STEP 3: ATTACHING SUPPLY AIR SQUARE PLENUM ADAPTOR (BM-3007)

NOTE: If the unit is to be located in the attic and installed through the ceiling joists, attach the supply air plenum adaptor in the attic.

A. HORIZONTAL DISCHARGE:
Refer to Figure 2.8.

B. TO CONVERT TO VERTICAL DISCHARGE:
Refer to Figure 2.9A & 2.9B
Tools required: 5/16” box wrench and 5/16” nut driver.

NOTICE: An Electric Heat Module cannot be installed after unit has been field converted to vertical supply air discharge (due to resulting blower housing obstruction).

Refer to Figure 2.9A for Steps 2 to 6a.

1. Place unit horizontally on a flat raised surface.

2. Remove (2) side access panels, return air panel and the cover plate from the top panel. The center screw on electric control box side does not need to be removed (8/9 panel-side screws removed).

3. Remove top panel by removing screws. Remove top/center screw from the electric control box.

4. Remove the two screws securing the front panel flange to the blower housing.

5. Remove the two screws attaching the blower housing to the motor support channel flange.

6a. Remove the six (6) screws attaching the motor mounting base to the motor support channel.

Refer to Figure 2.9B for Steps 6b to 13.

6b. Shift the motor mounting base (and blower housing) back towards the coil to the second set of mounting lugs on the motor support channel. Rotate the blower housing 90° to face upwards. When in position, reattach the motor mounting base to the motor support channel with the six screws.

7. Replace the top panel to its original position and insert discharge opening into the top panel opening.

8. Align the hole in the side blower housing with the upper slot in the motor support channel flange and join the two parts with one of the previously removed screws.

9. Align the (2) holes in the top panel flange with the holes in the blower housing and attach with removed screws.

10. Place the supply air plenum adaptor over the opening. Align the holes in the adaptor, gasket and top panel with the panel holes and secure with the screws provided.

11. Check that the blower wheel is centered in the inlet and discharge of the blower housing. To make any adjustments, loosen the 4 bolts securing the motor, shift the motor as required and refasten the 4 bolts.

12. Place the coverplate removed from the top panel over opening in the front panel and screw in place.

NOTICE: Check that all inside cabinet surfaces are covered with insulation, add insulation if required. An uninsulated panel will “sweat” and condensate will form on the cabinet.

13. Replace all panels and screws.

FIGURE 2.8
INSTALLING AIR DISTRIBUTION COMPONENTS

All plenum duct and supply tubing runs as well as room terminator locations must be in accordance with air distribution system requirements listed in Section 1 of fan coil unit installation, operation and maintenance manuals. Where taping of joints is required, use UL181 approved tape.

Plenum Duct Installation

All tees, elbows and branch runs must be a minimum of 24" from the fan coil unit or any other tee, elbow or branch run. Keep all tees and elbows to a minimum to keep system pressure drop on larger layouts to a minimum. Square plenum duct comes in 4-foot sections and may be cut to length.

Begin installing plenum duct (see Figure 2.14). For straight or branched plenum run cut off the female end of a plenum duct section. In the case of a bull head tee (see Unit No. 1 in Figure 1.3 of installation manuals) cut off the male end of a plenum duct section. Then insert duct into fan coil unit plenum adaptor. Push duct in tight to form snug joint, and insert flat head pins. Remove paper backing on rectangular foam pieces and place over pin heads. Tape the unit/plenum joint securely. To prevent air leakage and condensation, wrap and tape in place the 6" wide piece of foil faced fiberglass insulation over the taped joint. Be sure insulation is pushed up against the unit.

Continue to assemble plenum duct, making sure shiplap joints (see Figure 2.15) are snug and taped securely. Remember, for the ESP-4860V system, a plenum “H” should be installed 18" from the fan coil unit before continuing plenum duct run (see air distribution system requirements in Section 1 of fan coil unit manual).

Plenum tee and elbow fittings may be installed at any point in the plenum duct run. If installing a fitting at the end of a full plenum section (see Figure 2.16), insert female end of fitting onto duct. If installing a fitting at a “cut” in the plenum duct (see Figure 2.16), form a field-fabricated flange (1½" wide) in the duct and insert male end of fitting into duct. Tape the joint securely.

An end cap must be installed at the end of each duct run. The cap contains an insulating cushion which is pushed up tight against the duct end. (If installing end cap at the end of a full plenum section, remove shiplap joint first). Holding cap firmly in place (see Figure 2.17), insert flat head pins through the holes in the end cap. Remove paper backing on rectangular foam pieces and place over pin heads. Tape cap to the plenum duct, circumferentially around the seam.
At the plenum location selected for attaching the supply tubing, cut a 2" diameter hole in the plenum with the SpacePak plenum hole cutter (see Figure 2.24).

Rotate the cutter as pressure is applied to force the serrated edge through the aluminum foil and insulation. Remove the hole cut-out from the plenum. Make sure there is no “flap” left inside plenum that could block hole during operation.

Place the plenum take-off gasket on the back side of the plenum take-off and insert the assembly into the hole in the plenum (see Figure 2.25).

NOTICE: Gasket must be installed to seal plenum take-off to prevent air leakage.

Hand insert the four plenum take-off fasteners one at a time such that each clip reaches the interior of the duct. Using the SpacePak pliers, snap the fasteners into place until they lock securely (see Figure 2.26).

NOTICE: All four fasteners must be installed to assure air tight fitting between plenum take-off and plenum.