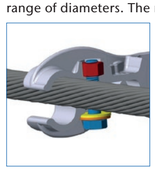
DAMP
SPACER DAMPER

PROTECTING CONDUCTORS
OF BUNDLED LINES

To mitigate aeolian vibrations and subspan oscillations in bundled conductor lines, spacer dampers are essential for dissipating wind energy. Aeolian vibration, affecting both single and bundled conductors, is typically managed with Stockbridge dampers and spacer dampers. Subspan oscillation, specific to conductor bundles, requires spacer dampers to prevent clashes and surface damage by reducing kinetic energy and bending amplitude.

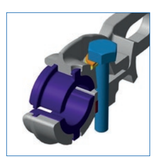
Types of clamps

Metal-to-metal bolted cantilever clamps to exactly accommodate the specified conductor size, not for a range of diameters. The nut is captive in the clamp.



Helical fixation clamp eliminates the need for screws. The connection is made with armor rods, a rubber liner in the clamp body prevents direct cable contact on metal clamp.

Rubber lined bolted cantilever clamps with an added rubber line placed between the clamp cap and body, ensuring the conductor does not directly contact them, providing extra safeguarding.



Nutcracker rubber lined with latch clamp can be tightened on conductor turning 90° a latch.

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MOTION CONTROL SYSTEMS

FOR THE BEST PROTECTION
AGAINST WIND INDUCED
CONDUCTOR MOVEMENT

MOSDORFER
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PROTECTING OVERHEAD LINES

AGAINST DAMAGES DUE TO
WIND INDUCED MOTIONS

CONTROL

STOCKBRIDGE DAMPERS

MOST EFFECTIVE
TYPE OF DAMPER

VIBRATION STUDIES

SOFTWARE SIMULATIONS
AND VIBRATION TEST SPANS

EXPERTISE

Ensuring sustainable and reliable transmission lines is essential for uninterrupted energy supply. Minimising the risk of damage and maintenance costs is key. Wind induced conductor oscillations pose a significant threat to fittings and conductors. Motion control hardware, such as that offered by Mosdorfer and Damp, provides state-of-the-art solutions to protect these assets, increase efficiency and reduce costs.

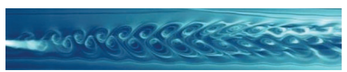
Aeolean Vibrations
On tensioned overhead lines, wind flow causes high-frequency vibrations with amplitudes in the magnitude of a conductor diameter.

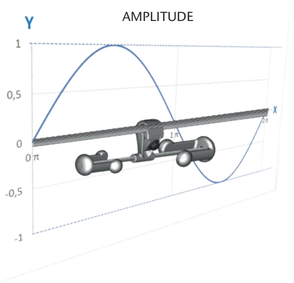
Aeolian vibrations occur at wind speeds of approximately 1-7m/s and cause vibration frequencies of 5-100Hz, depending on conductor diameter and tension. These vibrations cause internal conductor fatigue stresses at suspension and tension fittings, and compressive and bending loass at conductor support points.

The higher the tensile load, the greater the vibration. Line routes along flat terrain or across valleys require higher levels of protection, particularly where prevailing wind directions are perpendicular to the line route.

Fatigue stresses will damage the conductor, resulting in strand breakage and cable failure. Insulator string ball fittings and turnbuckles are particularly vulnerable due to their specific shapes.

Stockbridge dampers and spacer dampers protect your network from wind induced damage.





Ever since the first overhead lines were built, there have been problems with vibration. The Stockbridge vibration damper (named after its inventor) soon proved to be the most effective type of damper.

These dampers are a combined energy absorbing resonance type that damp all frequencies that occur as part of an energy balanced system. Mosdorfer dampers work particularly well where part of the wind energy is absorbed by the conductor and the remaining major part is absorbed by the damper.

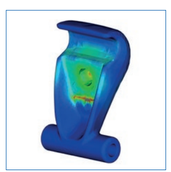
Types of Stockbridge damper
- Standard Stockbridge dampers have open weights cast onto the messenger cable.

- Conductor clamps are manufactured from aluminium, either forged or cast.

- Messenger wires are manufactured from high tensile hot dip galvanised steel or stainless steel wires, designed to provide good energy dissipation and damping properties.

- Screws and nuts for cast clamps are hot dip galvanised. Stainless steel screws are used for forged clamps.

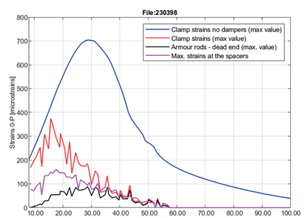
Combined energy absorbing type



Finite element calculation

For an energy balanced system, it is necessary to ensure that the dampers are 'tuned' and compatible with the conductor system. A vibration study considers the line route terrain, climatic conditions, conductor data (conductor data sheet), line tension, configuration, span lengths, system voltage and self-damping characteristics of the conductor if known.

Data from existing lines, suspension and tension arrangements are also required if available. This data enables Mosdorfer to carry out vibration studies, select the most suitable damper type and recommend both quantity and location within the span to protect the system.



In addition to software simulations, Mosdorfer also uses a vibration test span to test, optimise and verify damping systems. Dampers must be matched to the conductor in order to work efficiently and provide long term, safe protection against conductor vibration.

We select the most suitable damper type, recommend quantity and location within the span.

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