Memtech Acoustics



COMMERCIAL DUCT SILENCERS

CROSSTALK SILENCERS

ACOUSTICAL LOUVERS

COMMERCIAL AIRFLOW ATTENUATION

MAKING NOISY AIRFLOW QUIET





Commercial

AIRFLOW ATTENUATION

COMMERCIAL AIRFLOW ATTENUATION REFERS TO A SERIES OF PRODUCTS THAT REDUCE NOISE CREATED BY VARIOUS TYPES OF HVAC EQUIPMENT. THE PRODUCT MIX CONSIST OF VENTILATION/ DUCT SILENCERS/ATTENUATORS/TRAPS AND FIXED-BLADE, ACOUSTIC LOUVERS WHICH CAN BE APPLIED TO INTAKE AND DISCHARGE MECHANICAL ROOM AND EQUIPMENT VENTS, ALONG SUPPLY AND RETURN DUCT PATHS OR OPEN RETURN, VENTILATION OPENINGS BETWEEN TWO ROOMS JUST TO NAME A FEW APPLICATIONS.

HVAC equipment noise is one of the major sources of interior noise in a building and contributes to the overall level of occupant satisfaction. It can also be a noise concern outside of the building. In fact, most municipalities have by-laws for sound levels outside of the building. The correct selection of acoustic products positively impacts the performance of the HVAC System and surrounding noise levels.

COMMON APPLICATIONS

- HVAC Duct Systems
- Fan Inlet & Discharge
- Air Handling Units
- Cooling Towers
- Panel Duct Systems
- Outside & Exhaust Air Plenums
- Generator / Mechanical Room Vents
- Barrier Wall and Enclosure Ventilation

PRODUCTS INCLUDE

COMMERCIAL DUCT SILENCERS

Commercial Duct Silencers control, reduce, or limit airborne noise in ducts and openings in buildings, enclosures, or equipment rooms. The manufacturer offers the design and engineering assistance to integrate our vast line of duct silencers / sound attenuators into a system solution. As a result, you may choose from a selection of “made-to-order”, engineered duct silencers that will satisfy the requirements of each application.

PRESSURIZED PLENUMS & EQUIPMENT CASINGS

The control of noise in modern buildings due to air-conditioning is a normal procedure in most projects. The manufacturer designs and manufactures a complete line of pressurized plenum modular enclosures for heating, ventilating and air-conditioning installations. Designed to be erected in the field, our panel enclosures provide thermal and optimum noise control through sound absorption and sound transmission loss.

ACOUSTIC LOUVERS

Fixed Blades Acoustic Louvers are economical, effective, and attractive. They are designed for maximum sound reduction when space is limited. They are aesthetically pleasing and available in various material types, noise reduction, pressure losses, and direct and no-direct line of sight.



COMMERCIAL DUCT SILENCERS

The manufacturer offers the design and engineering assistance to integrate our line of duct silencers/sound attenuators into a system solution. As a result, you may choose from a selection of "made-to-order" engineered duct silencers that will satisfy the requirements of each application.

Silencers limit airborne noise in ducts and openings in buildings, enclosures, or equipment rooms. Openings into or out of noisy environments are prime candidates for noise control measures. Integration of noise control measures, such as silencers, into the system design requires careful consideration of space constraints, fan selection, and aerodynamic pressure losses. Silencers are custom engineered to satisfy the requirements of each application.

All silencers are backed by independent testing in a NVLAP accredited laboratory in accordance with ASTM E477-06a and AMCA 1011-03.

THREE PERFORMANCE CHARACTERISTICS

1. **Dynamic insertion loss** is the difference in sound levels at a given point before and after the installation of noise reduction equipment while under flow. It is essentially a measure of the amount of noise that the silencer or other equipment is moving.
2. **Pressure drop** is the difference in total pressure between two points when measured upstream and downstream of a silencer.
3. **Generated noise** is created when air flows through a silencer air passage, a function of air expansion and air turbulence.

APPLICATIONS

- Duct System Path from the Air Handling Unit to the Receiving Room, both supply and return
- Fan Inlet and Discharge
- Mechanical Room Ventilation
- Air Handling Units (AHU / RTU)
- Cooling Towers
- Radiators / Condensers
- HVAC Duct Systems for Commercial, Institutional, and Industrial Buildings
- Cross-talk Applications (adjacent rooms, shared ventilation)



COMMERCIAL DUCT SILENCERS | MODELS & TYPES

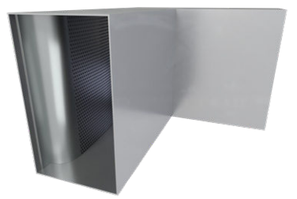
PRODUCTS

- KCRS Rectangular Straight Duct Silencers
- KCES Elbow Duct Silencers
- KCCS Circular Duct Silencers
- Custom Duct Silencers

RECTANGULAR / CIRCULAR DUCT SILENCER TYPES

- Elbow Dissipative (absorptive)
- Straight Dissipative (absorptive)
- Reactive (no media), Elbow and Straight
- Cross-Talk
- Axial Cone
- Transitional
- Custom Designs as Required

SELECTION TABLE FOR SILENCER CONFIGURATIONS

RECTANGULAR	ELBOW	CIRCULAR
		
BEST FOR: • Applications at most air velocities • Long duct runs or chases	**BEST FOR:** • Applications with air velocities >1,500 fpm • Space saving • Replacing single wallduct elbow to improve system effects	**BEST FOR:** • Applications with air velocities >2,000 fpm • Use with circular ductwork

EXTENDED CASINGS	ROUND ENDCAP	T-ELBOW
		
BEST FOR: • Applications requiring low pressure drop while maintaining maximum levels of dynamic insertion loss (DIL)	**BEST FOR:** • Applications with circular ductwork requiring a no media silencer, or VAV or FPAV connections	**BEST FOR:** • RTU's with bottom discharge (supply) intake (return)



CROSSTALK & VENT SHAFT DUCT SILENCERS

Crosstalk and Vent Shaft Duct Silencers solve room-to-room speech transmission problems by focusing on mid-tone octave band frequencies where most voices fall. Crosstalk silencers are installed where the need exists to transfer air from one enclosed area to anther while maintaining privacy by impeding the transmission of speech or noise. Crosstalk and Vent Shaft Duct Silencers permit circulation of air through walls and vent shafts without degrading the acoustic performance (STC rating) of common walls.

FEATURES

- Cost-effective, light-weight, and easy to install
- Acoustic performance equivalent STC values range from 35-55 (application and configuration dependent)
- Available in aluminum, galvanized, stainless steel 304 and stainless steel 316
- Construction thicknesses vary from 22 ga, 18 ga, and 16 ga
- Wide variety of standard and custom sizes available to fit your needs
- Available configurations:
  - L-shaped
  - Z-shaped
  - U-shaped
  - S-straight

CUSTOM SILENCERS FOR INDUSTRIAL & COMMERCIAL APPLICATIONS

Proprietary computer modeling software allows **quick** design and fabrication of the correct silencer for your **application.**

FEATURES

- Custom engineered solutions
- Standard of construction to meet application requirements
- Variety of silencer mating options
- Galvanized and stainless steel construction

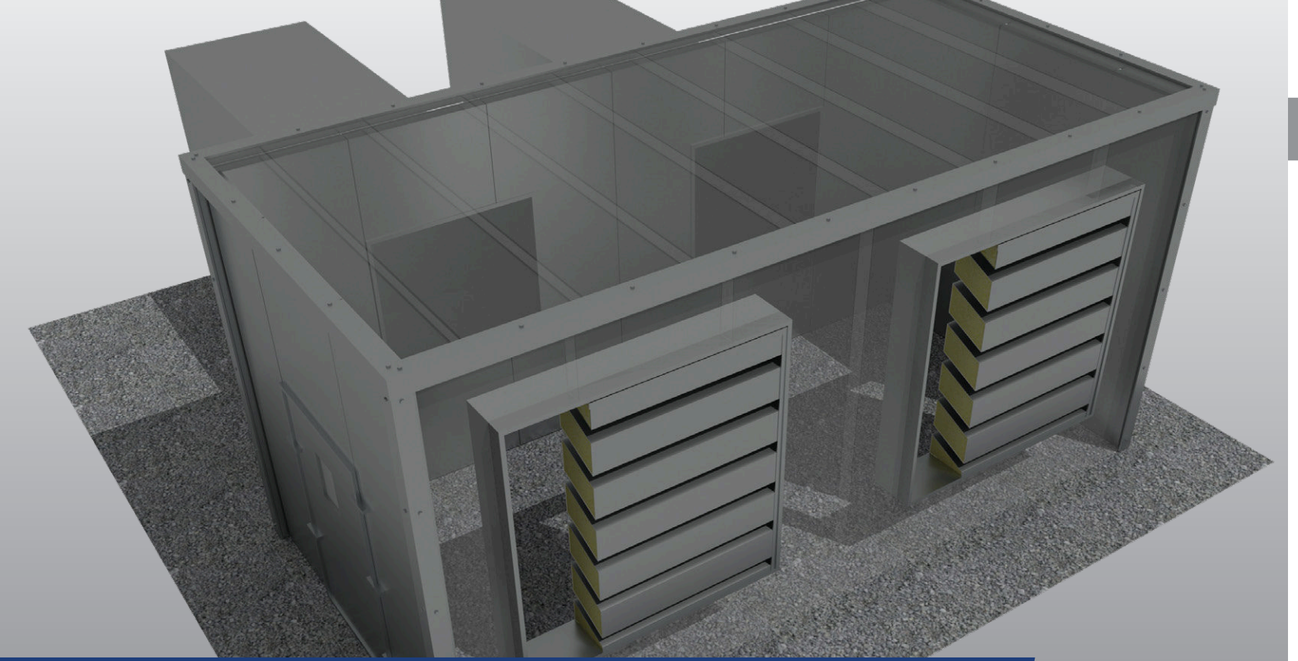
COMMON APPLICATIONS

- Industrial fans inlet or discharge
- Air pollution control equipment
- Building or enclosure ventilation / intake / outlet
- Low pressure vents

SILENCER OPTIONS & ACCESSORIES

- HTL Casing (18 ga to 10 ga)
- ENVIROGREEN™ Cotton Media and No Media options
- Fiberglass cloth and film lining (vapor barrier)
- Lock formed or welded casing construction
- Slip or flanged inlet and outlet end treatments
- Bird screen
- Rain hoods





PRESSURIZED PLENUMS & EQUIPMENT CASINGS

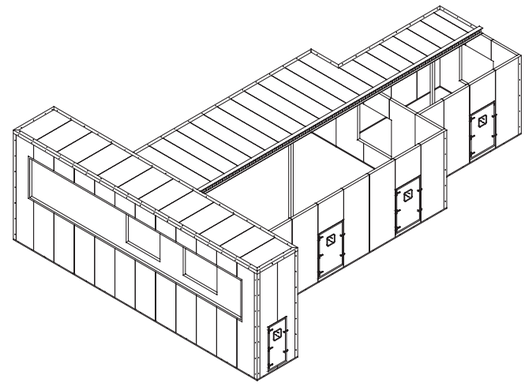
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The manufacturer offers complete design and engineering assistance including layout, as well as providing acoustical, structural, and ventilation requirements.

PRODUCTS OVERVIEW

- 2-, 4-, Custom 6-inch thick
- 18 and / or 16 Gage Solid / 22 Gage Perforated Skins
- Galvanized (G90) /Stainless 304/316 / Aluminum 3003 H14
- Tongue and Groove (TG) Panel Connections
- Access Doors with Airtight Seals
- Double-Glazed, Wire Reinforced Door Windows
- Removable Panel Sections
- Factory Located Duct Penetrations
- Plenums are Structurally Designed Based on the Internal Positive or Negative Operating Static Pressure with a Maximum L/240 Deflection
- AutoCAD Submittal and Piece-Marked Installation Drawings

APPLICATIONS

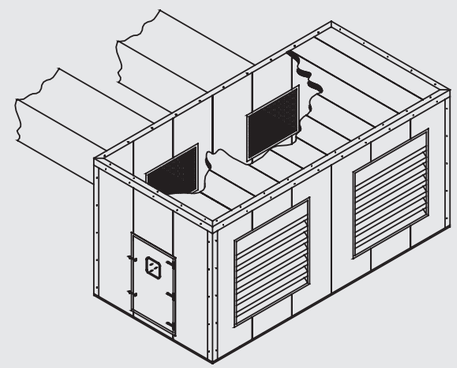


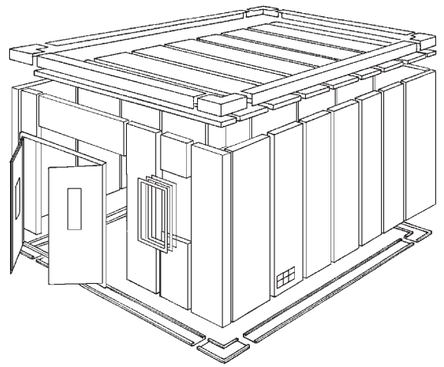
BUILT-UP AIR HANDLING UNITS

NOISEBLOCK™ modular panels are perfect when incorporating into a field assembled, built-up air handling unit (AHU). The manufacturer's engineers work closely with fan system engineers to design panel systems offering maximum acoustical and structural performance.

OUTSIDE AIR INTAKE / EXHAUST PLENUMS

NOISEBLOCK™ modular panels can be used for duct system plenums, where air and noise are collected and re-routed throughout the duct system. Besides offering sound absorption and transmission loss, they are an excellent source of introducing multiple power splits into a system offering increasing levels of natural attenuation. Inherently strong and easily designed to withstand up to +/- 10 in. WG, static pressures.





MECHANICAL / CONTROL ROOM

NOISEBLOCK™ modular panels are effective in creating mechanical equipment rooms, sometimes considered a room-within-a-room, where commercial applications require high levels of noise separation between occupied building spaces.



ACOUSTIC LOUVERS

Fixed **Blade,** Acoustic Louvers are **economical, effective,** and attractive solution for maximum sound reduction when space is **limited.** Used as part of the **intake** and exhaust air systems of **buildings, structures,** or **equipment,** acoustic louvers reduce noise produced by the **system's equipment.** Acoustic louvers have a relatively large surface area which compensates for their **lack** of **depth.** Models are available in varying **depths,** material **types,** percent open **area,** and blade configurations yielding various pressure loss and noise reduction **performance.**

APPLICATIONS

- Building Ventilation
- Generator Room Intake and Discharge Vents
- Barrier Wall Systems — Cross Ventilation
- Acoustic Enclosure Ventilation
- Pump Room Ventilation
- Barrier Walls
- Louvered Single and Double Doors

OPTIONS

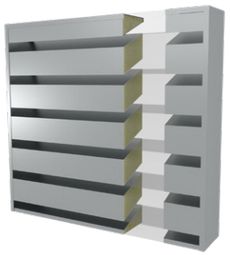
- Acoustic Louvers are available in **galvanized (type G90),** aluminum **3003-H14,** stainless steel 304 and **316.** Powder coat and baked-enamel finishes also available.
- Flanges
- Bird screen
- Structural design modeling assistance of large acoustic louver banks

PRODUCTS



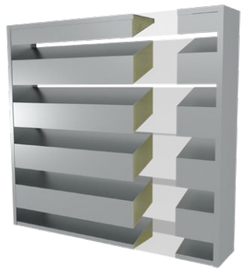
KCAC

- 30-40% open area
- 12", 16", or 24" thickness
- No line of sight (security)
- Maximum attenuation



KCPL

- 30-40% open area
- 6", 8", or 12" thickness
- Small vane spacing
- Low frequency noise control



KCAL

- 40-50% open area
- 6" or 12" thickness
- Low pressure drop
- Light weight
- Lowest cost



KCFL

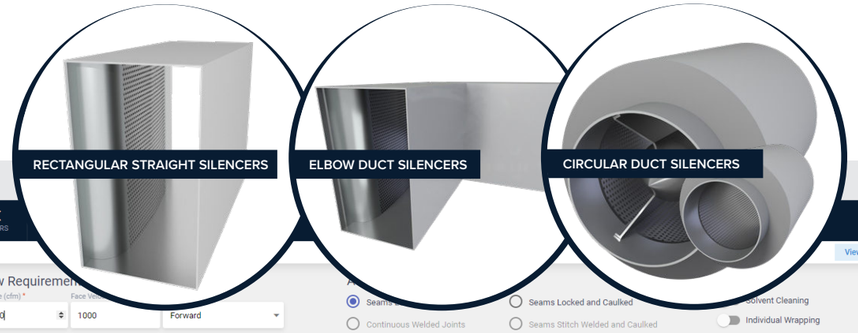
- 6", 8", or 12" thickness
- Lower pressure drop
- Airfoil blade shape reduces pressure loss
- Unique architectural aesthetics

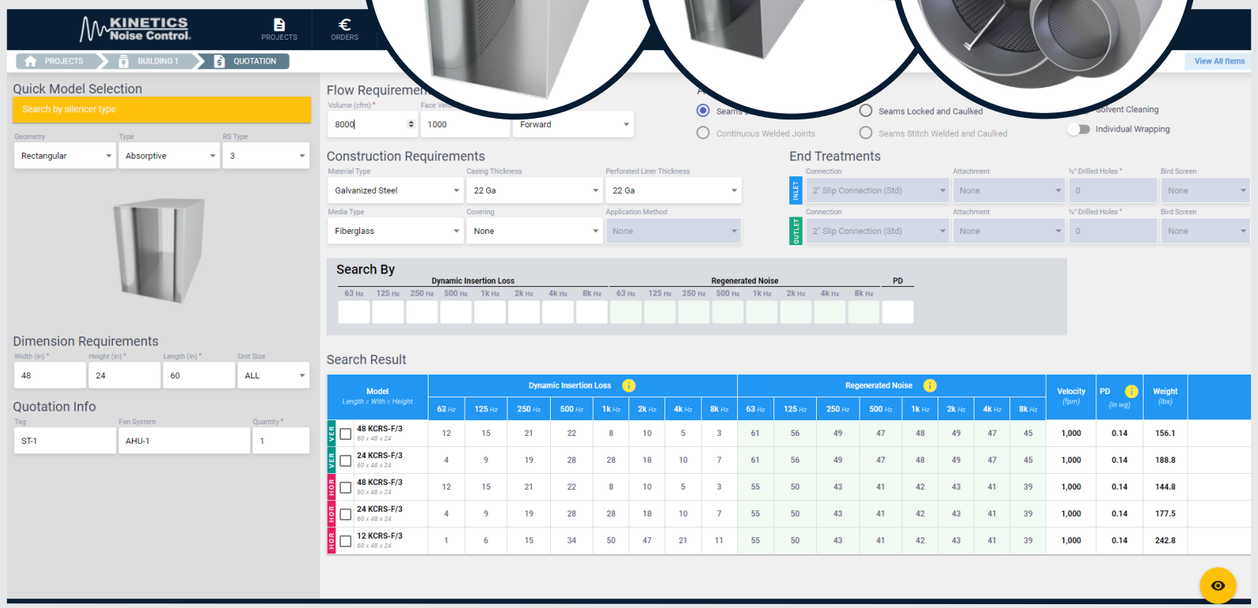
WEB-BASED SILENCER SELECTION AND ACOUSTIC DUCT SYSTEM ANALYSIS PROGRAMS

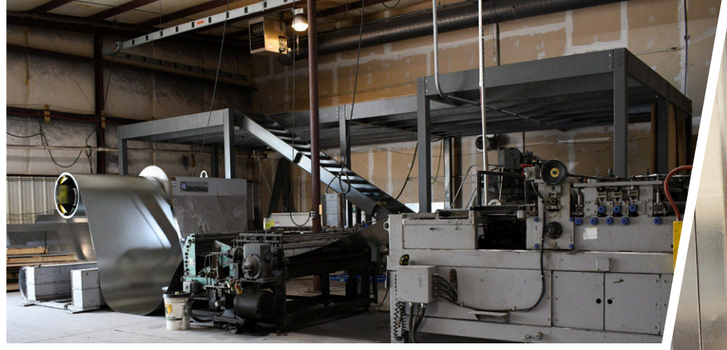
Silencer and acoustic louver performance data is obtained using our web-based, selection program. **For access contact Memtech Acoustics.**

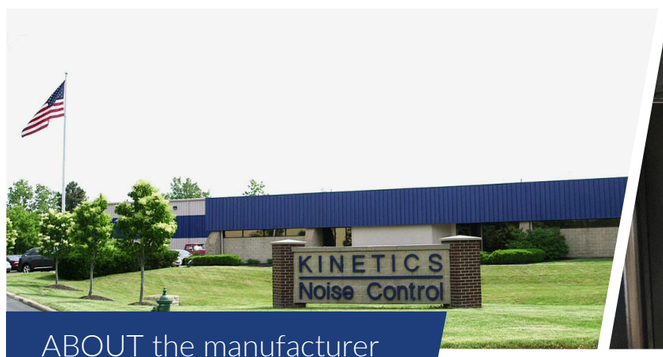
Representatives will assist in designing and analyzing your project using duct analysis program offering both in-duct acoustics and breakout noise analysis. Application incorporates up-to-date design analysis algorithms presented by ASHRAE. The program dramatically reduces engineering time when designing duct systems.

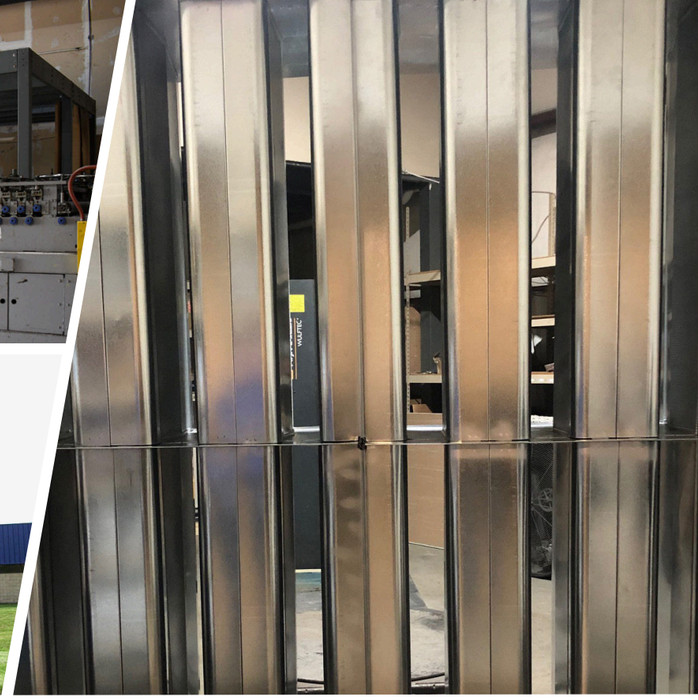
Program provides you with a complete, eight-octave band, acoustical analysis accounting for natural attenuation of duct and fittings, sound power splits, end reflection, insertion loss of insulated duct and fittings, system component generated noise and critical space / room attenuation. The program allows entry of fan sound power level data for any manufacturer's equipment. It is a true, "model-all" program. The program produces a complete acoustical report displaying whether your design meets the required critical space sound levels. If not, the program will automatically choose a silencer based on the height, width, length and pressure loss restrictions.











ABOUT the manufacturer

THE MANUFACTURER has extensive experience designing and manufacturing innovative products to control noise and vibration. Established in 1958 as industrial consultants focused on controlling sound and vibration, the manufacturer now produces the industry's largest selection of innovative products and solutions to control airborne noise, isolate structure-borne vibration, enhance room acoustics, create quiet spaces, and restrain non-structural building systems. The manufacturer features an experienced staff of professional engineers, customer support, and sales representatives worldwide who are ready to work with you.

ENGINEERING SOLUTIONS:

The manufacturer's Engineering team has combined technical design experience exceeding 300 years, which allows us to deliver our customers optimal solutions for sound and vibration control, room acoustics, and seismic isolation.

PRODUCT MANUFACTURER:

At its core, the manufacturer is a manufacturer of products to control noise, limit vibration, improve sound, and protect buildings from seismic events. Our American made products are manufactured with care and precision in our central Ohio and southern California plants.

EXCEPTIONAL PEOPLE:

Employs over 200 dedicated people in Ohio, California, Ontario, and Hong Kong. We partner with over 300 exceptional representatives in more than 20 countries to help us deliver acoustic, noise, seismic, and vibration solutions worldwide.

ONE SOURCE

COUNTLESS POSSIBILITIES

Memtech Acoustics

Tel: 248-289-1123
sales@memtechacoustics.com
www.memtechacoustics.com