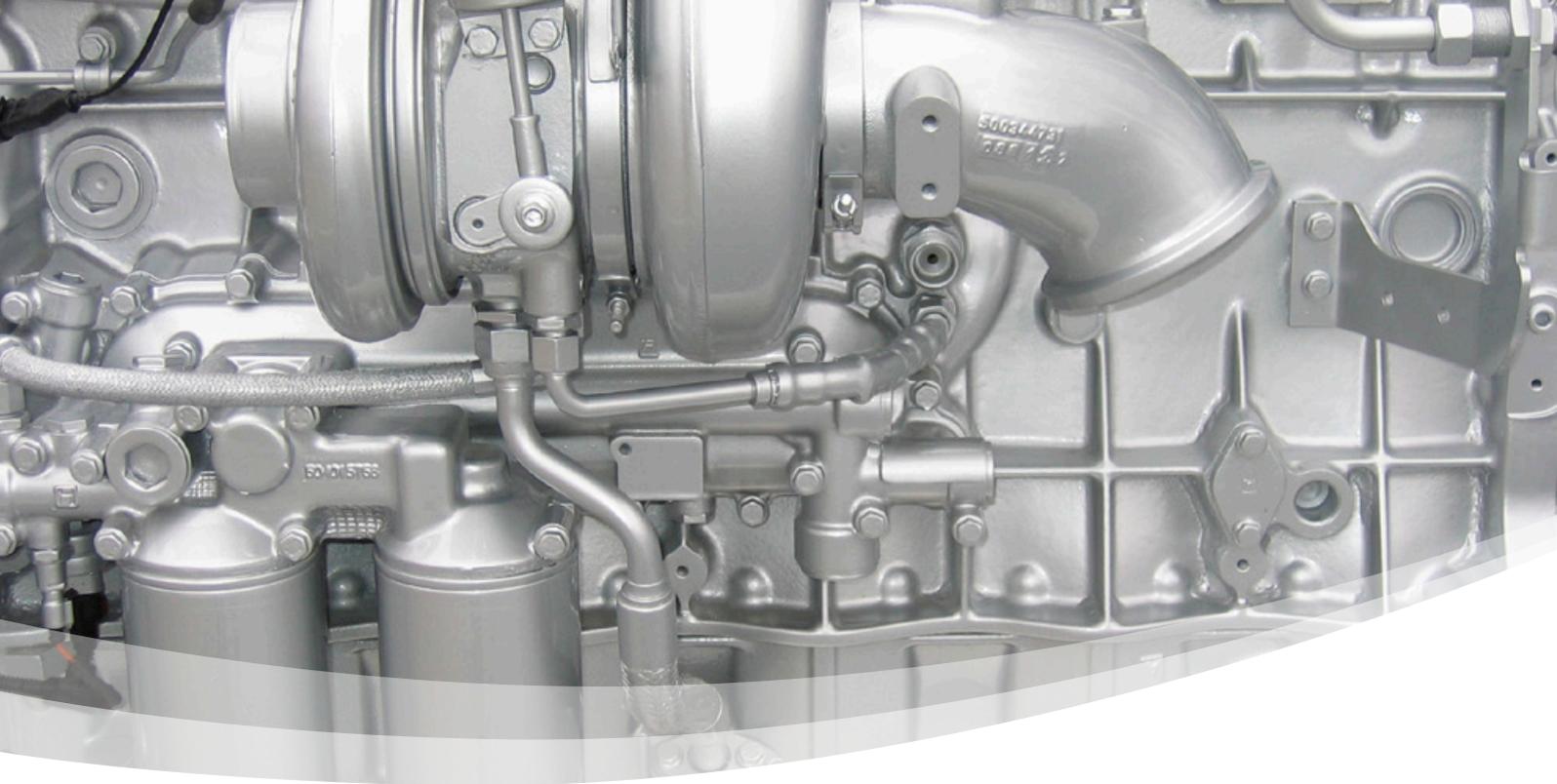




# DIESEL SEALING SOLUTIONS



# FREUDENBERG DIESEL SEALING SOLUTIONS

The Freudenberg product range offers more than 16,000 standard products and a multitude of customer-specific solutions, with outstanding seals and vibration control for all diesel power plant components.

Innovative brand-name products from Freudenberg deliver the complete package for industrial diesel engines. With state-of-the-art product development and a comprehensive standard product line, Freudenberg has sealing solutions for all major areas of modern diesel engines. We provide not only reliable sealing and reduced vibration, but also vast improvements in component service life, performance, and the superior value of cost efficiency.

With our diesel engine expertise and know-how as specialists in seals and vibration control, acknowledged around the world, we are able to provide you with optimal solutions for all power train components.

Seals and vibration control components from Freudenberg are the perfect choice whenever diesel engines must meet stringent requirements.

Designed specifically for marine, agricultural, and construction equipment, as well as stationary systems, our solutions are outstanding in their functionality and operational reliability. For example, with its extremely robust construction and innovative sensor technology, Simmerring® IWDS combines the advantages of modern engine management with markedly improved sealing performance. The Freudenberg Hydromount KL is highly effective in its damping capacity while maintaining its soundproofing capability—a perfectly designed solution for commercial vehicles and ships. Wherever Freudenberg industrial diesel engines products are used, increased component reliability and efficiency add significantly to application performance.

# DIESEL SEALING COMPONENTS

The Freudenberg product range offers more than 16,000 standard products and a multitude of customer-specific solutions, with outstanding seals and vibration control for all diesel power plant components.

## SIMMERRING® OIL SEALS

These seals provide excellent wear resistance in various environments and are functionally reliable across a broad range of applications. They are specially designed with friction-optimized technology to decrease fuel consumption, which leads to reductions in CO<sub>2</sub> emissions.



## GASKETS

Heightened for performance through a balance of material and design, our gaskets supply maximum sealing and durability. Technologies include: homogeneous rubber (press-in-place), carrier-type (plastic/metal), embossed rubber-coated metal, embossed steel, stamped composites, along with high-temp alloy materials and secondary coatings.



## HYDRO MOUNTS

Extreme comfort is achieved with our robust and innovative design. A combination of elastomeric materials and hydraulic dampening provides optimum acoustic isolation and maximum damping of natural vibrations via internal fluid viscosity and a damping disc.



## DUO FORESEAL

Made of PTFE, Duo Foreseal U-packings are pressurized and feature metallic pre-tension springs—rings that seal both statically and dynamically at temperatures from -200°C to 260°C (-392°F to 500°F). Standard sizes, plus customized solutions, make Duo Foreseal U-packings ideal for many applications, such as direct-injection, high-pressure fuel pumps and EGR valves.



## CASCO® SEALS

The CASCO seal generates 70% less friction compared to elastomeric engine seals due to the use of a unique sealing mechanism that utilizes centrifugal force as an advantage. CASCO reduces fuel consumption, contributes to reduced carbon deposits, and is the ultimate long-life seal.



## HIGH-TEMP FFKM

High-temp FFKMs resist heat aging, splitting, and compression set relaxation at temperatures up to 325°C in a broad range of harsh chemical environments. Ideal for turbo applications, this unique material outperforms competitive materials with regard to compressive stress relaxation in both ASTM and customer testing.



# DIESEL SEALING COMPONENTS

## O-RINGS

**Freudenberg O-rings and D-rings** are targeted for fuel injector and wet cylinder liner applications. Standard or custom designed, our O-rings are available in several hundred materials and provide outstanding fuel resistance, extreme low-temperature flexibility, and excellent compression set resistance over a broad range of temperatures.



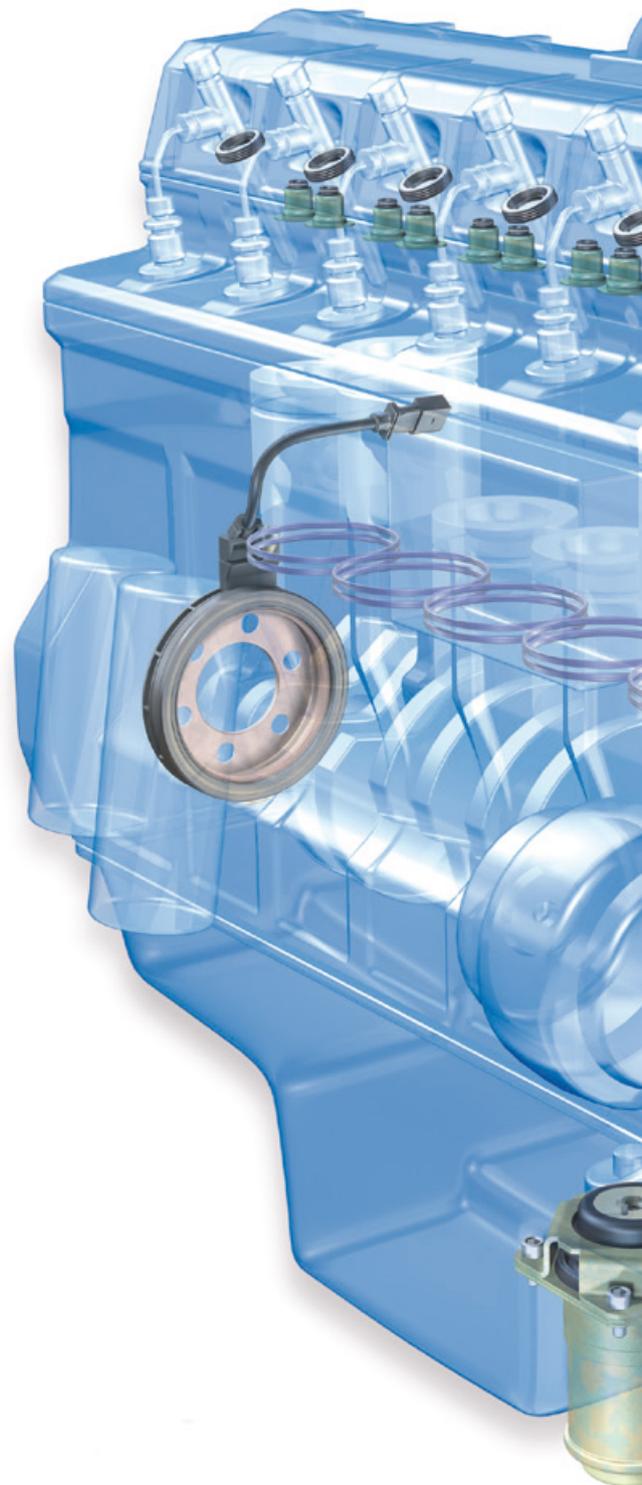
## VALVE STEM SEALS

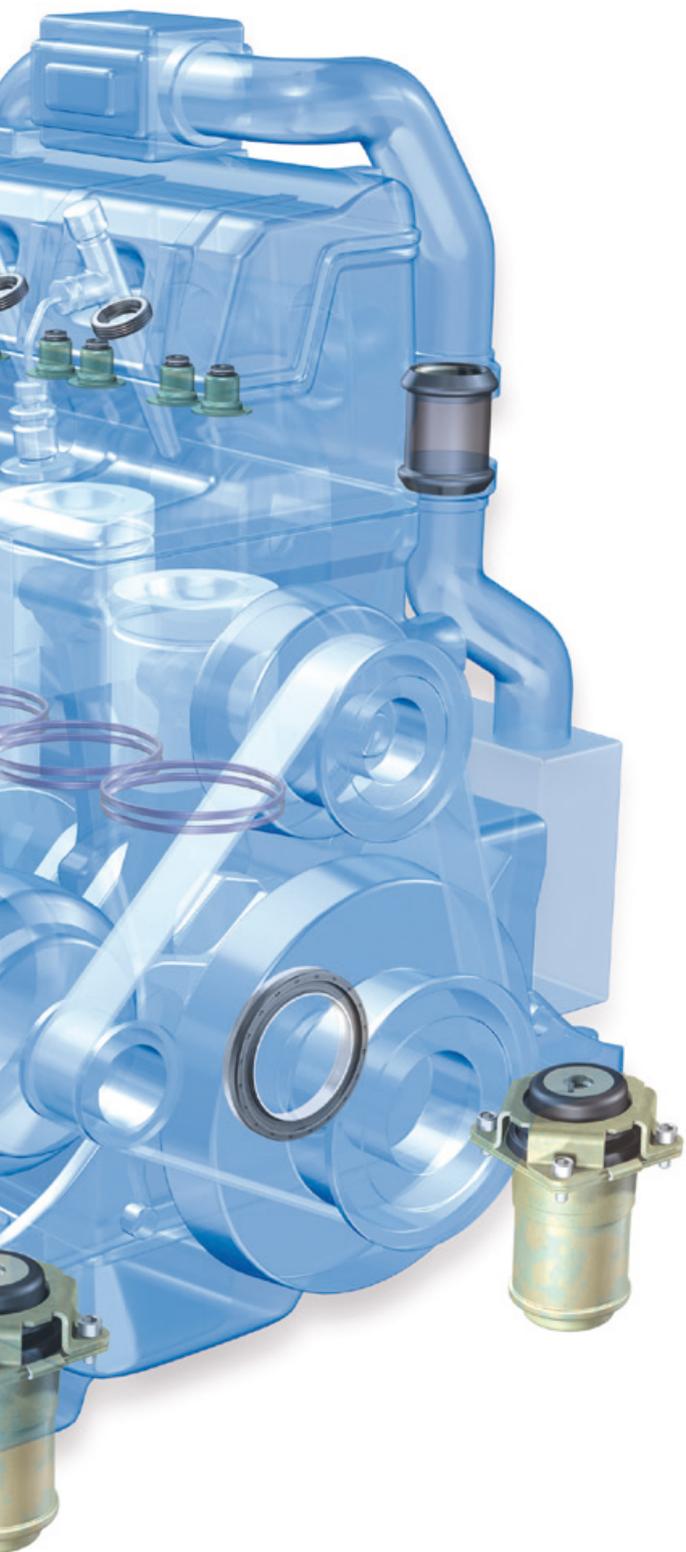
**Increase engine efficiency**, reduce oil consumption, and optimize emissions with our high-performance valve stem seals. The special step lip and gas lip are designed to provide extra protection from blow-by gas in diesel applications, and the flanged metal case improves seal retention.



## ENCODERS

**Precise and consistent measurement** for both cam and crankshaft position at all speeds with no loss in signal quality is provided by our magnetic encoders. Extremely reliable, they can be used to improve fuel efficiency and thus reduce emissions.





## PLUG & SEAL

A reliable tight connection between two housings is established with our Plug & Seals. A secure, low-cost solution for the transport of air, water, and oils, they can combine several functions in a single component and compensate for conduit misalignment and tolerance variations.



## PTFE CASSETTE SEALS

This seal combines sealing function and dirt protection in one single, closed component. The Cassette seal consists of a Simmerring® and an optimized wear sleeve which make it optimal for material handling equipment. It provides reduced friction without a spring and can handle high-stress applications.



## OFFSET SEALS

Customized solutions make offset seals ideal for applications such as diesel engine glow plugs, cam sensors, water lines, and vacuum pump systems. Offset seals ensure simplified assembly and disassembly, reduce stress on mated components, reduce heat transfer between components, allow use of dissimilar mated materials, and also provide noise reduction and light-damping properties.



**Freudenberg Sealing Technologies GmbH & Co.KG**  
Höhnerweg 2-4  
D-69465 Weinheim  
Germany

[www.fst.com](http://www.fst.com)