



# VALUE SELLING BOOKLET FOR DISTRIBUTION PARTNERS

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## FREUDENBERG COMPANY, BRANCHES AND BRANDS

Freudenberg Sealing Technologies is the largest business group in the Freudenberg Group with some 13,500 employees and is part of the Seals and Vibration Control Technology business area. As a technology expert and global market leader for sealing technology, Freudenberg Sealing Technologies is a reliable supplier and professional development and service partner to industry. The company acts as a trusted partner to its customers, for example in the automotive industry, civil aviation, mechanical engineering and shipbuilding, the food and pharmaceutical industries, and the agricultural and construction machinery industries. Based on their knowledge of engineering and the market acquired over many years, the sealing experts find the right solution for all sealing requirements. Worldwide production and warehouse locations as well as a network of strong Distribution partners enable outstanding product availability. In addition, customers benefit from an extensive portfolio of product-related, logistics and on-line services.

The Freudenberg brand stands for more than 170 years of experience in engineering and materials, which along with top-quality and innovative sealing solutions, is the basis for Freudenberg Sealing Technologies being at the forefront of technology and innovation leadership. In addition, the Dichtomatik brand offers reliable sealing products manufactured by certified suppliers to complete its range.

### OUR UNIQUE DISTRIBUTION NETWORK

We are just as uncompromising in the selection of our strategic partners as we are with our sealing qualities. Our global network is formed exclusively by well-trained, highly qualified and certified distributors. Thanks to this distribution partners, we ensure many contact and service points always nearby. They have the same quality standards, are competent specialists and share our values. Those are partners, on whom we trust – for decades and beyond national borders. This local support means understanding for customers' specific local markets. With this outstanding partnership combined with 100% batch management, Freudenberg Sealing Technologies offers extraordinary quality controlled products and ensures thus process reliability.

### ADVANTAGES WHEN BUYING FROM OUR DISTRIBUTION PARTNERS

- Access to the worldwide Freudenberg Sealing Technologies product range
- Two brands from a single source: state-of-the-art Freudenberg brand products for all kind of applications – and the Dichtomatik brand which offers reliable sealing products manufactured by certified suppliers.
- Highest technical competence
- Qualified training and certified sealing knowledge
- Coordinated, simple and fast processes
- Reliable logistics and secure supply chain management
- Access to Freudenberg's engineering services and material know-how at any time
- One face to the customer for whole sealing systems



## SIMMERRING® MSS1

### PRODUCT DESCRIPTION

The standard Simmerring® BAUM is a patented sealing system with a dust lip made of NBR or FKM as well as an inner buffer. The MSS1 substitutes the two-seal-solution which traditionally contain a primary and secondary redundant seal in vertical sealing applications. Additionally, it is a proven type with high resistance to soiling and metal abrasion in the oil chamber.

### ADVANTAGES AT A GLANCE

- Robust sealing system with two sealing elements
- Broad range of applications, e.g. in different gearboxes and pump applications
- Very long service life and reliability, thanks to protection from internal contamination even in a vertical shaft position
- Low friction even at overpressure
- Less stress of lubricant due to sinus wave lip
- Up to 70% less friction/power dissipation in comparison to existing solutions (two seals)
- Available without tooling cost from 20 mm to 145 mm shaft sizes

## PREMIUM SINE SEAL

### PRODUCT DESCRIPTION

Thanks to its unique design and sealing behavior, the Premium Sine Seal from Freudenberg Sealing Technologies can more than double the service life of the sealing system. The new sealing solution seals reliably, reduces friction and power loss, and actively counteracts internal contamination in the sealing system.

### ADVANTAGES AT A GLANCE

- Bi-directionally acting, dynamic sealing solution for oil and grease lubrication
- Low radial force and specific contact pressure on the shaft
- Wide contact area of the sealing lip on the shaft
- Low friction power
- Reduced temperature development
- Robust solution with high conveying efficiency
- Generates virtually no shaft run-in
- Wiping effect promotes lubricant exchange at the sealing point
- Wiping effect promotes lubricant exchange at the sealing point
- Long service life of the sealing system
- Reduced cost of ownership

# PRODUCT HIGHLIGHTS

## STATE-OF-THE-ART SOLUTIONS OF THE FREUDENBERG BRAND

Freudenberg Sealing Technologies offers sealing products and solutions for all kind of applications. From standard O-rings, piston or rod seals to customized products and complete solutions for all kind of industries. Detailed product and material information on the entire portfolio can be found on the companies websites or in the e-Catalog and data sheets.

Are you interested?  
Contact an authorized distribution partner:



Find a distributor nearby



FST product overview



Product data sheet



Video: Modular Sealing Solution MSS1



FST Website



## MERKEL® OMEGAT OMSU

### PRODUCT DESCRIPTION

Merkel® Omevat OMSU-MR PR is a two-piece seal set for sealing piston rods, consisting of a profile ring made of polyurethane with an integrated pressure-relief function and an O-ring as the pre-stressing element. Can be used as an individual seal in conjunction with a double wiper up to an operating pressure of 16 MPa.

### ADVANTAGES AT A GLANCE

- Enhanced operating reliability of sealing systems with tough operating parameters (no continuous pressure build-up in the intermediate space)
- Extended service life of sealing systems due to stable long term behavior (reduced loads on the sealing system from friction and wear)



▶ Product data sheet



▶ e-Catalog



## MERKEL® V-PACKING

### PRODUCT DESCRIPTION

Merkel® V-Packing Set VPS40 is a multi-part seal set for sealing piston rods, comprising one polyurethane pressure ring, one poly-urethane V-ring and one elastomeric support ring as energizer. For challenging heavy duty applications, as well as for large diameter hydraulic cylinders up to Ø 1,900 mm. The seal set is able to handle high operating pressures up to 40 MPa and unfavorable operating conditions like long stroke/low speed/high pressure or short stroke/high frequency/low pressure. The seal set can be placed in adjustable and non-adjustable housings.

### ADVANTAGES AT A GLANCE

- Innovative design with focus on low friction
- Best sealing functionality at the V-cut, since sealing edges are perfectly aligned
- No loss of sealing function at low starting temperatures, as the influence of the thermal expansion in the area of the V-cut has been optimized by FE calculations
- Longevity thanks to the use of wear-resistant and hydrolysis-stabilized high performance polyurethane
- Based on the proven U-ring design, the seal set can also be used with increased radial deflection, e. g. as a result of worn metal guides
- Easy installation due to the use of robust materials and self-adjusting preload element
- Ready to install delivery. Cutting on site is not required



▶ Product data sheet



## RADIAMATIC® HTS II

### PRODUCT DESCRIPTION

The Radiamatic® HTS II shaft seal ring offers multifaceted options for use in the process industry. This special development made of PTFE is distinguished by its lip's low contact pressure on the shaft and, as a result, low frictional losses. Special design available to meet stringent cleaning and sterility requirements.

### ADVANTAGES AT A GLANCE

- Good dry running properties
- Steam resistant
- Good thermal conductivity
- Electroconductive/antistatic
- Type can easily be matched to housing
- Suitable for water applications
- Anti-adhesive

### ADDITIONAL ADVANTAGES FOR THE HYGIENIC DESIGN

- Dead space-free in terms of hygienic design
- For untempered shaft surfaces
- Wear resistant
- Good dry running properties
- Allows complete draining of containers



▶ Product data sheet



▶ FST Website



▶ Installation Instructions



▶ Product data sheet



▶ e-Catalog



▶ Dichtomatik brand Website



## SHAFT REPAIR SLEEVES

### PRODUCT DESCRIPTION

Shaft repair sleeves offer an economical alternative to the replacement of elaborate post-processing of the shaft. Shaft sleeves naturally can also be used as original equipment in machines, assemblies or facilities to avoid the complex, cost-intensive or difficult processing of shaft running surfaces. Shaft repair sleeves of the product brand Dichtomatik can be delivered in all its dimensions, up to 200 mm, from stock. Moreover, special dimensions, with stronger walls for example, can be manufactured after a technical consultation. The shaft sleeves are packed individually and delivered with multilingual mounting instructions.

### ADVANTAGES AT A GLANCE

- Simple and fast repair (mounting sleeve and instructions are delivered with the product)
- Economical rebuilding of the shaft running surface since dismantling and reworking of the shaft are eliminated
- Elimination of costly machine downtime since the repair time is reduced to a minimum
- The radial shaft seal ring running surface is rebuilt permanently with full functionality
- Secure fit on the shaft due to press fit
- Optimally processed and wear-resistant surface guarantees a long lifespan
- Retention of the original seal dimensions, which simplifies stocking of replacement parts



## UNPARALLELED RANGE OF O-RINGS

### PRODUCT DESCRIPTION

The O-rings of Freudenberg Sealing Technologies are used for the static sealing of motionless machine parts. The versatile usage in applications include water fittings, air conditioners, vehicle engines or dentist drills. In addition, the classic O-rings seal is also available in special shapes and dimensions, making it suitable as a dynamic sealing element, for example as piston or rod seals in hydraulic elements. O-rings are manufactured from a wide variety of materials for all requirements.

### TREATMENT

Optimizations of a product or process flow sometimes require adaptation to increase the functionality of the application under specific operating conditions. In addition to the broad range of products and services Freudenberg Sealing Technologies offers numerous options for environmentally friendly and standard-compliant high-performance coatings. Here, too, we ensure consistent, high quality through standardized processes and modern manufacturing. Today, we already provide well over 250 million parts per year with a wide variety of coatings.

Our numerous different materials also conform to many approvals or have several certifications for different kinds of applications. Our standard O-rings can be supplied as FEP encapsulated version in industrial standard quality from the Dichtomatik brand. For more information contact your distributor.

### ADVANTAGES AT A GLANCE

- Optimization of lubrication properties
- Stick-slip free
- Lower loose bending moments
- Automated assembly
- Silicone and paint wetting free
- Anti-stick effect
- Easier assembly
- Technical cleanliness
- Increased process reliability



► FST Website



► Animation Video



► Dichtomatik brand Website



## OMK-PU AU 30500 HYDROLYSIS AND GLYCOLYSISRESISTANT

### PRODUCT DESCRIPTION

A two-piece piston seal, as potential alternative to PTFE material, made of the new Freudenberg hydrolysis resistant high-performance polyurethane 98 AU featuring an O-ring energizing element made of HNBR. The special design and material combination ensures maximum tightness, durability and chemical resistance even in demanding applications especially in regions with higher temperature and humidity levels.

### ADVANTAGES AT A GLANCE

- Cost effective (injection ready molded)
- Inter-changeable with standard PTFE DIN ISO7425 grooves
- Re-calibration after assembly not required
- Robust against damage (tube surface and assembly process)
- High level of physical properties (higher resistance to gap extrusion) and high wear resistance
- Short stroke applications possible
- Very low leakage values
- Low friction due to hydro-dynamically optimized sealing geometries
- Outstanding hydrolysis and glycolysis resistant TPU (for harsh environment)
- A high level of operational parameters:
  - Pressure:  $\leq 40$  MPa
  - Temperature:  $-30^{\circ}$  to  $+120^{\circ}$  C \*

\*Operating temperature belongs to the entire seal set



► Product data sheet



## 75 FKM 170055

### MATERIAL DESCRIPTION

This material is an especially wear-resistant material made of fluororubber that has been specifically developed for radial shaft seals in synthetic oils. It is an excellent material for Simmerring® radial shaft seals that are used in highly dynamic applications with high acceleration and high-speed movement such as robotics and enables extended service life of the sealing system. Products made of 75 FKM 170055 have significant advantages with respect to the total cost of ownership.



## 94 AU 30000

### MATERIAL DESCRIPTION

Thermoplastic Polyurethane (PU) is produced by a polyaddition reaction of difunctional diisocyanates with divalent alcohols or polyols. This reaction creates a urethane bond, being the reason for the material's name. Depending on the kind of manufacturing method the material can be hard and brittle or soft and elastic. It offers a high elasticity as well as a very good mechanical strength and wear resistance. Nevertheless Polyurethane reaches its limits in polar media, lyes and brake fluids. The flexibility stays good even at low temperatures. The material is also extremely resistant to ozone, oxidation, petroleum products and many more. The temperature range for standard versions is from -30 °C to +80 °C. Freudenberg Sealing Technologies has developed a special Polyurethane material, 94 AU 30000, which offers a significantly higher service life and withstands a greater range of extreme temperatures (-35 °C to +120 °C).

### ADVANTAGES AT A GLANCE

- Extension of the service life expectancy
- Reduction wear band width for Simmerring®
- Reduction of shaft wear grooving
- Reduced downtime and lower maintenance costs

### ADVANTAGES AT A GLANCE

- Ability to withstand stress
- High extrusion stability allows operating pressures up to 50 MPa
- High tear resistance boosts operating life and resistance to wear
- Stability in temperatures from -35 to +120 °C
- Outstandingly suited to mineral and biodegradable hydraulic fluids
- Mobile machinery (agricultural/construction equipment, materials-handling technology)
- General hydraulics applications for use around the world

## HIGHLIGHT MATERIALS

Freudenberg Sealing Technologies has been developing innovative brand products at the highest level for decades. The quality of the material used is critical in ensuring optimum functionality of seals. This is an area in which Freudenberg Sealing Technologies is particularly proud of its worldwide pioneering role.

Working in development cooperations with various research institutes, as well as leading manufacturers of polymers and chemicals, engineers and chemists develop new materials for the most demanding functional requirements on a daily basis. The materials developments need to meet the respective customer-specific requirements and withstand all conceivable loads encountered in their sector – not just in terms of temperature, pressure, and media resistance,

but also static or dynamic loads. The service life of the products is subject to continuous improvement thanks to optimization of the materials. Constant checks on the road to becoming a series production material also guarantee you the highest quality.

Are you interested?

Contact an authorized distribution partner:



► Find a distributor nearby



► Virtual Tour Mixing Facility



► FST product overview



► FST Website



► Product data sheet



► Whitepaper



## CHEMICAL PROCESSING 98 AU 30500

The chemical industry comprises a wide range of different processes and supplies raw materials to many other sectors. In processes involving fine and specialty chemicals, temperatures of up to +300 °C (+572 °F) and even higher, can push equipment components and associated materials to their limits, including sealing systems. In the past, some applications required extreme thermal stability while others needed strong chemical resistance.

### 80 SIMRIZ® 498

The Simriz® product lineup is well suited to meet the demanding sealing requirements across a variety of applications for the chemical processing industry. 80 Simriz® 498 is a perfect example. Its patented triazine cure system provides outstanding long-term performance in nearly every environment, including acids, solvents and other harsh chemicals. With a temperature range of -5 °C to +320 °C (+21 °F to +617 °F), the compound also performs well under overheated steam up to +230 °C (+446 °F) and hot water conditions.

### 75 SIMRIZ® 495

Simriz® 495 performs well in a wide variety of harsh chemicals as well as under overheated steam and hot water conditions. Especially its outstanding performance in strong acids and oxidizers makes Simriz® 495 the perfect match for nearly every application in the chemical process industry. The black 75 Simriz® 495, offers a universal media resistance, even to amines. The temperature range is between -15 °C and +230 °C (+5 °F and +446 °F). Providing high-value, cost-efficient solutions, 80 Simriz® 498 and 75 Simriz® 495 outperforms materials from leading competitors in virtually every metric. It can stand up to extreme conditions across a range of chemical processing applications, including: Pumps, Valves, Paint spray equipment, Mechanical seals, Dispenser systems, Heat Exchangers.

### MATERIAL DESCRIPTION

The new in-house developed polyurethane 98 AU 30500 shows superior performance in comparative testing under extreme conditions when compared to other commercially available sealing polyurethanes. While conventional seals in this hardness range of 98 shore A showed premature failure during testing, seals made from this new material showed an ideal performance and wear behaviour. The tear resistance at 140 MPa, which is important for a good wear behaviour, is higher than that of other comparable polyurethanes. The new material has other outstanding properties, as it can be used in mineral-based hydraulic media up to a temperature of +120 °C and shows a high hydrolysis resistance even in applications in hot water up to 80 °C. In addition to this, the extrusion resistance of the material has also been improved to allow for higher system and spike pressures. The low friction behaviour of the new material 98 AU 30500 scores points in 2 areas. Low friction leads to reduced wear and therefore to increase seal life. Due to its various benefits, the new material is also coming into focus as a potential replacement for PTFE sealing solutions. This is an important step in view of the awaited limitations from the new PFAS regulations. All in all, the new 98 AU 30500 is already a pioneering material when compared to other conventional polyurethane solutions available in today's market.

### ADVANTAGES AT A GLANCE

- Extreme wear resistance and a higher resistance to chemical attack from hydraulic fluids when compared to other polyurethanes .
- The very low friction forces generated, lead to an increased service life
- A high extrusion and tear resistance allows for higher system and spike pressures
- Excellent friction and leakage behaviour make this material a potential substitution for PTFE sealing solutions
- Free from PFAS restrictions when compared to PTFE solution
- Larger application range from -25 °C bis +120 °C
- Suitable for use in a variety of different applications

## SIMRIZ®

### LONG-LASTING, HIGH-PERFORMANCE FFKM SEALS

Designed for thermal stability and nearly universal protection against the chemical elements, Freudenberg Sealing Technologies' proprietary family of Simriz® Perfluoroelastomer compounds offer outstanding sealing performance. Simriz® stands out with its broad chemical stability, like PTFE, combined with the rubbery-elastic qualities of an elastomer. Simriz® FFKM's are used wherever extreme safety standards apply and high maintenance as well as repair expenditures exceed the costs of the seals. Freudenberg is vertically integrated back to the monomers to provide unparalleled material performance, cost competitiveness and speed of delivery. In addition, many popular compounds and AS568 sizes are in stock.

### ADVANTAGES AT A GLANCE

- Patented cross-linking system provides superior performance beyond the limits of other competitor FFKM products
- Freudenberg is the only vertically integrated O-ring manufacturer
- As the only vertically integrated O-ring manufacturer down to the monomers, Freudenberg can provide the most cost-efficient FFKM O-rings
- Outstanding performance under steam and hot water conditions



► FST Website



► 75 Simriz® 495  
Flyer



► Simriz® 498



► Product Data Sheet



# PROCESS INDUSTRY

## CHALLENGES FOR SEALING SYSTEMS IN THE PROCESS INDUSTRY

In our everyday life, we take it for granted that food and beverages are free of germs and have an unadulterated taste. When we use detergents and body care products or take medications, we simply assume that we are holding a high-purity product in our hands. These standards, which are commonplace for us, must be guaranteed for a system manufacturer and operator in the process industry every

single day. Due to the many different and often unique features of the systems and processes in the pharmaceutical, food and chemical industries, the challenges for a sealing system in these areas are manifold. Freudenberg Sealing Technologies has risen to these challenges and developed appropriate sealing solutions that are innovative, functional, and durable.

### CHALLENGES IN THE PHARMACEUTICAL INDUSTRY

- High temperatures and pressures
- Powdery media
- Chemical resistance to various educts and solvents
- Compliance with pharma-specific approvals such as USP Class VI and FDA
- Conformity according to Hygienic Design
- Aggressive CIP/SIP media



### CHALLENGES IN THE FOOD & BEVERAGE INDUSTRY

- Prevention of flavor transfer
- Conformity according to Hygienic Design
- Temperature variations
- Media that contain grease
- Abrasion
- Aggressive CIP/SIP media
- Compliance with food-specific approvals, such as EU (Reg.) 1935/2004, EU (Reg.) 10/2011, FDA §177.2600, NSF 51, GB 4806 and GB 9685



### CHALLENGES IN THE CHEMICAL INDUSTRY

- Aggressive and toxic chemicals
- High pressures, temperatures and temperature peaks
- The use of solvents
- Compliance with emission values according to the TA Luft regulation



## SEALING SOLUTIONS FOR THE PROCESS INDUSTRY

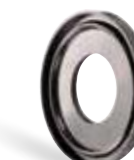
### HYGIENIC USIT®

With the EHEDG certified Hygienic Usit®, contamination at the screw connection point can reliably be prevented in open and closed manufacturing processes with direct product contact. This completely replaces metal washers that are not food-compliant due to gap formation. The elastomer bead is available in three different approved materials: 70 EPDM 291, 75 Fluoroprene® XP 45 and 70 EPDM 253815. In addition, optimally matched screws and cap nuts are available thanks to a cooperation with HEINRICH KIPP WERK.



### CLAMP SEALS

As ideal sealing element for flange connections in continuously operated systems, clamp seals from Freudenberg Sealing Technologies can be used in a wide range of applications within the process industry. They are “made in Europe” and enable a simple and at the same time reliably sealed pipe connection. One big advantage is the reusability after opening the joint. The portfolio includes three different materials that all comply to the industry-specific legal regulations: 70 EPDM 291, 75 Fluoroprene® XP 41 and 70 VMQ 117055.



### O-RINGS

Especially for the demanding conditions and requirements of the process industry, Freudenberg Sealing Technologies offers O-rings for aseptic flange connections according to DIN 11864. Thanks to a dead space-free sealing they guarantee hygienic manufacturing processes. The available materials, 70 EPDM 291, 75 Fluoroprene® XP 41 and 70 VMQ 117055, comply with the industry-specific legal standards.



► FST Food & Beverage Website



# SERVICES PORTAL



► **e-Catalog**

Do you need a Simmerring®, an O-ring or another seal? Whether you are looking for a Freudenberg premium seal or a Dichtomatik seal that meets common industry standard requirements, you will find the right seal here. Explore the possibilities of the e-Catalog or contact the person you normally deal with if you are looking for an individual sealing solution.



► **CIP/SIP GUIDE**

Determine the right cleaning agents for your process based on the Freudenberg materials you use. Or vice versa: find the right seal materials for your cleaning process.



► **SIMMERRING® SELECTOR**

With the help of the Simmerring® selector, you can quickly and easily find the right Simmerring® for your application by entering specific application parameters in just a few steps.



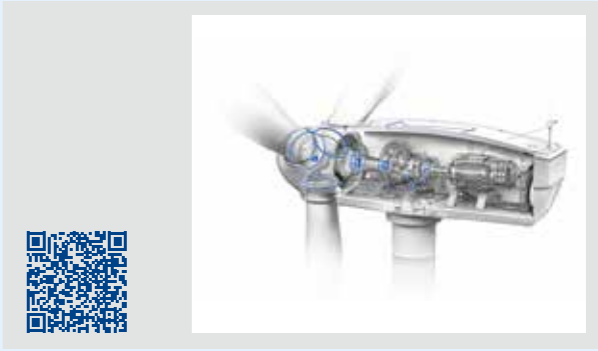
► **CHEMICAL RESISTANCE GUIDE**

Get exclusive access to the results of decades of testing and experience. The Chemical Resistance Guide shows you the appropriate sealing materials for the common process media used in general industry and process industries, such as acids and sulfates, and helps you optimize your processes and maximize seal life in the field.



► **O-RING CONFIGURATOR**

Freudenberg Sealing Technologies innovative, web-based O-ring configurator sets improved standards as an auxiliary application for O-ring selection. The goal of this online tool is to select an optimal combination of O-ring and installation space to ensure a reliable seal. Unlike other O-ring configuration programs, the calculation analyses and target value recommendations are based on the current ISO 3601 and other international O-ring standards.



► **3D ANIMATIONS**

Discover the innovative sealing solutions for applications in various market segments with the 3D animations from Freudenberg Sealing Technologies.

# SERVICES AND TOOLS

Expertise in all process areas, from research and development, materials and manufacturing to customer-oriented sales: this is the guarantee for Freudenberg Sealing Technologies' unique know-how and a product range of the highest quality. Conveying this knowledge directly and transparently to customers is the goal of the services provided by Freudenberg Sealing Technologies.

✉ **Are you interested?**  
Contact an authorized distribution partner.



► Find a distributor nearby



► Service Portal

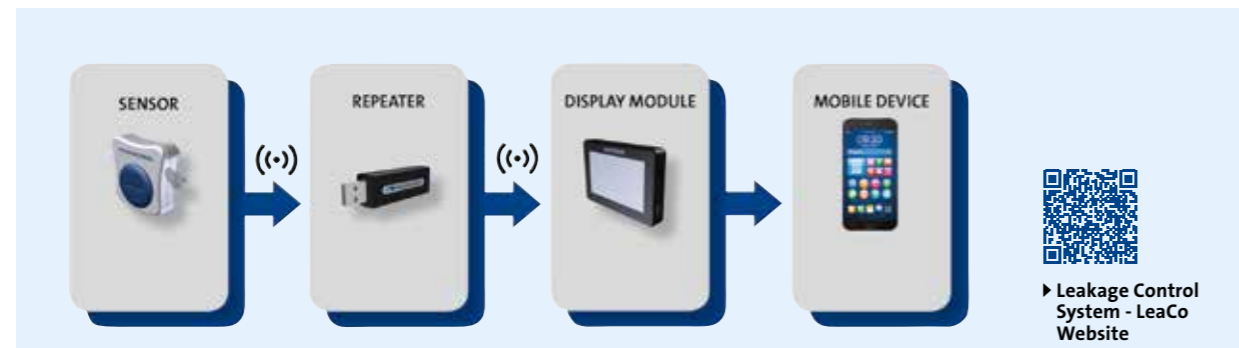


### ENGINEERING

Are you developing or modifying an application and would like the expertise of Freudenberg Sealing Technologies product experts? Freudenberg Sealing Technologies in-house research and development team is continuously working on new sealing solutions, with 250 engineers working on new materials for better lifetimes, and customized solutions. With our distribution network, Freudenberg Sealing Technologies can identify your needs nearby and develop a new solution to keep your machines running. Freudenberg Sealing Technologies also offers customized sealing solutions with special geometries or application requirements with excellent material, product, and application know-how. (Freudenberg Xpress® service provides you with an outstanding option for customized solutions.)

### MATERIAL COMPETENCE

Materials build the foundation of Freudenberg's sealing technology. With our profound materials experience, broad processing expertise, and comprehensive product knowledge, Freudenberg Sealing Technologies materials are essential for your success. Freudenberg Sealing Technologies produces more than a billion seals every year from over 15,000 tons of production materials. You have access to a diverse portfolio that impresses both in quality and quantity with over 1,800 compounds from 1,000 raw materials many of which are standardized compounds for your individual sealing needs. Our experts at Freudenberg Sealing Technologies are here to advise you on selecting the right materials for your application and are available from testing through production.



### LEACO: SMART SENSORS – THE SENSORY ORGANS OF THE FUTURE

The Leaco (Leakage Control) leakage sensor from Freudenberg Sealing Technologies detects leaks, sends a message to the associated display module and then to a cell phone as a text message. The sensor needs to be activated once by simply pressing a button and being connected to the display module. If the fleece integrated on the back of the sensor comes into contact with leakage fluid, a wireless alarm signal will be sent to the display module.

The display module has a touch display and is operated via a USB Micro-B input and a power plug. Up to 40 sensors can be connected to the display module. In the event of an alarm, the affected sensor will be shown on the display and be forwarded to a cell phone as a text message upon request, stating the name of the sensor.



## FREUDENBERG SEALING TECHNOLOGIES STANDS FOR PROCESS RELIABILITY

### BATCH MANAGEMENT:

Thanks to the elaborated batch management systems Freudenberg Sealing Technologies can tell you at any time which of your products relate to which batch production (meaning we can provide you with production place and date, compound number, and supply chain information). For Freudenberg premium products, we also provide you best before dates allowing for better stock planning.

### TRAININGS/WEBINARS/TECH-DAYS:

At Freudenberg Sealing Technologies we pride ourselves on serving our customers, this requires well-trained technical experts. We provide regular training to both our team and certified distribution partners. Additionally, we offer our partners regular webinars and tech days for their staff to fully understand our Freudenberg products.

### CERTIFICATIONS AND QUALITY APPROVALS:

Freudenberg Sealing Technologies material and sealing know-how ensure best-in-class products for customer-specific demands. Initial sample test reports reassure our customers to order the series.

### LUBE & SEAL:

Providing an outstanding value-added service Freudenberg Sealing Technologies also offers appropriate lubricants for your sealing solutions from our partner Klüber. Thanks to this cooperation, Freudenberg Sealing Technologies offers specific tests with Klüber lubricants ensuring the compatibility of both the seals and lubricants.

### COATINGS/MARKINGS:

Freudenberg Sealing Technologies offers permanent quality control thanks to visual features and surface quality.

# FREUDENBERG XPRESS®

## CUSTOMIZED SEALS IN ORIGINAL FREUDENBERG QUALITY

Repair demands, small series, prototyping – Freudenberg Xpress® offers machined seals in the quality of series production using state-of-the-art production technologies.

The many production possibilities at Freudenberg Xpress®, such as CNC machining and welding, provide high flexibility and avoid costly and time intensive downtimes. Thanks to the worldwide network of local Freudenberg Xpress® service centers and production partners, our customers always have a local contact person at their side and fast deliveries are possible.

Due to the use of original Freudenberg materials and sealing profiles, the Freudenberg Xpress® products boast the same quality as in series production. This ensures not only high quality and safety, but also enables you to easily exchange Freudenberg seals in your plants.

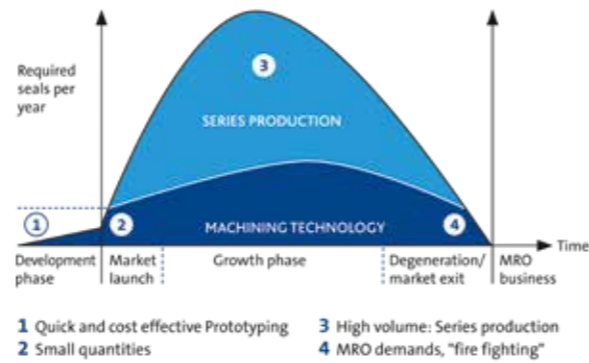
### PRODUCT PORTFOLIO

The portfolio of Freudenberg Xpress® includes catalog parts, complex plastic parts, customized solutions as well as welded and cut-to-size products.

Machined seals are a particularly interesting alternative when the production of a series tool is too expensive or not even possible due to the special design. This is often the case in prototyping, which in most cases then requires multiple functional specimens to be produced. Freudenberg Xpress® also offers the right solution for other stages of the product lifecycle (see graphic on the right).

Thanks to state-of-the-art welding technologies, Freudenberg Xpress® can produce particularly large seal profiles of up to 20 meters. Extruded seal profiles produced from the original Freudenberg polyurethane materials form the basis for this.

### STAGES OF A PRODUCT'S LIFECYCLE



### YOUR BENEFITS AT A GLANCE

- Original Freudenberg profiles and materials like in series production
- Tailor-made sealing solutions
- Long service life thanks to unique material characteristic and state-of-the-art production processes
- Cost-effective small series production and prototyping
- High degree of consultancy expertise
- Fast deliveries for very urgent repair demands – if necessary and after previous consultation within 24 hours)
- Rapid Prototyping



► Freudenberg Xpress® Website



► Virtual Tour through our production site in Schwalmstadt, Germany



► Freudenberg Xpress® brochure



Guiding Element  
made of Laminated Fabric



Elastomeric Wiper  
with Aluminum Housing



Compact Piston Seal  
made of NBR, PU and POM



Merkel Radiamatic® RPM 41  
made of NBR



Merkel® V-packing set EK  
made of NBR



Rapid Machined Simmerring  
made of Fluoroprene® XP



O-ring  
made of EPDM



## SEGMENT-SPECIFIC SOLUTIONS

**Freudenberg Xpress® provides high-quality machined seals for nearly every industry segment – from the heavy industry and the fluid technology to the process industry.**

### HEAVY INDUSTRY

Pressures up to 2,500 bar, aggressive media and many more – the heavy industry requires especially resistant and reliable sealing solutions. Freudenberg Xpress® is the right partner here. The portfolio includes ten product lines made from original Freudenberg materials and profiles. These are available as cut-to-size, precision-joined or endless versions. In order to allow individual diameter specifications for wipers, v-seal set packings and radial shaft seals, Freudenberg has developed a special joining method.

### PROCESS INDUSTRY

The operating conditions in the process industry are very challenging. The used sealing products need to withstand aggressive cleaning and product media, high temperatures as well as extreme pressures. Additionally, they need to comply with industry- and country-specific legal regulations, such as those of the FDA or EU (Reg.) 1935/2004. Sealing solutions from Freudenberg Xpress® are tailored to these requirements and are thus suitable for use in the food, beverage, pharmaceutical and chemical industries. The portfolio includes original Freudenberg materials, such as the specially developed Fluoroprene® XP or 70 EPDM 291.

## İZMİR

1202/1 Sokak No:101/D Yener İş Merkezi  
35170 Yenisehir / İzmir  
Tel: 0 232 457 92 92

## GEBZE / İSTANBUL

Şekerpınar Mh., Muhsin Yazıcıoğlu Cd.  
No:78, 41420 Çayırova / Kocaeli  
Tel: 0 262 658 19 90

## BURSA

Üçevler Mh., İzmir Yolu, No:233/B 16120 Nilüfer / Bursa  
Tel: 0 224 443 00 80

## ESKİŞEHİR

Sultandere Mahallesi, 75. Yıl Mahallesi 1. Cadde C Blok No:17/B  
Emko Sanayi Sitesi, 26250 Odunpazarı / Eskişehir

Tel: 0 222 228 15 85

## KONYA

Fevzi Çakmak Mahallesi 10768. Sokak C Blok  
No:4 D:A Karatay Konya  
Tel: 0 332 345 44 44

## HOME OFFICES

ADANA - ANKARA - ANTALYA - DİYARBAKIR - SAMSUN

[info@unluteknik.com](mailto:info@unluteknik.com)