

# TYPES OF ANTI-VIBRATION MOUNTS & RUBBER-TO-METAL BONDED PRODUCTS

## GUIDELINE

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# ANTI-VIBRATION MOUNTS & PRODUCTS



# TYPES OF ANTI-VIBRATION MOUNTS & RUBBER-TO-METAL BONDED PRODUCTS

## ANTI-VIBRATION MOUNTS & PRODUCTS

Anti-vibration mounts are rubber-to-metal assemblies that protect vehicles, equipment, or machinery from vibrations. This back-and-forth movement, or oscillation, can cause excessive noise and wear, affecting human health and safety and causing mechanical failure. Vibration mounts, or isolation mounts, consist of a molded rubber component that is permanently bonded to a metal body. Some anti-vibration rubber mounts come with a rod-like metal fastener. Others are designed to accommodate one.

Elasto Proxy supplies vibration mounts to original equipment manufacturers (OEMs) and to tiered suppliers in markets such as heavy equipment, aerospace, medical, industrial machinery, and generator sets (gensets). We maintain a network of strategically-located warehouses in North America and Europe and also have gasket fabrication and material distribution capabilities. With our kitting and custom packaging services, we can provide all of the rubber, plastic, and rubber-to-metal parts that you need.

Request a quote or keep reading to learn more about our industrial vibration control solutions.

## VIBRATION ISOLATION THEORY AND MOUNT MATERIALS

Rubber is used for vibration control because it has a higher shear modulus than other materials. When rubber is shear stressed (i.e., stressed parallel to its cross-section), it is less likely to become permanently deformed. Rubber is also elastic and withstands the heat that is produced when vibrations transfer kinetic energy at the molecular level. Although natural rubber is used in most standard vibration mounts, custom products may use silicone, EPDM, NR, or NBR instead to withstand specific environmental conditions.

Typically, the metal in an anti-vibration mount is made of steel, a strong and heat-resistant metal that is less likely to deform or bend when subjected to loading. Steel is used in the body to which the rubber is bonded, and in

any fasteners, nuts, washers, or plates. Because vibrations can loosen smooth-sided fasteners, threaded ones are used. Screws and nuts can be cold formed or welded, and zinc-plating or bluing can provide corrosion resistance. For food or medical applications, stainless steel may be required.

## ANTI-VIBRATION MOUNTS & PRODUCTS

Anti-vibration rubber mounts are in many different industries. Some common applications include:

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Elasto Proxy can help you to select the right vibration mount for your application and supply you with regular shipments according to your sales forecasts. Talk to us about forecasting your inventory levels.

# TYPES OF ANTI-VIBRATION MOUNTS



# TYPES OF ANTI-VIBRATION MOUNTS & RUBBER-TO-METAL BONDED PRODUCTS

## TYPES OF ANTI-VIBRATION MOUNTS

There are four main types of anti-vibration mounts.

- standard
- bell
- construction machinery
- other

The following sections describes each type of isolation mount and its sub-types.

## STANDARD VIBRATION MOUNTS

Standard anti-vibration mounts typically have a cylindrical, or bobbin-style style, design; however, this category also includes cone mounts and buffers. These are the common styles, or product sub-types.

- male/male bobbin
- male/male silicone
- female/female bobbin
- male/female bobbin
- female buffer
- rubber feet pad

## MALE/MALE BOBBIN

Male/male bobbins have a threaded fastener that passes through the rubber-to-metal assembly so that both ends of the fastener can be attached. The body is usually cylindrical but may be tapered.



## MALE/MALE SILICONE

Male/male silicone vibration mounts use silicone instead of natural rubber as the elastomer. They have a concave design and are typically used in food and medical applications.

## FEMALE/FEMALE BOBBIN

Female/female bobbins have a threaded hole to accommodate a fastener. They can be cylindrical or tapered.



## MALE/FEMALE BOBBIN

Male/female bobbins have a threaded fastener that protrudes through only one side of the assembly.

## FEMALE BUFFER



Female buffers do not include a rod-like fastener but have a threaded hole to accommodate one. Buffers with large bonding surfaces can withstand high-peak dynamic stress.

# TYPES OF ANTI-VIBRATION MOUNTS & RUBBER-TO-METAL BONDED PRODUCTS

## RUBBER FEET PAD (MACHINE FOOT).



Rubber feet pad absorb vertical force and prevent excessive impacts and overload. They can be used as machine feet to reduce or limit vibrations.

## POSITION LIMITER



Position limiters are designed to prevent vibrations that can cause objects to move. Their body tapers to a narrow tip.

## BELL ANTI-VIBRATION MOUNTS



Bell type vibration mounts, or machine mounts, are a broad category of products that resemble a doorbell or school bell. The bell may have an exposed metal surface with an anti-corrosion treatment, or feature rubber-to-metal bonding. The top surface is broad and flat with a degree of stiffness that restricts motion in all directions of the horizontal plane. The type and durometer of the rubber depends on the application.

Most bell type anti-vibration mounts do not include a threaded fastener. Instead, they have a metal plate with two or four bolt holes for attachment. For mobile applications, an interlocking metal component or safety lock can provide fail-safe protection. Some products have drain-like channels that help to remove contaminants and protect the rubber. This category of products also includes stationary machine mounts and bumper mounts.

# TYPES OF ANTI-VIBRATION MOUNTS & RUBBER-TO-METAL BONDED PRODUCTS

## RUBBER FEET PAD (MACHINE FOOT).



Elasto Proxy supplies construction machinery mounts that dampen vibrations from various types of heavy equipment, including machinery for material handling. These are the main styles or sub-types.

- low frequency
- high frequency
- rectangular
- gear-shaped
- elevator mounts

The following sections describe them.

### LOW FREQUENCY

Low frequency anti-vibration mounts, or shear mounts, can dampen extreme shocks. They have an hourglass shape and absorb the greater heat that is generated by stronger vibrations.

### HIGH FREQUENCY

High frequency vibration mounts come in different durometers and have a step-up, multi-tiered design. They are built to withstand impact fatigue.

## RECTANGULAR



Rectangular mounts consist of rubber that is sandwiched between two metal plates, each of which provides different levels of stiffness in multiple directions of loading. They are often used as engine mounts, conveyor mounts, and vibratory equipment springs.

## ELEVATOR MOUNTS

Elevator mounts for industrial vibration control are installed under material handling equipment to reduce vibrations that pass through objects and produce noise.

## OTHER ANTI-VIBRATION MOUNTS

Finally, Elasto Proxy supplies these other types of anti-vibration mounts.

- air conditioner vibration mounts
- assembly isolation mounts
- machinery supports
- vibration isolators
- generator supports

The following sections describe each style or sub-type.



# TYPES OF ANTI-VIBRATION MOUNTS & RUBBER-TO-METAL BONDED PRODUCTS

## AIR CONDITIONER VIBRATION MOUNT

Air conditioner vibration mounts let air flow through the bottom of an AC unit while avoiding the accumulation of water on the unit's underside. They can be used in outdoor ductless mini-split air conditioners and in system condensers. Some products have a tapered body.

## ASSEMBLY ISOLATION MOUNT

Assembly isolation mounts provide fail-safe dynamic isolation, typically in the vertical direction. They are used to isolate structures where through-assembly is required. Examples include agricultural and military equipment, tractors, and off-road vehicles.

## MACHINERY SUPPORT

Machinery supports are used with engines, tools, machinery, pumps, HVAC systems, and gensets that are subject to severe vibrations. They support a range of loads and may include nuts and washers.

## VIBRATION ISOLATOR

Vibration isolators prevent the transmission of noise and vibration in vertically applied loads. They are used in generators, blowers, pumps, and road machines.

## GENERATOR SUPPORT

Generator supports are shear isolators with two symmetrically-tilted metal screws, each with a different length. They improve stability and isolate lower frequencies in generators and gensets.

## ANTI-VIBRATION MOUNTS FROM ELASTO PROXY



Do you need standard or custom anti-vibration mounts? Elasto Proxy can supply you with both types of industrial vibration control solutions along with all of the molded or extruded rubber products that you need. As a one-stop shop, we provide manufacturers with everything from isolator mounts and silicone hose connectors to custom gaskets and insulation (thermal and acoustic).

Would you like to learn more and receive samples of products? Contact us to find out if you qualify.



FOR MORE INFORMATION:  
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