

SILENCER SHEETS

DESCRIPTION

Vibro-Acoustics' AC silencers are aerodynamically and structurally designed to connect directly to an axial fan. They use acoustic grade glass fiber as the principle sound-absorbing mechanism. Perforated metal and a glass fiber cloth liner protect the acoustical media from erosion by the airflow.

An AC silencer installed on the inlet of an axial fan helps evenly accelerate and direct the air into the tips of the fan blades. A properly sized silencer centerbody helps reduce the pressure losses over the fan hub. A discharge AC silencer effectively decelerates the air to maximize the regain of static pressure. A properly sized centerbody helps reduce the turbulence and energy losses over the fan's motor.

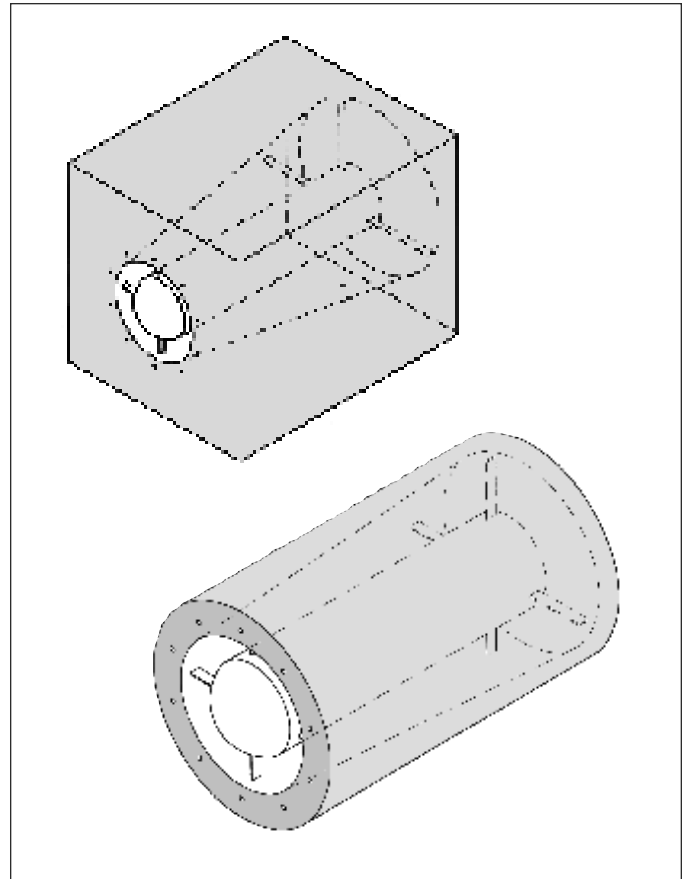
AC silencers are structurally designed to withstand the higher turbulent forces close to an axial fan.

APPLICATION

- ◆ to replace axial fan cone connections
- ◆ when there is not enough duct length to fit duct silencers (see SAS 9)
- ◆ when the noise needs to be contained at the source
- ◆ to help quiet noisy fan rooms
- ◆ when minimum energy consumption is required (see SAS 8)

FEATURES AND BENEFITS

- ◆ available in any connection size to fit the fan
- ◆ gauges compatible with the fan duty
- ◆ internally stiffened
- ◆ centerbody on inlet matched to fan hub to minimize pressure loss
- ◆ centerbody extends to motor on fan discharge to minimize airflow turbulence and maximize static pressure regain
- ◆ can be selected to suit the acoustic, space, or energy-cost requirements
- ◆ construction quality and aerodynamic design optimized to give reliable performance, best acoustics, lowest pressure drop and lowest overall cost



CAUTIONS / WHEN NOT TO USE AC SILENCERS

- ◆ when standard duct silencers can be effectively utilized
- ◆ silencer must be carefully designed to provide good flow conditions into and out of the fan. If the silencer is mismatched it can provoke the fan to make more noise and lose efficiency

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PERFORMANCE DATA / TESTING

See Performance Data section.

There is no current adequate rating method for AC silencers. They can be tested in a duct per ASTM E-477 methods. However, performance can vary substantially when directly connected to a fan. Fan performance can also change because of the fan/silencer interaction. Consult Vibro-Acoustics' application engineers for system specific performance. (1-800-565-8401)

Vibro-Acoustics' 4th generation aero-acoustic laboratory was the first laboratory to be NVLAP accredited for the ASTM E-477 silencer test code. NVLAP is administered by the U.S. Dept. of Commerce. See the Corporate/Laboratory Section.

SILENCER SELECTION AND LOCATION

For preliminary performance data see the Performance Data section. To optimize performance Vibro-Acoustics' AC Silencers need to be carefully selected. Call 1-800-565-8401 for custom selections by our application engineers.

STANDARD CONSTRUCTION FEATURES

- ◆ galvanized, lockformed casings for class I construction
- ◆ galvanized or prime painted mild steel stitchwelded and sealed casings for class II construction
- ◆ prime painted, mild steel continuously welded casings for class III construction
- ◆ 2" slip connection at each end
- ◆ centerbody "bullet" centered and supported in airstream by steel struts
- ◆ acoustic grade glass fiber under minimum 15% compression
- ◆ glass fiber cloth liner to protect acoustical media from erosion
- ◆ inlet silencer centerbodies sized to match fan hub or as required by fan geometry
- ◆ discharge silencers sized to match fan motor or as required by fan geometry
- ◆ perforated cone section transitions from fan connection size to duct connection size

Other construction features vary depending on size, type, capacity and pressure of fan. Consult Vibro-Acoustics application engineers for information.

SPECIAL CONSTRUCTION OPTIONS

- ◆ continuously welded casings
- ◆ special materials e.g. stainless steel, aluminum
- ◆ flanges
- ◆ brackets or legs for mounting and isolation
- ◆ vibration control
- ◆ access doors
- ◆ media protection: film liner
- ◆ birdscreen
- ◆ built-in transitions
- ◆ removable splitters
- ◆ flow measuring stations
- ◆ for details of above and more special options see Special Construction Options (pg. 3.33 to pg. 3.37).

TO SPECIFY

See example specification located in the Selection/Specification section.