

BAFFLE SILENCERS

Principle

Baffle silencers are contained within a circular or rectilinear housing in which one or more noise absorbent panels are mounted. Each panel is composed from modules filled with a noise absorbent material, suitably protected against fiber migration, supported by perforated plates.

The noisy gas is induced to pass over the perforated material so allowing the vibration energy of the noise to be converted by friction over the fibers into heat. The fibrous absorbent material selected is dependant upon the specification and application and the frequency range and noise levels to be treated determine the proportions of thickness of the absorbent material, the length of the panel and the distance from its neighbour.



Applications

Q.E. International B.V. baffle silencers are used in:

- Ventilation and air-handling systems
- Cyclone systems
- Compressor installations
- Steam venting
- Boiler steam discharge Fans and blowers
- Electric motors
- Internal combustion engines

The dynamic insertion loss (the measured difference between the ingoing noise levels at the full flow condition and the emerging noise levels under the same conditions) describe the silencer acoustic performance and is usually quoted in decibel per Octave Band.

Owing to flanking noise that is transmitted by structural vibrations practical values rarely exceed 50 dB.

Where noise attenuation greater than this is specified Q.E. International B.V. advice the placement of more than one silencer unit in a series configuration with suitable inter-unit isolation.

Custom- built units

Using its own in-house developed computer program that incorporates up-to-date laboratory and on-site measurements Q.E. International B.V. is able to provide designs for custom-built silencer units. The optimum design-acoustic, mechanical, application, is then, guaranteed.

Pressure-loss

In general, the pressure-loss over a silencer depends upon the geometry of the flow-path and the speed of the gas over the various surfaces. By careful design and stringent monitoring of the fabrication processes Q.E. International B.V. ensures that the supplied silencers have a minimum pressure-loss.

Material of construction

In the standard form the baffles are fabricated from galvanized steel plate and the absorbent material is a high-density mineral wool. Support of the mineral wool is by glass-fiber cloth and galvanized perforated plates.

For custom-built units the specification determines the materials selection so that elevated temperatures, corrosive media, and demands of hygiene can all be met by, for example, electrolytic zinc finish, and stainless steels. The absorbent material, too, is selected to meet the demands of extreme operating conditions and the migration protection arranged by using metallic gauzes.

Calculation

In order to be able to make the necessary calculations to size the plant item we need the following data:

- Medium (gas flowing)
- Quantity of gas
- Temperature of the gas upstream of and downstream of the silencer
- Gas pressure upstream of and downstream of the silencer
- Desired attenuation of noise levels
- Maximum permissible pressure loss through the dampener
- Connection sizes to the ducting
- The installation configuration

Q.E. International B.V. your partner in industrial noise suppression

In short, with more than 40 years of experience Q.E. International B.V. has demonstrated itself to its satisfied and trusted clientele to be the partner of choice in the solution of industrial noise problems. We are ready to advise you.

Please make contact with us – our advisors are ready to examine your noise and vibration problem and to determine the best way of overcoming it.

Contact

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