

# CONSTRUCTION



FREUDENBERG-NOK  
SEALING TECHNOLOGIES

**FREUDENBERG-NOK**  
INNOVATING TOGETHER



## BUILD FOR THE FUTURE

The high demands of today's construction leave no room for error. Infrastructure projects will increase globally to satisfy a growing population. As this trend occurs, construction manufacturers will see a significant growth in demand for their products. Reliable equipment must be produced which resists and endures the extreme threats that are all too common in modern construction work environments.

Harsh weather, radical temperature fluctuations, extended UV radiation, and natural contaminants challenge a system's integrity. No one can afford downtime. Manufacturers are incorporating innovative materials and designs in their sealing solutions to help address these challenges.

Furthermore, there is now more attention to fuel economy and emissions standards due to a growing concern with climate change and the environment. The construction industry plays an essential role, and the goals are continually changing. Industries will develop new designs and upgrade existing machinery as to comply with current and future standards. Staying on top of technology and innovation is the only way to exceed these expectations.

Overall, manufacturers today are looking for components that last longer, survive extreme environmental conditions, and possess the latest innovations. They are turning to Freudenberg–NOK Sealing Technologies to build for the future.

## GROUNDBREAKING SOLUTIONS

Our more than 500 experts continually bring to market new compounds that achieve advanced resistance to aggressive chemicals, high pressures, and extreme temperatures, making Freudenberg–NOK Sealing Technologies your specialist when it comes to innovation. We offer our customers the world's

largest product range from a single source, materials and manufacturing expertise, and revolutionary sealing solutions. To make sure your equipment survives any conditions, wherever you are located, look to Freudenberg–NOK for groundbreaking solutions.



# RELIABILITY

**Minimizing downtime means preventing machinery malfunctions.** To assist with this, we provide reliable sealing solutions with the latest technology. After all, time is money and quality is Freudenberg–NOK Sealing Technologies.

## CASSETTE SEALS SERIES

A **robust axle hub seal** with multiple-point exclusionary labyrinth built into a single housing, this seal is the ultimate at keeping the elements out and oil in while minimizing friction. The unique design provides outstanding contaminant exclusion at optimized surface speeds.



## 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.



## HDP 330 SEALS

These **precision-molded** hydraulic cylinder piston seals offer extreme strength against gap extrusion and high abrasion resistance. Unique molding techniques provide dimensional stability, making it the ultimate seal to offer tight sealing and drift resistance for extreme conditions and pressure up to 800 bar.



## NEW POLYURETHANE

**This superior, cost-effective urethane** encompasses many market needs with one material. AU30000 seals handle higher temperatures, higher pressures, and more diverse fluids, and last longer overall. Ratings of 7250 psi and  $-40^{\circ}\text{F}$  to  $250^{\circ}\text{F}$  put this urethane in a class all its own.



# LOW EMISSIONS

Freudenberg—NOK Sealing Technologies specializes in LESS—Low Emission Sealing Solutions—which reduce friction, improve fuel economy, and enable manufacturer to meet emission standards.

## 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.



## POP SEALS

**The POP seal (Power Optimized PTFE)** reduces friction, resulting in emissions reduction, less shaft wear, and lower fuel consumption. The surface structure of the PTFE sealing lip has an optimized helix to provide a micro pump effect, ensuring perfect sealing behavior and minimized power loss.



## DIAPHRAGMS

**High quality** and dimensionally consistent diaphragms produced with superior elastomer materials and thermoplastic polyurethane will withstand demanding environmental conditions resulting in exceptional seal life. FEA-developed designs are perfectly attuned to technical requirements, allowing the diaphragms to move precisely.





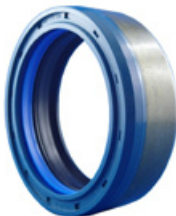


# EXTREME OPERATING CONDITIONS

**Maximum performance under extreme operating conditions is a must.** Whether it is aggressive materials such as coolant, or extreme sub-zero climate conditions, we deliver state-of-the-art solutions.

## SF-STYLE COMBI SEALS

**This is the ultimate seal** for enhanced dirt protection where shaft rotation and endplay must be accommodated. Using a unique design that balances scraping elements with sealing technology, this seal is proven to increase seal life and reduce warranty claims from the field.



## TRACK ROLLER SEALS

**Durable seals made from high-strength/ high-alloy metals,** track roller seals provide excellent wear and corrosion resistance. The precision lapped and polished metals use elastomeric energizers which come in standard materials or can be customized for special needs.



## O-RINGS

**Custom compounds that withstand** biodiesel (fuel systems), aggressive oils (power systems), coolants (cylinder liners), along with many other fluids, combined with Six Sigma manufacturing capability transform the average standard O-ring into an integral part of the sealing system.



## PLUG & SEAL

**Plug & Seal is a one-piece, reliable,** tight connector to align components, compensate for misalignment, accommodate thermal movement, and offer acoustic decoupling. Our high-temp PTFE Plug & Seal version offers durability up to 480°F, along with media resistance to almost any fluid.





# ENERGY SAVINGS

Achieve significant energy savings by offering friction-reducing and fuel-saving products. Make the most efficient use of your equipment by incorporating our solutions in your next application.

## CASCO® SEALS

CASCO 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.



## ACCUMULATORS

Our diaphragm and piston accumulators provide excellent energy storage with unique materials to prevent permeation, cover wide temperature ranges, and provide outstanding life. The next generation of lightweight accumulators combines the effectiveness of aluminum with the functional ability of an accumulator to maximize the function/cost ratio.



## LF 300 ROD SEALS

The unique grooved-lip design on this rod seal provides an approximate 30% reduction in seal friction between the pressures of 500 to 2500 psi. Our unique TODI-based urethane prevents extrusion and provides excellent sealing even at low speeds.



## SIMMERRING OIL SEALS

Decades of testing have crafted a design standard that utilizes unique materials to provide consistent performance, low wear, superior fluid resistance, 15 to 20% lower friction, and unique temperature capabilities (-40°F to 345°F) when compared to other conventional competitor seals.



# PORTFOLIO

Seal Type	Engine		Axle	Under-carriage	Trans-mission	Hydraulic System		Brakes
	Timing & Fuel Systems	Mechanical Systems				Cylinders	Pumps & Motors	
SIMMERRING OIL SEALS								
Standard		+	+					
Encoder	+		+		+		+	
Cassette		+	+	+	+			
ESS		+	+					
VSS	+							
Special	+			+	+		+	+
O-RINGS								
Standard		+			+	+	+	
Six Sigma	+			+				+
FLUID POWER SEALS								
Polyurethane				+		+		
PTFE					+	+		
Nylon						+		
Special					+			+
GASKETS								
Flat gaskets		+	+	+	+		+	
Homogeneous	+	+	+		+			
Carriers	+	+	+		+			
SPECIAL SEALING DIVISION								
Plug & Seals	+	+			+		+	
Diaphragms	+		+					
STRATEGIC SOURCING TRADING DIVISION								
Track roller seals				+				
POWER AND VIBRATION CONTROL								
Accumulators			+	+	+			
Vibration control			+	+	+			

## CERTIFICATIONS

- EN ISO 9001: 2008
- EN ISO 14001 : 2004
- AS9100
- AS9120
- A2LA Laboratory
- EN9100



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