Revolutionizing Hydraulic Sealing
FROM CONCEPT TO DELIVERY

Interactive brochure
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Trelleborg Sealing Solutions can apply its expertise in hydraulic sealing to give clear benefits by extending service life, reducing friction and optimizing performance. Knowing that demands are ever changing, Trelleborg is continually developing new technologies and refining existing solutions to meet the ever more stringent and complex requirements of the fluid power market.

NEW FLUID POWER TECHNOLOGIES
Pioneering the revolution in hydraulic sealing, Trelleborg Sealing Solutions has invested substantial resources into the development of new lubrication management technologies.

Through a deeper understanding of the functioning of hydraulic fluids within a sealing system, a new method of fluid management offers reduced friction and wear, resulting in extended service life.

By designing components to work together more effectively with fluids and permitting lubrication to reach areas which would previously remain unlubricated, stick-slip and friction are significantly lowered.

BENEFITS
• Optimizes the performance of the hydraulic system
• Reduces stick-slip
• Improves friction characteristics
• Extends system life
• Reduces maintenance needs
• Lowers total cost of ownership
EXPERIENCE AUGMENTED REALITY

To fully experience this augmented reality brochure, scan the QR code to download the app from the App Store or Google Play, or download directly by searching for “Trelleborg Sealing Solutions Augmented Reality Library”.

1. Install and start the app on your device.
2. Use your device to scan the AR symbol wherever you find it in the brochure to see films, animations and other interactive features.

WORKING WITH TRELLEBORG SEALING SOLUTIONS

With manufacturing and engineering resources in over 40 countries, Trelleborg Sealing Solutions offers the unrivalled ability to provide product development expertise and value-added services with a global reach.

• Advanced delivery programs with global stock holding, customized handling and special packaging services
• Engineering expertise from prototype development to market rollout
• Evaluation of application performance through pressure testing and chemical resistance profiling
• Finite element analysis (FEA) for market leading non-linear analysis
• Manufacturing capabilities with custom solution development
Getting all elements of a sealing solution working together leads to improved performance and product lifetime. One way of achieving this is by using rounded sealing edges that allow sufficient lubrication to reach areas that were previously not lubricated, significantly reducing friction.

**ZURCON® SCRAPER DA 24 VENTING VERSION**
A unique venting design incorporates a pressure-relief function to prevent system failure.

**Applications:** Construction machinery, Mobile hydraulics, Forestry machinery, Telescopic cylinders

**ELASTOMERIC DUALSEAL**
A unique one-piece design provides an alternative to O-Rings and Back-up Rings in standard groove sizes for static hydraulic sealing applications.

**Applications:** Fork lifts, Mobile hydraulics, Industrial hydraulics, Machine tools, Hydraulic presses, Injection molding presses, Cartridge valves

**ZURCON® DUALSEAL**
A heavy-duty static sealing element that combines an O-Ring and Back-up Ring into a single, easy-to-install product.

**Applications:** Fork lifts, Mobile hydraulics, Machine tools, Hydraulic presses, Cartridge valves, Industrial hydraulics, Injection molding presses, Injection Molding Machines

**SPECIAL HANDLING**
A range of services that optimize the mounting and handling of seals, saving time and making business easier.

- **Automated Inspection**
  100% in-process inspection is built in to production equipment to ensure effective quality procedures.

- **Special Marking**
  Individual marking and engraving for easy item recognition and tracking.

- **Surface Treatment**
  Coating and surface modifications for elastomer and plastic products to optimize assembly.
Seal edge with standard contact pressure distribution
Seal edge with neutral/inverse contact pressure distribution

Lubrication Management

Primary Seal Secondary Seal

Primary Seal Secondary Seal

Seal with innovative, rounded sealing lip shows smooth contact pressure distribution curve
Seal with conventional sealing lip shows high contact pressure on sealing edges

INNOVATIVE PRODUCTS
Trelleborg Sealing Solutions is at the forefront of engineering and design. Our global teams work through local contacts with our customers to deliver solutions that not only meet performance criteria, but optimize product life and make business easier.

To optimize performance and service life, Trelleborg engineers can develop solutions that incorporate the latest developments in hydraulic sealing technology.

ASSEMBLY
Let Trelleborg Sealing Solutions simplify your value chain.

By delivering ready-to-use assembled components, taking control of pre-assembly steps for your products, even from other suppliers.
As a founder in the development of specialist seals for fluid power applications, the Trelleborg Sealing Solutions range includes many innovative and unique sealing elements specifically engineered for hydraulic systems.

Encompassing advanced principles such as back-pumping and lubrication management, we work in collaboration with our customers to develop sealing configurations that exceed performance requirements.

Surface competence is a critical element to ensure that the performance requirements for your hydraulic cylinders are met. Trelleborg Sealing Solutions is an expert in this area managed by a Global Surface Competence Team. Devoting a high level of research and development into the analysis of surfaces, counter surfaces and lubrication, we can advise on the optimum surface coatings and finishes for your applications.

The Turcon® M12 PTFE-based material gives unrivalled performance in key hydraulic sealing characteristics, such as friction, wear and high pressure operation. Testing proves that it resists virtually all media, including a broad range of lubricants, and has outstanding wear resistance and friction characteristics, while remaining cost-effective.

With over 60 years' experience, Trelleborg Sealing Solutions prides itself on its superior materials knowledge. Based on decades of research and test results, we are able to recommend the optimum solution in terms of design and material compound for any application.

Discover our wide range of digital tools at www.tss.trelleborg.com
ZURCON® GLYD RING® D
The perfect combination of sealing performance and service life, through optimized contact pressure and minimized heat generation from friction.

Applications: Hydraulics cylinders, Mobile hydraulics, Construction machinery, Truck cranes, Earth moving equipment, Fork lifts

ZURCON® EXCLUDER 5 INJECTION MOLDED
A new generation of wiper to more effectively seal, ease installation and reduce costs at medium and high volumes.

Applications: Hydraulics, General machine operation, Mobile hydraulics, Machine tools

ZURCON® RIMSEAL INJECTION MOLDED
An innovative design gives optimized sealing function and product life at a reduced cost in medium and high volumes.

Applications: Hydraulics, General machine operation, Mobile hydraulics, Machine tools

REVOLUTIONIZING HYDRAULIC SEALING

SCALE OF SURFACE FINISHES
When looking at surface finishes we are working with fractions of a micron. One micron is a 50th of the size of a human hair.

Laser scanning beam
Lubrication oil film on a piston rod: < 0.5 µm

SURFACE STRUCTURE AND MATERIAL RATIO
• With sliding surfaces, significant peaks can cause increased friction and high wear
• Plateau-like surfaces with pronounced grooves provide a good lubrication film and the best sliding characteristics
• The profile of the material ratio curve provides concise information about the profile structure

TURCON® M12
• Resistant to virtually all media including a broad range of lubricants
• Outstanding wear resistance and friction characteristics
• Provides extended seal life
• Operates in wide temperature, pressure and velocity ranges

REACH & ENVIRONMENTAL COMPLIANCE
We at Trelleborg Sealing Solutions ensure that we protect our customers.

Proactive Approach:
• Segment specific emphasis
• Customer specifications
• OEM standards
✓ Full monitoring and actions

Accidents, Claims and Major Recalls as Initiators:
• Food Safety
• Public Health
• Occupational Health & Safety
✓ Focused tracking of emerging requirements

Regulatory Bodies, Societal Responsibility:
• REACH and related regulations
• Product Safety, Occupational Health & Safety, Ethics, Sustainability
• New polyurethane material Zurcon® Z53 & Z54
✓ Active management of chemicals in use
Trelleborg is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative solutions accelerate performance for customers in a sustainable way.

Trelleborg Sealing Solutions is a leading developer, manufacturer and supplier of precision seals, bearings and custom-molded polymer components. It focuses on meeting the most demanding needs of aerospace, automotive and general industrial customers with innovative solutions.

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