



Technology DRDO 0224: Dissipative Acoustic Silencer

The subject technology is a sound absorption device to moderate the sound effect of a machine. Noise reduction can be achieved by modification of source or path or receiver. Among these, modification of path is most practicable. These silencers attenuate noise in ducts through which gas/air flows by baffling process. The silencer works on the principle of sound absorption through its baffles. Each baffle consists of a perforated metallic sheet filled with sound absorbing material. Silencer attenuation takes place by converting dissipated sound energy into heat. The technique was employed in developing acoustic silencers for shipboard equipment, such as gas turbines and ventilation fans.

This technology is a noise attenuating device for air/gas handling systems. These silencers are made up of ducts filled with spaced baffles. A baffle is typically a perforated metallic casing filled with sound absorbing material. The device reduces the transmission of sound from incident end to the receiving end so that noise level at the desired location is brought within desired limits. By proper design of its parameters such as length and thickness of baffle, density of sound absorbing material, desired noise attenuation is achieved.

This technology was mainly intended for naval ship board applications. This can be used in air/gas handling systems where noise levels are predominant. Locating fans in seldom-visited areas of the ship is common practice, but engine rooms must be continuously monitored in military vessels. In the gas extraction industry the problem of noise has been addressed by locating the compressors in rural areas. However, as population spread increases, the noise from the compressors is becoming a larger concern.

Development Status

This system has been successfully designed for small and moderate size of air handling systems and has been running successfully for three years.

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