

SILENCER APPLICATION SOLUTIONS

PROBLEM:

Limited silencer connection sizes

◆ Virtually all duct systems are designed having cross-sectional dimensions in increments of 2" for larger sizes and 1" for small sizes. However, many silencer manufacturers only provide limited silencer size ranges such as 6", 12", 15", 18" and 24" width increments. This forces the designer to either provide energy wasteful and costly duct size transitions from the system ductwork to the silencer and back again, or change the system ductwork to fit the silencer.

◆ Transitions installed on the inlet and outlet of a silencer result in less than ideal airflow conditions. Common transition configurations force the air to expand through the transition, contract through the silencer, expand at the exit of the silencer, then contract again through the transition (see diagram). This is not stream-lined flow. Aerodynamic system effects result which increase the silencer's catalogued pressure drop (See Silencer System Effects, pg. 4.19).

◆ Most air handling units have non-standard cross-sectional dimensions. When silencers with limited size ranges are installed, gaps remain around the silencer bank which must be "blanked-off." The smaller silencer bank size increases velocities through the silencer, increasing its pressure drop.

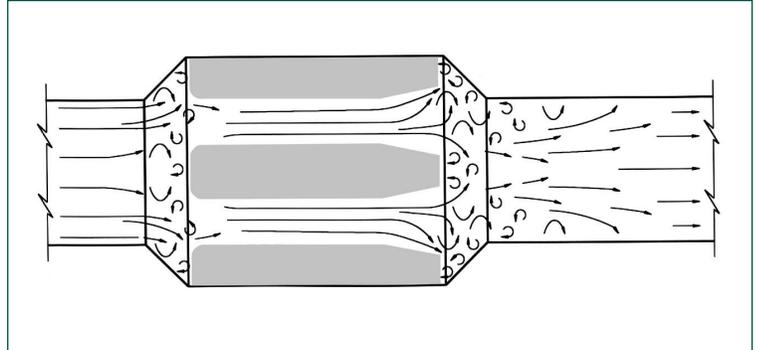
SOLUTION:

"Fit-the-duct" / "fit-the-AHU" silencers.

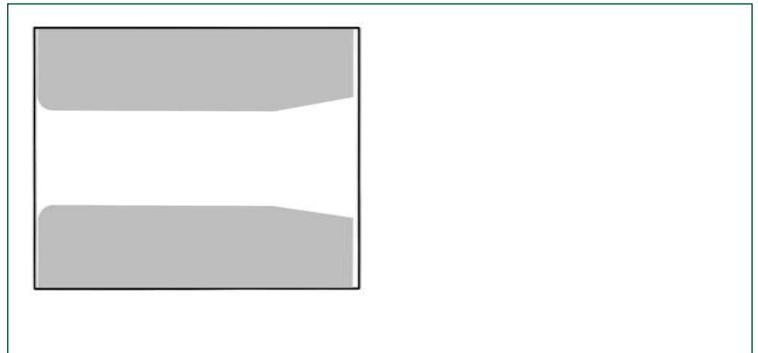
◆ Vibro-Acoustics provides, as a *standard* feature, silencers that fit the system ductwork or AHU cross-sectional dimensions at no additional cost. Silencer parts are not made from molds or dies. Vibro-Acoustics' sheet metal fabrication equipment is computerized to cut and bend any part size. Assembly techniques are independent of dimensions.

Benefits of "fit-the-duct" / "fit-the-AHU" silencers:

- ◆ eliminate aerodynamic system effects caused by transitions
- ◆ eliminate the need for the contractor to supply costly special fittings
- ◆ save the engineer design time to change duct sizes
- ◆ significantly reduce blank-off sections required in air handling units
- ◆ bottom line - reduces costs and saves energy



Silencer's catalogued pressure drop rating doubles due to aerodynamic system effects caused by the transitions.



Silencer performs at catalog rating. No increase in pressure drop.