

Sealing Solutions for Agricultural Equipment



Your Partner for Sealing Technology

INCREASING PRODUCTIVITY WHILE MINIMIZING ENVIRONMENTAL IMPACT












Agriculture machinery and vehicles are expected to perform in extremely harsh conditions. They require high-performance, long-lasting sealing solutions, which can operate under high pressure and temperature fluctuations, while simultaneously standing up to dirt and moisture, as well as corrosive greases and fuels. Trelleborg Sealing Solutions offers a wide range of sealing and bearing systems to meet these needs.

High-performance, environmentally friendly solutions

Stand up to harsh conditions

Extended sealing life

SELECTED TOOLS FOR DESIGN ENGINEERS

Mechanical Design Assistance	Standards, Conversions and Norms	Learning and Knowledge	Product Selection
 Hydraulic System Calculator  Area & Volume Calculator  Mechanical Engineering Calculator  Fluid Mechanics Calculator  CAD Services	 ISO Fits & Tolerances  Unit & Hardness Converter	 Installation Instructions  e-Learning on Sealing Technology	 Electronic Catalog  Sealing Solutions Configurator

● Website Tools & Services

● Mobile Apps

Further Information

To find our complete range of tools and apps for engineers, visit www.tss.trelleborg.com or scan the QR code.



Technical Library

Technical articles, whitepapers and webinars can be found in the Technical Library at www.tss.trelleborg.com.

Unrivaled Services & Capabilities

Trelleborg Sealing Solutions contributes more benefits than a simple seal supplier. Our experts partner with customers across the globe to help them achieve their goals, whether starting from a "black box" specification, aiding testing and qualification to get product to market, or developing solutions to enhance manufacturing and supply chain processes.



ServicePLUS

- Services to support every step of your value chain:
 - Optimize product & application performance
 - Maximize production throughput
 - Enhance supply chain processes
 - Boost customer care



ENGINEERING

- State-of-the-art CAD tools
- Experienced designers
- On-site support at customer facilities
- Dedicated project management
- FEA modeling
- Prototyping
- Custom-made solutions



TESTING

- Nine research and development centers globally
- World class material & product testing equipment
- Analytical laboratories



PROJECT MANAGEMENT & QUALIFICATION

- Comprehensive project management
- From development to serial production and product introduction

Sealing Solutions for Tractors

MATCHING SEALING SOLUTIONS TO DEMANDING REQUIREMENTS

Tractors are the most used machine for farming and agriculture worldwide. Whether in low horsepower vehicles that work on small holdings or in the monsters that traverse the vast arable lands of the US, seals are critical components in tractors' hydraulic systems.

Seals must keep lubricants in while preventing ingress of harsh media, lowering friction and extending system life. They need to overcome stick-slip for equipment used occasionally or stand up to 24/7 operation during harvesting periods.



Scan the QR code to see our full portfolio of products and solutions for agricultural equipment.



Dualseal

Dualseal in Zurcon® polyurethane or elastomeric materials resists twisting and gives stability at pulsating pressures, providing a low contamination risk.

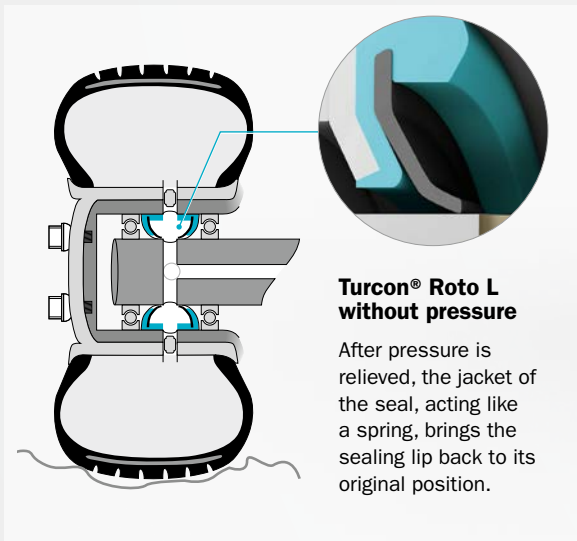
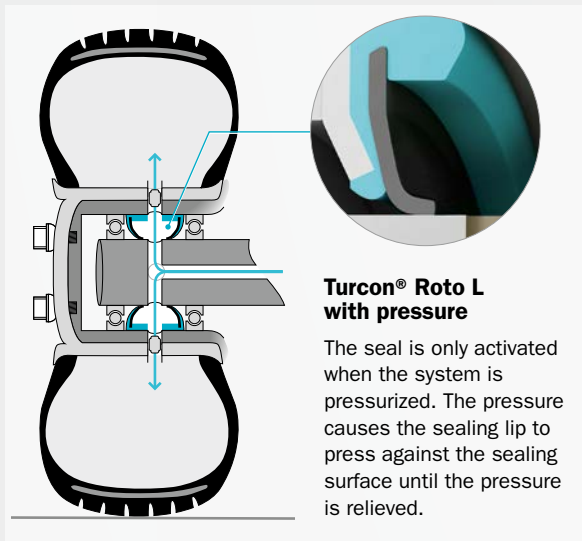
VALVES & PUMPS

To maximize efficiency for the operator, valves and pumps must operate precisely. External media needs to be excluded and time between planned maintenance extended.

Typical Components: Directional control valve, Pneumatic valve, Catridge valve, Control valve

CENTRAL TIRE INFLATION SYSTEM

The Turcon® Roto L seal is engineered to extend the lifetime of Central Tire Inflation Systems by lowering friction. Uniquely, it only seals when sealing is required. This reduces friction to lower fuel consumption and thereby conserves energy. As seal wear only occurs when pressure is activated, seal lifetime is four times longer than a standard seal.





Cassette Seal

Trelleborg Cassette Seals incorporate opposing spring energized lips and a stacked design to reduce friction and wear, extending seal life while improving contaminant exclusion and static sealing ability.

POWER TRAIN

Engines have a variety of configurations and sealing solutions meet the unique requirements of each application. Rotary seals keep oil and grease within the system, while static seals and custom-molded parts prevent ingress of dirt and debris.

Drivetrain components transfer power from the engine to the wheels. Heavy-duty rotary seals, engineered-molded parts and high-performance static seals prevent contamination by mud, dirt and water, protect components from abrasion and keep lubricants inside the system.

Typical Components: Engines, Emission controls, Fuel system, Fan drives, Front & rear axles, Clutch, Gearbox, Transmission



TIRES

Trelleborg Wheel Systems is a leading supplier of tires and wheels for agricultural equipment. Scan the QR Code to find out more or visit www.trelleborg.com/wheels





Scaper DA24

The Zurcon® Scaper DA24 is a double-acting polyurethane scraper for severe operating conditions and heavy dirt attack.

IMPLEMENTS & ATTACHMENTS

Given the proximity attachments have to the ground, static and mechanical face seals are vital in keeping dirt and contamination out of the system. Linear and rotary seals allow for the smooth and quiet operation of hydraulic equipment while preventing leakage into the environment.

Typical Components: Dozer blade, Bucket and lifting cylinder, Power take-off (PTO), Rocker arm shaft, High-demand orbital motor, Disc harrow



Zurcon® Glydring® D in Z13

Lubrication grooves in Zurcon® Glydring® D create a closed reservoir, reducing friction. Its D-shaped profile and two step sealing prevent blow by and extrusion. Zurcon® Z13 polyurethane material has excellent mechanical and elastic properties, with compatibility to hydraulic, mineral, synthetic and water-based fluids.

CYLINDERS & ACTUATORS

Within hydraulic and pneumatic systems, cylinders and actuators play a critical part. It's important that sealing systems within them help achieve maximum performance, over a long operating cycle without leakage.

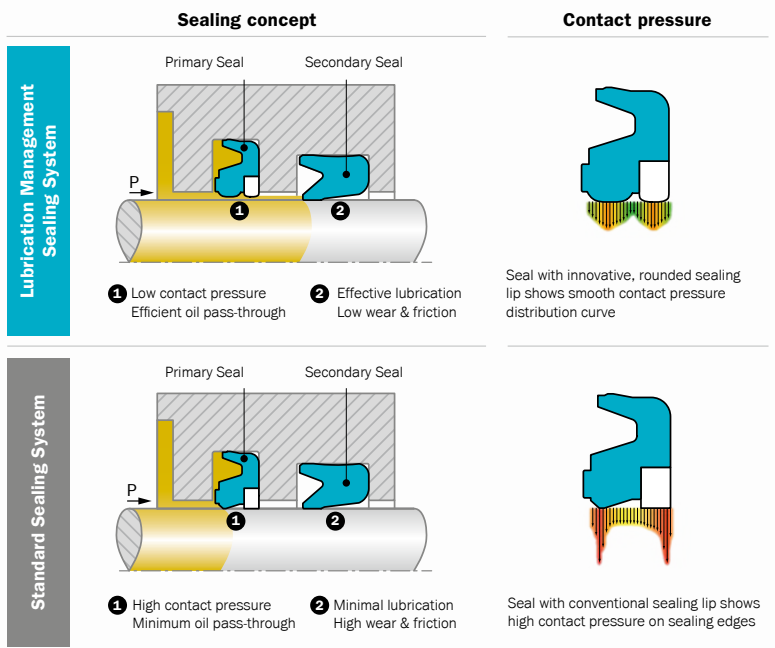
Typical Components: Steering cylinder and knuckle column, Linear actuator in seeding equipment, Lift actuator on garden tractor

LEADING TECHNOLOGY

Continuing to innovate in sealing of hydraulics, Trelleborg Sealing Solutions optimizes system performance.

LUBRICATION MANAGEMENT TECHNOLOGY

Effective sealing in demanding hydraulic applications requires seals and lubricant to work together. Trelleborg's Lubrication Management technology transforms hydraulic sealing by adjusting lubrication conditions of all single sealing elements within a sealing system.



COUNTER SURFACES

Surface competence ensures that the performance requirements for hydraulic applications are met. Having devoted a high level of R&D into the analysis of surfaces, counter surfaces and lubrication, we can advise on the optimum surface coatings and finishes.

MATERIAL & DESIGN COMPETENCE

As a pioneer 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 fluid power 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.

MATERIALS

Trelleborg Sealing Solutions has developed an industry-leading group of materials within each material type. We work with manufacturers of agricultural equipment to help specify the compound that best suits their needs.

ADVANCED ELASTOMER MATERIALS

NBR (Nitrile Butadiene Rubber)

Primarily used with mineral-based oils and greases and in general has good mechanical characteristics.
Operating temperatures: -30 °C to +100 °C / -22° F to +212 °F

HNBR (Hydrogenated Nitrile Butadiene Rubber)

Often used in high-temperature applications due to its excellent abrasion resistance and good mechanical properties.
Operating temperatures: -30 °C to +140 °C / -22 °F to +284 °F

FKM (Fluorocarbon Rubber)

Exhibits very good resistance to fuel, oil and aggressive media, as well as excellent resistance to ozone, weathering and aging. Dependent on structure, fluorine content and curing system, FKM materials differ in chemical resistance and cold-flexibility.
Operating temperatures: -20 °C to +200 °C / -4 °F to +392 °F, for short periods up to +230 °C / +446 °F

TURCON® – Outstanding Friction Characteristics

Proprietary Polytetrafluoroethylene (PTFE) based materials provide low friction with minimized wear in dynamic and high-speed applications. Compatible to virtually all media, even at elevated temperatures, and resistant to aging.
Operating temperatures: -196 °C to +260 °C / -320 °F to +500 °F
Recommended material: Turcon® M12

ZURCON® – Exceptional Wear Resistance

Thermoplastic-based materials with outstanding friction characteristics, making them ideal for reciprocating, very slow rotating and oscillating situations where high wear resistance is required.
Operating temperatures: -60 °C to +260 °C / -76 °F to +500 °F
Recommended material: Zurcon® Z20

ORKOT® – Advanced composite polymers

Unique thermoset composite bearing material ensures optimum performance.
Operating temperatures: -150 °C to +130 °C / -238 °F to +266 °F
Recommended material: Orkot® C380

HIMOD® – Economical Solution for Medium Loads

Provides an economical solution for applications with medium transverse loads, while giving good wear and compression properties.
Operating temperatures: -40 °C to +130 °C / -40 °F to +266 °F
Recommended materials: HM061 and HM062

TURCITE® – Stick-slip Free Operation

Has outstanding friction behavior and good load capacity with stick-slip free operation.
Operating temperatures: -60 °C to +200 °C / -75 °F to +390 °F
Recommended materials: Turcite® M12, T47, T51

SEALS FOR A FULL RANGE OF AGRICULTURAL EQUIPMENT

- Combine Harvesters
- Mowers
- Log splitters
- Attachments, such as disc harrows
- Utility task vehicles (UTV)
- Silos



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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