

TSL Sealing Solutions Limited



Adhesives
Gaskets
Seal Kits

Bonded Washers
Hydraulics
Shaft Repair Kits

Circlips
O-Rings
Snap Rings

Industrial Precision Trusted Performance



TSL Sealing Solutions Limited is a newly established, privately owned UK company specialising in providing innovative and high-quality solutions for the industrial sealing market. With over 30 years experience we are positioned as a market leading provider, with a core business focused on delivering expert sealing products and solutions to a diverse range of industries.

Our Mission

Our Vision is to be the preferred global partner for innovative and reliable sealing solutions, actively contributing to our clients' success and a sustainable future. Our core Mission is to be the leading provider of high-quality sealing solutions worldwide, ensuring the reliability, efficiency, and safety of your operations. We are committed to continuous improvement, sustainable practices, and delivering exceptional value to all our stakeholders. Products and Expertise

At TSL, we differentiate ourselves through superior product quality, exceptional customer service, and a deep understanding of unique sealing challenges. We supply a wide range of standard and custom - engineered products, alongside expert technical support and consultation.

Our comprehensive product range includes:

- **Gaskets:** Metallic, non-metallic, and semi-metallic types for static sealing.
- **O-rings:** Standard and custom sizes in various elastomeric materials such as NBR, FKM, EPDM, and Silicone.
- **Seals:** Oil seals/rotary shaft seals, hydraulic & pneumatic seals, and mechanical seals for rotating equipment.
- **Custom-Engineered Seals:** Designed and manufactured to specific customer drawings and performance requirements.

Beyond products, our expertise and services include Technical Consultation and Application Engineering.

SEALING SOLUTIONS FOR ALL INDUSTRIES

- Manufacturing
- Automotive
- Hydraulics
- Oil and Gas

OUR PROMISE

Unmatched Expertise at Your Service

At TSL Sealing Solutions Limited, our technical team is driven by a commitment to excellence. Based in the UK, we combine years of industry experience with advanced knowledge to ensure that every sealing solution we provide is perfectly tailored to your needs. With our high-quality seals, you can rest assured that we never compromise on quality. As a trusted supplier, TSL is dedicated to offering solutions that exceed expectations while ensuring reliability and performance.



ADHESIVES

Category	Description	Primary Application Examples
Epoxy Resins	Two-part system (resin and hardener) offering high strength and chemical resistance.	Structural bonding, automotive parts, repairs.
Cyanoacrylates (Super Glue)	Fast-curing, single-component adhesive for small, instant repairs.	Household items, electronics, rapid assembly.
Polyurethane Adhesives	Known for flexibility, durability, and strong bond to various materials, including wood and concrete.	Woodworking, flooring, construction joints.
Hot Melt Adhesives	Thermoplastic polymers that are melted and applied, solidifying rapidly upon cooling.	Packaging, product assembly, crafting.
Acrylic Adhesives	Versatile with good resistance to environmental factors and impact. Can be two-part or single-part.	Signage, plastic bonding, metal joining.

Adhesives are non-metallic substances applied to one or both surfaces of two separate items that binds them together and resists their separation. Adhesives can be found in a wide variety of forms, from liquid to solid, and are crucial in countless industries, including construction, automotive, packaging, and electronics.

Bonded Washers

Bonded washers, also known as sealing washers or self-centralising washers, are specialized fasteners designed to provide a secure and leak-proof seal. They consist of two main components: an outer metal washer and an inner elastomeric (rubber) sealing element. This combination allows them to distribute the load effectively while also creating a tight seal against fluids and gases.



Construction and Materials

The construction of a bonded washer is key to its functionality. The outer metal washer typically provides the structural integrity and load-bearing capabilities.

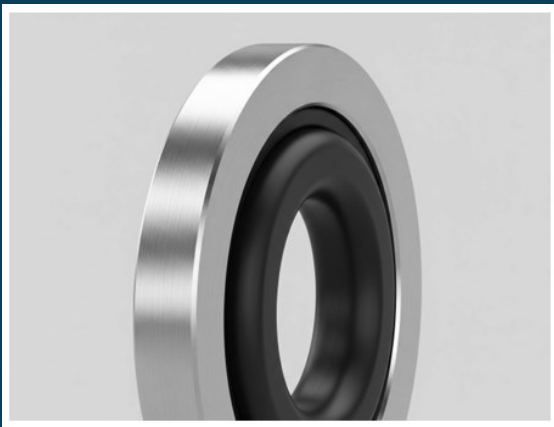
Common materials for the metal washer include:

- **Steel:** Often zinc-plated for corrosion resistance.
- **Stainless Steel:** For applications requiring high corrosion resistance.
- **Aluminium:** For lightweight applications.

The inner elastomeric ring is responsible for the sealing action. The choice of elastomer depends on the application's specific requirements, such as temperature, chemical compatibility, and pressure.

While the basic principle remains the same, there are variations in bonded washer designs to suit different needs:

- **Standard Bonded Washers:** The most common type, as described above.
- **Self-Centralizing Bonded Washers:** Designed with an inner lip that helps to centralize the washer during assembly, ensuring proper sealing.
- **Flanged Bonded Washers:** Feature an extended flange on the metal washer for increased load distribution or a larger sealing surface.

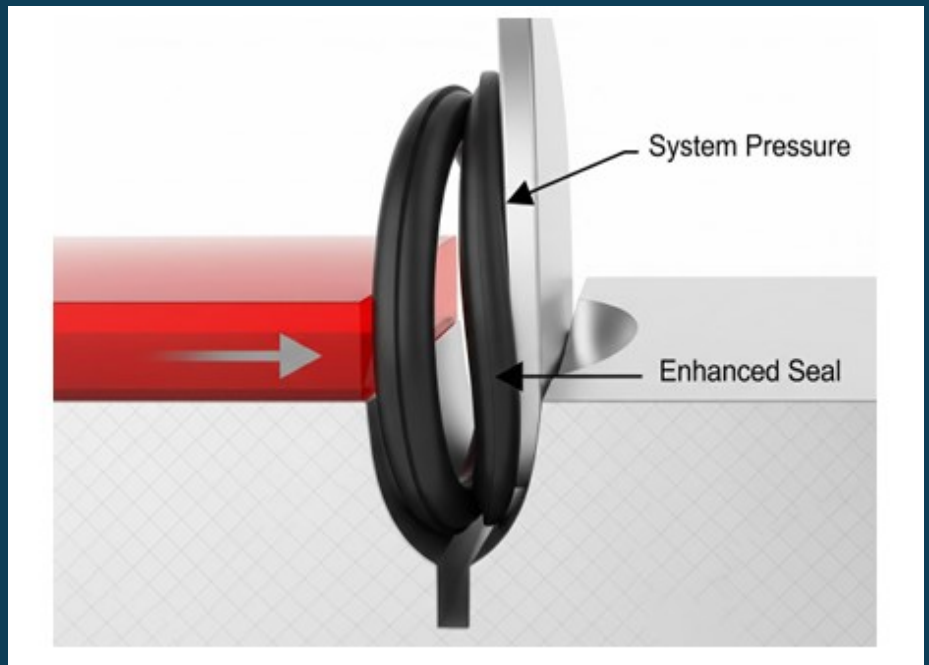


Circlips & Snap Rings

Circlips and snap rings are a family of fasteners known as retaining rings. Their primary function is to secure components onto shafts or within bores, preventing axial movement. They are critical in many mechanical assemblies, from automotive gearboxes to consumer electronics. While the terms "circlip" and "snap ring" are often used interchangeably, they both refer to internal (for bores) and external (for shafts) rings made from resilient materials, typically spring steel.

Material	Standard Specification	Key Characteristics
Carbon Spring Steel	SAE 1070-1090	High tensile strength, cost-effective
Stainless Steel	AISI 302, 316	Excellent corrosion resistance, good strength
Beryllium Copper	UNS C17200	Non-magnetic, excellent electrical conductivity
Phosphor Bronze	CDA 510	Good electrical conductivity, resistant to fatigue

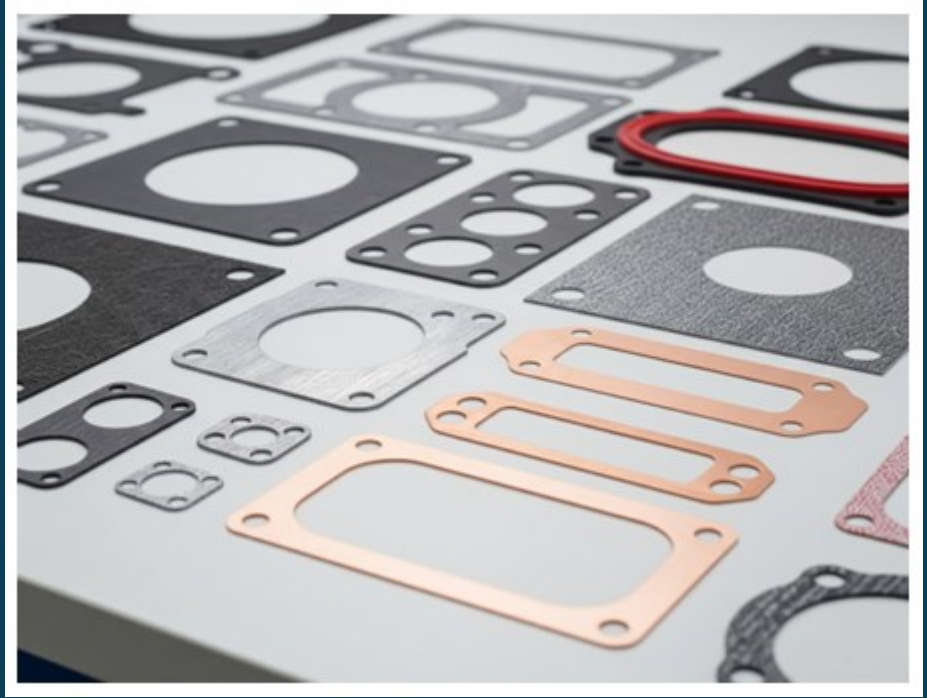
O-Rings



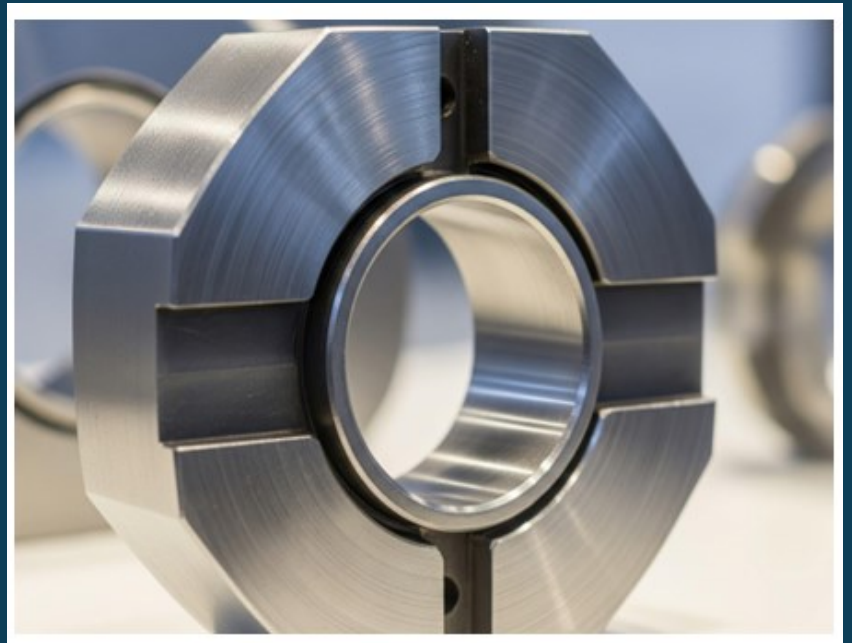
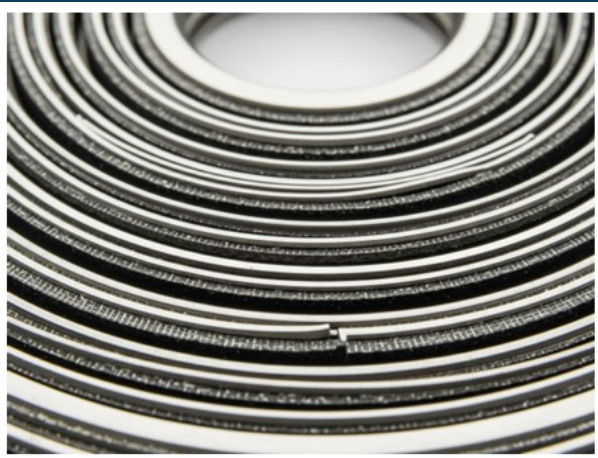
Material Type	Common Applications	Key Properties
Nitrile (Buna-N)	General purpose, petroleum oils, water	Good abrasion resistance, excellent compression set, limited ozone resistance
Viton (FKM)	High-temperature applications, aggressive chemicals	Excellent chemical and heat resistance, good mechanical properties
Silicone	High/low temperature extremes, food and medical applications	Excellent high/low temperature flexibility, poor abrasion and tear resistance
EPDM	Brake fluids, hot water, steam, outdoor exposure	Excellent weather and ozone resistance, good heat and steam resistance
Neoprene	Refrigerants, moderate chemicals, weather resistant	Good oil, ozone, and weather resistance, good resilience

Gaskets

There are numerous types of gaskets, each designed for specific applications and operating conditions. The choice of gasket material and design depends on factors such as temperature, pressure, chemical compatibility, and the nature of the fluid being sealed.



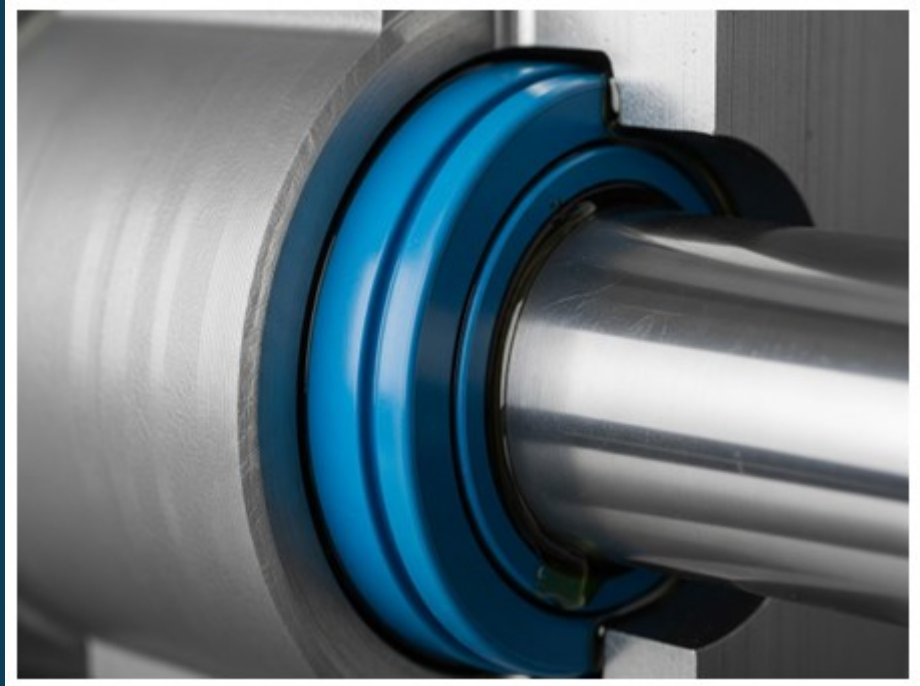
- ◆ Sheet Gaskets
- ◆ Spiral Wound Gaskets
- ◆ Ring Type Joint (RTJ)



Hydraulic Seals

Hydraulic seals are crucial components in hydraulic systems, designed to prevent fluid leakage and maintain pressure within cylinders, pumps, and valves. They play a vital role in ensuring the efficient and safe operation of machinery across various industries, from manufacturing and construction to aerospace and automotive.

- ◆ Rod Seals
- ◆ Piston Seals
- ◆ Wiper Seals
- ◆ Buffer Seals
- ◆ Static Seals
- ◆ Rotary Seals



The choice of material for a hydraulic seal depends heavily on the operating temperature, pressure, fluid type, and chemical compatibility. Common materials include:

- **Nitrile Rubber (NBR)** A versatile and cost-effective material suitable for a wide range of hydraulic fluids and temperatures.
- **Polyurethane (PU)** Known for its high abrasion resistance and strength, making it ideal for heavy-duty applications.
- **Viton (FKM)** Offers excellent resistance to high temperatures, chemicals, and aggressive fluids.
- **PTFE (Polytetrafluoroethylene)** Provides very low friction and excellent chemical resistance, often used in dynamic applications.





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