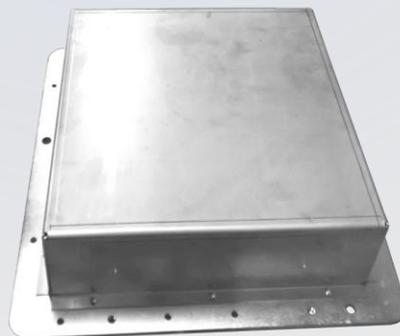
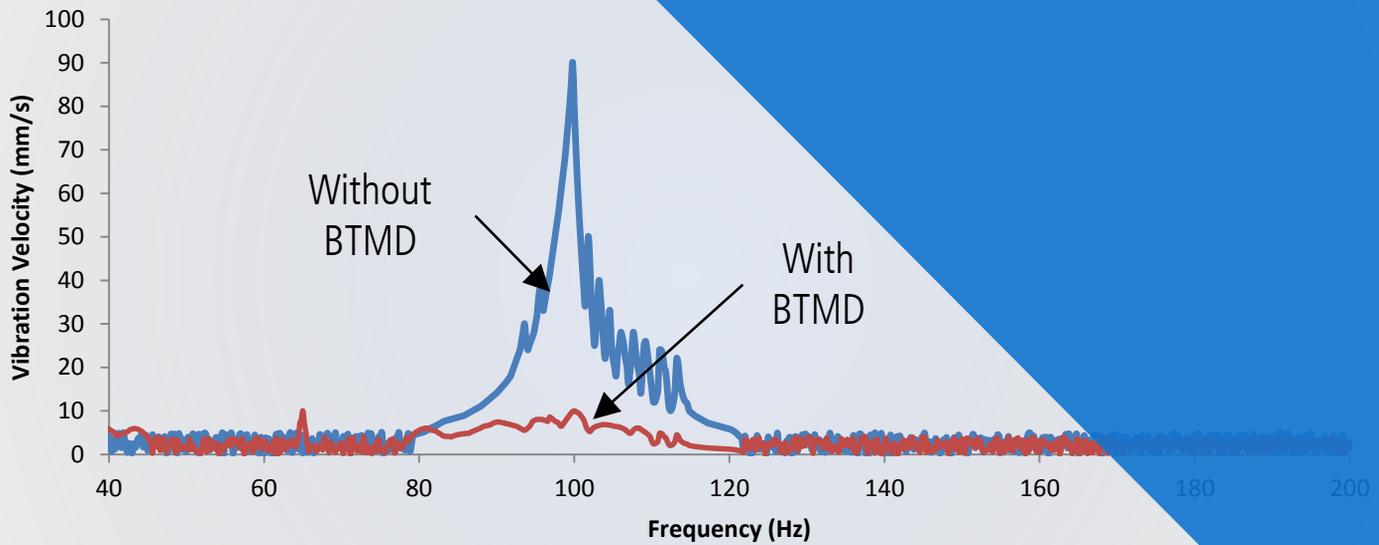




BTMD
BROADBAND
TUNED MASS DAMPERS
AMC MECANOCAUCHO®



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BROADBAND TUNED MASS DAMPERS

DESCRIPTION

This product is a novel broadband passive mass damper, used to reduce disturbing vibrations in a broad frequency band in all three directions.

It works without input energy or control, making it a low cost solution.

This proven technology reduces the vibration level at resonance by 50 to 90%, it is used in applications from 0,1kg to 100ton and frequencies from 4 to 1000Hz.

Compared with conventional Tuned Mass Dampers that reduce the vibration level only at specific frequency, AMC-MECANOCAUCHO® broadband tuned mass dampers reduce it at a broad band.

It allows the optimization of the application, as natural frequencies are not limitations of design, enabling lighter structures and money saving.

It is suitable to be installed both in new constructions as well as for retrofits.

Due to its robust construction, it is suitable for harsh environments, like arctic or marine applications.

The reduced vibration level achieved increases the durability of the equipment and it can be also used for noise reduction.

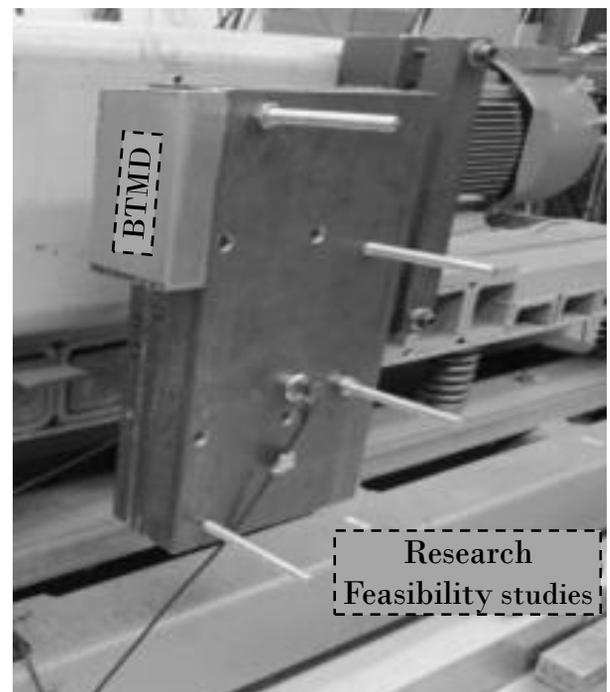
AMC-MECANOCAUCHO® broadband tuned mass damper reduces the vibrations with a moving mass of about 5% of the modal mass of the structure.

ADVANTAGES:

- Passive solution
- Simple and proven concept
- Broad frequency band
- Works in three directions
- Resistant to harsh environments
- Custom made
- Allows lighter structures
- Maintenance free

APPLICATIONS:

- Wind turbines
- Engines
- Circuit boards
- Generators
- Ships
- Land vehicles
- Machines in general



BROADBAND TUNED MASS DAMPERS

TECHNICAL CHARACTERISTICS

AMC-MECANOCAUCHO® broadband tuned mass damper is based on a high dampened non-linear mount assembled to a moving mass, which has the target of reducing the amplitude of vibrations in the structure.

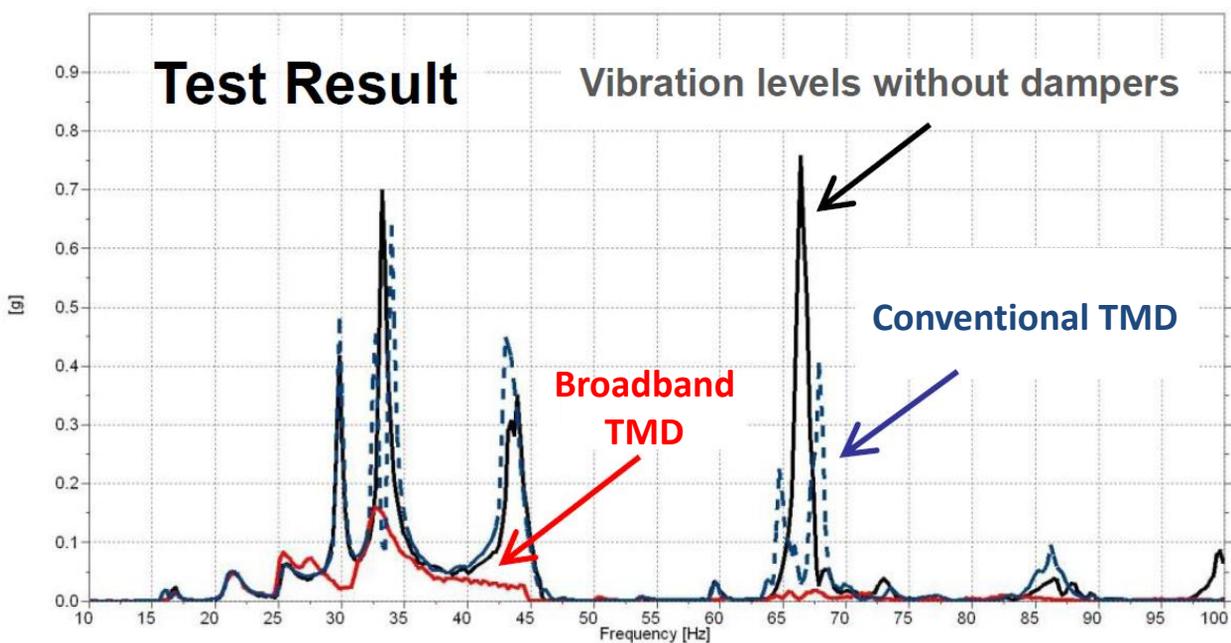
The nonlinearity of the mount enable the tuned mass damper to resonate out-of-phase with the structure in a broad frequency band, while the resulting vibration energy is dissipated to the environment as heat.

Its capacity to work in broad frequency band means that small changes in the behavior of the structure or the device will not lead to big changes in the behavior of the whole system, as it would happen with a conventional tuned mass damper.

MODELISATION PROCESS

The whole assembly is calculated and tested for the application.

- Troubleshooting
 - Installation in situ
- Design phase tool
 - Solution for resonance problem during design phase
 - Mathematical models available
- Optimization of the application
 - Natural frequencies are not limitations of design anymore
 - It enables lighter structures
 - Save money



DEMONSTRATION VIDEO

CASE STUDIES

Engine component

- Customer Challenge: Vibration level of the engine component over the limit.
- Solution: Broadband tuned mass damper was installed to the engine component.
- Benefit: Customer can run the engine without limitations.
- Modal mass: 2000kg
- Moving mass: 100kg

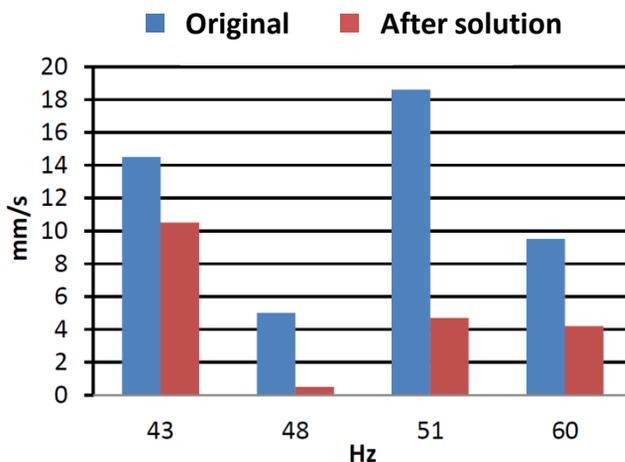
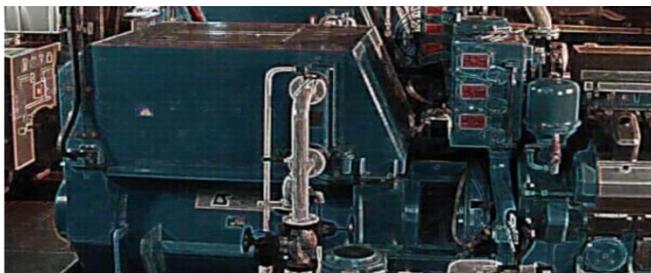


Overall Vibration RMS level

Original	After solution
134 mm/s	49 mm/s

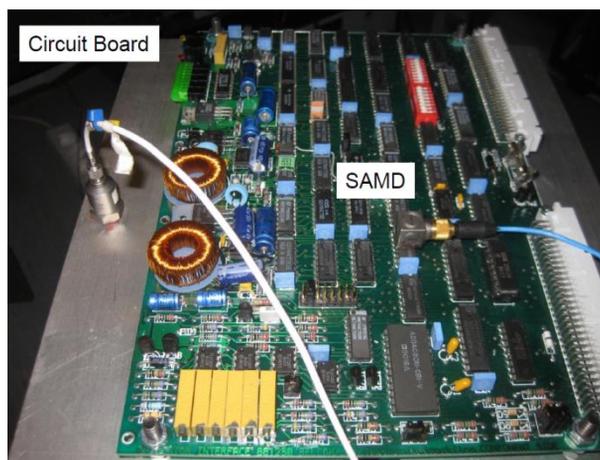
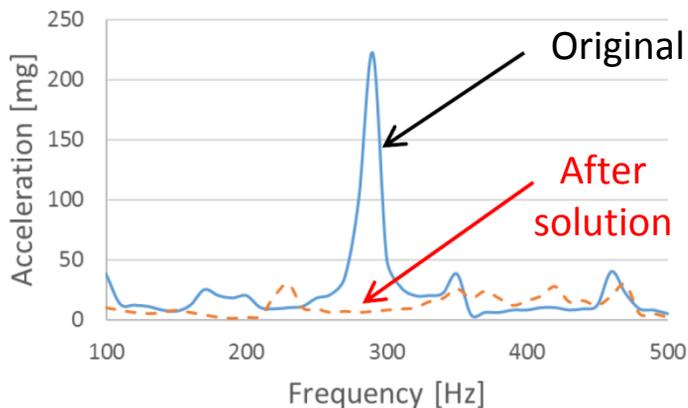
Power plant component

- Modal mass: 3000kg
- Moving mass: 150kg



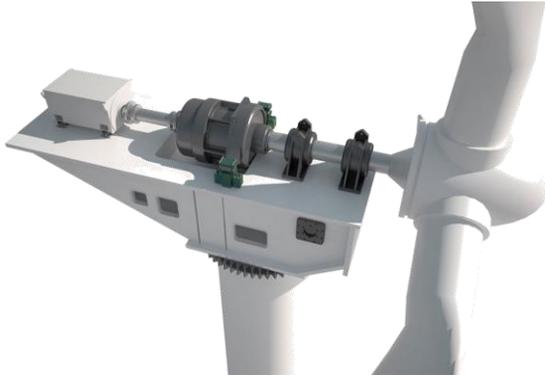
Circuit board

- Modal mass: <0,5kg
- Moving mass: <0,1kg



APPLICATIONS

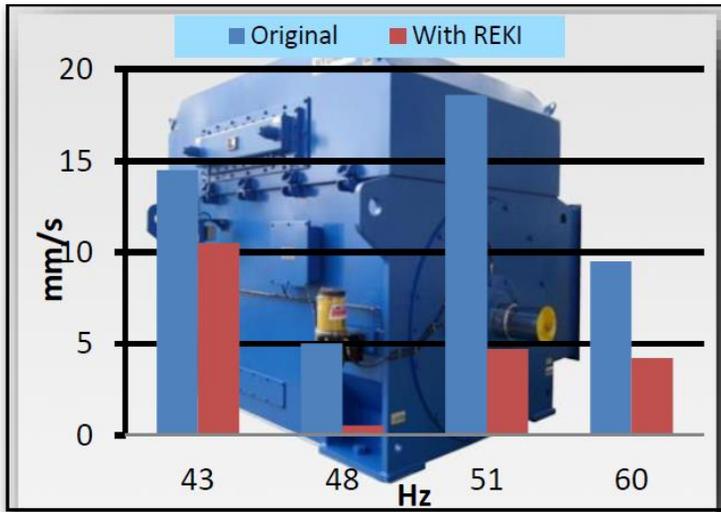
Wind turbines



Generators

■ Original ■ After solution

Large engines



Standard part in great ship
Lighter structure – advantage to customer



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