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SENOR

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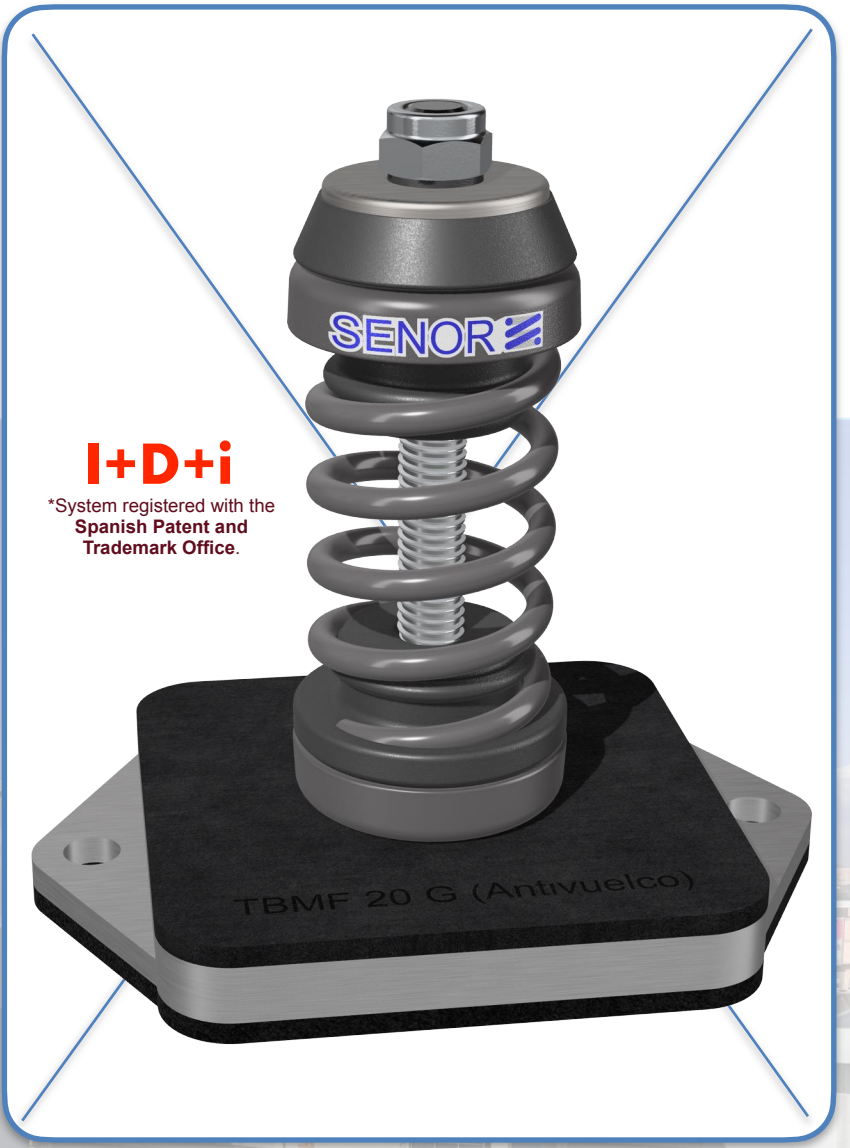
TBMF 20 G (Anti-Tilt)

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 **TBMF/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.

Additionally, one of this product's outstanding features is its square base, measuring 8 cm per side, which enhances equipment stability by distributing weight evenly. This base is made from **ZAMAK-5**, an alloy that combines zinc with aluminium, magnesium, and copper, offering exceptional resistance to impact and deterioration. To increase its durability against corrosion, the entire structure is coated with **INTERPON 700**, an epoxy and polyester resin that guarantees rust resistance for over **2000 hours** under saltwater exposure conditions. This specific coating is crucial, especially in coastal environments where air salinity can cause accelerated material wear. In summary, the **TBMF/ANTI-TILT** is a benchmark in safety and durability for the HVAC industry, ensuring optimal performance against the challenges of the outdoor environment.

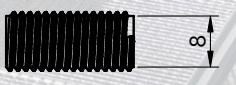


I+D+i

*System registered with the **Spanish Patent and Trademark Office**.

REF.	COLOUR	APPLICATION FIELD	LOAD (Kg) MIN-MAX	METRIC MIN-MAX
SE-TBMF-20 G	■	Cooling	3 - 20	8

DIAMETER
ANTI-TILT AXLE



M8

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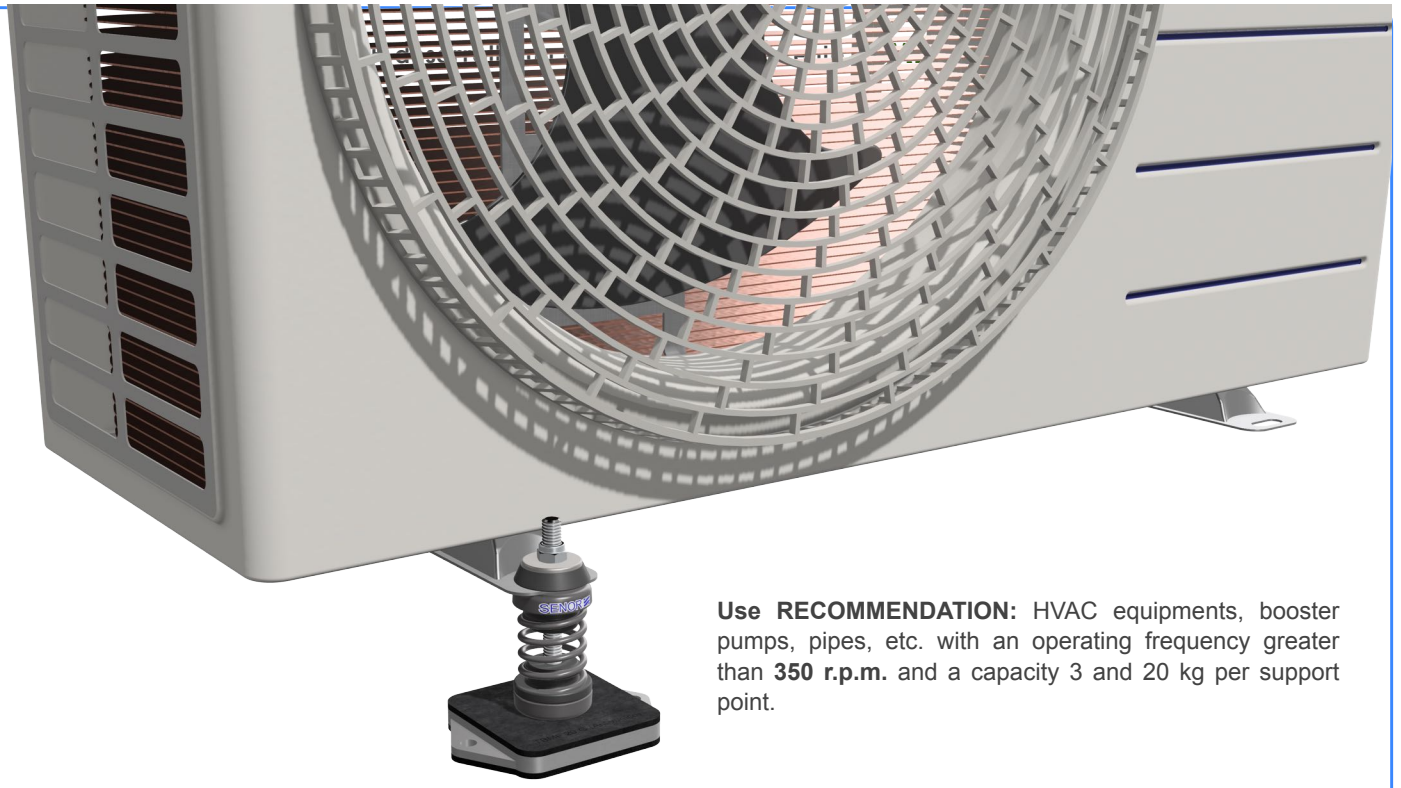
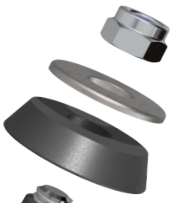


Use RECOMMENDATION: HVAC equipments, booster pumps, pipes, etc. with an operating frequency greater than **350 r.p.m.** and a capacity 3 and 20 kg per support point.



- Polymer: Manufactured by **KRAIBURG-TPE** for SENOR according to standard UNE-EN ISO 10846-1:2009. Hardness 40º Shore A.

✓Resonace frecuency: 7-15Hz

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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 grey epoxy coating. Stiffness **(18,2 KN/m)**

✓Resonace frecuency: 3-7Hz

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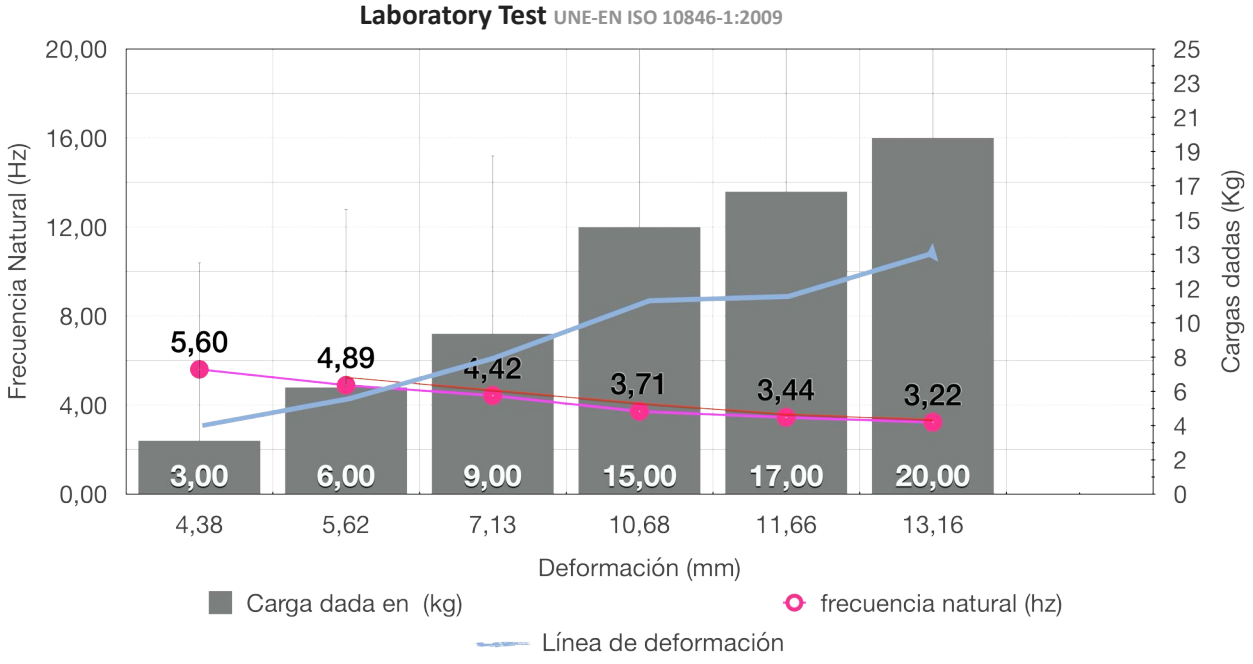
Dynamic Behaviour and Axial Deformation

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
3	4,38	5,60	20	50	91,49	98,73
6	5,62	4,89			93,64	99,03
9	7,13	4,42			94,87	99,21
15	10,68	3,71			96,44	99,45
17	11,66	3,44			96,95	99,52
20	13,16	3,22			97,34	99,58



Dimensions

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

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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: TC2/GPN RUBBER
8: CN/8
9: BEC-3
10: ZAMAK-5
11: BEC-3

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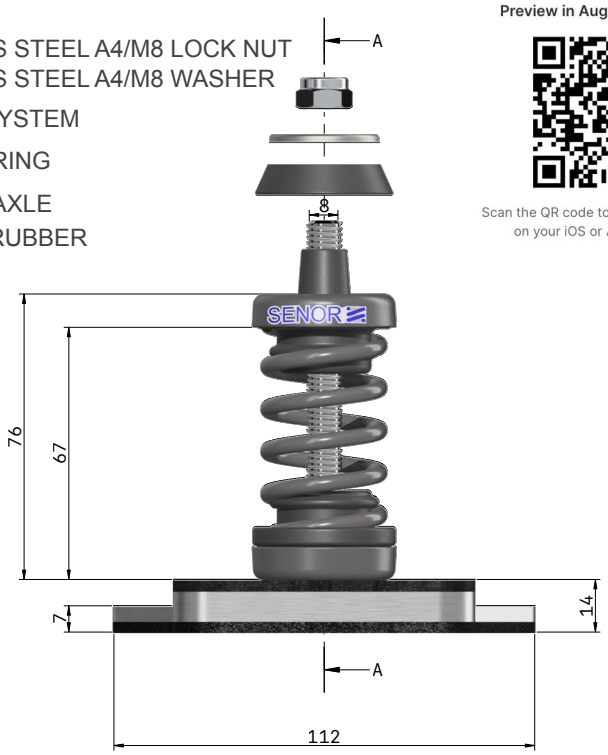

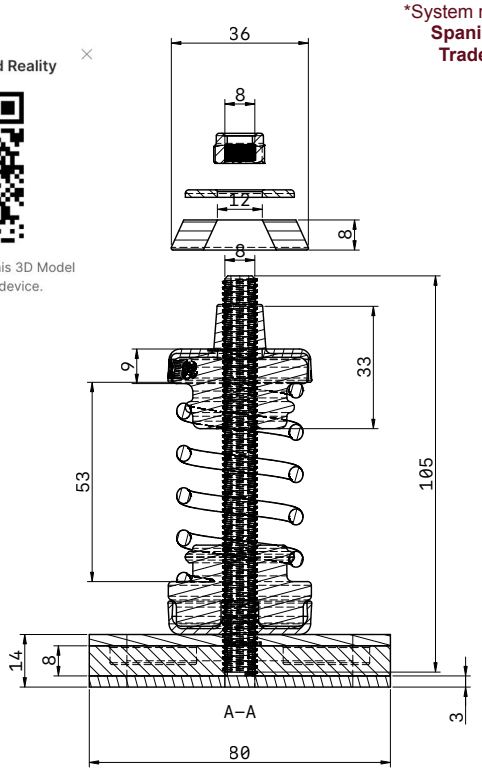

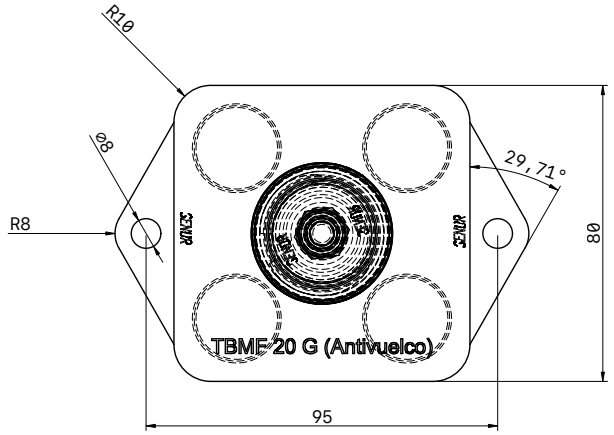

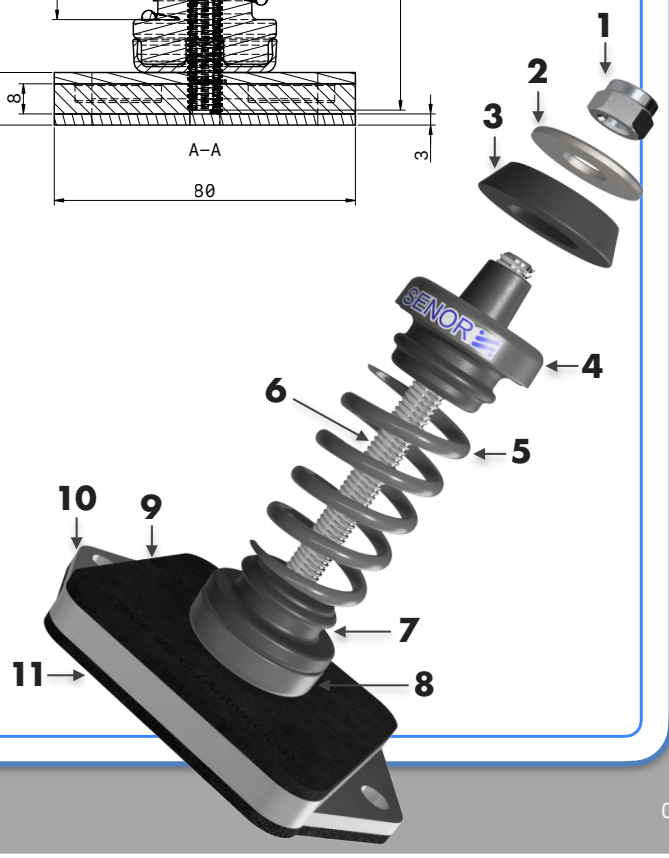

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KEY Features

The TBMF 20 G (Anti-tilt) is the most potent damper on the market for supporting HVAC equipment with direct attachment to the slab. This damper is the present and future for noisy spaces.

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

A: The TC2/GPN 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 line of **DOMESTIC SPLIT** products, designed specifically to support air conditioning units on both floor and various other surfaces, comes with an impressive guarantee of a service life exceeding 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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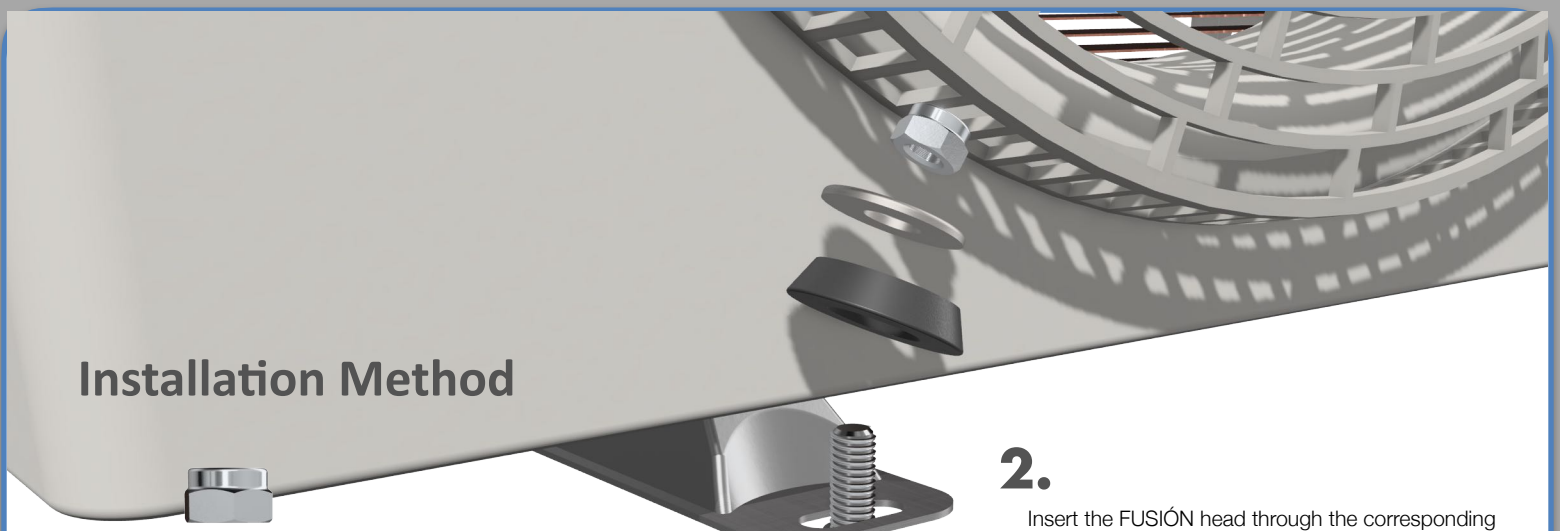
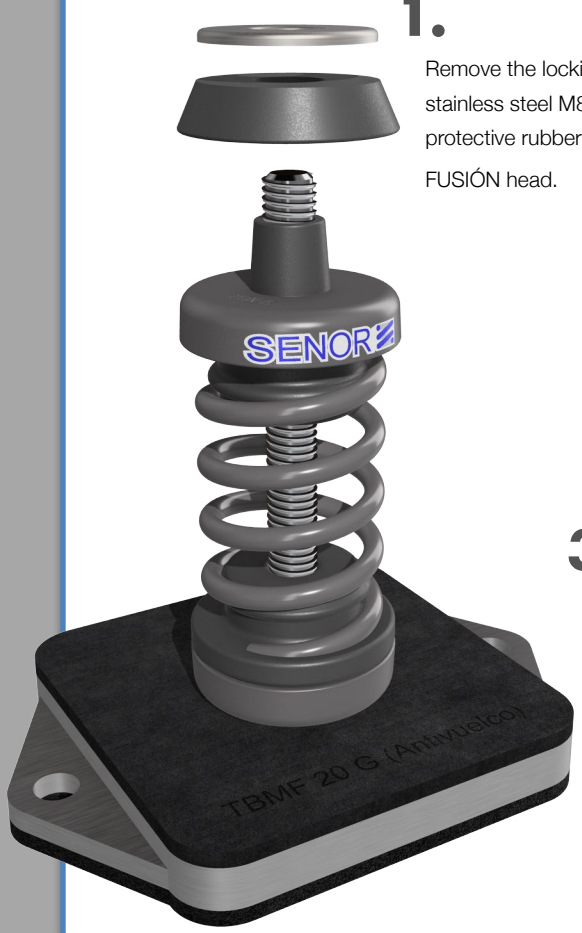


Installation Method

1.

Remove the locking nut, the stainless steel M8 washer, and the protective rubber ring from the FUSIÓN head.



2.

Insert the FUSIÓN head through the corresponding hole located on the leg of the air conditioning unit, ensuring that it fits precisely and securely. This will guarantee a proper and efficient connection for the optimal performance of the system.

3.

Reinsert the protective rubber ring of the FUSIÓN head, place the stainless steel M8 washer over the protective rubber, and finally complete the process by firmly tightening the A4/M8 stainless steel locking nut. This ensures a robust and durable connection capable of withstanding both time and operating conditions.