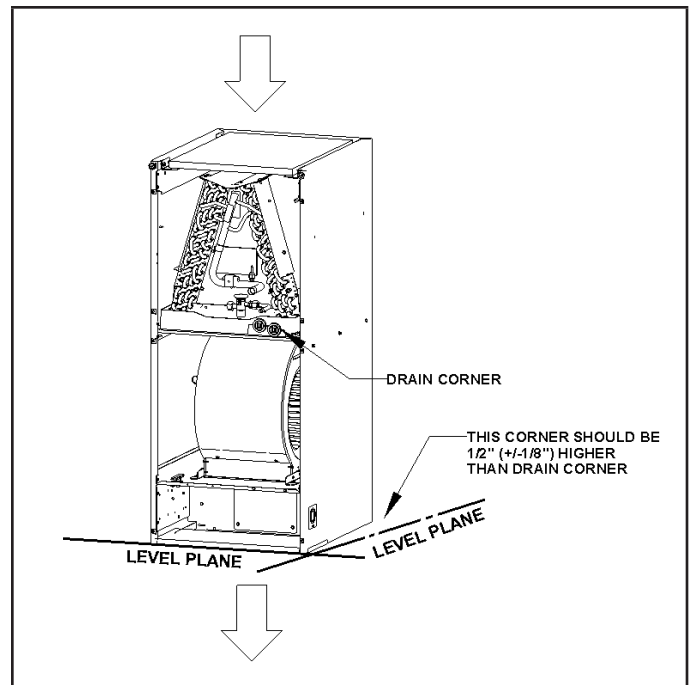


FIGURE 23.

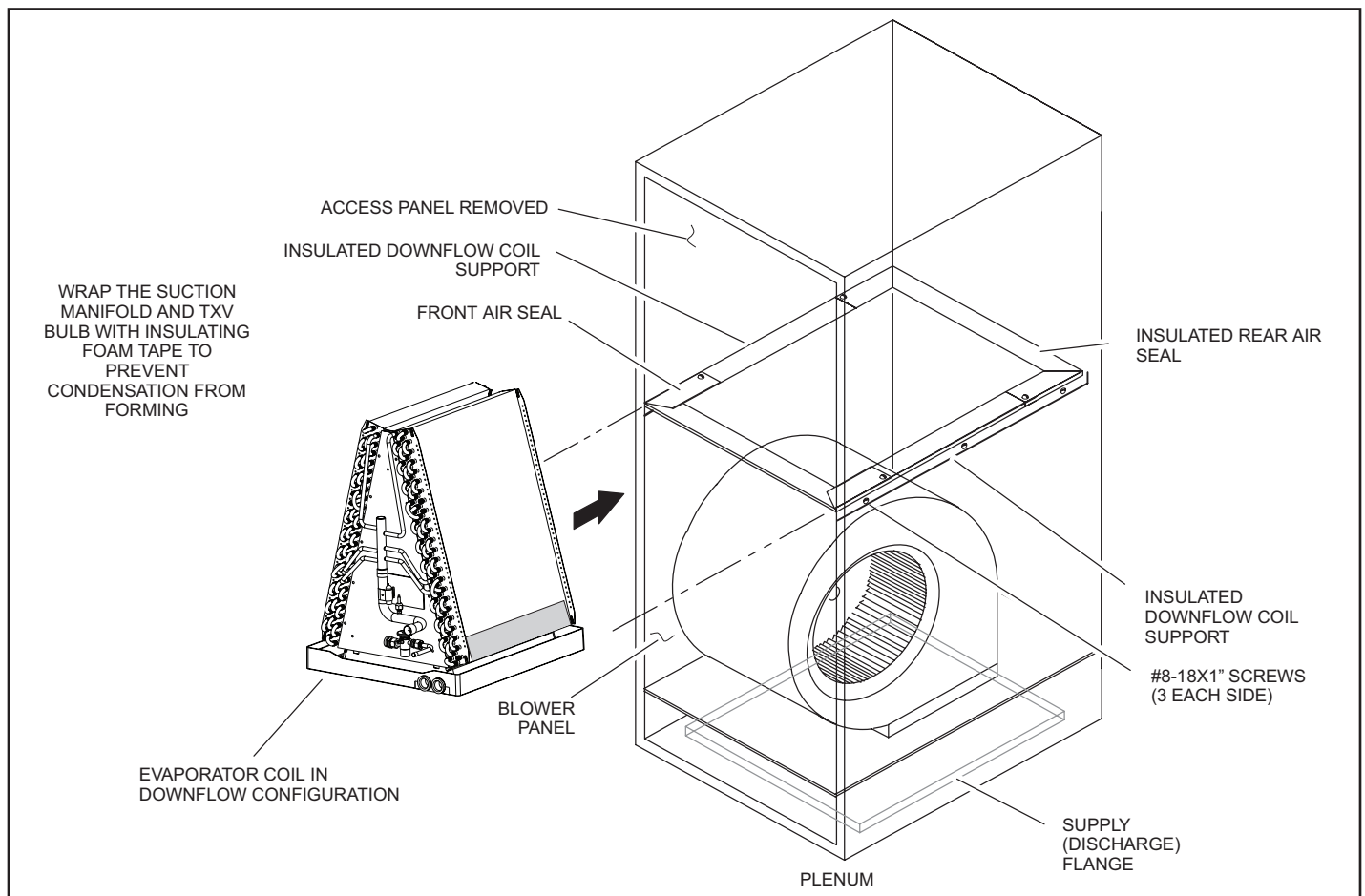


FIGURE 24.