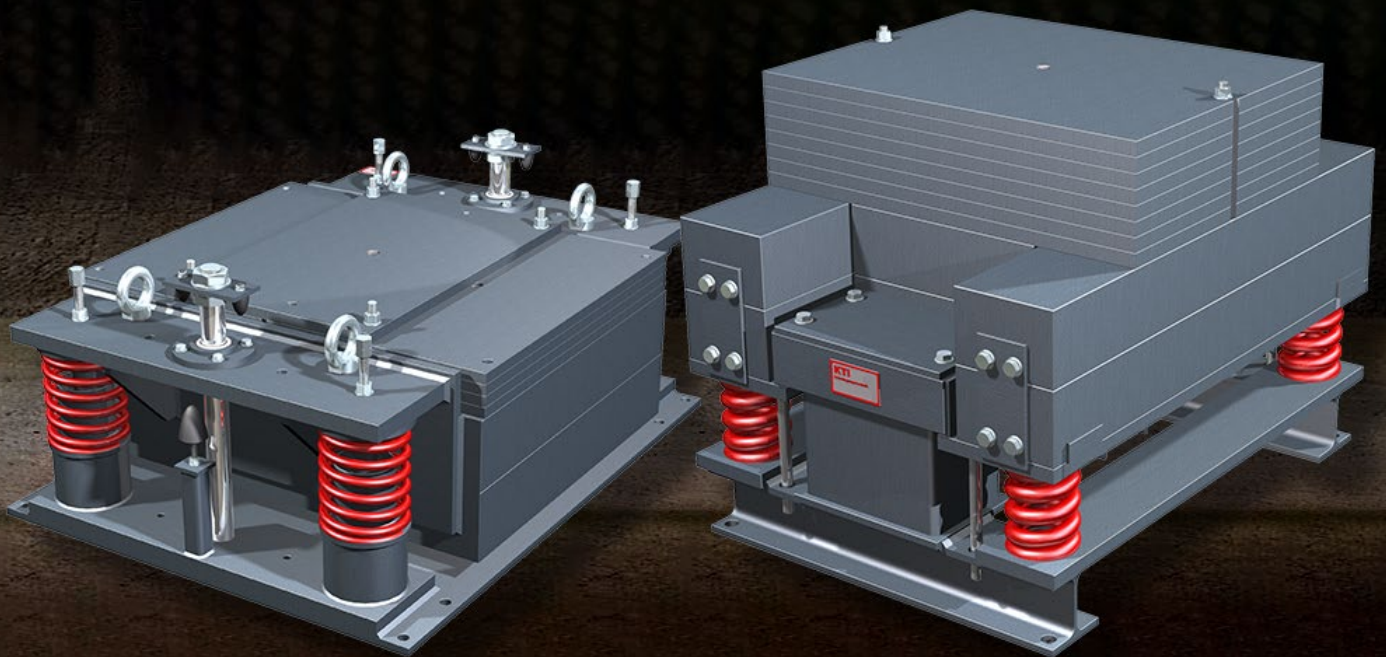




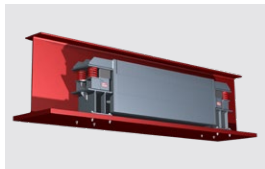
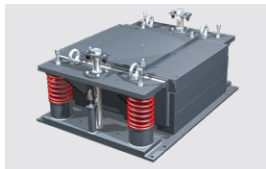
Vibration damping

# Tuned mass dampers – substantially reducing vibrations



## Tuned mass dampers

Developed by KTI-Schwingungstechnik GmbH



**mageba**



## Vibration damping

# Product, characteristics, service

### Principle

Structures are subjected to loading from many sources, such as wind, earthquakes and human influences, which can cause the entire structure or individual parts to vibrate. Such mechanical vibrations are undesirable as they can cause discomfort, damage or even structural failure.

Tuned mass dampers (TMD) are used, as passive damping systems, to reduce the natural frequencies of bridges, slabs, platforms and other structures. The optimum combination of mass, frequency and damping can substantially reduce structural vibrations.

### Characteristics

The modular design of the tuned mass damper supports compact, cost-effective designs:

- For TMD masses of up to 10 t
- For TMD tuning in the range 1.3 Hz to 10.0 Hz
- Wear-free dampers
- Temperature-stable damper fluids for indoor and outdoor use
- High-quality, polyester-coated steel springs
- Individual dimensioning based on calculable TMD functions

### Design

Each tuned mass damper consists of a mass, springs and individual dampers. The mass – in the form of layered steel plates – is mounted on the springs and equipped with viscous dampers.

Each TMD is designed according to the customer's specific needs, optimally adapted to the particular structure and the space available.

You thus receive an individual solution, tailored to meet your structure's unique requirements.

### Services

Design of the TMD depends on the structure's vibration parameters. We will be happy to measure your structure's natural frequency in advance of designing a suitable damping system.

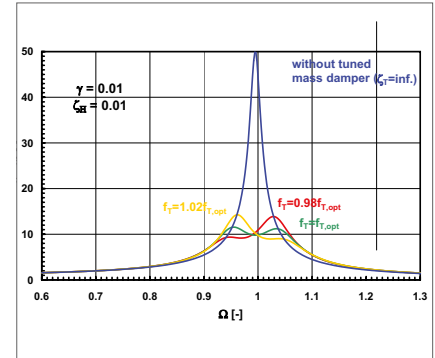
Installation of TMDs can generally be carried out by the main contractor, but we will be happy to support you with our many years of experience in installation of key structural components. Please contact us if we can be of assistance.

### Advantages

- Each TMD is designed to satisfy the customer's individual needs
- The modular design of the TMD allows compact, cost-effective designs
- We support you with vibration measurements and TMD installation

### Applications

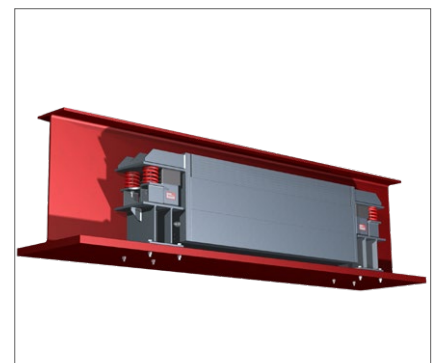
- (Pedestrian) bridges
- (Work) platforms
- Floor and roof slabs
- Structures whose natural frequencies must be reduced



Representation of a bridge's vibrations, with and without a tuned mass damper



Tuned mass damper with a natural frequency of 4.3 Hz and a mass of 3.5 t, installed on a bridge in Kiel, Germany



The vibration reduction system is optimally adapted to the structure's design. Here: Floor slab supported by steel beams

**The tuned mass damper is a product of KTJ Schwingungstechnik GmbH.**

## mageba structural bearings



Pot bearings



Deformation bearings



Spherical bearings

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