

# Knitted Wire Mesh Graphite Seals

High-Performance Sealing and Lubrication for  
Demanding Applications



Protecting People, Property and our Planet

KnitMesh UK and KnitMesh India Working in Partnership

**Knitted wire mesh Graphite Seals are high-performance components combined with high-purity graphite to provide reliable sealing, lubrication, and thermal control in demanding automotive and industrial applications.**

Combining the strength of knitted wire mesh with the natural compressibility, chemical resistivity, lubricity and heat stability of premium graphite, our Graphite Seals provide consistent, long-lasting performance for DPF seals, gaskets and spacer rings where conventional materials fail.



## Principles of Operation

KnitMesh Technologies' Graphite Seals are made from specially engineered knitted wire mesh combined with pure graphite. This unique combination provides exceptional sealing, lubrication, and thermal performance across a wide range of automotive and industrial environments. The properties of the graphite, including compressibility, recovery and elasticity, combined with the mesh material (a wide range of stainless steels and high-nickel alloys are commonly used), ensure long life and high performance.

The resilient mesh structure, paired with graphite's natural lubricity, creates a highly effective seal against liquids and gases whilst significantly reducing friction.

The graphite mesh combination is designed for each specific application and moulds perfectly to the surfaces it contacts. This ensures a reliable, long-lasting fluid seal even under demanding operating conditions. This enhanced gas-sealing capability is particularly valuable in automotive applications, helping to reduce emissions and maintain system efficiency.

In moving components such as bearings, bushings, and isolators, the graphite acts as a lubricant. This minimises wear, dissipates heat at critical contact points, and extends the component's life.

The knitted mesh itself is strong, flexible, and highly resistant to shock and vibration. Once compressed, the mesh lattice securely retains the graphite, ensuring reliable, long-term performance throughout the seal's service life.

Our Graphite Seals can be produced in a range of mesh densities and configurations to meet specific sealing or lubrication requirements. Components are available as bespoke seal elements or ready-to-install sub-assemblies.

## Applications

- Exhaust seals for high-temperature gas systems
- High-temperature bushings and bearings, such as exhaust gas diverter valves
- Valve gland packing where lubrication and thermal stability are essential
- High-temperature gaskets for sealing liquids and gases
- Specialist applications requiring lubrication, NVH (Noise, Vibration, and Harshness) reduction, or BSR (Buzz, Squeak, and Rattle) mitigation

## Quality Assurance

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



## Features and Benefits

- **Exceptional Sealing Performance:** provides an effective fluid and gas seal
- **Lubricating Properties:** graphite minimises friction and wear in moving parts
- **High-Temperature Capability:** suitable for continuous operation in extreme heat
- **Thermally Conductive:** dissipates heat away from critical components, reducing overheating risks
- **Durability:** resistant to chemical, corrosion, and mechanical degradation
- **Extended Service Life:** maintains sealing efficiency and structural integrity over long operational cycles
- **Mechanical Strength:** withstands higher radial, axial, and compressive loadings than many conventional systems
- **Customisable:** available in a wide range of stainless steels and high-performance super-alloys



## Customisation Options

Material	Stainless Steel (304, 316, 430), Inconel, Hastelloy, and Speciality Alloys
Operating Temperature	550°C
Graphite Purity	From 98% to 99.85%
Mesh Wire Diameter	0.05mm - 0.6mm
Mesh Lattice Porosity	60% - 98%
Product Form	Defined Forms, Flexible Graphite Ropes

*Other materials and characteristics are available upon request.*



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