

Vibration damping the ELESA way

Vibrations are often an unwanted phenomenon and can adversely affect the machinery that generates them, the conditions in the surrounding environment, and people's health.

The world of mechanics already has effective solutions to prevent the excess amount of vibrations produced by machines with moving parts, such as motors, pumps or air treatment systems, from interfering negatively with their proper functioning or their activity.

However, given the magnitude of the undesirable effects of vibrations and the repercussions in terms of the loss of system efficiency, the scientific world continues to explore and develop new solutions and new "metamaterials" to stop or reduce the spread of vibrations in air or in solid bodies.

A group of researchers from the University "Politecnico di Torino", in collaboration with scholars from other European Universities, in a study recently published in the scientific journal "Matter" ([Optimized structures for vibration attenuation and sound control in nature: A review](#)) observed the phenomenon in nature, focusing on the solutions adopted by creatures such as woodpeckers, which pierce trunks, or certain moths, whose wings are structured so as not to be heard by bats. It emerges that many organisms have adapted to their living environment through complex evolutionary processes that have allowed them, over the course of millennia, to obtain advanced properties and functionalities, producing extremely efficient materials and structures that have optimised mechanical, thermal, and optical properties.

THE STRENGTH OF AN EVER-GROWING RANGE OF VIBRATION MOUNTS

ELESA offers an increasingly wide range of vibration mounts to which are added the recent **AVR rubber buffer plates** consisting of two zinc-plated steel plates glued onto both sides of a perforated NBR rubber vibration-damper body (hardnesses 30, 50, 55, 60 and 80 Shore A). The range also offers square plates with SBR rubber coating (AVR-Q) and rectangular plates (AVR-R).

The new **AVR rubber buffer plates** offer effective protection against vibrations and shocks where compressive resistance is required and are suitable for meeting the requirements of industrial air treatment systems (HVAC), for electrical panels and presses, possible sources of vibration that must be isolated as much as possible to prevent malfunctions and to protect the operator's health.



AVR-Q square rubber buffer plates



AVR-R rectangular rubber buffer plates

Press Box

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STANDARD MACHINE ELEMENTS WORLDWIDE



The following are also included in the Elessa range of vibration mounts:

- Rubber buffers in natural rubber NR, in combination with threaded inserts in zinc-plated steel or AISI 304 stainless steel in various shapes: cylindrical, conical, hourglass, bell-shaped. Silicone rubber (MVQ) vibration dampers in compliance with FDA (U.S. Food and Drug Administration), with the possibility of use in the food and medical industries. (various DVA, DVB, DVC, DVF, DVL series). Also available on request in different materials.
- Flange mounts with double-acting flange, in blue *painted* aluminum (AVG series).
- Metal cushions in AISI 304 stainless steel (AVF series).
- Wire rope isolators made entirely of AISI 316 stainless steel, consisting of two pairs of bars, joined together by a connecting cable with a helical winding - coil (AVC series).
- Spring mounts with body and non-slip coating in NBR rubber (AVM series).
- Vibration-damping levelling feet with bases, stems and damping element in different sizes and combinations of materials, suitable for loads up to 40,000 N to offer stability to heavy machinery even in the presence of strong vibrations.

The technical data sheets of the products, complete with drawings and tables with codes and dimensions, are available on our website elesa.com.



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