Vibro-Acoustics

SS1

RD/CD

RECTANGULAR AND CIRCULAR

SILENCER SHEETS

DESCRIPTION

Vibro-Acoustics' RD and CD silencers use acoustic grade glass fiber as the principal sound-absorbing mechanism. Rectangular models utilize acoustical splitters, sometimes called baffles, for broad-band attenuation. Perforated metal protects the glass fiber from erosion by the airflow. Similarly circular models have acoustical center-bodies, sometimes referred to as pods. They also incorporate glass fiber external to the duct connection size.

Splitters in rectangular models vary in quantity and thickness, and air passages also vary in size. Circular models vary in centerbody diameter, air passage width and external body dimension. The splitters and centerbodies are aerodynamically shaped to minimize pressure drop.

MODEL NAMES

Vibro-Acoustics' silencer model names are coded to help identify their recommended application range.

Rectangular

RD - ___ - ___

SILENCER TYPE

VELOCITY RANGE
ULV, LV, MV, HV

FREQUENCY INDICATOR*
F1, F2, F3, F4, F5,
F6, F7, F8, F9

Circular

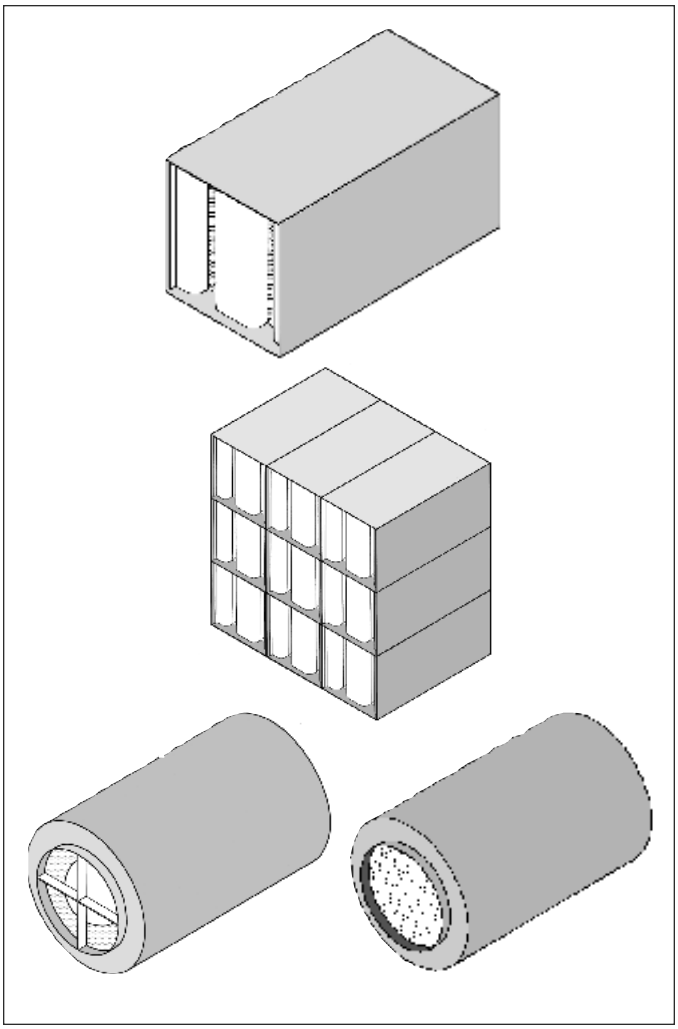
CD - ___ - ___

SILENCER TYPE

VELOCITY RANGE
LV, MV, HV, UHV

FREQUENCY INDICATOR*
F1, F2

*The lower the Frequency Indicator, the better the silencer's insertion loss in the low frequency range. The higher the Frequency Indicator, the better the silencer's insertion loss in the mid to high frequency ranges.



APPLICATION

- in supply, return and exhaust ductwork
- in fan plenums and air handling units (both supply and return)
- on cooling towers, air-cooled chillers, etc.
- on the receiver side of valves, dampers, terminal boxes, etc.
- economical substitution for acoustically lined duct (see SAS 10)

- normal recommended duct velocity range

RD-ULV	0-500 fpm		
RD-LV	0-750 fpm	CD-LV	0-1500 fpm
RD-MV	750-1250 fpm	CD-MV	1500-3000 fpm
RD-HV	1250-2000 fpm	CD-HV	3000-5000 fpm
		CD-UHV	5000-7000 fpm

For velocities in excess of the RD-HV range see the EX Model and RLP Silencers (SS8 and SS9).

Copyright© 1998 Vibro-Acoustics

SILENCER SHEETS

FEATURES AND BENEFITS

- ◆ available in any cross-sectional dimensions to "fit-the-duct"
- ◆ modular unit sizes to fit ducts and air handling units without using transitions or large blank-off sections
- ◆ standard rectangular silencer lengths available in 36, 60, 84 and 108"; custom lengths up to 144" at no cost premium
- ◆ 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
- ◆ splitters can be aligned vertically or horizontally to minimize extra pressure losses due to poor inlet or discharge flow conditions e.g. near fans, elbows, etc.

CAUTIONS / WHEN NOT TO USE RD AND CD SILENCERS

- ◆ when 3-5 equivalent duct diameters of straight, unobstructed duct are not available on both the silencer's inlet or discharge; consider using Elbow Silencers (SS5), Transitional Silencers (SS6) or Fan Silencers (SS10 and SS11)
- ◆ when velocities exceed 2000fpm for RD silencers; see RLP Silencers (SS9) or EX Silencers (SS8)
- ◆ when acoustical media in the airstream is of concern; see Film Lined Silencers (SS2) and No-Media Silencers (SS3)
- ◆ when break-out noise is of prime concern RD and CD silencers may be appropriate selections. They may require mass/stiffness added to their outer casing (see HTL Silencers (SS7) and refer to the Selection/Specification Section for proper silencer location)

PERFORMANCE DATA / TESTING

See Performance Data section.

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

Vibro-Acoustics offers multiple selection methods, from Vibro-Acoustics' Full-Service complete analysis to Do-It-Yourself quick selections. See the Selection/ Specification Section for details.

STANDARD CONSTRUCTION FEATURES

RD

- ◆ galvanized, lockformed casing constructed to SMACNA standards
- ◆ 1" slip connection at each end
- ◆ aerodynamically shaped, galvanized nose at inlet
- ◆ galvanized gap plates between splitters to ensure close dimensional tolerances at air passages
- ◆ perforated galvanized splitters complete with perforated diffuser tail sections
- ◆ splitters filled with acoustic grade glass fiber under minimum 15% compression

CD

- ◆ 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
- ◆ centerbodies have either spun aerodynamic noses or truncated nose cones
- ◆ centerbodies have perforated diffuser tail sections
- ◆ casing and centerbodies filled with acoustic grade glass fiber under minimum 15% compression

SPECIAL CONSTRUCTION OPTIONS

- ◆ heavier gauge casings and perforated metal
- ◆ continuously welded casings
- ◆ special materials e.g. stainless steel, aluminum
- ◆ flanges
- ◆ access doors
- ◆ media protection: glass fiber cloth, film liner
- ◆ high transmission loss (HTL) casings to prevent break-out/break-in noise
- ◆ 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/

Copyright© 1998 Vibro-Acoustics