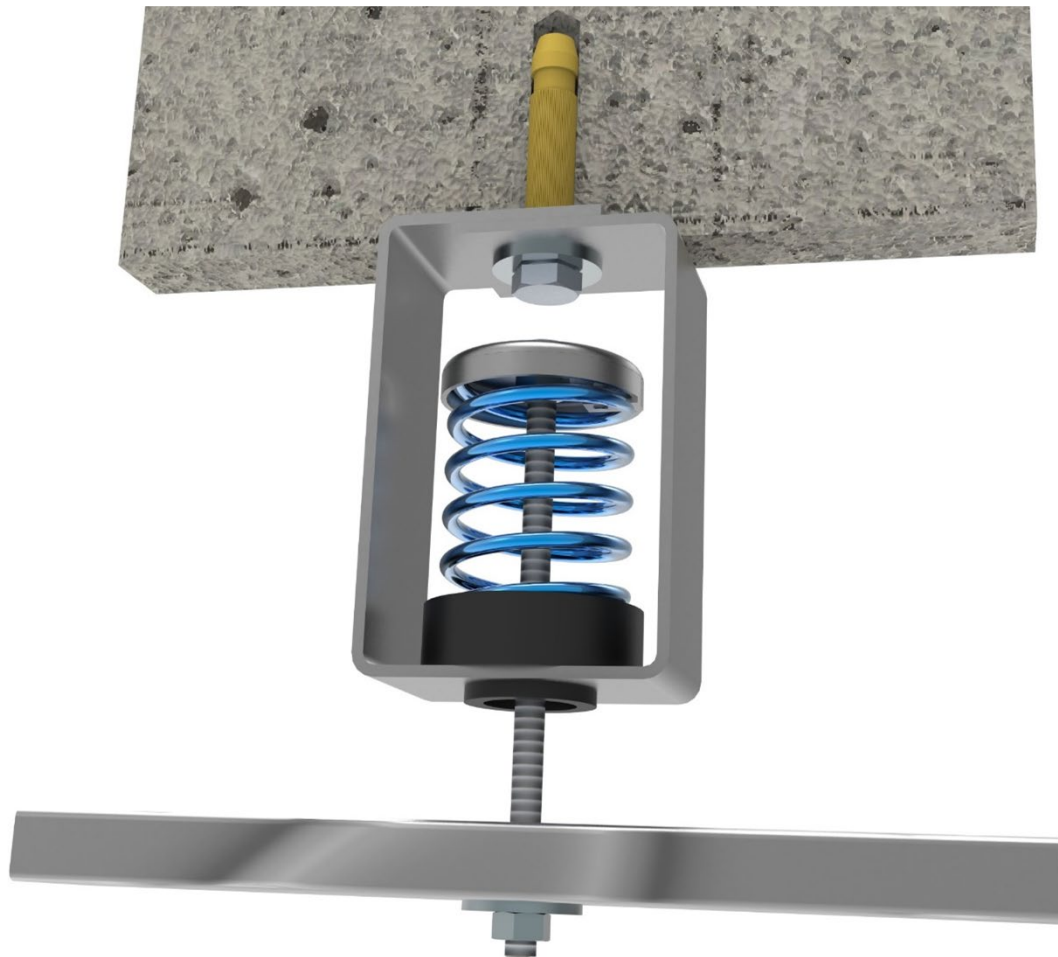


CORRECT INSTALLATION OF SPRING HANGERS TO OPTIMIZE ACOUSTIC INSULATION RESULTS



VT spring hanger from AMC-MECANOCAUCHO.

VT Spring mounts are often installed in industrial environments to isolate vibration of suspended machinery. Correct installation of these anti vibration mounts will optimize soundproofing results.



VT spring hangers from AMC-MECANOCAUCHO® are installed to reduce noise and vibration in industrial environments, typical applications include HVAC equipment, silencers, airducts, fans, compressors and even suspended ceilings.

Their architecture allows the connection of two components with an elastic element between them, this provides a low natural frequency to the suspended system.

From one side, this anti vibration mount is installed to the vibrating element and from the other to the structure or frame.

Each installation is different, and complexities of each work must be studied and measured. Spring hangers provide flexibility on the way that they can be installed. Below are shown 2 types of installation possibilities.

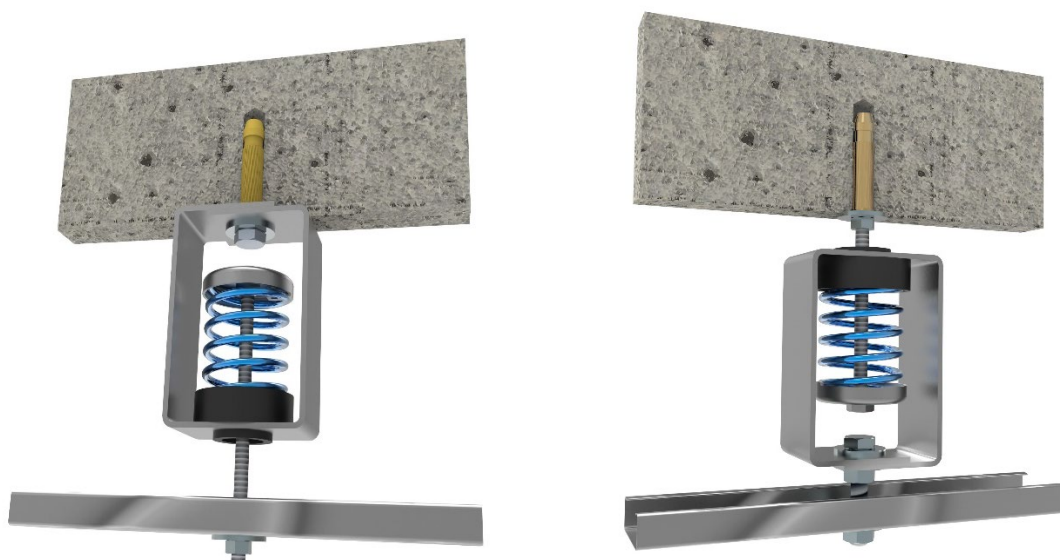


Fig 1. Vibration source fixed to the spring. Metal hanger frame installed to the structure.

Fig 2. Vibration source fixed to the metal hanger frame. Spring installed to the structure.

Both of installations are acceptable. Figure 1 installation will be preferable as the metal hanger frame is installed to the point where there is more mass. There is no possibility for a long stud to resonate.

Figure 2 is still acceptable as the stud is short and has a high stiffness, it is unlikely that the metal stud will interfere with the main disturbing frequencies of a machine (often 4 to 200Hz).



If it is unavoidable and long studs must be used there is a possibility that high frequencies could interfere with the length of the stud, in this case we would recommend filtering these frequencies using a Sylomer® pad as shown in the images below.

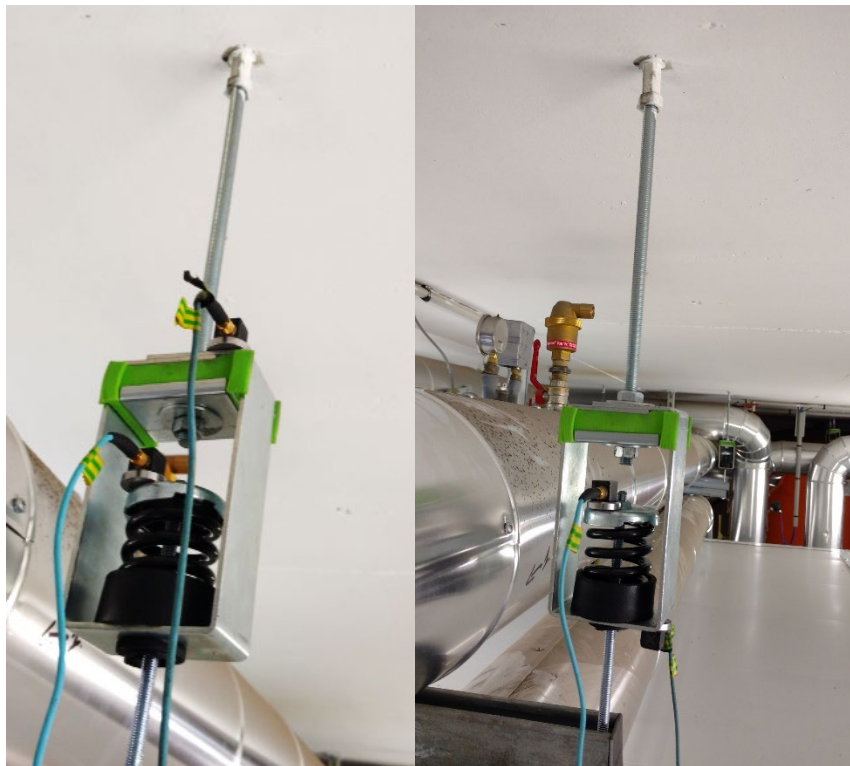


Fig 3. Accelerometers placed on SRS+Sylomer® acoustic hangers.

As part of its service to customers AMC-MECANOCAUCHO® supervises installations to ensure correct fitment, vibration measurements are also taken to verify the vibration isolation results. The process consists of installing accelerometers at different points of the installation to determine the vibration transmission.



CORRECT ALIGNEMENT OF STUDS

It is important to maintain the concentricity of the studs to avoid any metal to metal contact, and a resulting acoustic bridge.

The below image shows a correct installation of a VT spring hanger anti vibration mount.

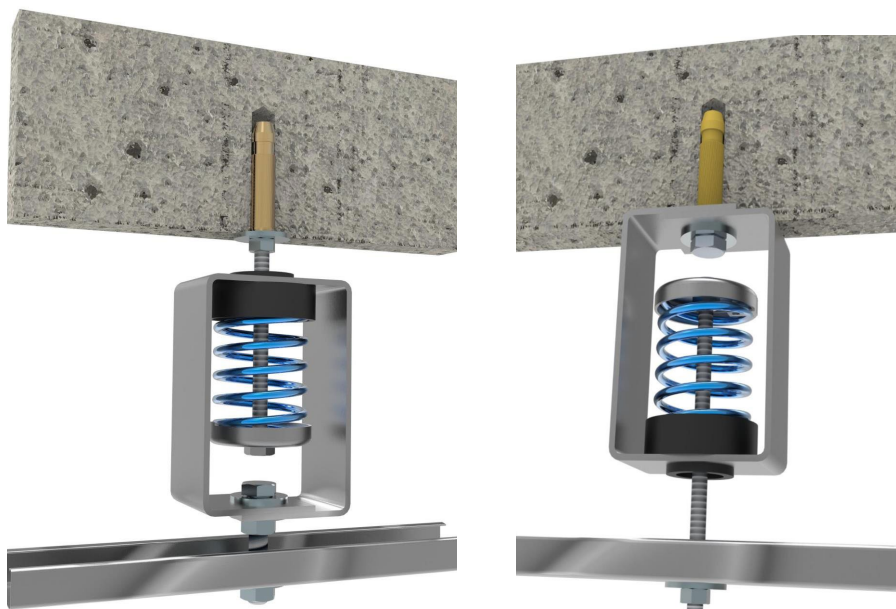


Fig 4. Correctly aligned studs on a VT hanger.

Although the [VT acoustic hanger](#) from Mecanocaucho incorporates a rubber cup to avoid a metal to metal contact, it is preferable that the stud has no contact with the rubber rim.

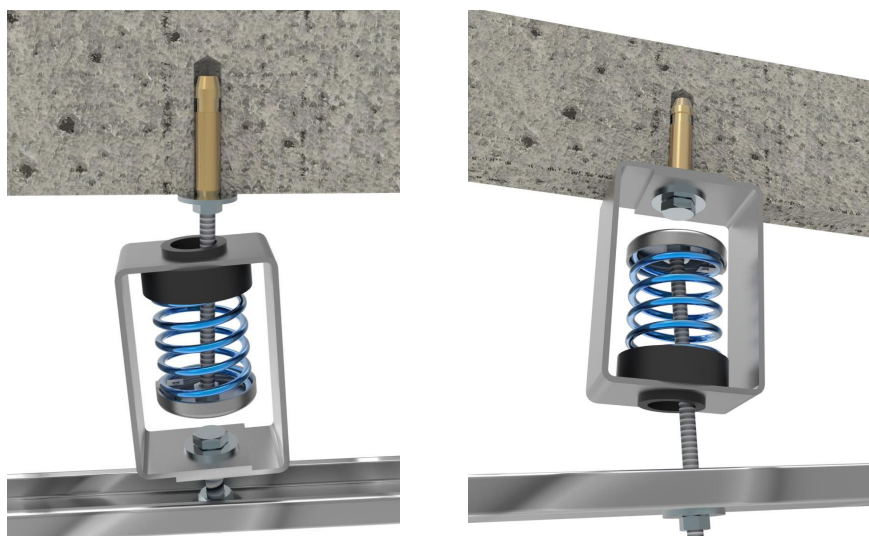


Fig 5. Misaligned studs lines should be avoided.



EQUALLY LOADED AND DEFLECTED

Ensure that [VT spring hangers](#) can be equally loaded and deflected, hangers with very uneven deflections will alter the natural frequency of the system and could reduce the performance of the suspended installation. Using the height adjusters can allow a correct levelling, the below image shows the preferred installation method.

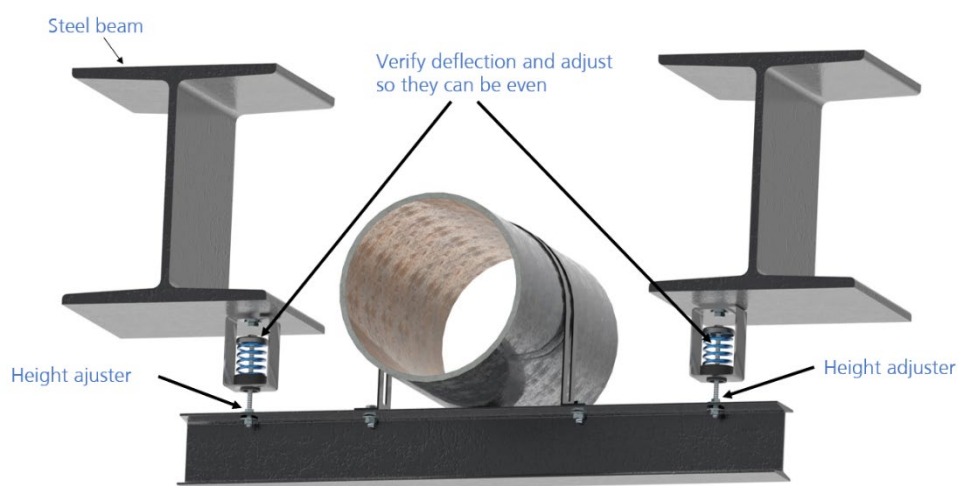


Fig 6: Duct suspension installing the metal frame to the Steel beam.

Installing the metal frame to the source of vibration is a less preferred installation method. Studs should be kept to the lowest dimension possible in order to avoid a frequency response of the stud itself.

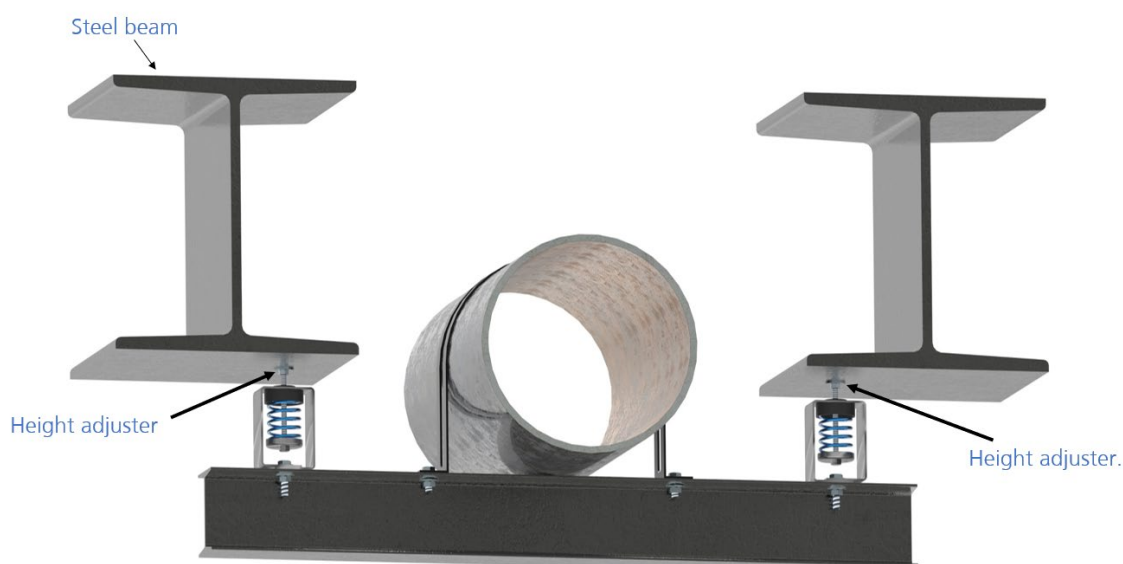


Fig 7. Installation of the metal frame to the source of vibration. (Less preferred installation method). Studs should be kept to the lowest dimension possible



CORRECTLY INSTALLED VT HANGERS ON INCLINED CEILINGS

Inclined ceilings are often a challenge for the installation. An option to achieve a robust installation is by means of using beam clamps and "U" shaped metal parts that are fixed to channels.



AMC MECANOCAUCHO manufactures metal parts to suit your installation needs so do not hesitate to [contact our technical department](#) if you require help on this topic.

