

SIMMERRING® – THE ORIGINAL OIL SEAL



For more than 90 years, the traditional Freudenberg brand CFW® has represented innovation, high-quality and technical excellence of sealing technologies. Best proof is the original Simmerring®, a radial shaft seal developed by Walther Simmer at Freudenberg in 1932, branded CFW® ever since. The Simmerring®

has gained worldwide recognition and is used in a wide range of applications.

Worldwide the Simmerring® symbolizes...

Quality & Availability



- **Experience and Expertise**
Invention of the Simmerring® by Freudenberg in 1932 – Over 90 years of experience and in-depth knowledge of radial shaft seals.
- **Material Development**
In-house development of elastomer compounds for the sealing industry.
- **Manufacturing Depth**
Comprehensive in-house manufacturing from elastomer materials to metal parts and elastomer molding tools.
- **Global Production**
Worldwide production in own manufacturing facilities for short supply chains and maximum availability.
- **Quality Standards**
Globally standardized manufacturing and quality standards from components to the Simmerring® whether customer-specific or standard designs.

Cost Optimization (Total Cost of Ownership)



- **Longevity**
Long service life of the Simmerring® increases the cost-effectiveness and security of your investment.
- **Increased Maintenance Intervals**
Reduced maintenance effort and longer maintenance intervals, lowering operating costs.
- **Increased Efficiency**
Low friction reduces energy losses and wear, improving system performance.

Product Performance



- **Superior Performance**
Outstanding results in parameters such as wear of the seal or shaft, chemical compatibility, and overall sealing performance.
- **Energy Efficiency**
Minimizes friction and energy losses, reduces CO2 emissions, and lowers thermal stress in the system.
- **Reliability and Durability**
Minimizes downtime and ensures reliable operation.
- **Easy Installation**
Quick installation saves time and costs.
- **Innovation**
Continuous development of designs and elastomers for demanding applications and market requirements.
- **Easy Modifiability**
Possibility to easily adapt to specific customer requirements and specifications.

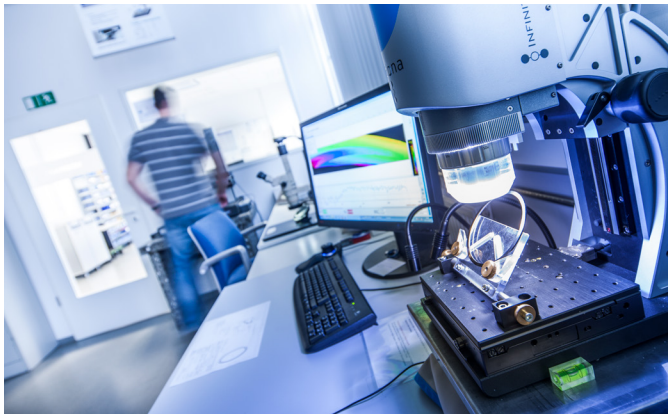
Technical Service



- **Application Expertise**
Highly specialized experts support the development or improvement of your application.
- **Comprehensive Consulting**
Holistic consulting on the tribological system (seal – shaft – lubricant).
- **Analysis Capabilities**
Extensive analysis possibilities in the world's largest test field for radial shaft seals.
- **Customized Solutions**
“Innovating together” – Development of tailored solutions precisely matching the individual needs and challenges of customers.
- **Application Diversity**
Comprehensive expertise across a broad spectrum of industrial applications.
- **Online Tools**
Find your Simmerring® based on the application data and dimension: [FST Simmerring® Selector](#)



QUALITY AND AVAILABILITY – NO COMPROMISES



All components of Simmerrings are produced in **FST's own production facilities** worldwide, with short supply chains, ensuring maximum product availability.

Quality management by Freudenberg Sealing Technologies on [fst.com](https://www.fst.com)

The Simmerring® standard product line includes more than 3,300 radial shaft seals in the range of 4 mm to 820 mm, covering all sizes standardized by DIN 3760 (A/AS) or ISO 6194-1, amongst others. More than 80% of our standard program is permanently in stock.

From the components to the finished product, all our processes are designed for quality and are **entirely in the hands of Freudenberg Sealing Technologies (FST)**. It doesn't matter whether Simmerrings are designed to customer specifications or standard products from our catalog portfolio. Our stringent production processes and quality standards apply equally to the entire product range of Simmerrings.

It covers a wide range of sealing applications. Nevertheless, specific operating conditions may require a tailored seal to ensure proper function or increase the service life of the sealing point. Therefore, we offer the ability to optimize existing **Simmerrings from our extensive catalog range by making modifications without incurring tooling costs and with short delivery times.**

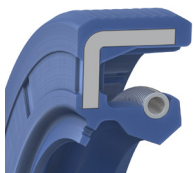
An **extensive in-house manufacturing depth**, ranging from elastomer materials, metal parts to elastomer molding tools, ensures complete traceability and process control.

[Sales sheet modified simmerrings](#)

MODIFIED CATALOG DESIGNS



Speed



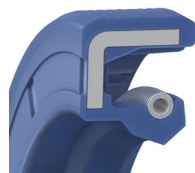
Vented or shortened dust lip



Speed



Vibration



Modified Spring



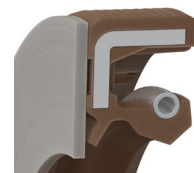
Dirt impact



Non-woven disc



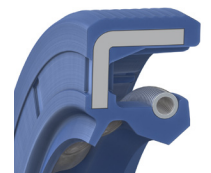
Medium



PTFE-disc



Medium



Pre-greased dust lip

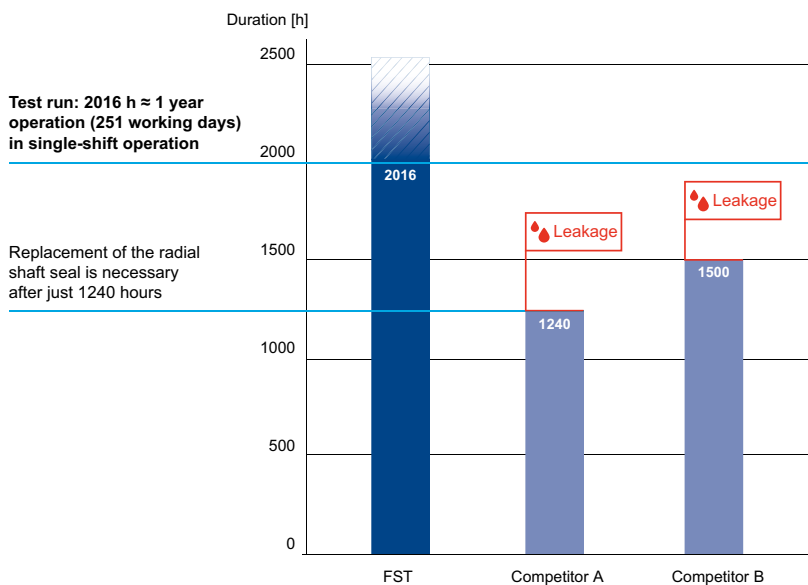


OUTSTANDING PERFORMANCE – LESS STRESS FOR SMOOTH OPERATION

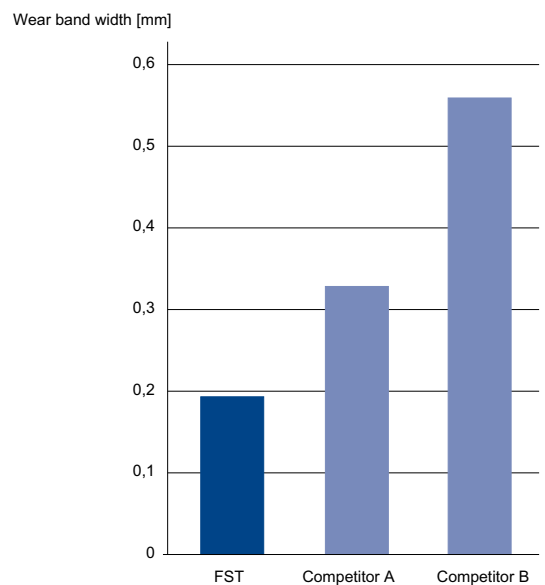
Decades of experience in our customers' applications along with test bench runs at FST's world's largest testing center for radial shaft seals, demonstrate the **outstanding performance of a Simmerring®** compared to competitors' products.

Test runs conditions (2016 h, shaft Ø 38 mm, 500 rpm, +70 °C, 0 bar, Mobile Gear 600 XP 220).

TEST RUN



WEAR OF RADIAL SHAFT SEAL



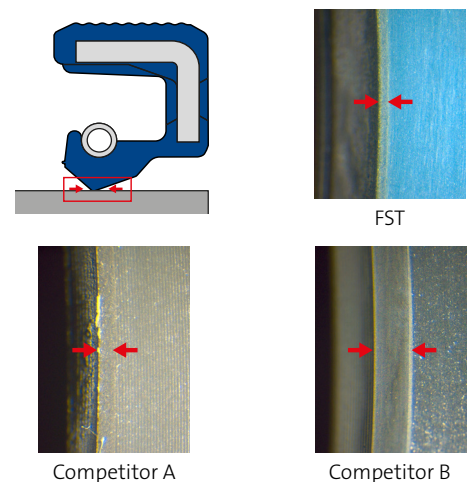
Under moderate operating conditions, competitor radial shaft seals fail and show oil leakage before the end of the test due to increased friction and wear.

In this case, smooth operation of the system would not be possible, **and after just about six months, using a competitor's radial shaft seal would necessitate costly maintenance (In a two-shift operation after 3 month).**

In contrast, the Simmerring® shows no increased wear and is suitable for use well beyond the 2016 h test duration.

[Test field video](#)

WEAR BAND OF RADIAL SHAFT SEAL UNDER MICROSCOPE



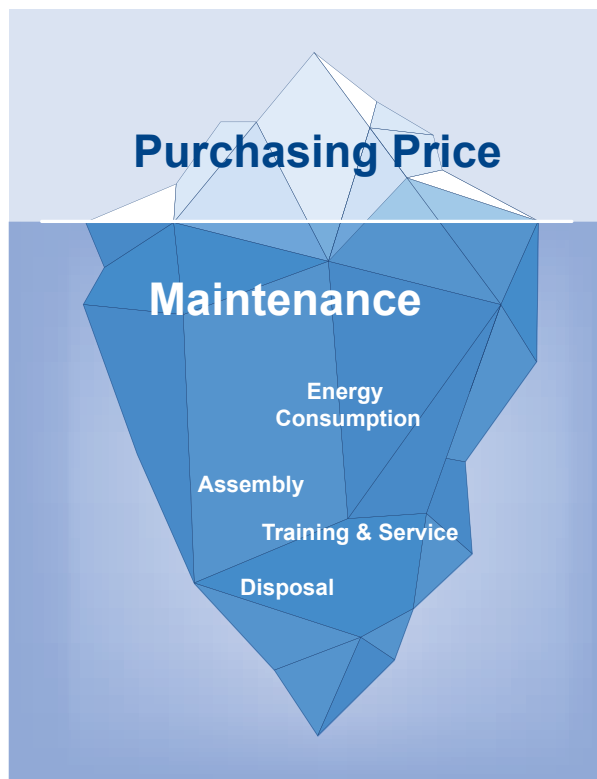
TOTAL COST OF OWNERSHIP – YOUR BENEFIT



The acquisition cost of the shaft seal represents only a small fraction of the overall system costs over its operating life.

However, the savings in maintenance and energy consumption through the use of the FST Simmerring® are considerable.

TOTAL COST OF OWNERSHIP OF A GEAR BOX



Share of TCO after 2016 operating hours
(≈ 1 year operation with single-shift)

	Simmerring®	Competitor	Difference
Purchasing Price	27%	26,7%	+1%
Maintenance	No fail after 2016 h in test => one revision per year or longer 25%	Failed after 1240 h in test => two revisions per year 51%	-100%
Energy Consumption	12%	12,4%	-3,3%
Assembly Training & Service Disposal	10%	10%	
	74,5%	100%	-34,3%



TECHNICAL SERVICE – EXPERT GUIDANCE AND SERVICES FOR OPTIMAL PERFORMANCE

Sealing solutions are complex systems whose function and service life depend on numerous factors. **The sealing experts at Freudenberg Sealing Technologies support you in developing or modifying applications** and provide tailored recommendations based on your specific operating parameters. Additionally, they offer valuable insights into the causes of system failures in case of malfunctions.

Our **extensive analysis capabilities**, supported by the world's largest test field for radial shaft seals, ensure precise and reliable results.

We embrace the philosophy of “innovating together,” focusing on the development of customized solutions that meet the unique needs and challenges of our customers.

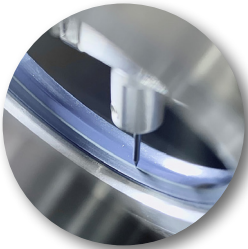



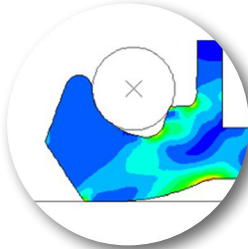
With **comprehensive expertise across a wide spectrum of industrial applications**, we deliver high-quality, tailored sealing solutions to various industries, ensuring optimal performance and longevity.

Choose from our range of services:

SEALING SYSTEM

ANALYTIC

MODELLING

Seal	Shaft	Lubricant	Testing	Simulation
 <ul style="list-style-type: none"> • Mikroskopy 2D & 3D • Radial load • Dimensions • μ-Mechanical Characteristics • IRHD, SEM-EDX, Nano-CT, GC-MS 	 <ul style="list-style-type: none"> • Surface measurement 2D & 3D • DIN, ISO & VDA • Macro lead • Micro lead • Wear 	 <ul style="list-style-type: none"> • Physical & chemical characterization • IR-Spectrum • Additive elements • Wear elements • Wetting behavior 	 <ul style="list-style-type: none"> • Dynamic & static testing • DIN, ISO, RMA • Customer specific • Lubricant-Elastomer Compatibility • FLENDER & SEW • Friction torque • Assembly 	 <ul style="list-style-type: none"> • Deformation • Contact stress • Load and stress peaks • EHL simulation • Sealing-lip lift-off

Radial Shaft Seal Engineering Services on fst.com

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