VibraMesh®

High-Performance Vibration Isolator for Low-Volume Specialist Applications

KnitMesh® Technologies
Protecting People, Property and our Planet

VibraMesh® is a self-assembly, metallic vibration isolator specifically designed for high-performance, motorsport, and specialist automotive applications.

Delivering exceptional vibration damping and thermal resistance, VibraMesh® provides a robust, cost-effective solution for harsh environments where rubber or polymer isolators fail. Supplied ex-stock with zero tooling costs, it accelerates deployment while minimising lead times and upfront spend.

Principles of Operation

VibraMesh® acts as a metallic spring-damper, effectively absorbing and dissipating vibration energy generated by mechanical, engine, or exhaust systems. This significantly reduces noise, vibration, and fatigue cracking in heat shields and associated components, improving NVH (Noise, Vibration, Harshness) and BSR (Buzz, Squeak, Rattle) performance. This makes it an excellent choice for use in high-performance and motorsport vehicles where components experience conditions of intense heat and vibration.

The two-piece isolator design features a stainless-steel load-bearing sleeve with upper and lower locking mesh components. It can be installed manually using simple hand tools, making it ideal for prototype, testing, or low-volume performance vehicle production, while also being adaptable for integration into automated high-volume systems.

The isolator's metallic knitted wire structure provides exceptional thermal resistance, retaining its mechanical integrity even when located near turbochargers, DPFs, and exhaust manifolds in high-performance engines. It also ensures electrical continuity across assemblies and minimises conductive heat transfer between components.

The knitted mesh also compresses and rebounds to accommodate thermal expansion and relative movement, maintaining a consistent clamping force that resists loosening under cyclic loads.

Applications

VibraMesh® is suitable for use in demanding environments where components are exposed to high levels of heat, vibration, and mechanical load. Typical applications include:

- Motorsport and performance automotive systems, including turbocharger, catalytic converter, and exhaust assemblies
- Prototype vehicle builds and low-volume production runs
- High-temperature engine bay environments
- Specialist mechanical and industrial systems

Features and Benefits

- **Self-Assembly:** simple manual installation
- **Cost Effective:** no specialist equipment required
- **No Tooling Costs:** established design eliminates the need for tooling or development expenses
- **Proven Performance:** tested in heat shield, catalytic converter, and turbocharger assemblies
- **Reliable Damping:** effectively absorbs and dissipates vibration from engines, exhausts, and mechanical systems
- **High-Temperature Resistant:** maintains performance up to 750°C, outperforming elastomeric (rubber and polymer) isolators
- **Durability:** stainless steel construction resists corrosion, oil, fuel, and UV exposure
- **Lightweight and Compact:** easy to handle, install and integrate into existing systems
- **No Minimum Volumes:** ideal for prototype, special, or low-volume production applications
- **Bespoke:** damping characteristics, materials, and fasteners can be tailored to meet customer-specific requirements

Customisation Options

Material	Standard: 304 Stainless Steel Optional: 316, 310S, 310L, Inconel, Hastelloy
Fasteners	Standard: M6 Optional: M5, M8, M10
Operating Temperature	Up to 750°C (standard) Up to 1000°C with high-temperature alloys
Compatible Heat Shield Thickness	0.6 mm – 1.2 mm
Damping Characteristics	Tuned to suit specific application frequencies

Other materials, fasteners, and characteristics are available upon request.

About KnitMesh Technologies

Since 1957, KnitMesh Technologies has been manufacturing high-quality knitted wire mesh products for a wide range of technical and industrial applications.

We are headquartered in the United Kingdom, with an additional manufacturing facility near New Delhi, India. Our engineers design and manufacture all products in-house, working closely with customers to understand their requirements and deliver reliable, high-performance solutions for demanding environments.

Quality Assurance

KnitMesh Technologies is accredited to: ISO 9001, ISO 14001, ISO 45001, PAS 99, and IATF 16949.

Web: knitmeshtechnologies.com
Email: enquiries@knitmesh.com
Tel: +44 (0) 1352 717 640
Coast Road, Greenfield, Flintshire, CH8 9DP United Kingdom

KnitMesh® Technologies

Protecting People, Property and our Planet