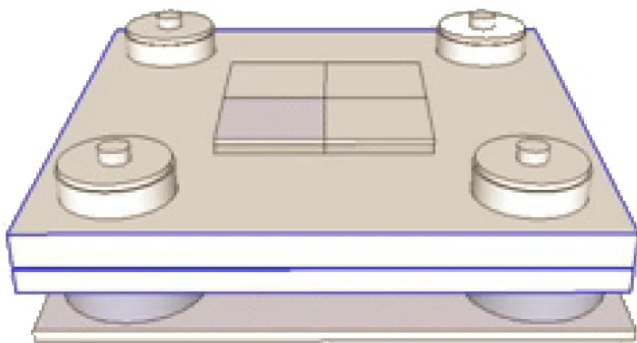




Tuned Mass Damper – High Frequency

A high frequency TMD is a additional damping device which is used in various mechanical applications. A High frequency TMD is primarily used for either reducing the radiation of audible resonant structure borne noise from larger structures having eigenfrequencies in the range of 15-100 Hz. Or to reduce transmission of structure noise from noise sources through stiff or elastic joints to a primary structure in a building or steel structures. Typical problems comes from engines, gensets, compressors etc. and are normally problem with transmission/radiation of noise in the range 50-60 Hz. In the highest frequency range with many natural frequencies present in the structure a traditional constrained layer (CLD) damping is often used. Often above 100 Hz



Product Characteristics

Product Specification

A Vibratec HFTMD is a customized product and is designed and manufactured according to the given specifications. In each case the TMD is designed to a tuning frequency F_t , which can be found when the natural frequencies of the main structure is known. Classical theory may be approached, however often there is a coupling to the acoustic, as the vibroacoustic parametes plays a major role. Finite element analysis may also be used to predict the overall global response with a HFTMD implemented in the FE model.

HFTMD mass: Range from 5 kg-

HFTMD frequency: Range from 15-100 Hz

HFTMD tuning range: $\pm 10\%$ of TMD frequency

Color and surface treatment: According to requirements

Installation type: According to requirement HFTMD's are often designed in co-operation with leading acoustic consultants or vibroacoustic specialists.

Fig 1. Principal design of tunable elastomer HFTMD

Example: 54 Hz absorber for a generator

During the structural design of a generator, it became obvious that it would require a number of TMD's in order to reduce the amplitude of the resonant modeshape. The generator is constructed in app. 30 mm thick steel plate, having the 1. modeshape in the raange of 52-58 Hz. As this is a 2D problem with rotational forces, a large no. of

radial TMD's were designed and manufactured with pre-compression in order to take care of the gravitation.



Contact information

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