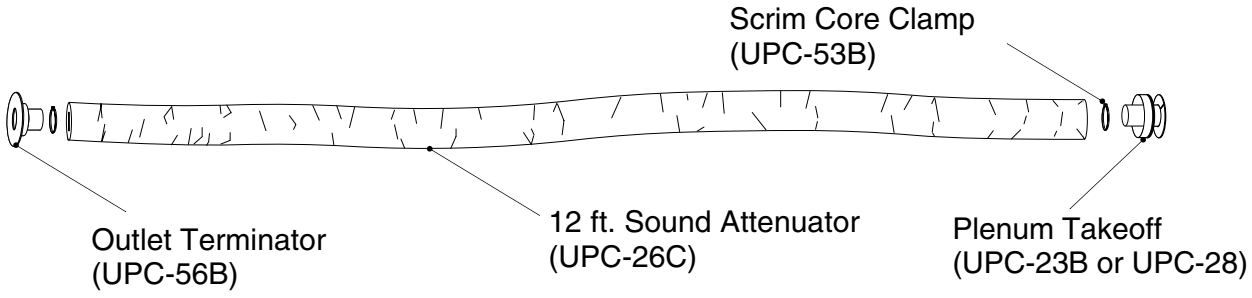
The Unico System®

ENGINEERING SPECIFICATIONS

UPC-80F-1, UPC-80M-1
12 Ft. Outlet Kit Instructions



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Packing List —

Each kit contains the following:

1 — 12 ft. (3.6 m) Insulated Attenuator tubing (UPC-26C)
1 — Supply Outlet Terminators (UPC-56B)
2 — Toggles and screws (UPC-51)
1 — Winter Shutoff plugs (UPC-42)
2 — Scrim core clamps (UPC-53B)
2 — Aluminum core clamps, *black* (UPC-52)
1 — Coupling with tape rings (UPC-38)
1 — Takeoff balancing cap, either 15, 35, or 50 percent reduction

UPC-80F-1 also includes:

1 — UPC-23B Fiberglass Takeoff

UPC-80M-1 also includes:

1 — UPC-28 Metal Takeoffs with tape ring and gasket

Application. The ***UNICO SYSTEM***® sound attenuator tubing is supplied in 12-ft (3.6-m) lengths for branch runs between 5 and 12 ft (1.3 to 3.6-m). The attenuator tubing is sold in kits and include all the necessary components to complete a duct run from the plenum to the conditioned space. For branch runs over 12 ft, use at least a 3-ft (1-m) sound attenuator (UPC-26C) coupled to the aluminum core supply tubing (UPC-25).

Installation. First, determine the location of the outlet. The outlet may be placed in the ceiling, floor, or sidewall. The best place is the corner, 5 inches (13 cm) from each wall. If that is not possible or practical, anywhere out of the traffic pattern is acceptable.

For floor outlets be sure to install an outlet screen (UPC-88) to prevent objects from falling into the duct.

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 (10 to13-cm) below the ceiling. For good air circulation they should be no higher than about 12-feet (4-m) above the floor level.

After the location is determined a hole must be cut (it necessary) and the duct routed from the plenum to the outlet location.

The attenuator tubing may be cut to any length but not less than 3 ft (1 m).

When installing the supply tubing follow these rules:

1. Use as few bends as possible.
2. If bends are necessary, provide a generous bend radius. The minimum radius is 6 inches (15 cm).
3. Support the supply tubing every 4 ft (1.2 m).
4. Be careful not to tear or puncture the supply tubing outer jacket.

The plenum may be made from either 1-inch (2.5 cm) thick fiberglass duct or an insulated metal duct. The duct dimensions may be either 6.5 inch (16.5 cm) square, 7 inch (18 cm) diameter, or any other dimension equivalent to 7 inch diameter such as 4 inch x 16 inch (10 x 40 cm).

For any duct other the 6.5-inch square duct, a transition duct must be attached to the unit so no air is cut off at the blower outlet. For example, if using round duct, use a 9 inch (23 cm) diameter duct at the unit; then reduce to 7 inch after about 5 feet (1.5 m).

When installing the duct system, use the following steps:

For New Construction Applications:

1. Install a plaster frame kit (UPC-86) where the outlet will be located.
2. Route the supply tubing so about 6 inches (13 cm) protrudes through the hole in the plaster frame.

3. Remove the excess supply tubing at the plenum and connect to the plenum takeoff.
   Note: If you have access to the plenum after terminator is secured, do this step last.
4. Push the duct up into the hole and install the drywall or paneling, cutting the appropriate 4¼ inch (11 cm) hole for the frame.
5. Pull the duct out and attach the duct core to the outlet terminator (see below).
6. Position the terminator in the hole and secure with toggles and screws.

For Existing Structures:

1. Cut a 4-inch (10-cm) hole in the plaster or drywall.
2. Then either route the supply duct through the hole to the plenum or from the plenum to the hole. If it is necessary to pull the duct through a floor joist, use either an electrician's “fish tape” or rope.
3. Remove any excess supply tubing at the plenum and connect to the plenum takeoff.
4. Allow about 6 inches to protrude through the hole, removing any excess, and connect to the outlet terminator (see below).

Plenum Takeoff Installation. Position the plenum takeoff so that the least amount of stress is applied to the connection and the duct is as straight as possible. Usually, the takeoff should be positioned in the 4 or 8

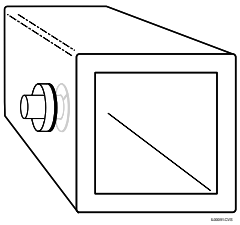

Figure 1. Plenum Takeoff Location

O'clock position (Fig. 1).

For 1 inch (2.5 cm) fiberglass plenum:

1. Use a UPC-55 hole cutter ("cookie" cutter) to make a 2 inch hole in the plenum.
2. Cut a 1/2 inch slit in the plenum jacket.
3. Bend the starting edge of the spin-in (UPC-23B) takeoff thread flange as shown in Fig. 2. Then twist the spin-in into the hole. Be sure that the bottom flange is fully engaged on the inside of the plenum. It may be necessary to apply some pressure as you spin the takeoff a full 360° around. Inspect the inside of the takeoff to be sure no insulation from the plenum is projecting into the air stream. Continue to spin the takeoff until no excess insulation can be seen down inside the stub of the takeoff.

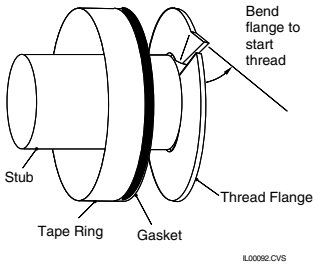

Figure 2. Spin-In Takeoff (for 1" Fiberglass Duct)

For Metal Plenum Duct:

1. Install and fully insulate the metal plenum before connecting plenum takeoffs.
2. Apply Take-off gasket to underside of take-off.
3. Attach Take-off directly to insulated plenum using four sheet metal screws.

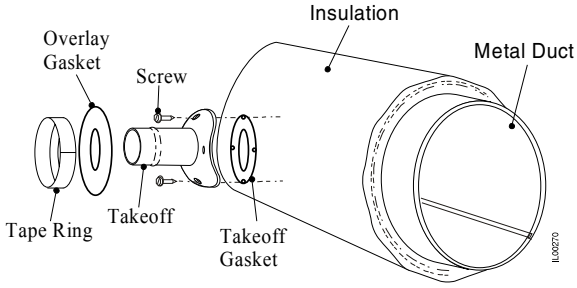

Figure 3. Metal Takeoff Installation

4. Use a 1-7/8-inch diameter hole saw (with extension if necessary) to cut through the insulation and duct.
5. Visually inspect the hole for any excess metal or insulation.
6. Peal the adhesive backing from the underside of the overlay gasket, slip it over the take-off and stick it to the vapor barrier. Apply even pressure around to secure.
7. Once the gasket is sealed against the insulation vapor barrier, peal off the backing on the top side to secure the tapering in the next step.
8. Slip the tape ring over the take-off and seal it against the gasket, then connect the branch duct using a clamp and seal the outer vapor seal against the tapering with UL tape.

More Detailed Instructions and alternate methods for installing metal plenum takeoffs are available in Bulletin 30-50.

Connecting Duct to Takeoff or Terminator

1. Pull back the insulation of the supply tubing about 2 inches (5 cm) to expose the inner core.
2. Slip the core over the stub of the takeoff or terminator as far as you can. Then secure with clamp using clamp pliers (UPC-54).
3. Stretch the insulation and outer jacket over the core and stub and stuff under the tape ring as best you can. Secure the outer jacket with UL-181A aluminum tape.