

SEÑOR TBF 120 R (Anti-Tilt)

HYBRID DAMPER WITH ANTI-TILT SYSTEM
DEVELOPED FOR HVAC EQUIPMENTS

This is a high-performance, unique, and updated HYBRID damper. It is manufactured with the most advanced technology and designed to eliminate all solid-borne noise.

The innovative **TBF/ANTI-TILT** model represents a significant advance in the field of safety, thanks to its patented central anti-tilt axle (P.T.201330255). This axle, built with high-quality stainless steel, ensures optimal axial compression of the helical steel spring, allowing for effective functionality in various conditions. The integration of rubber at each end of the axle not only adds an element of flexibility and impact absorption but also improves the connection to the FUSIÓN locking system, which is designed to prevent the HVAC unit from detaching due to external forces. This system is especially relevant in scenarios with severe weather, such as hurricane winds, severe storms, and minor seismic movements, making this damper an essential component for the outdoor installation of HVAC equipment.

In addition to the features already mentioned, it is important to highlight several distinctive aspects that make this product an outstanding choice in the market. One of these is its innovative fusion system, which allows for a seamless integration of its components, guaranteeing fluid and efficient operation. Furthermore, its anti-tilt axis has been meticulously designed to minimize the risk of unwanted oscillations, offering unparalleled stability during operation.

Corrosion protection is another key element, as the product incorporates a special coating that resists corrosion, a critical factor in environments where exposure to adverse conditions is constant. This coating becomes essential in coastal areas, where air salinity can lead to accelerated wear and even premature failure in unprotected materials.

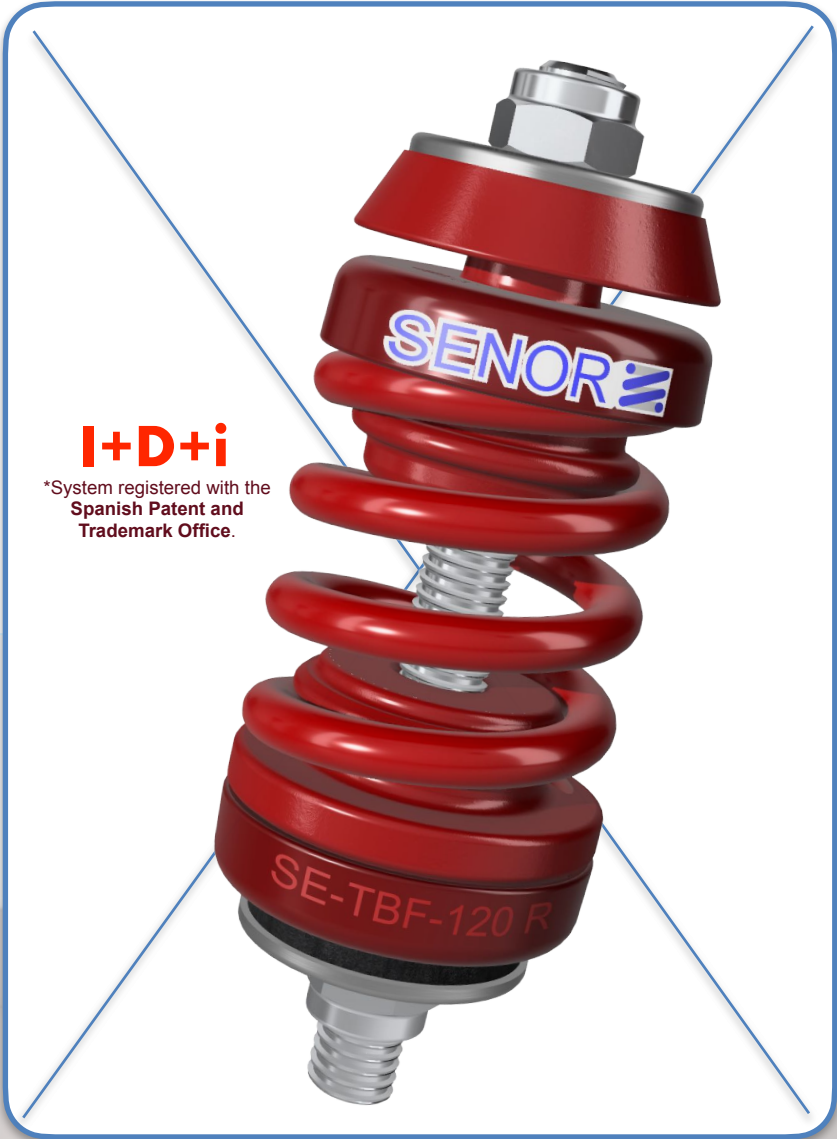
Likewise, each unit is accompanied by lock nuts and washers manufactured from A4-grade stainless steel (highest quality). This type of steel is renowned for its high resistance to corrosion, making it ideal for applications in extreme environments, ensuring a long service life and maintaining the integrity of the system.

In summary, the **TBF/ANTI-TILT** is not only positioned as a leader in terms of safety and durability within the HVAC industry, but it also offers a guarantee of exceptional performance against the challenges presented by the outdoor environment, making it a reliable choice for those seeking easy and efficient solutions

Preview in Augmented Reality



Scan the QR code to open this 3D Model on your iOS or Android device.



I+D+i

*System registered with the Spanish Patent and Trademark Office.

REF.	COLOUR	APPLICATION FIELD	LOAD (Kg) MIN-MAX	METRIC MIN-MAX
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SE-TBF-120 R



Cooling

60 - 120

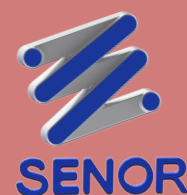
8

DIAMETER
ANTI-TILT AXLE

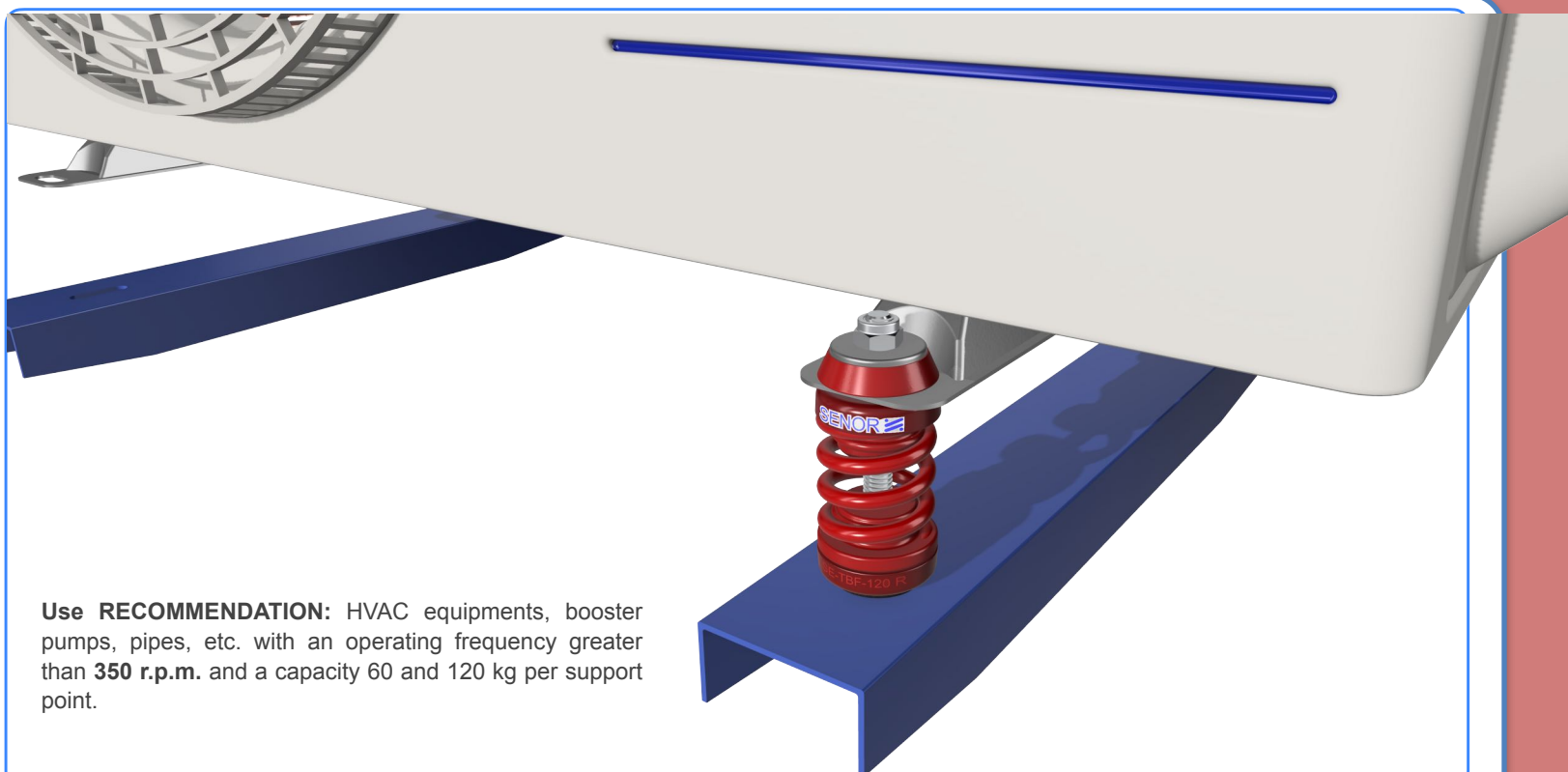


M8

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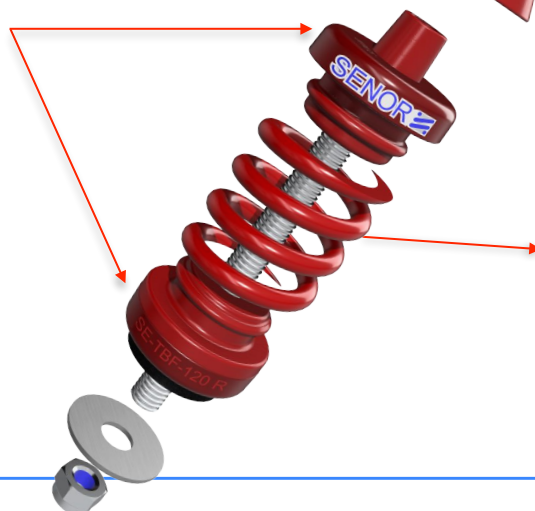
SENOR Products
Split DOMESTIC



Use RECOMMENDATION: HVAC equipments, booster pumps, pipes, etc. with an operating frequency greater than **350 r.p.m.** and a capacity 60 and 120 kg per support point.

- Polymer: Manufactured by **KRAIBURG-TPE** for SENOR according to standard UNE-EN ISO 10846-1:2009. Hardness 60° Shore A.

✓ Resonance frequency: 7-15Hz



Hybrid System: This innovative system is achieved by fusing a cutting-edge polymer with a helical steel coil, creating a solid support structure. This combination maximizes efficiency and strength, allowing for flexibility in its application. It is ideal for industries that require lightweight, robust, safe, and acoustically unbeatable products.

- **Helical Spring:** Manufactured with steel wire according to standard **DIN 2095-UNE EN 10270** with an anti-rust finish and a metallic red epoxy coating. Stiffness (**105,7 KN/m**)

✓ Resonance frequency: 3-7Hz

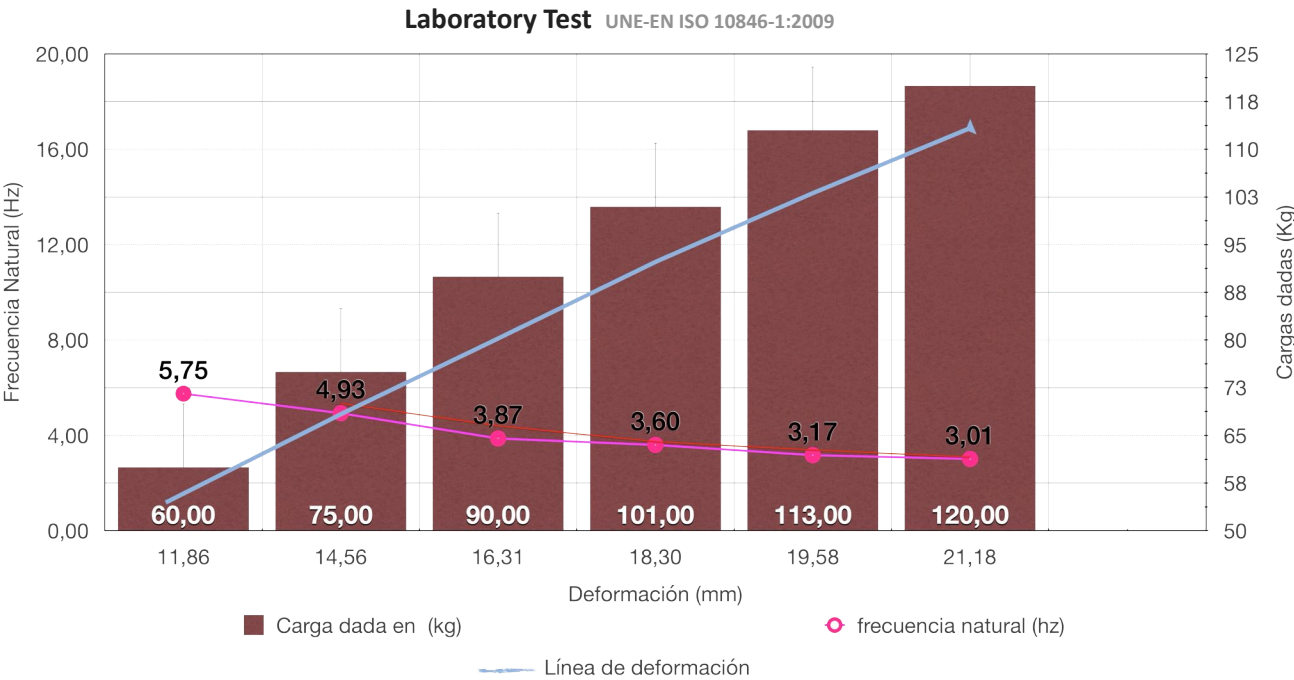
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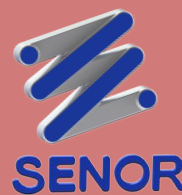
Dynamic Behaviour and Axial Deformation

Steel helical springs exhibit dynamic stiffness equivalent to their static stiffness, making them ideal for applications that demand predictable mechanical properties. In contrast, viscoelastic materials exhibit more complex behavior. The dynamic stiffness of these materials never equals their static stiffness, as they absorb and dissipate energy, adapting to the frequency and magnitude of vibrations. To fully understand this phenomenon, the dynamic behavior of viscoelastic materials cannot be determined through theoretical calculations alone; it requires specific laboratory testing to ensure accurate data for industrial applications.

LOAD (Kg)	DEFORMATION (mm)	RESONANCE FREQUENCY (Hz)	SWEEP (Hz)	SWEEP (Hz)	% SOUNDPROOFING 20HZ	% SOUNDPROOFING 50HZ
60	11,86	5,75	20	50	90,99	98,66
75	14,56	4,93			93,53	99,02
90	16,31	3,87			96,11	99,40
101	18,30	3,60			96,65	99,48
113	19,58	3,17			97,42	99,60
120	21,18	3,01			97,68	99,64



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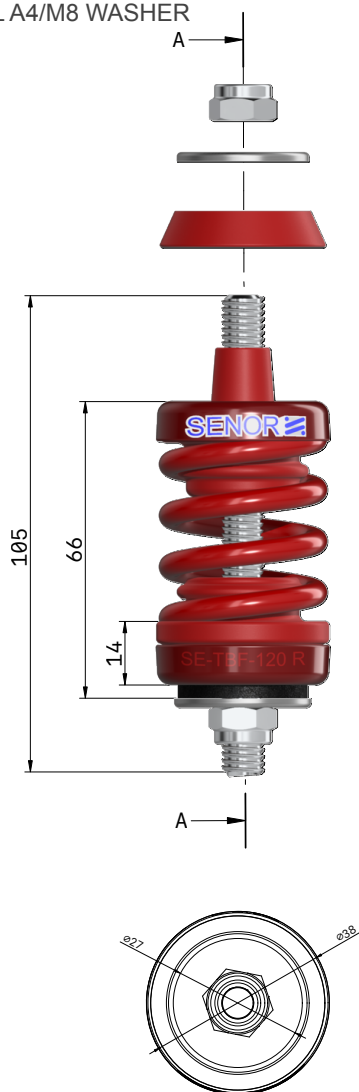
SENROR Products
Split DOMESTIC

Dimensions

You'll be surprised by its performance! It's an ideal damper for supporting HVAC equipment. Say **NO** to noise.

MATERIALS:

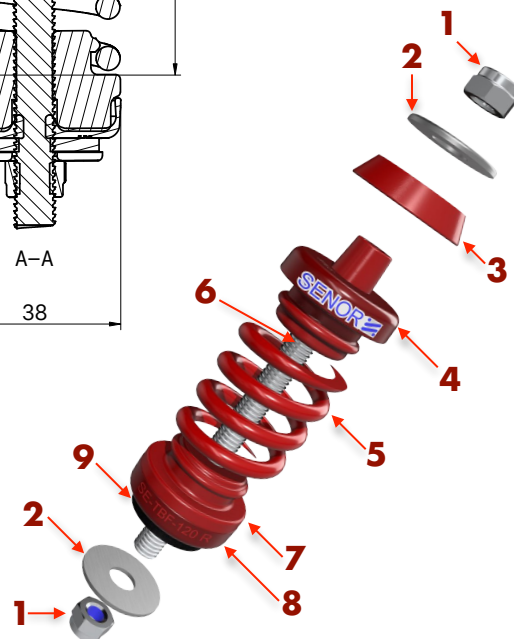
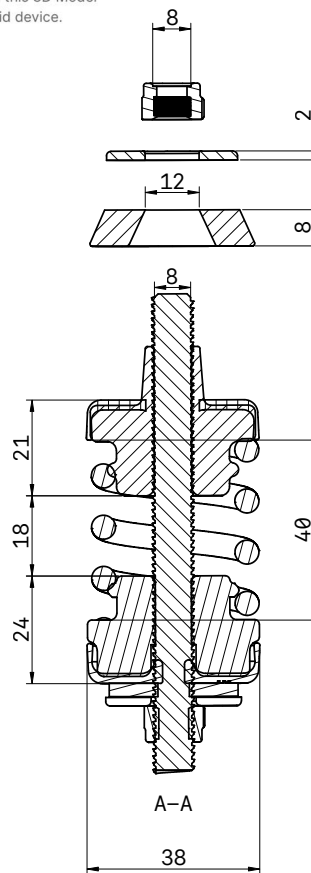
- 1: STAINLESS STEEL A4/M8 LOCK NUT
- 2: STAINLESS STEEL A4/M8 WASHER
- 3/4: FUSION SYSTEM
- 5: STEEL SPRING
- 6: ANTI-TILT AXLE
- 7: TC6/EXN RUBBER
- 8: CN/8
- 9: BEC-3



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SENOR TBF 120 R (Anti-Tilt)

KEY Features

The **TBF 120 R (Anti-Tilt)** is the most powerful damper on the market for HVAC equipment installed at an angle with wall fixing. It is the present and future for noisy spaces.

Our **technical team** works every day to offer new **alternatives** for the future.

A: The TC6/EXN FUSION System is characterized by its design with a projecting collar, an ingenious innovation that prevents unwanted contact between the anti-tilt axle and the metal parts of the HVAC equipment. This is crucial for ensuring the durability and performance of the system in which it is used. This component not only acts as a physical separator but also plays a fundamental role in dampening vibrations. Its ability to effectively reduce vibrations in the medium and high-frequency range, expressed in Hz, makes it an ideal solution for applications where stability and smooth operation are paramount. Furthermore, its design ensures the correct seating of the spring's helical wire, which helps to optimize the overall function of the mechanism, preventing premature wear and extending the lifespan of the components involved.

B: The helical steel spring is distinguished by its capacity to efficiently eliminate any kind of pollution related to vibro-mechanical energy, especially in the low and medium frequency ranges (Hz). This type of spring is designed to absorb and dissipate unwanted vibrations, making it an excellent solution for applications where stability and noise control are essential.

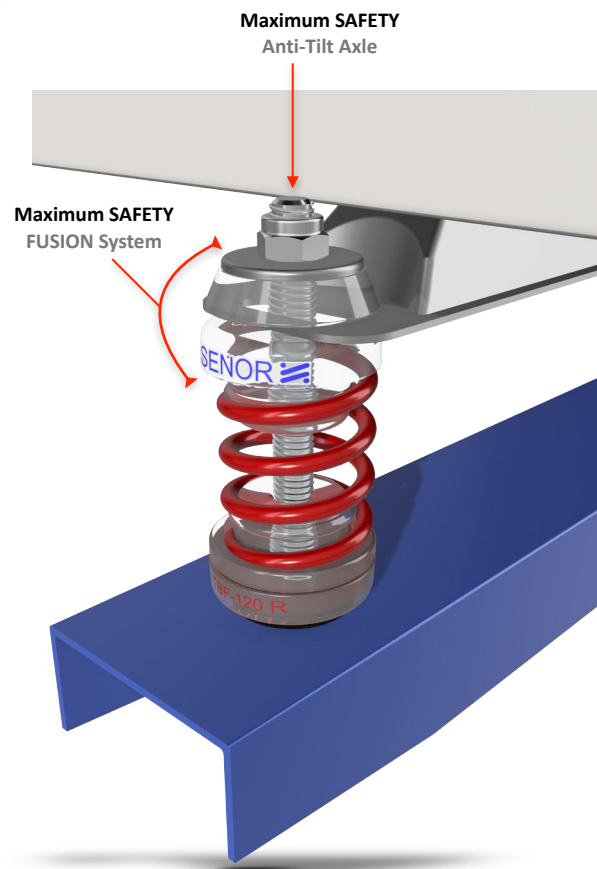
SENOR Certify

Our exclusive DOMESTIC SPLIT product line, specifically designed to support air conditioning units installed on walls and various structures, comes with an impressive warranty that guarantees a service life of over 10 years. This extended durability is subject to two fundamental conditions: first, it is essential that the installation is carried out correctly, following the specific technical recommendations to ensure optimal performance. Second, it is crucial to avoid contact between our products and any type of chemical components that could cause premature material degradation. These precautions will help to maximize the performance and longevity of the air conditioning systems, ensuring they can operate efficiently for many years.

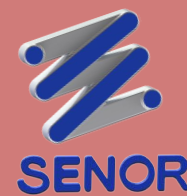
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SEÑOR Products
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Installation Method

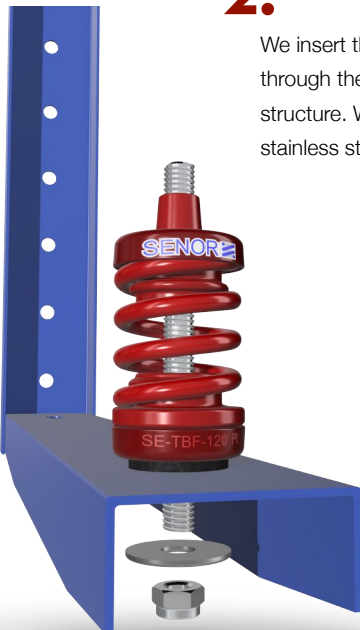
1.

We remove the lock nuts, the M8 stainless steel washers, and the rubber protection ring from the FUSIÓN head.



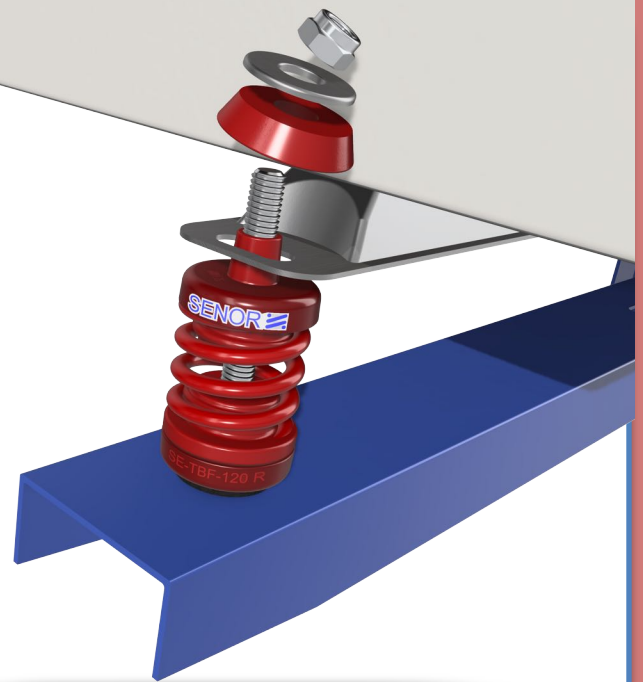
2.

We insert the anti-tilt shaft of the damper through the hole in the bracket or metal structure. We secure this area with the stainless steel washer and the lock nut.



3.

We proceed to introduce the FUSIÓN head through the corresponding hole located on the leg of the HVAC unit, ensuring that it fits precisely and firmly. This will guarantee an adequate and efficient connection for the system's optimal operation.



3.

We re-insert the rubber protection ring of the FUSIÓN head, place the M8 stainless steel washer over the protection rubber, and finally, we conclude the process by securing it firmly using the A4/ M8 stainless steel lock nut, thus guaranteeing a robust and durable connection that will withstand the passage of time and operational conditions.

