The Unico System®

Rigid Sound Attenuator Installation Instructions

GENERAL

The rigid sound attenuator (Unico part number UPC-84/85) is designed for close-coupled applications where the outlets must be directly attached to the plenum.

INSTALLATION

Determine the location of the outlets. The outlets may be placed anywhere away from normal foot traffic pattern, such as the ceiling, floor, or sidewall. For all floor outlets, be sure to install an outlet screen (UPC-88) to prevent objects from falling into the duct and blocking the airflow.

Provide 6 outlets per nominal ton (6 per nominal 3.5 kW). In some cases, because the outlets are extremely short, it may be necessary to install a balancing orifice to each plenum takeoff to reduce the airflow to acceptable levels.

For sidewall outlets, position the outlet well above head height. In most cases, except for very high ceilings, they can be 4 to 5-inches (100-125 mm) below the ceiling. For good circulation of air they should be no higher than about 12-feet (4 m) above the floor level.

The plenum can be made from either 1-inch (25-mm) thick fiberglass duct or an insulated metal duct.

If not using a Unico System plenum adapter (UPC-61-xxxx), a transition duct must be attached to the unit to avoid cutting off air at the blower.

Table 1. Plenum Size, inches (mm)

Round Size	Maximum Airflow	Rectangular Equivalent
7.0 (180)	600 CFM (283 L/s)	6.5 x 6.5 (165 x165) 6 x 8 (150 x 200) 4 x 12 (100 x 300) 3.5 x 14 (90 x 350)
9.0 (230)	1000 (472 L/s))	8.5 x 8.5 (215 x 215) 8 x 10 (200 x 250) 6 x 12 (150 x 300) 4 x 20 (100 x 500) 3.5 x 24 (90 x 600)
10.0 (250)	1300 (613 L/s)	9.5 x 9.5 (240 x 240) 8 x 12 (200 x 300) 6 x 14 (150 x 350) 4 x 24 (100 x 600)

Install the plenum before beginning the installation of the rigid sound attenuators. Refer to Bulletin 30-40 (fiberglass plenum) and 30-45 (metal plenum) for installation instructions.

Stud Frame Construction:

Tools and Parts required:

- Utility knife or hole saw
- UL-181B-FX duct tape

STEP 1. (If necessary) install the drywall or paneling where the outlet will be located. For drywall the toggles and screws supplied with the attenuator should be used to retain the terminator firmly against the wall. Cut or saw 4-inch (100-mm) holes directly in line with the plenum. For paneling 3-3/8-inch (86-mm) holes can be cut and wood screws (not supplied) be used to retain the terminator against the paneling.

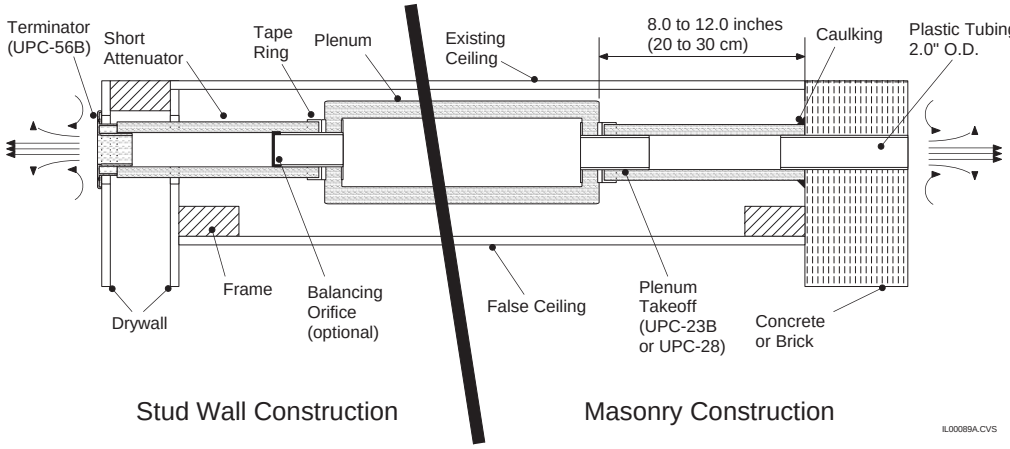

Figure 1. Typical Corridor Installation

Note — Specifications, ratings, and dimensions subject to change without notice.

STEP 2. Before installing the toggles and screws insert the attenuator assembly through the hole and over the plenum takeoff stub to check for fit. When the terminator is seated firmly against the wall the other end must fit over the plenum takeoff stub and rest firmly against the side of the plenum inside of the tape ring. If necessary, the attenuator may be cut to length but no less than 8-inches (200-mm). If the full 12-inch (300-mm) length is being used be sure the plenum is wide enough and positioned so the attenuator will reach to it.

STEP 3. Once the fit is assured, install the toggles and screws on terminator plate and insert the assembly through the hole, engaging the toggles and tightening the screws to pull the terminator plate firmly against the wall.

STEP 4. Tape around the attenuator and tape ring, with UL 181B-FX duct tape; making sure to seal the connection.

STEP 5. Construct a false ceiling to conceal the plenum.

Masonry Construction:

Tools and Parts required:

- Drill with 2-inch (50-mm) masonry bit
- 2-inch (50-mm) OD plastic tube
- Plastic tubing cutters
- UL-181B-FX duct tape
- Utility Knife

STEP 1. Bore a 2-inch (50-mm) hole, through the concrete or brick wall, directly in line with the plenum.

STEP 2. Cut a piece of plastic tubing long enough to be flush on one side of the wall and protrude about 3-inches (8-cm) from the other side of the wall.

STEP 3. Insert the 2-inch (50-mm) OD plastic tube through the hole, and glue with the end on the occupied space flush with the wall (refer to Figure 1).

STEP 4. Carefully remove the terminator from the attenuator assembly and cut the longitudinal seam of the insulation with the utility knife; forming a clamshell.

STEP 5. Cut the insulation to the desired length using a utility knife, but not less than 8-inches (200 mm).

STEP 6. Open the clamshell insulation and install between the takeoff and the plastic tube stubbed through the wall.

STEP 7. Tape the seam and around the tape ring with duct tape; making sure to seal the connections.

STEP 8. Caulk around sound attenuator at the wall (refer to Figure 1).

Slab Construction:

Tools and Parts required:

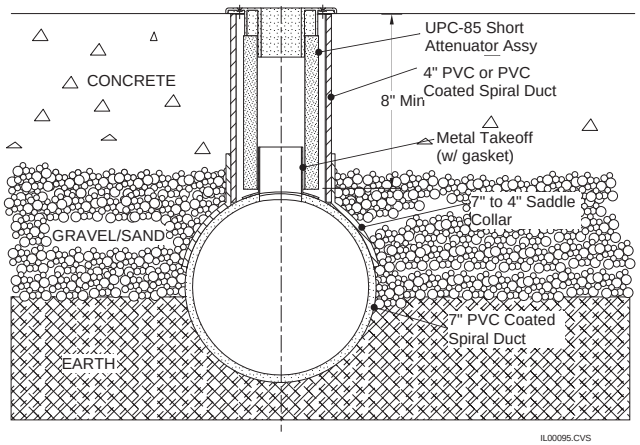

Figure 2. Typical Slab Installation

- PVC coated spiral duct
- 7-inch to 4-inch (178 to 100 mm) saddle collar
- 4-inch (102 mm) PVC pipe or PVC coated spiral duct
- Utility knife
- Plastic tubing cutters

STEP 1. Trench the area where the plenum will be located. Make sure the top of the plenum is at least 8-inches (200-mm) below finished floor.

STEP 2. Install the metal take-off on top of the plenum (refer to Figure 2 and Bulletin 30-50).

STEP 3. Install saddle collar around the take-off.

STEP 4. Cut and install a piece of either 4-inch (100-mm) PVC pipe or PVC coated spiral duct long enough to fit into the collar and be flush with the finished concrete floor.

STEP 5. Cut the sound attenuator to the desired length. Then, install it into the 4-inch (100-mm) pipe stub after the floor has been finished.

Warning

To prevent injury from mold or bacterial growth, inspect and remove any standing water from inside the plenum prior to system startup. If necessary, run the system blower to help dry out the duct.