DUO-AIRE U.L. LISTED CONCENTRIC DUCT INSTALLATION INSTRUCTIONS

DUCT-18/1-96

DUCT – CONCENTRIC – U.L. LISTED

When the system is furnished with a low profile fan base, measure from the top of the canopy to the bottom pan of the low profile fan base. Cut the supply duct to this measured length and the exhaust duct ½" shorter to allow for expansion. **IMPORTANT**: Do not allow supply duct to protrude more than 1" above pan as this will increase static pressure and reduce air flow.

When the system is furnished with a heat economizer and curb, measure from the top of the canopy to the top of the curb. Cut the exhaust duct ½" shorter than the measured length and the supply duct 1" to 3" longer.

Slip the exhaust duct onto the collar of the canopy; being certain that the collar is fully seated into the slip connector. This slip connection has been tested by Underwriters Laboratories and found to be a grease tight joint, which requires no welding unless specifically required by local code officials (Fig. A). **NOTE**: Fiber rope is installed at factory in the slip joint of the exhaust duct to eliminate potential vibration at collar. Check to insure this rope is included.

Slide the supply duct through the curb or low profile fan base and around the exhaust duct. Lower it to the canopy and slip it over the supply collar.

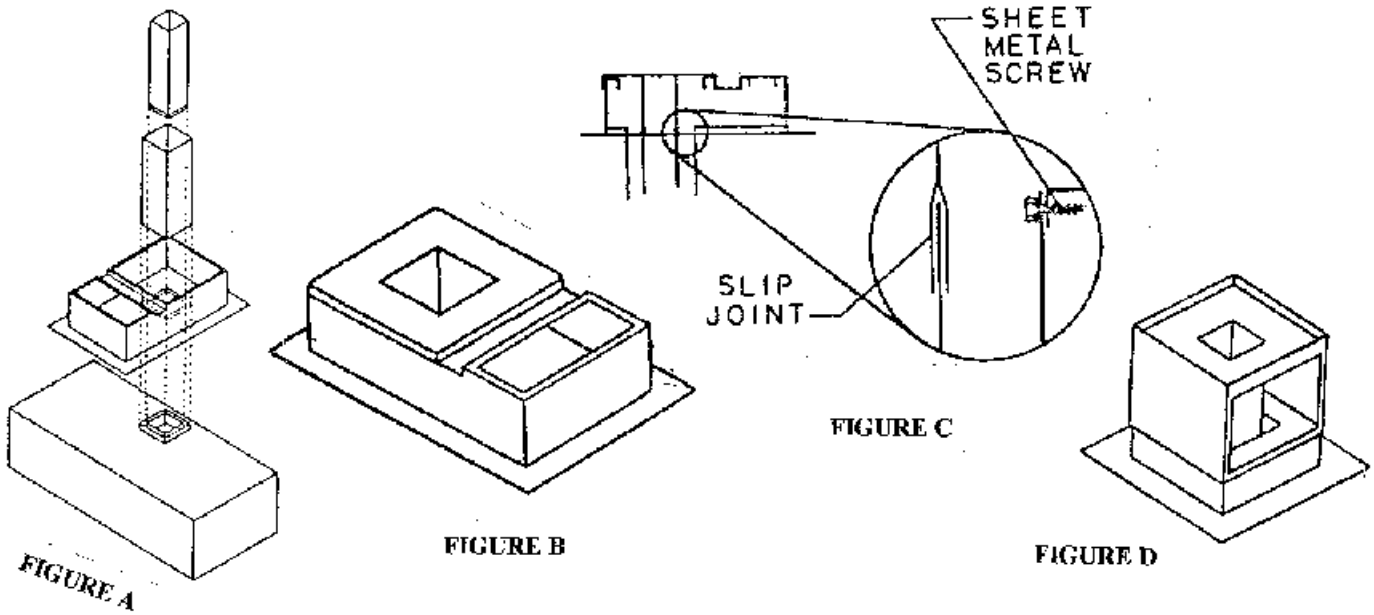


FIGURE A

FIGURE B

FIGURE C

FIGURE D

WHEN SYSTEM IS FURNISHED WITH A LOW PROFIEL FAN BASE (FIB. B)

Secure the top of the supply duct to the 1 x 1 angle bordering the large opening in the bottom of the low profile fan base. Sheet metal screws should be used for this procedure. Lower the low profile fan base exhaust duct into place sliding the slip joint over the duct in a similar manner to the other exhaust duct joints (Fig. C).

WHEN SYSTEM IS FURNISHED WITH A HEAT ECONOMIZER AND CURB (FIB. D)

After the hood and duct are place, the heat economizer should be set in place. The exhaust duct of the heat economizer slips together in a similar manner to other exhaust duct joints. The supply duct will fit into the large opening in the bottom of the heat economizer. The heat economizer is then fully lowered onto the curb. The supply duct should extend from one to three inches into the heat economizer. The exhaust duct should be engaged into the slip joint, but should carry no weight of the heat economizer.

Once all the duct is in place, sheet metal screws should be used to fasten the top of the supply duct to the heat economizer (Fig. E).

FOR ALL SYSTEMS

The supply duct may also be fastened at the hood, but it normally is not necessary. **DO NOT** fasten exhaust duct with screws or other devices that penetrates the duct. If the duct is in multiple sections, no screws are required at the mid joints, unless required by the local code officials. After the supply duct is fastened, the heat economizer (Fig. F) (when used) should then be fastened to the curb with sheet metal screws.

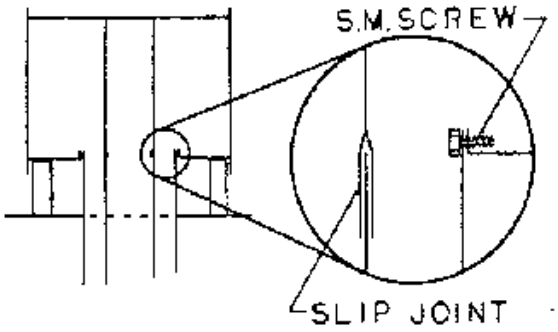
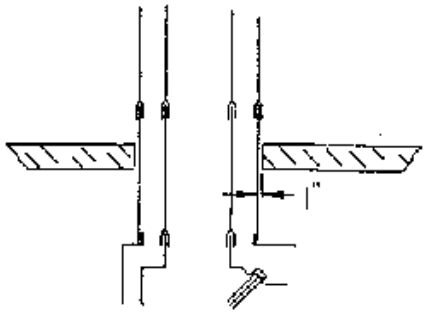
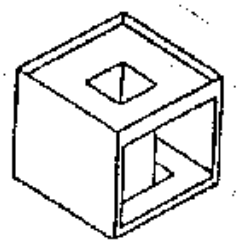


FIGURE E





*Care must be taken to assure a minimum of 1" clearance between all ductwork and any combustible materials on all U.L. listed duct. For non U.L. listed duct, check code requirements with local officials and install accordingly (Fig. G).

OFFSET DUCT SECTIONS

Offset duct sections come in many sizes and angles, so the best installation method will depend on the individual job.

"It is suggested that the installer or design engineer state the type or types of supports and methods of attachment to different types of structural members of the floor/ceiling or roof/ceiling structure. In any case, the support system shall not violate the integrity of the duct itself".

In many cases, the ductwork must be hung before the hood is installed. Several special considerations apply when installing offset duct.

1. If offset is more than two feet, a secondary support is required under the vertical riser (Fig. H).
2. If offset is followed by a second piece of duct, a secondary support is required under the vertical riser.
3. All horizontal runs of exhaust duct will require field welding. This weld must be continuous and liquid tight. Supply duct is bolted together (Fig. I).
4. Horizontal runs should be pitched a minimum of 1/8-1/4 inch per foot (1"/ft. for std. Mech. Code) toward the hood (Fig. J).
5. Long horizontal runs of duct should be supported at least every 8-10 feet.
6. U.L. Listed duct should be installed in accordance with the separate instructions provided.
7. All duct should be supported so that no excessive weight is applied to the top of the hood.

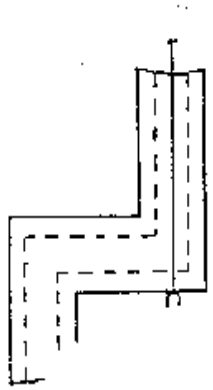


FIGURE H

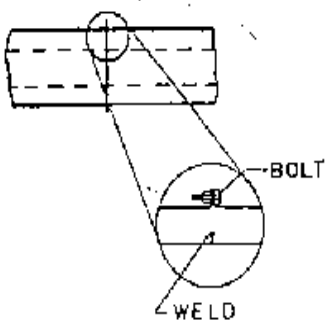


FIGURE I

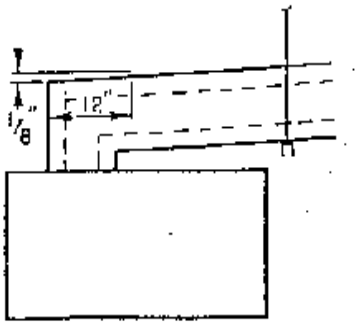


FIGURE J

MULTIPLE HOOD/DUCT SYSTEM

Duct systems to connect two hoods to one fan system are called “T” or “Y” ducts. Installation of these systems generally falls into similar considerations as offset ducts. The installer must again determine proper installation method. Listed below are some special considerations for “T” and “Y” duct systems.

1. If overall height from hood to roof is more than eight feet, the duct should have support so that no weight is on the hoods (Fig. K).
2. Vertical sections of duct above or below the “T” or “Y” are installed in a similar manner to straight duct.
3. In many systems the horizontal legs are not of equal length, so be sure the initial hanging of the duct is in the correct position.

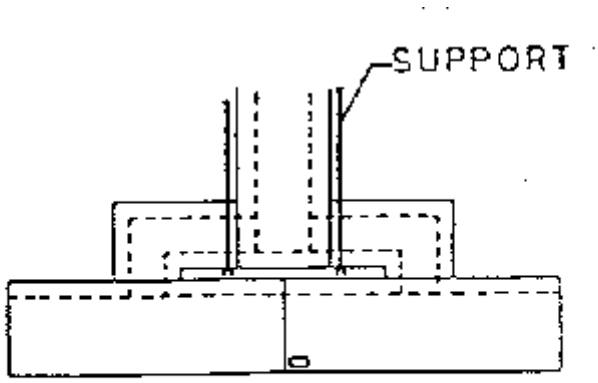


FIGURE K