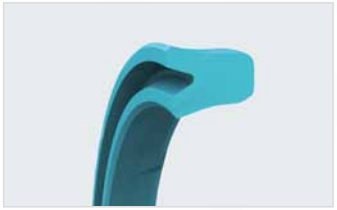
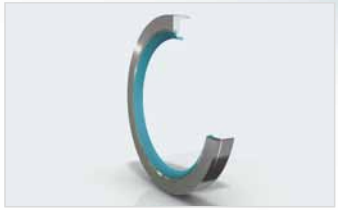
Product Range





YOUR PARTNER FOR SEALING TECHNOLOGY

Your Partner for Sealing Technology

Trelleborg Sealing Solutions is a major international developer, manufacturer and supplier of seals, bearings and molded components in polymers. We are uniquely placed to offer dedicated design and development from our market-leading product and material portfolio: a one-stop-shop providing the best in elastomer, silicone, thermoplastic, PTFE and composite technologies for applications in aerospace, industrial and automotive industries.

With 50 years of experience, Trelleborg Sealing Solutions engineers support customers with design, prototyping, production, test and installation using state-of-the-art design tools. An international network of over 70 facilities worldwide includes over 20 manufacturing sites, strategically-positioned research and development centers, including materials and development laboratories and locations specializing in design and applications.

Developing and formulating materials in-house, we utilize the resource of our material database, including over 2,000 proprietary compounds and a range of unique products. Trelleborg Sealing Solutions fulfills challenging service requirements, supplying standard parts in volume or a single custom-manufactured component, through our integrated logistical support, which effectively delivers over 40,000 sealing products to customers worldwide.

Trelleborg Sealing Solutions facilities are certified according to current market-related quality standards. In addition to the established ISO 9001 standard, our facilities are certified to environmental, health and safety standards, as well as specific customer specifications. These certifications are in many cases prerequisites, allowing us to comply to all market segment requirements.

ISO 9001

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Welcome to Trelleborg Sealing Solutions

SEALING TECHNOLOGY

Trelleborg Sealing Solutions offers an outstandingly comprehensive sealing portfolio – a one-stop-shop providing the best in elastomer, silicone, thermoplastic, PTFE and composite technologies; solutions that feature in virtually every application conceivable within the aerospace, industrial and automotive industries.

A WORLDWIDE PRESENCE

We are uniquely placed to offer a dedicated design and development service for sealing solutions; globally servicing, supporting and supplying customers through an unrivaled international network.

COMMITMENT – TO CUSTOMERS, NEEDS LONG-TERM

Trelleborg Sealing Solutions is one of the world's foremost experts in polymer sealing technology. Using our expertise and experience, we facilitate customers in achieving cost-effective, durable solutions that match their specific business requirements.

For more information watch the Trelleborg movie on the Trelleborg website: **www.tss.trelleborg.com**

A world leader in engineered polymer solutions

THE TRELLEBORG GROUP

Trelleborg Coated Systems
Leading global supplier of unique customer solutions for polymer-coated fabrics deployed in a variety of industrial applications.

Trelleborg Industrial Solutions
Market leader in such industrial application areas as hose systems, industrial antivibration solutions and selected industrial sealing systems.

Trelleborg Offshore & Construction
Leading global supplier of polymer-based critical solutions for deployment in highly demanding environments.

Trelleborg Wheel Systems
Trelleborg Wheel Systems is a leading global supplier of tires and complete wheels for agricultural and forestry machines, materials handling and construction vehicles, and two-wheeled vehicles.

Trelleborg Sealing Solutions
One of the world's leading developers, manufacturers and suppliers of precision seals. It supports its aerospace, industrial and automotive customers through over 20 production facilities and more than 50 marketing companies globally.

THE BLUE DIMENSION™

At Trelleborg, we believe that the benefits of our solutions stretch beyond functionality and business performance. For more information visit **http://trelleborg.com/bluedimension**

Our Global Resources

Americas

1	R&D Center
14	Marketing Companies
1	Logistics Center SCM
10	Manufacturing Sites
	Damping Solutions
2	Automotive Hubs
5	Aerospace Hubs

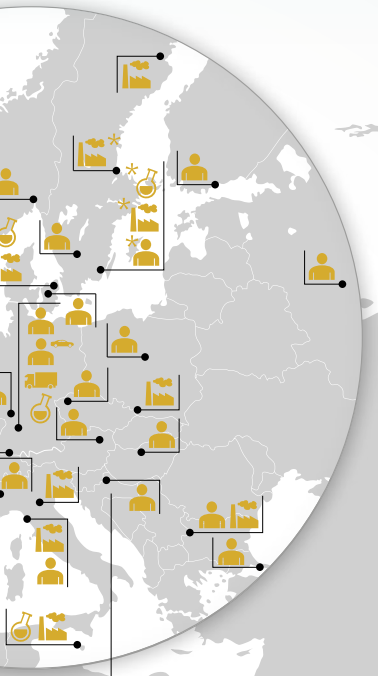
TRELLEBORG

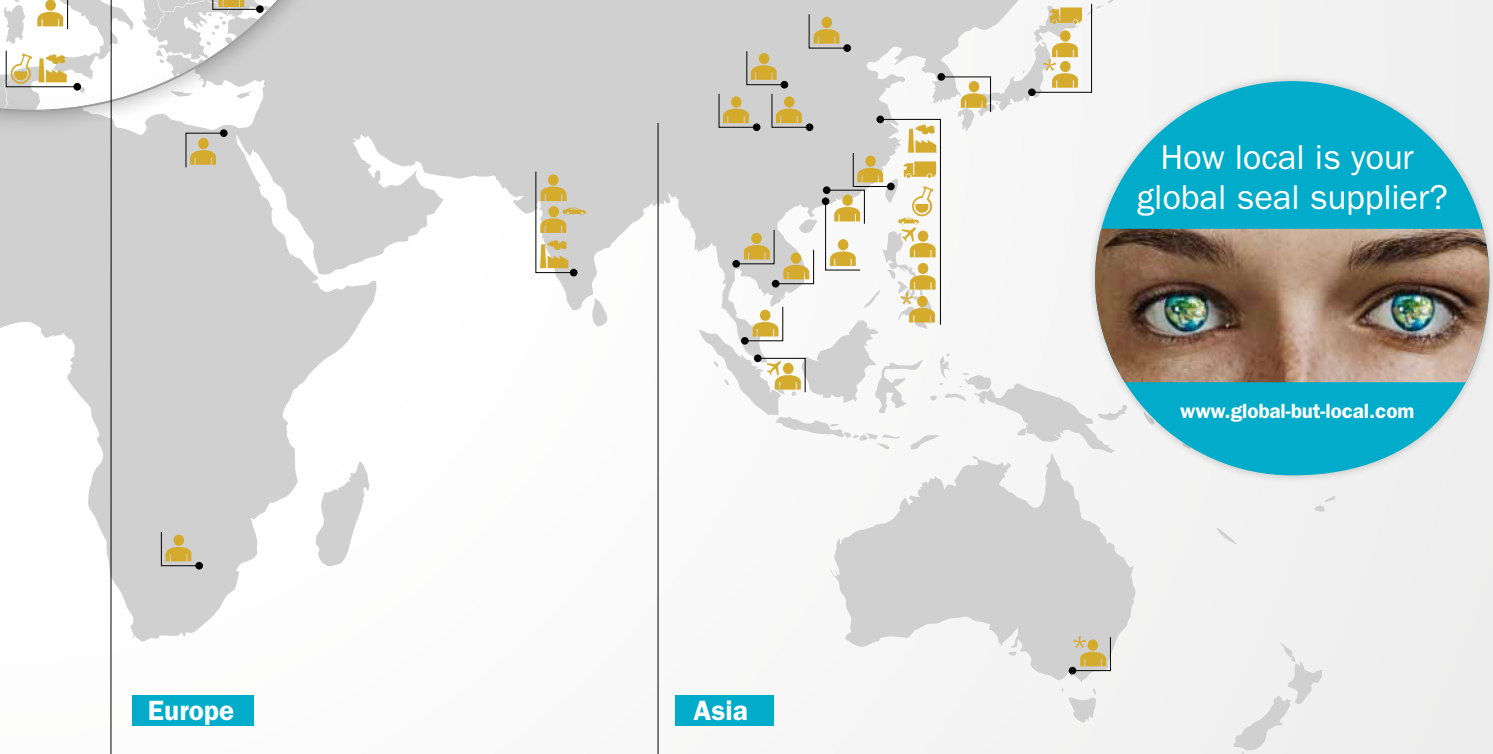
9	Research & Development Centers
53	Marketing Companies
4	Logistics Centers
28	Manufacturing Sites
	Damping Solutions
5	Automotive Hubs
9	Aerospace Hubs

5,800
employees

82
worldwide locations

More than
2,000
proprietary material formulations





Europe

- 7 R&D Centers
- 22 Marketing Companies
- 1 Logistics Center SCM
- 16 Manufacturing Sites
- Damping Solutions
- 1 Automotive Hub
- 2 Aerospace Hubs

Asia

- 1 R&D Center
- 17 Marketing Companies
- 2 Logistics Centers SCM
- 2 Manufacturing Sites
- Damping Solutions
- 2 Automotive Hubs
- 2 Aerospace Hubs

Products, Brands and Materials

Decades of experience designing and manufacturing polymer solutions has led Trelleborg Sealing Solutions to develop, manufacture and supply a range of unique materials and proprietary product designs, many of which have become industry standards. Development is ongoing, ensuring that our solutions meet the changing needs of our customers, as well as the latest industry trends and regulations.

WORLD RENOWNED NAMES UNITED

We own many of the longest established and leading names within the seal industry. These include:

- **American Variseal**
- **Busak+Shamban**
- **Dowty Seals**
- **Chase Walton**
- **Forsheda**
- **GNL**
- **Impervia**
- **Nordex**
- **Orkot**
- **Palmer Chenard**
- **Polypac**
- **SSF**
- **SF Medical**
- **Shamban**
- **Silcofab**
- **Silcotech**
- **Skega**
- **Stefa**
- **Wills**

PROPRIETARY MATERIALS

Ongoing development has yielded some of the most successful sealing and bearing materials available.

- **HiMod®**
- **Isolast®**
- **Orkot®**
- **Turcite®**
- **Turcon®**
- **Turel®**
- **Zurcon®**

OUR PIONEERING PRODUCTS

Trelleborg Sealing Solutions is pioneering and is continuously developing innovative products.

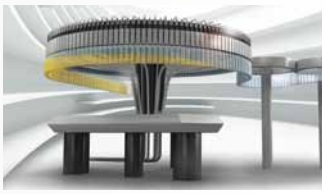
- **Turcon® AQ Seal®**
- **D-A-S Compact Seal®**
- **Turcon® Double Delta®**
- **Turcon® Excluder®**
- **Turcon® Glyd Ring® T**
- **Turcon® Hatseal**
- **Zurcon® L-Cup®**
- **Turcite® Slydring®**
- **Turcite® B-Slydway®**
- **Turcon® Stepseal® 2K**
- **Turcon® Stepseal® V**
- **V-Ring®**
- **Turcon® Varilip® PDR**
- **Turcon® Variseal®**
- **Turcon® VL Seal®**
- **Turcon® Wedgpak®**
- **Wills Rings®**
- **Zurcon® Wynseal**

To design a solution for your specific needs, contact your local Trelleborg Sealing Solutions marketing company.

Markets and Applications


Aerospace


Automotive


Food & Beverage


Chemical & Processing


Fluid Power - Hydraulics


Fluid Power - Pneumatics


Machine Tools


Alternative Energy


Healthcare & Medical


Agriculture


Construction vehicles


Semiconductor


Oil & Gas

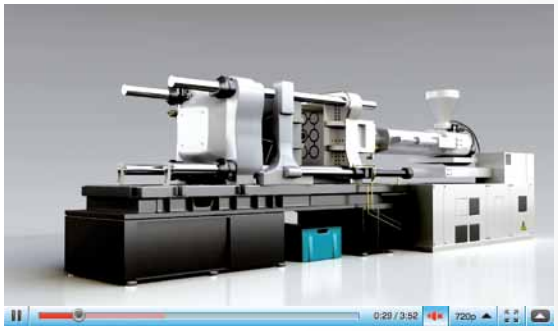

Marine


Sanitary & Heating

Films and Animations

SEEING IS BELIEVING

Complex sealing configurations can feature a large number of sealing elements. Trying to illustrate these on a 2-D page is difficult and can never properly show their function or characteristics. Trelleborg Sealing Solutions turned to the latest graphic technologies to produce 3-D animations of applications and typical sealing solutions for them.



View at
YouTube.com/trelleborgseals

View at
tss.trelleborg.com/films

Online 24-7
A range of films specific to different industries and products are available to view on the Trelleborg Sealing Solutions website or via YouTube.


Turcon® Roto L
Energy saving with no friction

Simplify Your Business Service PLUS

Service PLUS aims at uniting various enhanced solutions across the entire value chain, simplifying the processes of engineering, logistics, manufacturing and aftermarket for the customer.

Engineering | Logistics | Manufacturing | Aftermarket

SPECIAL HANDLING

Special Handling bundles an assortment of individual packaging solutions together with additional services that optimize the mounting and handling of seals.

ADVANCED DELIVERY

Our Advanced Delivery services simplify your stock replenishment process by managing your different vendors and stock levels – be it through a Kanban system or complete C-Part Management.

ENGINEERING SUPPORT SERVICES

Trelleborg provides world-class expert support for your engineering needs, from extensive design & compound competence to leading edge product testing.

ASSEMBLY

Trelleborg is willing and able to offer pre-assembled parts put together by specially trained staff, delivered directly to the customer.

QUICKSEAL

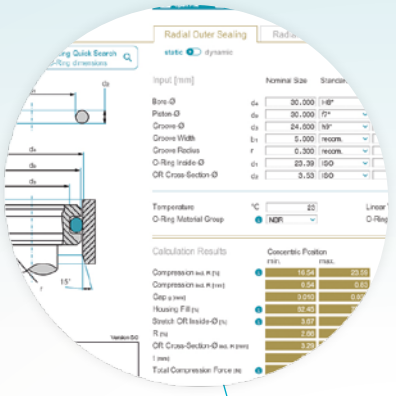
QuickSeal covers your short-notice needs for sealing solutions, whether you require a prototype, functional sample or a small batch rapidly.

DIGITAL TOOLS

Online resources and apps developed to make an engineer's life easier.

Discover our wide range of digital tools at **www.tss.trelleborg.com**

Digital Services



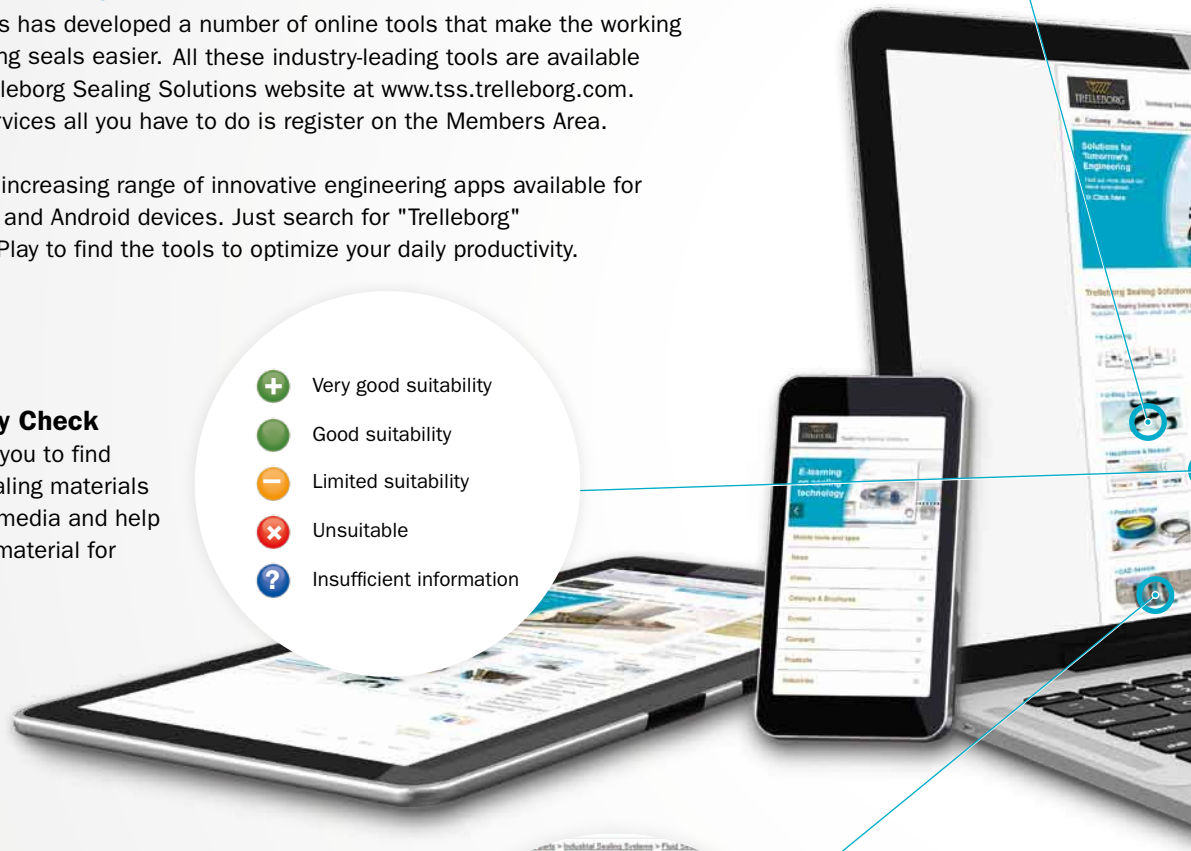
ONLINE TOOLS MAKE LIFE EASIER

Trelleborg Sealing Solutions has developed a number of online tools that make the working life of an engineer specifying seals easier. All these industry-leading tools are available free-of-charge from the Trelleborg Sealing Solutions website at www.tss.trelleborg.com. To use these advanced services all you have to do is register on the Members Area.

There is also a continually increasing range of innovative engineering apps available for smartphones, both for iOS and Android devices. Just search for "Trelleborg" in the App Store or GooglePlay to find the tools to optimize your daily productivity.

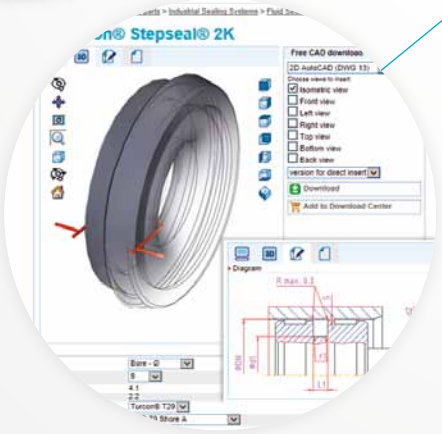
Materials Search and Chemical Compatibility Check

These two programs allow you to find out the compatibility of sealing materials with hundreds of different media and help identify the most suitable material for your application.



Versatile CAD Service

The CAD download facility provides thousands of drawings of a wide range of seals. It gives the option of 2- or 3-dimensional files in a range of formats to suit most commonly used CAD systems.

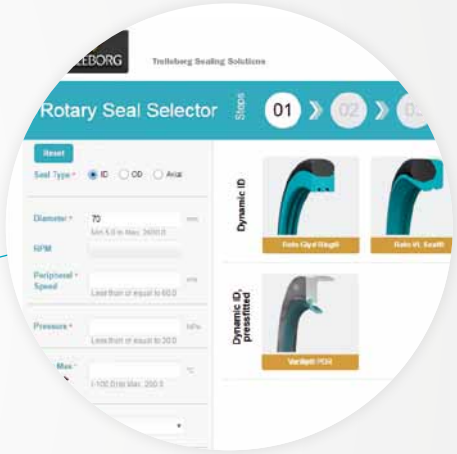


O-Ring Calculator

An industry-leading tool, the easy to use O-Ring calculator includes sizing capabilities, compression forces, design parameter recommendations and complete measurements. Results and comments may be printed, shared or filed as PDF.

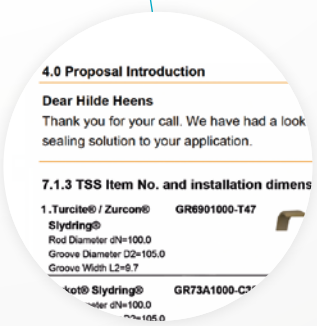
Sealing Solutions Configurator

The Sealing Solutions Configurator is the first tool of its kind offered by any seal supplier. It allows engineers to identify a proven sealing solution for their specific application in just four easy steps.



Rotary Seal Selector

The Rotary Seal Selector allows you to search through the wide range of rotary seals and materials available based on application conditions and offers detailed information on installation and seal capabilities.



Technical Proposals Online

Enhance your communication with Trelleborg Sealing Solutions with the Technical Proposals Online tool. Instantly access all your proposed solutions anywhere at any time and benefit from quicker dialog with our sealing specialists.

For more information
www.tss.trelleborg.com

Mobile Apps and Services

We understand the needs of engineers on the go. Check out our latest mobile tools and apps, ranging from an O-Ring calculator to unit and hardness converters. Just search for "Trelleborg" in the App Store or Google Play to find the tools to optimize your daily productivity.

Android App on **Google Play**

MANY MORE APPS available

Available on the **APP STORE**

For more information
www.tss.trelleborg.com

ISO Fits & Tolerances

Simply enter the nominal diameter and select the tolerance classes for bore and shaft to find the complete ISO fits definition with all relevant values including type of fit, with handy graphs to illustrate the classes by bore and shaft.

Technical Glossary

This app provides definitions of more than 2,000 terms from the world of sealing technology and engineering.

Aerospace Groove Selector

This app covers two of the most important SAE aerospace groove standards for hydraulic systems, AS4716 Rev B and AS5857 Rev A, making it really easy to find the size of grooves and hardware needed.

Installation Instructions

Videos demonstrate the best practice methods for installing seals, providing all relevant documentation within the interface, guiding you to a successful installation of Radial Oil Seals and Turcon® and Zurcon® rod and piston seals.

Unit & Hardness Converter

Intuitive and very easy to use, simply select the dimension and enter the value for conversion. The app offers a wide range of engineering and scientific units for each dimension.

in the groove

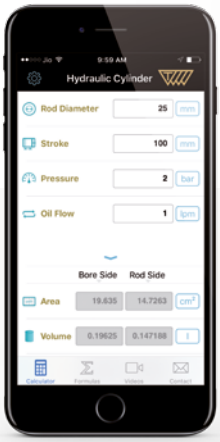
Our *in the groove* magazine provides news, technical and product information on seals, as well as insights into the markets they are used in. The magazine is also available in print and as an interactive PDF.

Rotary Selector

Bring the popular Rotary Seal Selector webtool with you! Quickly search through Trelleborg Sealing Solutions rotary seals and materials for the optimum product for your application conditions while on the move.

O-Ring Selector

When a user enters installation specifications into the O-Ring Selector app, such as the bore or rod/shaft diameter, the app quickly calculates O-Ring and housing dimensions in both metric and inch.

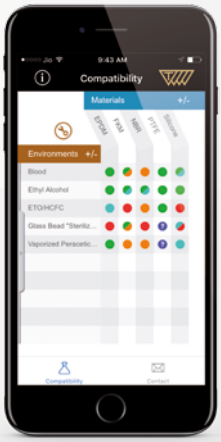


Hydraulic Cylinder Calculator

Quickly calculate areas and volumes in cylinders, extraction and retraction forces, time velocity and outflow by entering the requisite dimensions and parameters of the cylinder. In compliance with ISO 3320, ISO 3321 and ISO 4393.

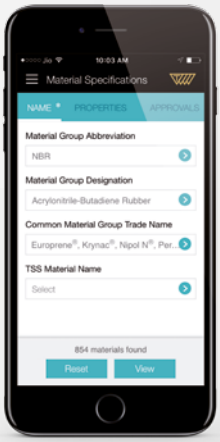
Area and Volume Calculator

Speeds up and simplifies calculating the area and volumes of more than 80 geometric shapes. The app supports both metric and imperial units and conveniently displays the formulas used. Fill your shape with solids or liquids, choosing from 1500 different materials, to calculate the weight.



Healthcare Materials

View a quick and easy overview of the compatibility of 34 materials with 35 chemical environments that are commonly encountered in the healthcare and medical industries. Select up to 20 materials and environments at once to produce a chart rating each material from "excellent" to "not recommended".



Sealing Materials Selector

Enter material specifications and required parameters, such as application temperature or hardness, to receive instant material proposals. The app features filters to limit searches based on chemical compatibility, institute approvals and product type and data sheets can be requested from within the interface.

O-Rings

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Elastomeric O-Ring general purpose	38							•				D	200 MPa 29,000 psi	-60 °C +200 °C -75 °F +390 °F	0.5 m/s 1.6 ft/s
Polyurethane O-Ring hydraulics abrasion resistance	38		•						•			D	200 MPa 29,000 psi	-30 °C +100 °C -20 °F +210 °F	— —
FlexiMold™ O-Ring general purpose large dimensions	38							•				D	200 MPa 29,000 psi	-60 °C +200 °C -75 °F +390 °F	0.5 m/s 1.6 ft/s
FEP O-Ring chemical industry aggressive media	39							•		•		D	25 MPa 3,625 psi	-60 °C +200 °C -75 °F +390 °F	— —
PTFE O-Ring chemical industry aggressive media	39						•					D	40 MPa 5,800 psi	-200 °C +260 °C -325 °F +500 °F	— —
Isolast® Perfluoroelastomer O-Ring chemical industry aggressive media high temperatures	39							•				D	200 MPa 29,000 psi	-25 °C +325 °C -10 °F +615 °F	— —

Static seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Zurcon® Dualseal mobile hydraulics twist-free	40		•									D	50 MPa 7,250 psi	-35 °C +110 °C -30 °F +230 °F	— —

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Static seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Elastomeric Dualseal mobile hydraulics resistant to twisting	40							•				D	0-21 MPa 0-3,000 psi	-30 °C +100 °C -22 °F +212 °F	—
Quad-Ring® Seal general purpose twist-free	40							•				D	40 MPa 5,800 psi	-30 °C +200 °C -20 °F +390 °F	up to 2 m/s up to 6.5 ft/s
Kantseal general purpose for flanges axial static	41							•				D	50 MPa 7,250 psi	-30 °C +200 °C -20 °F +390 °F	— —
Back-up Ring general purpose for O-Ring and Quad-Ring® seals	41	•	•			•	•	•	•	•			250 MPa 36,250 psi	-200 °C +260 °C -325 °F +500 °F	0.5 m/s 1.6 ft/s
Wills Rings® O general purpose sealing extreme conditions flange applications	41										•	D	1,000 MPa 145,000 psi	up to +850 °C up to +1,560 °F	— —
Wills Rings® C general purpose sealing extreme conditions flange applications	42										•	S	200 MPa 29,000 psi	up to +750 °C up to +1,380 °F	— —
Turcon® Variseal® H chemical industry gasket fittings gas sealing	42	•	•									S	40 MPa 5,800 psi	-100 °C +200 °C -150 °F +390 °F	— —
Turcon® Variseal® HF chemical industry flange fittings gas sealing	42	•	•									S	60 MPa 8,700 psi	-150 °C +200 °C -240 °F +390 °F	— —
Flange Seals mobile hydraulics general mechanical applications	43		•						•			S	42 MPa 6,000 psi	-35 °C +110 °C -30 °F +230 °F	— —

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Static seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Bonded Seal general purposes general machine operation automotive industry	43							•			•	✳ D	100 MPa 14,500 psi	-30 °C +200 °C -20 °F +390 °F	— —
Airseal chemical industry general mechanical applications	43							•				✳ D	1 MPa 145 psi	-50 °C +220 °C -55 °F +430 °F	— —

Hydraulic Seals – Piston Seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Turcon® Glyd Ring® hydraulics general machine operation machine tools mobile hydraulics	44	•	•									⇄ D	60 MPa 8,700 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Turcon® Glyd Ring® II a bonded one-piece seal for all industries with demanding applications which require a custom solution	44	•	•									⇄ ✳ S D	60 MPa 8,700 psi	-60 °C +200 °C -76 °F +392 °F	15 m/s 50 ft/s
Zurcon® Glyd Ring® D construction machinery earth moving equipment mobile hydraulics truck cranes forklifts	44		•									⇄ D	60 MPa 8,700 psi	-30 °C to +110 °C -22 °F to +230 °F depending on O-Ring Material	0.5 m/s 1.6 ft/s 0.8 m/s 2.6 ft/s for limited time
Turcon® Glyd Ring® Hz high frequency short stroke applications	45	•	•									⇄ D	30 MPa 4,350 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Turcon® Glyd Ring® T hydraulics general machine operation machine tools mobile hydraulics	45	•	•									⇄ D	60 MPa 8,700 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s

KEY TO APPLICATIONS: Reciprocating = ⇄ Rotary = ↻ Oscillating = ↻ Helix = ⌀ Static = ✳ Single-acting = S Double-acting = D

Hydraulic Seals – Piston Seals

Type	Page	Sealing and Bearing Materials										Applications		Operating Range		
		Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal			Pressure	Temperature	Velocity
Zurcon® Glyd Ring® P mobile hydraulics construction machinery	45		•									⇄	D	50 MPa 7,250 psi	-30 °C +110 °C -20 °F +230 °F	1 m/s 3 ft/s
Turcon® Double Delta® hydraulics light hydraulics medium hydraulics	46	•	•									⇄	D	35 MPa 5,075 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Turcon® AQ Seal® hydraulics medium operation piston accumulators	46	•	•					•				⇄ ✳	D	50 MPa 7,250 psi	-45 °C +200 °C -50 °F +390 °F	2 m/s 6.5 ft/s
Turcon® AQ Seal® 5 hydraulics fluid/gas separation mobile hydraulics heavy operation	46	•	•					•				⇄ ✳	D	60 MPa 8,700 psi	-45 °C +200 °C -50 °F +390 °F	3 m/s 10 ft/s
Turcon® Stepseal® 2K hydraulics general machine operation machine tools mobile hydraulics	47	•	•									⇄	S	60 MPa 8,700 psi	-30 °C +200 °C -20 °F +390 °F	15 m/s 50 ft/s
Turcon® Stepseal® V hydraulics general machine operation machine tools mobile hydraulics	47	•	•									⇄	S	60 MPa 8,700 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Zurcon® Wynseal hydraulics light hydraulics medium duty	47		•									⇄	D	25 MPa 3,626 psi	-35 °C +110 °C -30 °F +230 °F	0.8 m/s 2.6 ft/s
Zurcon® Wynseal M hydraulics light hydraulics medium duty	48	•	•									⇄	D	50 MPa 7,250 psi	-45 °C +200 °C -50 °F +390 °F	10 m/s 33 ft/s
Zurcon® U-Cup fluid power hydraulic cylinders general maintenance	48		•									⇄	S	40 MPa 5,800 psi	-35 °C +110 °C -30 °F +230 °F	0.5 m/s 1.6 ft/s

KEY TO APPLICATIONS: Reciprocating = ⇄ Rotary = ↻ Oscillating = ↻ Helix = ⌀ Static = ✳ Single-acting = S Double-acting = D

Hydraulic Seals – Piston Seals

Type	Page	Sealing and Bearing Materials: Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Operating Range: Pressure	Temperature	Velocity
Compact Seal POLYPAC® DBM hydraulics standard cylinder light to medium duty	48		•			•		•		•		D	35 MPa 5,075 psi	-35 °C +100 °C -30 °F +210 °F	0.5 m/s 1.6 ft/s
POLYPAC® PHD/CST Seal hydraulics mobile hydraulics construction machinery	49	•	•				•					D	40 MPa 5,800 psi	-45 °C +135 °C -50 °F +275 °F	1.5 m/s 5 ft/s
Turcon® Variseal® M2 hydraulics chemical industry aggressive media	49	•	•									S	Dynamic 20 MPa 2,900 psi Static 40 MPa 5,800 psi	-70 °C +300 °C -95 °F +570 °F	Linear 15 m/s 50 ft/s Oscillating / Rotary / Helix 1.3 m/s 4.2 ft/s
Turcon® Variseal® W2 chemical industry general mechanical applications	49	•	•									S	Dynamic 20 MPa 2,900 psi Static 40 MPa 5,800 psi	-70 °C +300 °C -95 °F +570 °F	Linear 15 m/s 50 ft/s Oscillating / Rotary / Helix 1.3 m/s 4.2 ft/s
Turcon® VL Seal® hydraulics general machine operation machine tools mobile hydraulics	50	•	•									S	60 MPa 8,700 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
POLYPAC® Veepac hydraulic cylinders machine presses mining, steel mills water management	50							•				S	40 MPa 5,800 psi	-30 °C +200 °C -20 °F +390 °F	0.5 m/s 1.6 ft/s
POLYPAC® Selemaster DSM hydraulic cylinders presses mining, steel mills water management	50							•				D	70 MPa 10,150 psi	-40 °C +130 °C -40 °F +270 °F	0.5 m/s 1.6 ft/s

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Hydraulic Seals – Rod Seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications		Pressure	Temperature	Velocity
		Sealing and Bearing Materials												Operating Range		
Turcon® Stepseal® 2K hydraulics general machine operation machine tools mobile hydraulics	51	•	•									⇄	S	60 MPa 8,700 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Turcon® Stepseal® V hydraulics machine operation machine tools mobile hydraulics	51	•	•									⇄	S	60 MPa 8,700 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Turcon® Stepseal® 2A industrial hydraulics mobile hydraulics machine tools hydraulic press injection molding presses	51	•	•						•			⇄	S	60 MPa 8,700 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Zurcon® Rimseal hydraulics general machine operation machine tools mobile hydraulics	52		•									⇄	S	60 MPa 8,700 psi (in tandem)	-45 °C +110 °C -50 °F +230 °F	5 m/s 16 ft/s (in tandem)
Zurcon® Rimseal IM hydraulics construction machinery mobile hydraulics machine tools	52		•									⇄	S	60 MPa 8,700 psi (in tandem) 25 MPa 360 psi (as individual element)	-30 °C to +110 °C -22 °F to +230 °F depending on O-Ring Material	5 m/s 16 ft/s with short strokes (<1 m) (in tandem system)
Zurcon® Buffer Seal LM earth moving equipment mobile hydraulic construction machinery	52		•									⇄	S	40 MPa 5,800 psi	-35 °C +110 °C -30 °F +230 °F	1 m/s 3.2 ft/s
Zurcon® U-Cup RU9 hydraulic cylinder mobile hydraulics industrial hydraulic	53		•									⇄	S	40 MPa 5,800 psi	-35 °C +110 °C -30 °F +230 °F	0.5 m/s 1.6 ft/s
POLYPAC® Selemaster SM hydraulic cylinders presses, mining steel mills water management	53							•				⇄	S	70 MPa 10,150 psi	-40 °C +130 °C -40 °F +270 °F	0.5 m/s 1.6 ft/s
POLYPAC® Balsele hydraulic cylinders presses mobile plant	53							•				⇄	S	40 MPa 5,800 psi	-30 °C +130 °C -20 °F +270 °F	0.5 m/s 1.6 ft/s

KEY TO APPLICATIONS: Reciprocating = ⇄ Rotary = ↻ Oscillating = ↺ Helix = ⌀ Static = ✳ Single-acting = S Double-acting = D

Hydraulic Seals – Rod Seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
		Sealing and Bearing Materials											Operating Range		
Zurcon® L-Cup hydraulics standard cylinders	54		•									S	40 MPa 5,800 psi	-35 °C +110 °C -30 °F +230 °F	0.5 m/s 1.6 ft/s
Turcon® Variseal® M2 hydraulics, chemical industry general mechanical applications aggressive media food & beverage	54	•	•									S	Dynamic 20 MPa 2,900 psi Static 40 MPa 5,800 psi	-70 °C +300 °C -95 °F +570 °F	Linear 15 m/s 50 ft/s Oscillating / Rotary / Helix 1.3 m 4.2 ft/s
Turcon® Variseal® W2 chemical industry general mechanical applications	54	•	•									S	Dynamic 20 MPa 2,900 psi Static 40 MPa 5,800 psi	-70 °C +300 °C -95 °F +570 °F	Linear 15 m/s 50 ft/s Oscillating / Rotary / Helix 1.3 m/s 4.2 ft/s
Turcon® VL Seal® hydraulics general machine operation machine tools mobile hydraulics	55	•	•									S	60 MPa 8,700 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Turcon® Glyd Ring® hydraulics general machine operation machine tools mobile hydraulics	55	•	•									D	60 MPa 8,700 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Turcon® Glyd Ring® T hydraulics general machine operation machine tools mobile hydraulics	55	•	•									D	60 MPa 8,700 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Turcon® AQ Seal® with Bean Seal hydraulics general machine operation fluid/gas separation medium duty	56	•	•									D	50 MPa 7,250 psi	-45 °C +110 °C -50 °F +230 °F	2 m/s 6.5 ft/s
Turcon® AQ Seal® 5 with Bean Seal hydraulics, fluid/gas separation mobile hydraulics heavy operation	56	•	•									D	60 MPa 8,700 psi	-45 °C +110 °C -50 °F +230 °F	3 m/s 10 ft/s
Zurcon® Wynseal M hydraulics light hydraulics medium duty	56	•	•									D	50 MPa 7,250 psi	-45 °C +200 °C -50 °F +230 °F	10 m/s 33 ft/s

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Hydraulic Seals – Rod Seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Turcon® Double Delta® hydraulics light hydraulics medium duty	57	•	•									D	35 MPa 5,000 psi	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
POLYPAC® Veepac hydraulic cylinders presses, mining steel mills water management	57							•				S	40 MPa 5,800 psi	-30 °C +200 °C -20 °F +390 °F	0.5 m/s 1.6 ft/s
Turcon® V-Stack (Chevron Seal) industrial hydraulics oil & gas applications	57	•	•					•		•	•	S D	140 MPa 20,000 psi	-45 °C +260 °C -50 °F +500 °F	2 m/s 6.5 ft/s

Hydraulic Scrapers

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Turcon® Excluder® 2 light hydraulics machine tools	58	•	•									D	— —	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Turcon® Excluder® 5 medium hydraulics mobile hydraulics	58	•	•									D	— —	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Turcon® Excluder® F hydraulics machine operation machine tools medium duty	58	•	•									D	— —	-45 °C +200 °C -50 °F +390 °F	15 m/s 50 ft/s
Turcon® Excluder® G hydraulics machine operation mobile hydraulics heavy duty	59	•	•									D	— —	-45 °C +200 °C -50 °F +390 °F	5 m/s 16 ft/s

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Hydraulic Scrapers

Type	Page	Sealing and Bearing Materials: Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Operating Range: Pressure	Temperature	Velocity
Turcon® Excluder® S  mining equipment hydraulic presses steelworks heavy construction machinery marine constructions offshore installations water works	59	•	•									⇄ / ↻ S	1.5 MPa 217.5 psi	-45 °C +200 °C -50 °F +390 °F Turcon® -45 °C +110 °C -50 °F +390 °F Zurcon® Z53/Z54 -60 °C +80 °C -76 °F +176 °F Zurcon® Z80/Z82	5 m/s 16 ft/s Turcon® 1 m/s 3 ft/s Zurcon® Z53/Z54 2 m/s 6.5 ft/s Zurcon® Z80/Z82
Turcon® Excluder® SN (Notch)  mining equipment hydraulic presses steelworks heavy construction machinery marine constructions offshore installations water works	59	•	•									⇄ / ↻ S	1.5 MPa 217.5 psi	-45 °C +200 °C -50 °F +390 °F Turcon® -45 °C +110 °C -50 °F +390 °F Zurcon® Z53/Z54 -60 °C +80 °C -76 °F +176 °F Zurcon® Z80/Z82	5 m/s 16 ft/s Turcon® 1 m/s 3 ft/s Zurcon® Z53/Z54 2 m/s 6.5 ft/s Zurcon® Z80/Z82
Turcon® Excluder® SR (2 x O-Ring)  mining equipment hydraulic presses steelworks heavy construction machinery marine constructions offshore installations water works	60	•	•									⇄ / ↻ S	1.5 MPa 217.5 psi	-45 °C +200 °C -50 °F +390 °F Turcon® -45 °C +110 °C -50 °F +390 °F Zurcon® Z53/Z54 -60 °C +80 °C -76 °F +176 °F Zurcon® Z80/Z82	5 m/s 16 ft/s Turcon® 1 m/s 3 ft/s Zurcon® Z53/Z54 2 m/s 6.5 ft/s Zurcon® Z80/Z82
Zurcon® Excluder® Z  hydraulics construction machinery mobile hydraulic truck cranes	60		•									⇄ / D / ⌇	— —	-30 °C to +110 °C -22 °F to +230 °F depending on O-Ring Material	Up to 2 m/s
Zurcon® Scraper DA22  hydraulics general purpose industrial hydraulics ISO 6195 housing	60		•									⌇ / D	— —	-35 °C +100 °C -30 °F +210 °F	1 m/s 3 ft/s

KEY TO APPLICATIONS: Reciprocating = ⇄ Rotary = ↻ Oscillating = ↻ Helix = ⌇ Static = ✳ Single-acting = S Double-acting = D

Hydraulic Scrapers

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Zurcon® Scraper DA24  hydraulics mobile hydraulics	61		•									D	—	-35 °C +100 °C -30 °F +210 °F	1 m/s 3 ft/s
Zurcon® Scraper DA24 Venting  construction machinery agriculture- and forestry machinery mobile hydraulics high attack of dirt side steering of piston rod	61		•									D	standard version: max. 5 MPa 725 psi venting version: max. 2 MPa 290 psi	-35 °C to +100 °C -30 °F to +210 °F	Up to 1 m/s 3 ft/s* * at high strokes and higher speed, please contact your local Trelleborg Sealing Solutions marketing company
Zurcon® Scraper DA17  hydraulics general purpose	61							•				D	—	-30 °C +100 °C -20 °F +210 °F	1 m/s 3 ft/s
Zurcon® Scraper DA27  hydraulics industrial hydraulics presses	62							•				D	—	-30 °C +100 °C -20 °F +210 °F	1 m/s 3 ft/s
Zurcon® Scraper ASW  hydraulics general purpose	62		•									S	—	-35 °C +100 °C -30 °F +210 °F	1 m/s 3 ft/s
Scraper WSA  hydraulics general purpose	62							•			•	S	—	-30 °C +110 °C -20 °F +230 °F	1 m/s 3 ft/s
Scraper WRM  hydraulics general purpose	63							•				S	—	-30 °C +110 °C -20 °F +230 °F	1 m/s 3 ft/s
Metal Scraper  hydraulics general purpose	63							•			•	S	—	-40 °C +120 °C -40 °F +250 °F	1 m/s 3 ft/s
Zurcon® Scraper WAE  industrial hydraulics mobile hydraulics	63	•	•						•			S	—	-35 °C +100 °C -31 °F +212 °F	1 m/s 3 ft/s

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Hydraulic Scrapers

Type	Page	Sealing and Bearing Materials: Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications		Operating Range: Pressure	Temperature	Velocity
Zurcon® Scraper WNE agricultural machinery mobile hydraulics	64		•									⇄	S	—	-35 °C +100 °C -30 °F +210 °F	1 m/s 3 ft/s
Zurcon® Scraper WNV agricultural machinery mobile hydraulics ISO standard cylinders	64		•									⇄	D	—	-35 °C +100 °C -30 °F +210 °F	1 m/s 3 ft/s
Zurcon® Scraper SWP mobile hydraulics construction machinery link-pin sealing	64		•								•	⇄	S	—	-35 °C +100 °C -30 °F +210 °F	1 m/s 3 ft/s
Turcon® Variseal® M2S marine and subsea environment ability to scrape marine growth high temperature application high speed hydraulics in dirty environments low temperature and cryogenic applications	65	•	•									⇄ ↻	 S	Maximum dynamic load: 20 MPa 2,900 psi Maximum static load: 40 MPa 5,800 psi (207 MPa with customs designs)	-70 °C to +260 °C in T40 -45 °C to +260 °C in T40 with HiClean -70 °C to +93 °C in Z80 -196 °C custom design option available	Reciprocating up to 15 m/s in T40 up to 2 m/s in Z80 Rotating up to 1.27 m/s in T40

KEY TO APPLICATIONS: Reciprocating = ⇄ Rotary = ↻ Oscillating = ↻ Helix = ⌇ Static = ✳ Single-acting = S Double-acting = D

Hydraulic Wear Rings

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Radial Bearing Pressure	Temperature	Velocity
Turcite® Slydring® hydraulics general purpose standard cylinders	66			•									15 MPa 2,200 psi	-60 °C +200 °C -75 °F +390 °F	15 m/s 50 ft/s
HiMod® Slydring® hydraulics general purpose standard cylinders mobile hydraulics	66					•							50 MPa 7,200 psi	-40 °C +135 °C -40 °F +275 °F	1 m/s 3 ft/s
Orkot® Slydring® hydraulics general purpose standard cylinders mobile hydraulics	66				•								120 MPa 17,400 psi	-60 °C +130 °C -75 °F +270 °F	1 m/s 3 ft/s

Pneumatic Seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Pneumatic Piston Seal	67		•						•			S D	1.6 MPa 232 psi	-40 °C +85 °C -40 °F +185 °F	1 m/s 3 ft/s
Pneumatic Rod Seal and Rod Seal - Scraper Combination	67		•					•	•			S D	1.6 MPa 232 psi	-40 °C +150 °C -40 °F +300 °F	up to 5 m/s up to 16 ft/s
Pneumatic Scraper / Scraper for Guiding Units	67								•			S	— —	-40 °C +80 °C -40 °F +175 °F	up to 4 m/s up to 13 ft/s
Pneumatic Cushioning Seal	68		•						•			S	1.6 MPa 232 psi	-40 °C +110 °C -40 °F +230 °F	1 m/s 3 ft/s

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Pneumatic Seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Pneumatic Glyd Ring® for Pistons and Rods	68	•	•									D	1.6 MPa 232 psi	-30 °C +200 °C -20 °F +390 °F	5 m/s 16 ft/s
Pneumatic Wear Ring for Pistons and Rods	68	•	•			•							40 MPa 5,800 psi	-40 °C +110 °C -40 °F +230 °F	1 m/s 3 ft/s
Complete Magnet Piston	69							•	•		•	D	1.6 MPa 232 psi	-40 °C +80 °C -40 °F +175 °F	up to 1 m/s up to 3 ft/s
Pneumatic Seals ARV industrial pneumatics special applications	69		•									D	1.6 MPa 232 psi	-30 °C +80 °C -22 °F +176 °F	<= 5 m/s 16 ft/s

Non-standard Pneumatic Seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Rubber-to-Metal and Rubber-to-Plastic Bonded Parts	70											S	— —	— —	— —
Special and Customized Solutions in Polyurethane	70											D	— —	— —	— —
Engineered Molded Parts	70							•				S D	— —	— —	— —

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Rotary Seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Pressure	Temperature	Velocity
Radial Oil Seal general purpose general mechanical applications	71							•				S D	1 MPa 145 psi	-40 °C +200 °C -40 °F +390 °F	30 m/s 100 ft/s
Shaft Repair Kit repair of worn shafts for non-hardened shaft	71										•		—	—	—
Sealing Cap gear manufacturing	71							•			•		—	-30 °C +200 °C -20 °F +390 °F	—
Turcon® Varilip® PDR general purpose general mechanical applications compressors, vacuum pumps gearboxes	72	•									•	S D	1 MPa 145 psi	-60 °C +200 °C -75 °F +390 °F	60 m/s 197 ft/s
V-Ring general purpose general mechanical applications	72							•				S	—	-40 °C +200 °C -40 °F +390 °F	12 m/s 40 ft/s
GAMMA Seal mobile hydraulics power transmission	72							•			•	S	—	-30 °C +200 °C -20 °F +390 °F	10 m/s 32 ft/s
STEFA System 500 / 3000 / 5000 Cassette Seal CSL 1500 mobile hydraulics construction machinery	73							•			•	S	0.05 MPa 7 psi	-30 °C +200 °C -20 °F +390 °F	15 m/s 50 ft/s
Turcon® Roto Glyd Ring® hydraulics general purpose rotary applications	73	•										D	30 MPa 4,350 psi	-45 °C +200 °C -50 °F +390 °F	2 m/s 6.5 ft/s
Turcon® Roto Glyd Ring® II a bonded one-piece seal for demanding rotary applications which require a custom solution	73	•	•									S	35 MPa 5,000 psi	-60 °C +200 °C -76 °F +392 °F	2.5 m/s 8 ft/s

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Rotary Seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications		Pressure	Temperature	Velocity
Turcon® Roto Glyd Ring® V machine tool industry, mainly machining centers hydraulic swivels, rotary connections with swivel movement hydraulic rotators robotics manipulators indexing tables	74	•	•										D	30 MPa 4,350 psi	+100 °C +212 °F (up to +150 °C +302 °F at lower PV-values)	2 m/s 6.5 ft/s
Turcon® Roto Variseal® general mechanical applications chemical industry	74	•	•										S	Dynamic 20 MPa 2,900 psi Static 25 MPa 3,625 psi	-70 °C +300 °C -95 °F +570 °F	Linear 15 m/s 50 ft/s Rotary 6.5 ft/s 2 m/s
Turcon® Roto L drive, automotive, agriculture off-highway	74													0-9 bar	-40 °C +200 °C -50 °F +390 °F	25 m/s (PV11barm/s) 82 ft/s
Turcon® Roto VL Seal® hydraulics general rotary machine applications construction swivels and rotary connections	75	•	•										S	30 MPa 4,350 psi	-45 °C +200 °C -50 °F +390 °F	2 m/s 6.5 ft/s
Zurcon® Roto Glyd Ring® S machine tools rotary connections	75		•										D	40 MPa 5,800 psi	-30 °C +100 °C -20 °F +210 °F	PV Limit 6.5 MPa x m/s 2,916 psi x ft/s
Mechanical Face Seals tracked vehicles tunnel boring machines heavy trucks conveyor systems	75										•			0.3 MPa 43.5 psi	-45 °C +200 °C -50 °F +390 °F	3 m/s 10 ft/s
Cartridge-ROS marine propellers polluted environments heavy duty industries	76							•	•		•		D	-0.5 to 6 bar	-50 °C +130 °C -58 °F +266 °F	4 m/s 13 ft/s
HP20 Rotary Oil Seal hydraulics motors and pumps mobile hydraulics heavy operation	76							•			•		S	0 to 200 bar max PV = 140	-30 °C +100 °C -20 °F +210 °F	4 m/s 13 ft/s

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Rotary Seals

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications		Pressure	Temperature	Velocity
HS-APJ Cassette Seal	76															
 robotics high speed gearboxes exposed to polluted environments propeller shafts								•			•		D	— —	-30 °C +130 °C -20 °F +266 °F	8 m/s 26 ft/s
Skyseal	77															
 actuators & gearboxes exposed to external contaminants and pressurized gasses		•					•	•			•		D	-0.5 to 3 bar	-50 °C +100 °C -58 °F +210 °F	8 m/s 26 ft/s

Bearings & Bushings

Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Radial Bearing Pressure	Temperature	Velocity
Turcite® -B Slydway®	78														
 chemical industry aggressive media				•									9 MPa 1,300 psi	up to +260 °C up to +500 °F	1 m/s 3 ft/s
Turcite® Bearings	78														
 general mechanical applications				•									15 MPa 2,200 psi	-60 °C +200 °C -75 °F +390 °F	15 m/s 50 ft/s
Orkot® Marine and Hydro Bearings	78														
 marine hydropower					•								Dynamic 90 MPa 13,000 psi Static 120 MPa 17,400 psi	-60 °C +250 °C -75 °F +480 °F	6 m/s 20 ft/s

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Engineered Seals, Gaskets and other Parts		Materials											Applications		Operating Range		
Type	Page	Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal				Pressure	Temperature	Velocity
Engineered Molded Parts	79							•	•	•				S D	— —	up to +325 °C up to +615 °F	— —
Engineered PTFE Components various custom applications	79						•								— —	up to +260 °C up to +500 °F	— —
Engineered HiMod® FlatSeal™ chemical and processing industries	79							•	•	•					25 MPa 3,625 psi	-210 °C +1,000 °C 345 °F +1,832 °F	— —
Rubber-to-Metal and Rubber-to-Plastic Bonded Parts various custom applications across all industries from a wide range of materials	80						•	•		•	•			S D	— —	-60 °C +325 °C -75 °F +615 °F	— —
Rubber and Rubber-to-Metal Bonded Gaskets	80							•			•				— —	-60 °C +325 °C -75 °F +615 °F	— —
Ground Balls check valves	80							•							— —	-30 °C +200 °C -20 °F +390 °F	— —
Diaphragms pumps valves regulators and actuators	81						•	•	•	•	•			D	(Not reinforced) 0.05 MPa 7 psi (Reinforced) 10 MPa 1,450 psi	-50 °C +325 °C -55 °F +615 °F	— —
Custom-made HiMod® High Modulus Plastics	81					•									— —	up to +300 °C up to +570 °F	— —
Liquid Silicone (LSR) Molded Parts custom applications including Life Sciences, Food & Pharmaceutical, Sanitary and Automotive	81							•						S	— —	-40 °C +175 °C -40 °F +350 °F	— —

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Engineered Seals, Gaskets and other Parts

Type	Page	Materials: Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Operating Range: Pressure	Temperature	Velocity
Two Component (2K) Liquid Silicone Parts various custom applications including Life Sciences, Food & Pharmaceutical and Automotive	82							•		•			— —	-40 °C +175 °C -40 °F +350 °F	— —
Silicone Hose and Tube medical tubing and profiles, reinforced hose and related value-added assemblies	82							•				S	— —	-40 °C +175 °C -40 °F +350 °F	— —
Rubore® Seals rubber-metal composite for custom made applications, various possible geometries and designs	82						•	•			•		— —	-40 °C +165 °C -40 °F +329 °F	— —

Surface Finishing

Type	Page	Sealing and Bearing Materials: Turcon®	Zurcon®	Turcite®	Orkot®	HiMod®	PTFE	Elastomeric	Polyurethane	Other Polymeric	Metal	Applications	Operating Range: Group	Temperature	Velocity
Flexcoat™ coatings computer controlled secure processes water-based	83		•					•	•				— —	-40 °C +175 °C -40 °F +350 °F	— —
Flexcoat™ colored coatings computer controlled secure processes water-based	83		•					•	•				— —	-40 °C +150 °C -40 °F +300 °F	— —
Flexclean™ cleaning solutions computer controlled secure processes	83		•				•	•	•				— —	— —	— —

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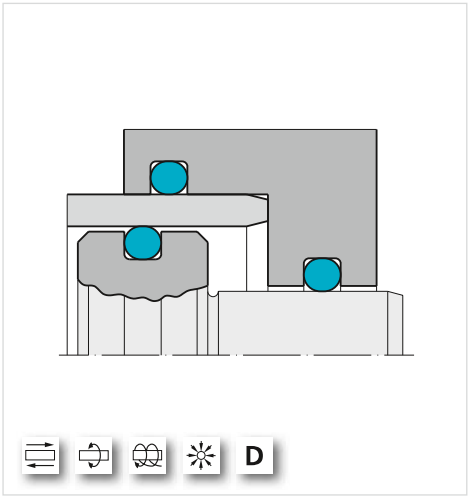
Elastomeric O-Ring

A double-acting seal for static and dynamic applications. Available in various materials including NBR, FKM, EPDM, chloroprene, silicone and fluorosilicone. Available to ISO 3601, AS 568 and other recognized standards.

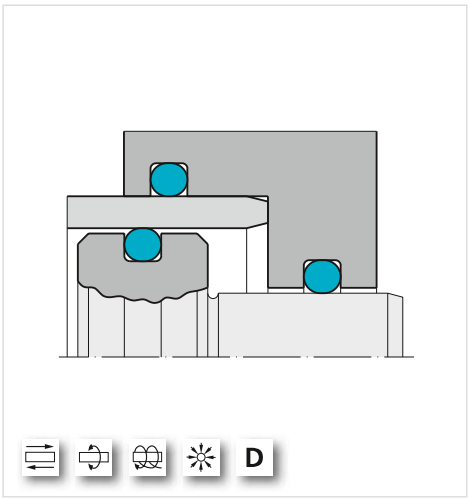
Ø Range	Pressure Range	Temperature Range	Velocity
from 0.5 mm	200 MPa	-60 °C +200 °C	0.5 m/s
from 0.02 in	29,000 psi	-75 °F +390 °F	1.6 ft/s



Polyurethane O-Ring

Polyurethane O-Rings are especially suited wherever O-Rings are subject to dynamic loads. This includes, for example, applications in hydraulics, pneumatics and in a wide range of other critical areas. In many cases, polyurethane O-Rings are used instead of NBR due to their high mechanical strengths.

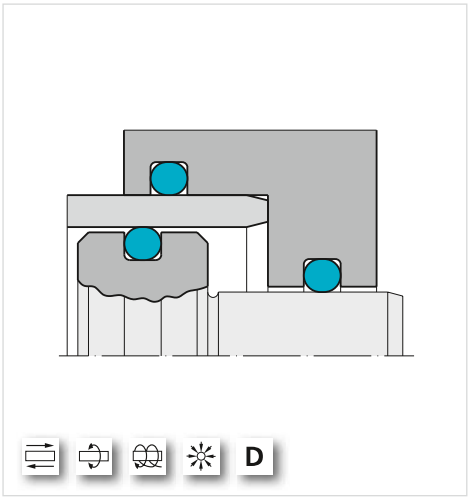
Ø Range	Pressure Range	Temperature Range	Velocity
from 2.5 mm	200 MPa	-30 °C +100 °C	–
from 0.1 in	29,000 psi	-20 °F +210 °F	–



FlexiMold™ O-Ring

Trelleborg Sealing Solutions has developed a proprietary manufacturing technology, FlexiMold™, that allows the manufacturing of large, high quality O-Rings without the leadtime and cost associated with dedicated tooling. Compared to conventional techniques such as the splicing of extruded cord, the FlexiMold™ process ensures full visual and dimensional integrity. The tolerances according to ISO 3601-1, class B apply for the inside diameters and cross sections.

Ø Range	Pressure Range	Temperature Range	Velocity
0.5 – 1,000 mm	200 MPa	-60 °C +200 °C	0.5 m/s
0.020 in – 39 in	29,000 psi	-75 °F +390 °F	1.6 ft/s

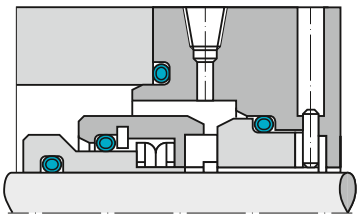


KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

FEP O-Ring

This encapsulated O-Ring is produced from silicone or fluorocarbon with a seamless FEP jacket. These seals can solve sealing problems due to their chemical resistance coupled with elastic properties and low friction. Available to ISO 3601, AS 568 and BS 4518 and other standards including hollow and square sections. Available in both inch and metric sizes.

Ø Range	Pressure Range	Temperature Range	Velocity
from 7.7 mm	25 MPa	-60 °C +200 °C	–
from 0.300 in	3,625 psi	-75 °F +390 °F	–

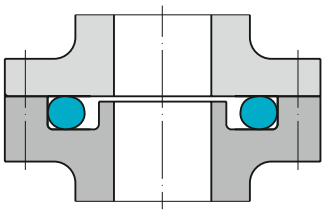


D

PTFE O-Ring

For axial static face or flange-type applications. Resistant to practically all chemicals and to high temperatures. Available in any required size.

Ø Range	Pressure Range	Temperature Range	Velocity
0.5 – 1,000 mm	40 MPa	-200 °C +260 °C	–
0.02 in – 39 in	5,800 psi	-325 °F +500 °F	–

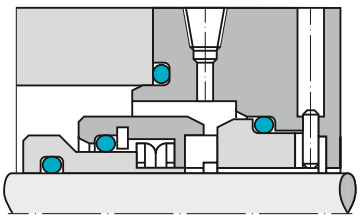


D

Isolast® Perfluoroelastomer O-Ring

Isolast® is Trelleborg Sealing Solutions proprietary perfluoroelastomer. It combines the elastic properties of fluorocarbon (FKM) with the outstanding chemical resistance and the high temperature stability of PTFE. Isolast® seals can be used for applications in high temperature service up to +325 °C / +615 °F. Isolast® O-Rings are available in metric and inch dimensions to ISO 3601 and AS 568.

Ø Range	Pressure Range	Temperature Range	Velocity
from 0.8 mm	200 MPa	-25 °C +325 °C	–
from 0.031 in	29,000 psi	-10 °F +615 °F	–



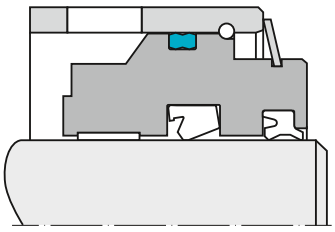
D

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** **S** **Double-acting =** **D**

Zurcon® Dualseal

Zurcon® Dualseal is a sealing element for static applications and a highly effective alternative to an O-Ring and Back-up Ring combination. The main advantages are resistance to twisting, stability at pulsating pressures and low contamination risk. Zurcon® Dualseal is easy to install and guarantees long service life. Recommended for heavy duty applications in cylinders and valves.

Ø Range	Pressure Range	Temperature Range	Velocity
6 – 280 mm	50 MPa	-35 °C +110 °C	–
0.236 in – 11 in	7,250 psi	-30 °F +230 °F	–

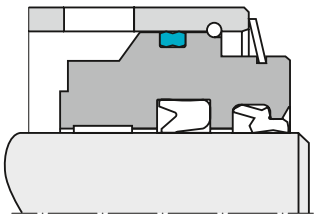


D

Elastomeric Dualseal

Developed to address fluid power industry requirements, the Elastomeric Dualseal is a one-piece alternative to O-Rings and Back-up Rings for static sealing. As a single component, it can easily retrofit existing standard ISO 3601-1/AS 568 O-Ring groove sizes and provides improved performance in most applications.

Ø Range	Pressure Range	Temperature Range	Velocity
2 – 658 mm	0 – 21 MPa	-30 °C +100 °C	–
0.070 in – 26 in	0 – 3,000 psi	-22 °F +212 °F	–

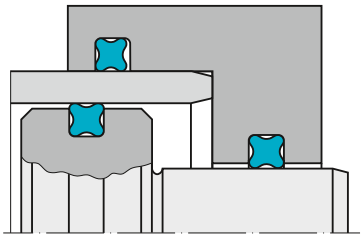


D

Quad-Ring® Seal

A double-acting four lip seal for static and dynamic applications. Available in a wide range of elastomer compounds. Provides higher seal efficiency and lower friction than conventional O-Rings.

Ø Range	Pressure Range	Temperature Range	Velocity
1 – 660 mm	40 MPa	-30 °C +200 °C	0.5 m/s (up to 2 m/s rotary)
0.039 in – 26 in	5,800 psi	-20 °F +390 °F	1.6 ft/s (up to 6.5 ft/s rotary)



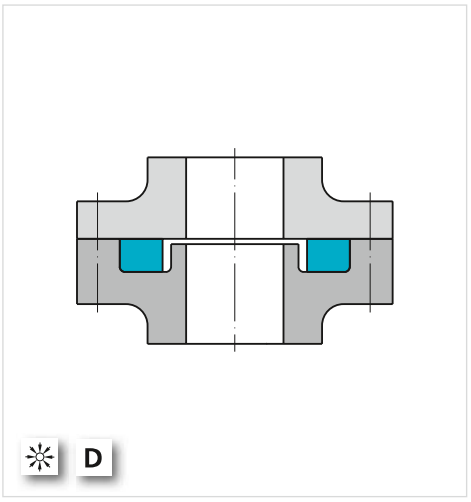
D

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Kantseal

Kantseal is an elastomer square sectioned ring for static applications. Mostly used on flanges to SAE standards and covers, it has a high sealing efficiency and keeps its shape. Available in nitrile (NBR) and fluorocarbon (FKM).

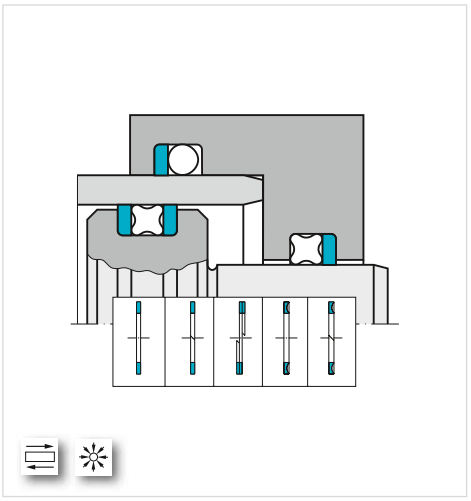
Ø Range	Pressure Range	Temperature Range	Velocity
5 – 456 mm	50 MPa	-30 °C +200 °C	–
0.197 in – 18 in	7,250 psi	-20 °F +390 °F	–



Back-up Ring

Back-up Rings are installed together with O-Rings and Quad-Ring® Seals to prevent gap extrusion in applications above 5 MPa / 725 psi. Available in spiral, cut or uncut designs in filled or unfilled PTFE, Turcon® , elastomers and thermoplastics based on ISO 3601, AS 568.

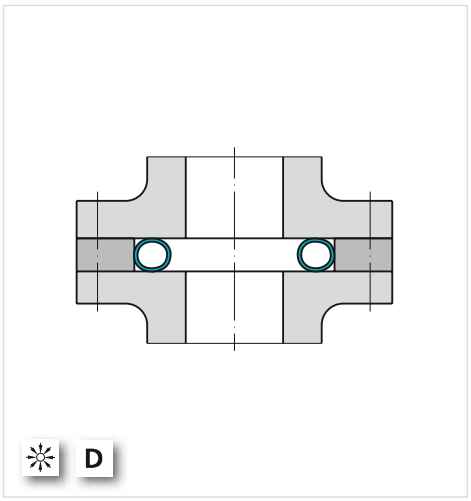
Ø Range	Pressure Range	Temperature Range	Velocity
from 2.9 mm	250 MPa	-200 °C +260 °C	0.5 m/s
from 0.115 in	36,250 psi	-325 °F +500 °F	1.6 ft/s



Wills Rings® O

Wills Rings® O are metal O-Rings for static face-sealing applications that give reliable performance over a large temperature range for gases and liquids. Extreme high pressures and vacuums can be sealed with Wills Rings® O. Long life and excellent corrosion resistance are also characteristics of the seals. Available as pressure-filled, pressure-actuated, non-pressurized and solid seals, in mild and stainless steel, copper and Inconel® 600 materials. The seals can be plated in silver or nickel, or PTFE coated.

Ø Range	Pressure Range	Temperature Range	Velocity
8 – 3,000 mm	1,000 MPa	up to +850 °C	–
0.315 in – 118 in	145,000 psi	up to +1,560 °F	–

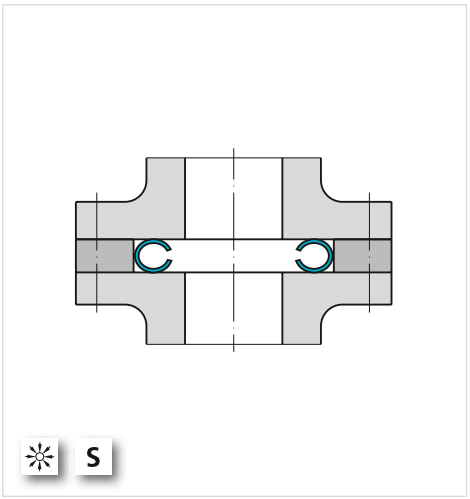


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Wills Rings® C

Wills Rings® C are metal C-Rings used for almost any static face sealing applications. They give reliable performance over a large temperature range in liquids and they can also seal high pressures and vacuums. Wills Rings® C exhibits greater spring back and elasticity than Wills Rings® O. This characteristic provides more effective sealing where thermal expansion of the seal housing is found. The seals are available for internal and external seal housing in Inconel® 718 and X750. They can be plated in silver or nickel, or coated with PTFE.

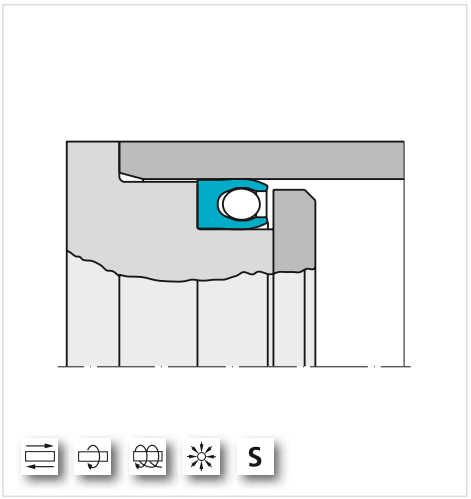
Ø Range	Pressure Range	Temperature Range	Velocity
20 – 500 mm	200 MPa	up to +750 °C	–
0.787 in – 19.5 in	29,000 psi	up to +1,380 °F	–



Turcon® Variseal® H

A single-acting sealing element comprised of a U-shaped Turcon® ring and a coiled metallic energizing spring. The seal has a high specific sealing force and gives gas-tight sealing even at low temperatures. Resistant to most liquids and chemicals it has unlimited shelf life. Used for radial static or slightly dynamic applications, the seal is available in versions for cryogenic service.

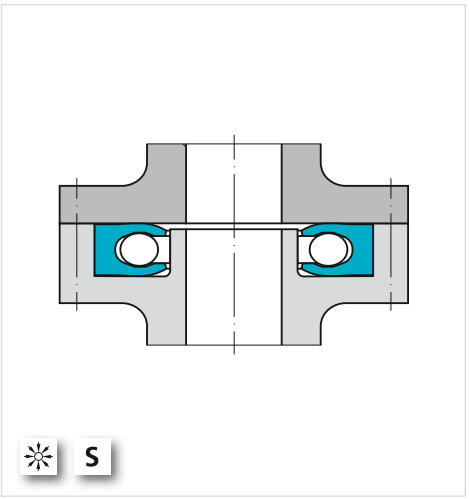
Ø Range	Pressure Range	Temperature Range	Velocity
3 – 3,300 mm	40 MPa	-100 °C +200 °C	–
0.118 in – 130 in	5,800 psi	-150 °F +390 °F	–



Turcon® Variseal® HF

A single-acting face sealing element comprised of a U-shaped Turcon® ring and a coiled metallic energizing spring. The seal has a high specific sealing force and gives gas-tight sealing even at low temperatures. Resistant to most liquids and chemicals it has unlimited shelf life. Used for inside or outside sealing, the seal is available in versions for cryogenic service.

Ø Range	Pressure Range	Temperature Range	Velocity
3 – 3,300 mm	60 MPa	-150 °C +200 °C	–
0.118 in – 130 in	8,700 psi	-240 °F +390 °F	–



KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Flange Seals

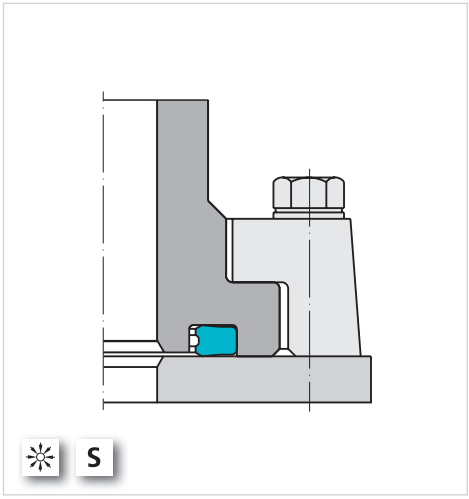
SAE Flange Seals corresponding to SAE J 518 are available in three different variants:

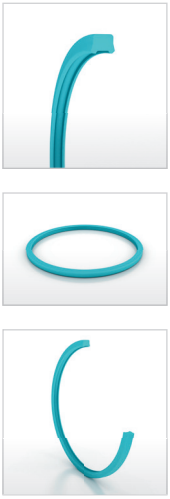
- O-Rings (standard material: NBR 90 ShA)
- Rectangle Seals series DR (standard material: NBR 90 ShA)
- Zurcon® Flange Seals DRV5 are designed to work with both standardized SAE J518 and ISO 6162:1 grooves (standard material: Zurcon® Z20 polyurethane 93 ShA)

All SAE Flange Seals provide high functional security and can easily be mounted and dismounted. They are used in a variety of applications including hydraulics, press manufacturing and materials-handling.

Ø Range	Pressure Range	Temperature Range	Velocity
15 – 50 mm	42 MPa	-35 °C +110 °C*	–
0.59 in – 2 in	6,000 psi	-30 °F +230 °F*	–

* -50°C to 110°C for Zurcon® Z22 version
* -55°F to 230°F for Zurcon® Z22 version

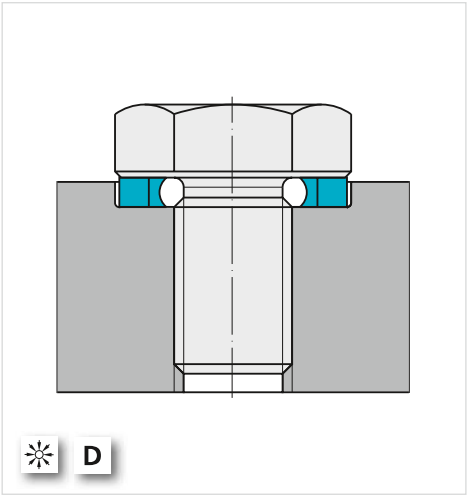




Bonded Seal

These are sealing discs that seal threads and flange joints. The discs consist of a metallic ring and a rubber sealing pad bonded together. Available in metric and inch dimensions.

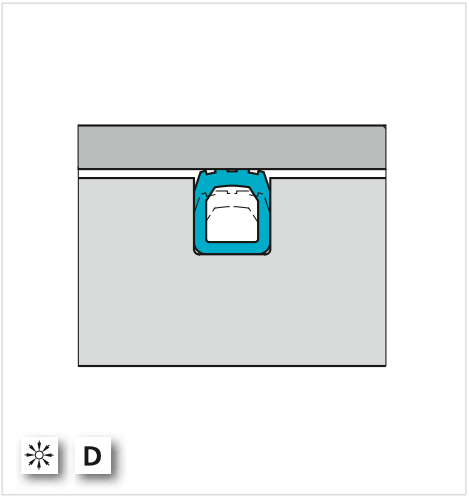
Ø Range	Pressure Range	Temperature Range	Velocity
M2.5 – M125	100 MPa	-30 °C +200 °C	–
1/8 in – 2 1/2 in	14,500 psi	-20 °F +390 °F	–



Airseal

Airseals are tubular elastomer seals which are activated by internal pressurization (inflatable seals) with air /or water or other medium. Airseals are used wherever reliable sealing of accesses to plants, containers and rooms are required. They represent a technically improved alternative to the standard contact pressure seals. A wide range of high-pressure and low-pressure seals, as well as numerous elastomer materials offer the designers potential solutions to an enormous variety of applications(ex. doors & locks of autoclaves & sterilizers in Chemical and Semiconductor industries). Airseals can be easily adapted to match the surface to be sealed and are therefore generally manufactured to the customer's drawings.

Ø Range	Pressure Range	Temperature Range	Gap Covered
50 – 4,000 mm	1 MPa	-50 °C +220 °C	1 – 76 mm
2 in – 157 in	145 psi	-55 °F +430 °F	0.04 in – 2.99 in

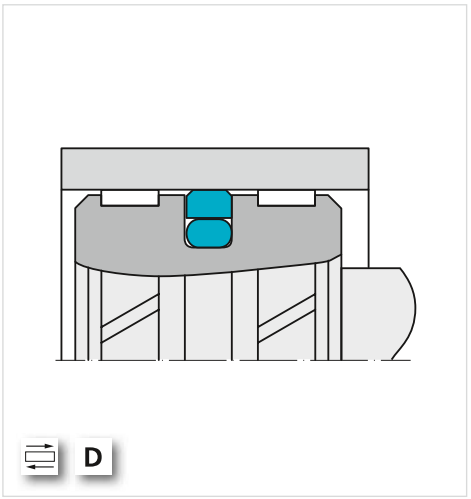


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Turcon® Glyd Ring®

Turcon® Glyd Ring® is a double-acting O-Ring energized piston seal for dynamic applications. Turcon® Glyd Ring® provides low friction with no stick-slip, minimal break out force and high wear resistance. Main application is actuator cylinders. Installed in grooves to ISO 7425.

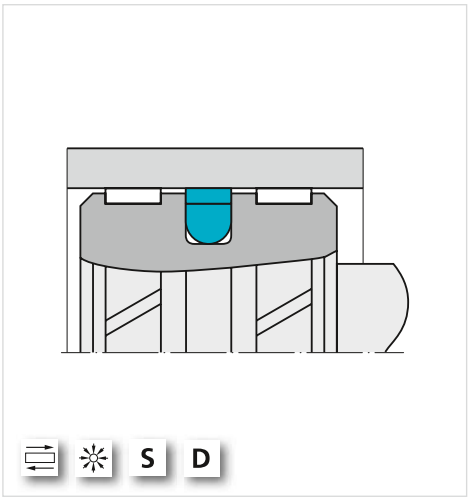
Ø Range	Pressure Range	Temperature Range	Velocity
8 – 2,700 mm	60 MPa	-45 °C +200 °C	15 m/s
0.315 in – 105 in	8,700 psi	-50 °F +390 °F	50 ft/s



Turcon® Glyd Ring® II

The Turcon® Glyd Ring® II is a double-acting, bi-directional seal for demanding applications. It consists of a permanently bonded elastomer energizer and a PTFE-based seal ring to form a one-piece seal.

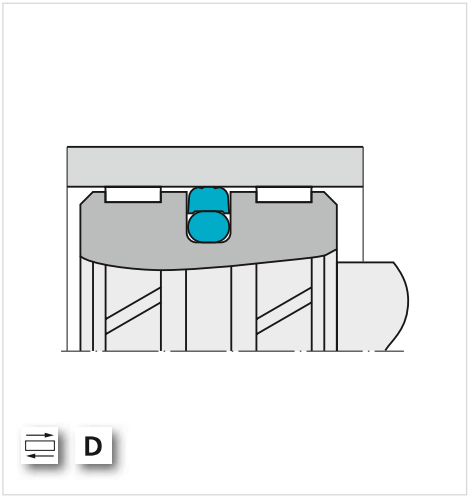
Ø Range	Pressure Range	Temperature Range	Velocity
2.5 – 1,016 mm	60 MPa	-60 °C +200 °C	15 m/s
0.100 in – 40.0 in	8,700 psi	-76 °F +392 °F	50 ft/s



Zurcon® Glyd Ring® D

Zurcon® Glyd Ring® D is a double-acting seal consisting of a premium polyurethane Zurcon® Z13 seal ring and an elastomer O-Ring as energizing element. The innovative D-shape design optimizes contact pressure and the two special grooves incorporated keep an oil reservoir for adequate lubrication that minimizes heat generated by friction forces. The above features give the perfect combination of sealing performance and service life in heavy duty hydraulic applications.

Ø Range	Pressure Range	Temperature Range	Velocity
–	up to 60 MPa	-30 °C +110 °C	0.5 m/s
–	8,700 psi	-22 °F +230 °F depending on O-Ring Material	1.6 ft/s

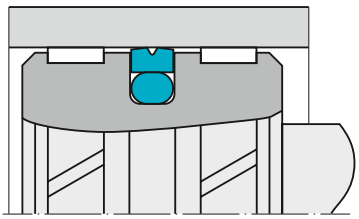


KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Turcon® Glyd Ring® Hz

Turcon® Glyd Ring® Hz is a symmetric, double-acting seal which has design features to allow improved performance over a standard Turcon® Glyd Ring® in high frequency, short stroke applications.

Ø Range	Pressure Range	Temperature Range	Velocity
8 – 999.99 mm	30 MPa	-45 °C +200 °C	15 m/s
0.315 in – 39.4 in	4,350 psi	-50 °F +390 °F	50 ft/s

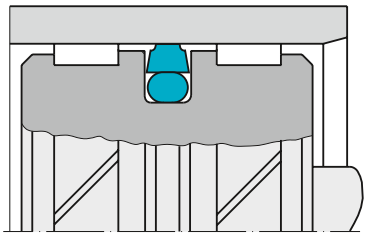


D

Turcon® Glyd Ring® T

Turcon® Glyd Ring® T provides optimum leakage control and good resistance to extrusion. The seal is a double-acting O-Ring energized piston seal for dynamic applications. Installed in grooves to ISO 7425, it has excellent friction characteristics with no stick-slip, minimal break-out force and high wear resistance.

Ø Range	Pressure Range	Temperature Range	Velocity
8 – 2,700 mm	60 MPa	-45 °C +200 °C	15 m/s
0.315 in – 105 in	8,700 psi	-50 °F +390 °F	50 ft/s

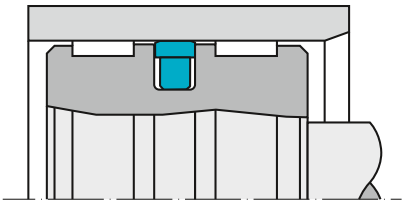


D

Zurcon® Glyd Ring® P

The double-acting Zurcon® Glyd Ring® P is a combination of a Zurcon® based material slipper-seal with a step cut and an energizing rectangular elastomer ring. The high strength of Zurcon® means there can be a two-times larger extrusion gap compared with Turcon® materials. The step cut in the ring is necessary for installation in closed grooves and to give flexibility to this very stiff material.

Ø Range	Pressure Range	Temperature Range	Velocity
45 – 190 mm	50 MPa	-30 °C +110 °C	1 m/s
1.75 in – 7.5 in	7,250 psi	-20 °F +230 °F	3 ft/s



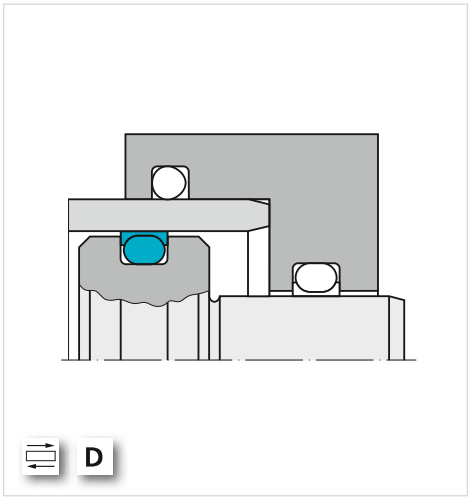
D

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Turcon® Double Delta®

The Turcon® Double Delta® is a double-acting sealing element which is energized by an elastomer O-Ring. The Turcon® Double Delta® seal can be fitted in existing O-Ring grooves (US standard AS 568 A, MIL-P-5514) and it demonstrates good friction properties, stick-slip-free starting and excellent dry-running. The Turcon® Double Delta® is used in light and medium-duty industrial hydraulics.

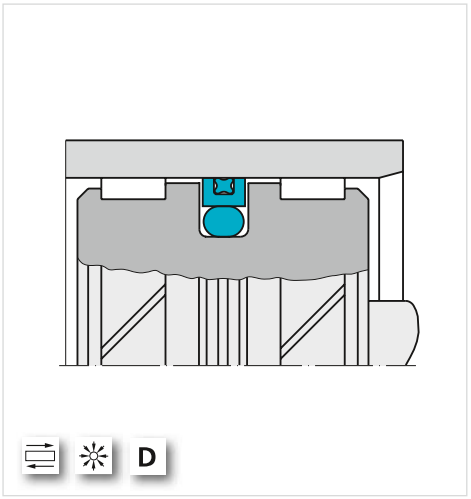
Ø Range	Pressure Range	Temperature Range	Velocity
4 – 2,700 mm	35 MPa	-45 °C +200 °C	15 m/s
0.157 in – 105 in	5,075 psi	-50 °F +390 °F	50 ft/s



Turcon® AQ Seal®

A double-acting O-Ring energized seal developed for sealing between two media such as fluid and gas. It incorporates a limited footprint Quad-Ring® Seal inset into the dynamic sealing face. Installed in grooves to ISO 7425.

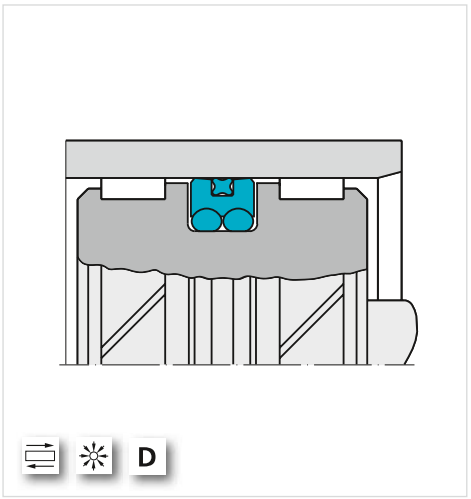
Ø Range	Pressure Range	Temperature Range	Velocity
16 – 700 mm	50 MPa	-45 °C +200 °C	2 m/s
0.625 in – 27.5 in	7,250 psi	-50 °F +390 °F	6.5 ft/s



Turcon® AQ Seal® 5

A further development of the standard Turcon® AQ Seal® , the double-acting Turcon® AQ Seal® 5 incorporates an elastomer Quad-Ring® Seal and an elastomer or polyurethane Bean Seal in the dynamic sealing face. It is energized by two O-Rings to improve sealing behavior.

Ø Range	Pressure Range	Temperature Range	Velocity
40 – 700 mm	60 MPa	-30 °C +200 °C	3 m/s
1.5 in – 27.5 in	8,700 psi	-22 °F +390 °F	10 ft/s

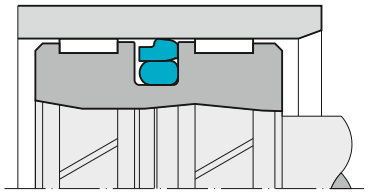


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Turcon® Stepseal® 2K

A single-acting O-Ring energized piston seal for dynamic applications installed in closed grooves, including grooves to ISO 7425. Turcon® Stepseal® 2K offers high sealing efficiency, low friction with no stick-slip, minimal break out force and high wear resistance. Optimum sealing characteristics are achieved by installing in a tandem Turcon® Stepseal® or Rimseal arrangement together with a double-acting scraper. Available in Turcon® or Zurcon® materials.

Ø Range	Pressure Range	Temperature Range	Velocity
8 – 2,700 mm	60 MPa	-45 °C +200 °C	15 m/s
0.315 in– 105 in	8,700 psi	-50 °F +390 °F	50 ft/s

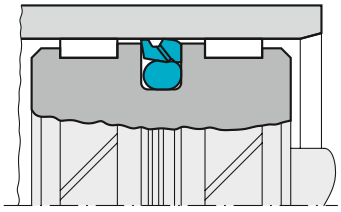


S

Turcon® Stepseal® V

A single-acting O-Ring energized piston seal with hydrostatic pressure relief channel for dynamic applications. It prevents pressure trapping between seals under all service conditions. Installed in closed grooves, including grooves to ISO 7425, Turcon® Stepseal® V offers high sealing efficiency. It also has low friction with no stick-slip, minimal break out force and high wear resistance. Turcon® Stepseal® V is preferably used together with a secondary seal from the range of Turcon® and Zurcon® piston seals.

Ø Range	Pressure Range	Temperature Range	Velocity
15 – 2,700 mm	60 MPa	-45 °C +200 °C	15 m/s
0.600 in – 105 in	8,700 psi	-50 °F +390 °F	50 ft/s

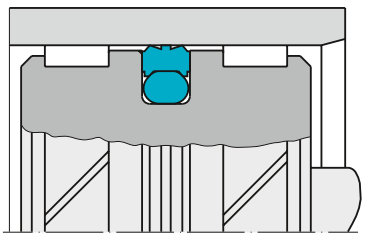


S

Zurcon® Wynseal

A double-acting O-Ring energized piston seal in injection molded polyurethane for dynamic applications. Installed in grooves to ISO 7425, Zurcon® Wynseal offers high sealing efficiency, and is tear and abrasion resistant.

Ø Range	Pressure Range	Temperature Range	Velocity
16 – 250 mm	25 MPa	-35 °C +110 °C	0.8 m/s
0.625 in – 10 in	3,626 psi	-30 °F +230 °F	2.6 ft/s



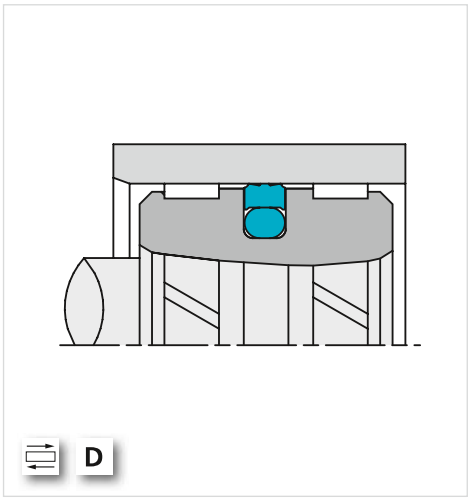
D

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Zurcon® Wynseal M

A double-acting O-Ring energized piston seal for dynamic applications in a machined version. All diameters up to 2,700 mm / 105 in. Installed in grooves to ISO 7425. High sealing efficiency in tear and abrasion resistant Zurcon® polyurethane. Also available in Turcon® materials.

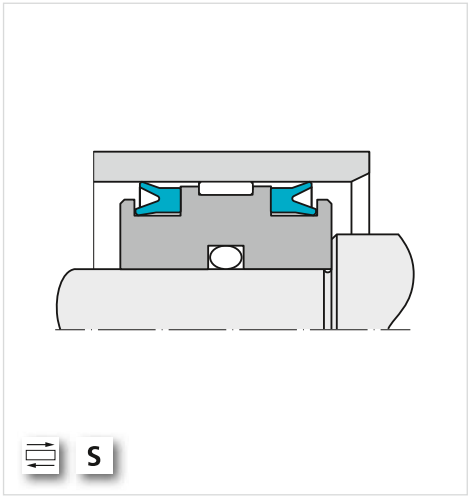
Ø Range	Pressure Range	Temperature Range	Velocity
8 – 2,700 mm	50 MPa	-45 °C +200 °C	10 m/s
0.315 in – 100 in	7,250 psi	-50 °F +390 °F	33 ft/s



Zurcon® U-Cup

Zurcon® U-Cup is a single-acting polyurethane piston seal that is available in a wide range of sizes. The seal is suitable for assembly into closed grooves and mainly used in light-duty cylinder applications in mobile equipment.

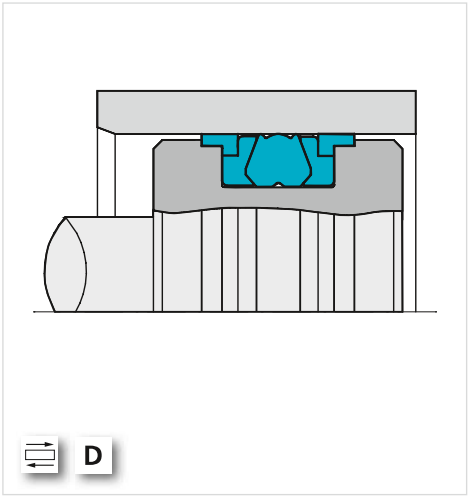
Ø Range	Pressure Range	Temperature Range	Velocity
14 – 250 mm	40 MPa	-35 °C +110 °C	0.5 m/s
0.550 in – 10 in	5,800 psi	-30 °F +230 °F	1.6 ft/s



Compact Seal POLYPAC® DBM

Double-acting compact piston seal assemblies consisting of an elastomer piston seal, two thermoelastomeric Back-up Rings and two thermoplastic wear rings. They are installed in closed grooves.

Ø Range	Pressure Range	Temperature Range	Velocity
20 – 250 mm	35 MPa	-35 °C +100 °C	0.5 m/s
0.800 in – 10 in	5,075 psi	-30 °F +210 °F	1.6 ft/s

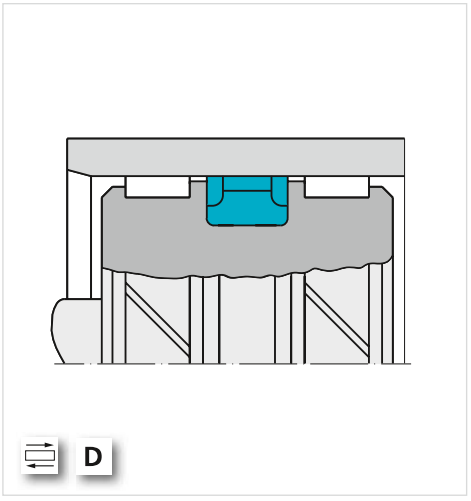


KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

POLYPAC® PHD/CST Seal

A heavy duty compact double-acting piston seal, the POLYPAC® PHD/CST Seal is an elastomer energized PTFE assembly. It gives stability, wear resistance, sealability, low friction and a maintenance-free long life. HiMod® Back-up Rings are specially designed to protect the seal ring from extrusion, even in the most demanding applications. Available in metric and inch sizes.

Ø Range	Pressure Range	Temperature Range	Velocity
50 – 180 mm	40 MPa	-45 °C +135 °C	1.5 m/s
2 in – 7 in	5,800 psi	-50 °F +275 °F	5 ft/s

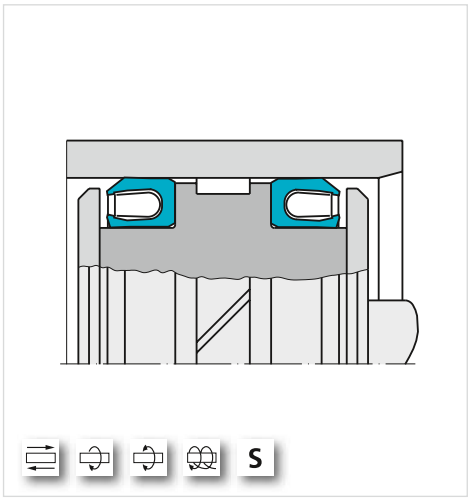


Turcon® Variseal® M2

A single-acting sealing element comprised of a U-shaped Turcon® ring and metallic energizing finger spring. It offers low friction with no stick-slip, minimal break out force and high wear resistance. Resistant to most liquids and chemicals, it has an unlimited shelf life.

Ø Range	Pressure Range	Temperature Range	Velocity
6 – 3,300 mm	D: 20 MPa S: 40 MPa	-70 °C +300 °C	L: 15 m/s R/O/H: 1.3 m/s
0.236 in – 130 in	D: 2,900 psi S: 5,800 psi	-95 °F +570 °F	L: 50 ft/s R/O/H: 4.2 ft/s

S = Static, D = Dynamic, L = Linear, R/O/H = Rotary/Oscillating/Helix

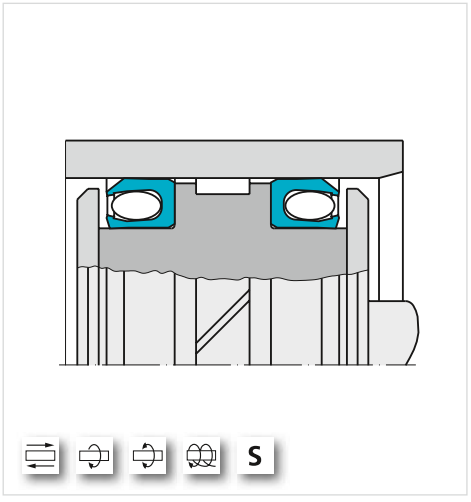


Turcon® Variseal® W2

Turcon® Variseal® W2 is a single-acting rod seal energized by a slantcoil spring. The advantage of the Turcon® Variseal® W2 lies in its low friction and relatively constant preloading force over a relatively large deformation range. The seal is used wherever friction has to be kept within a narrow tolerance zone, for instance in pressure switches.

Ø Range	Pressure Range	Temperature Range	Velocity
3 – 3,300 mm	D: 20 MPa S: 40 MPa	-70 °C +300 °C	L: 15 m/s R/O/H: 1.3 m/s
0.118 in – 130 in	D: 2,900 psi S: 5,800 psi	-95 °F +570 °F	L: 50 ft/s R/O/H: 4.2 ft/s

S = Static, D = Dynamic, L = Linear, R/O/H = Rotary/Oscillating/Helix

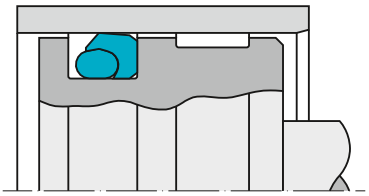


KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Turcon® VL Seal®

The Turcon® VL Seal® is a single-acting L-shaped Turcon® seal with an elastic energizer for dynamic applications. Its design provides low friction, no stick-slip effect, high wear resistance. It features the Turcon® Stepseal® back pumping effect and is also available in Zurcon® . The seal can be installed in a standard O-Ring groove.

Ø Range	Pressure Range	Temperature Range	Velocity
10 – 2,700 mm	60 MPa	-45 °C +200 °C	15 m/s
0.400 in – 105 in	8,700 psi	-50 °F +390 °F	50 ft/s

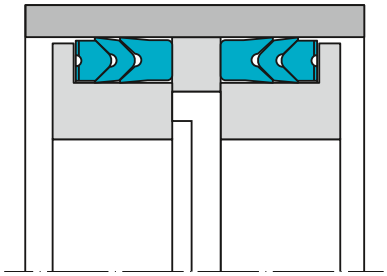


S

POLYPAC® Veepac

POLYPAC® Veepac is an assembly of fabric-reinforced, highly wear resistant, chevron sealing rings with a support ring and a pressure energizing ring. POLYPAC® Veepac seals are designed with preloaded radial lips to provide good sealing results. They are very robust, not sensitive to sealing surface finish and dimensionally adjustable. They are especially suited to applications where there is a risk of damage and contamination.

Ø Range	Pressure Range	Temperature Range	Velocity
40 – 250 mm	40 MPa	-30 °C +200 °C	0.5 m/s
1.5 in – 10 in	5,800 psi	-20 °F +390 °F	1.6 ft/s

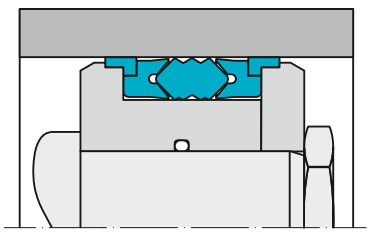


S

POLYPAC® Selemaster DSM

A double-acting compact piston seal with an integrated Back-up Ring and guide ring. The multi-lip elastomer seal element is backed on both sides with fiber-reinforced profile rings. Recommended for high pressure applications and where vibration occurs.

Ø Range	Pressure Range	Temperature Range	Velocity
45 – 360 mm	70 MPa	-40 °C +130 °C	0.5 m/s
1.75 in – 14 in	10,150 psi	-40 °F +270 °F	1.6 ft/s



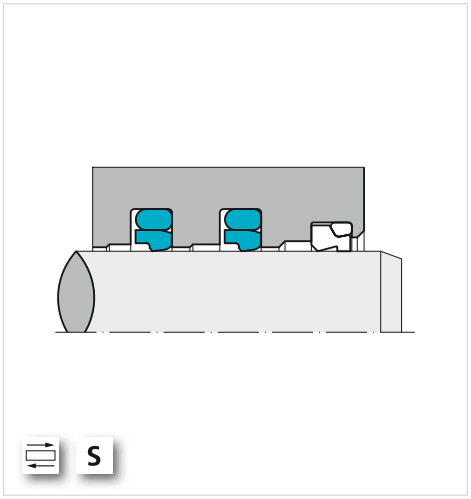
D

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Turcon® Stepseal® 2K

A single-acting, O-Ring energized rod seal for dynamic applications, Turcon® Stepseal® 2K can be installed in closed grooves including grooves to ISO 7425. It offers high sealing efficiency, low friction with no stick-slip, minimal break out force and high wear resistance. Optimum sealing characteristics are achieved by installing in a tandem Turcon® Stepseal® or Rimseal arrangement together with a double-acting scraper. Available in Turcon® or Zurcon® materials.

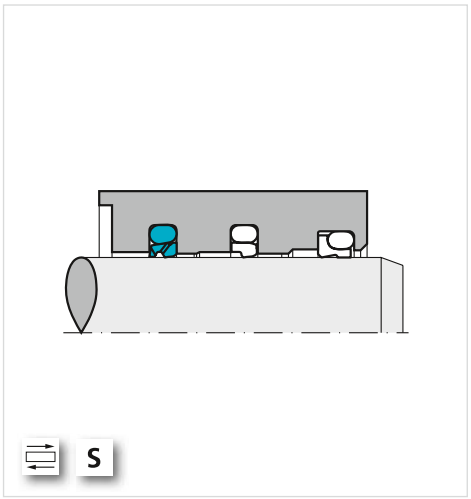
Ø Range	Pressure Range	Temperature Range	Velocity
3 – 2,600 mm	60 MPa	-45 °C +200 °C	15 m/s
0.120 in – 102 in	8,700 psi	-50 °F +390 °F	50 ft/s



Turcon® Stepseal® V

A single-acting, O-Ring energized rod seal with hydrostatic pressure relief channel for dynamic applications. Prevents pressure trap between seals under all service conditions. Installed in closed grooves including grooves to ISO 7425, Turcon® Stepseal® V offers high sealing efficiency. It also gives, low friction with no stick-slip, minimal break out force and high wear resistance. Turcon® Stepseal® V is preferably used together with a secondary seal from the range of Turcon® and Zurcon® rod seals, together with a double-acting Excluder® or Scraper.

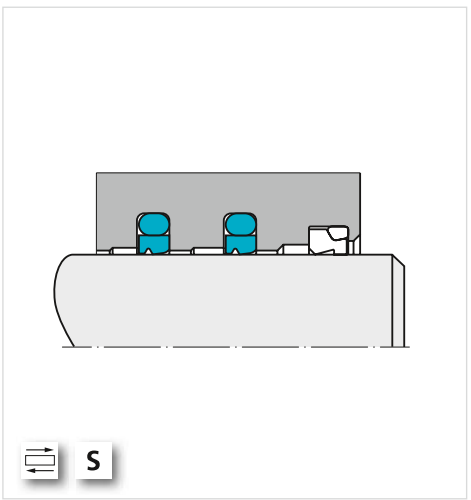
Ø Range	Pressure Range	Temperature Range	Velocity
12 – 2,600 mm	60 MPa	-45 °C +200 °C	15 m/s
0.500 in – 102 in	8,700 psi	-50 °F +390 °F	50 ft/s



Turcon® Stepseal® 2A

Turcon® Stepseal® 2A has all of the excellent performance characteristics of Turcon® Stepseal® 2K with additional design features to protect against tilting as a result of back pressure.

Ø Range	Pressure Range	Temperature Range	Velocity
18 – 2,600 mm	60 MPa	-45 °C +200 °C	15 m/s
0.709 in – 102.4 in	8,700 psi	-50 °F +390 °F	50 ft/s

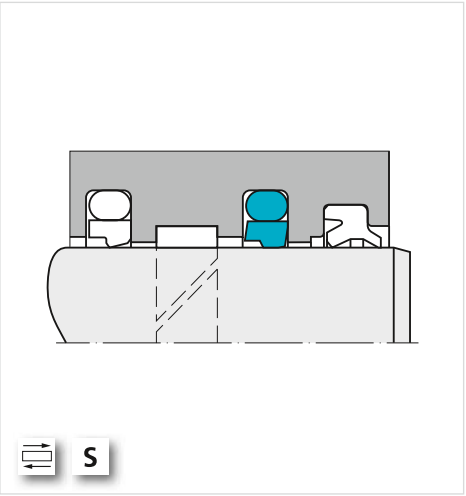


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Zurcon® Rimseal

Zurcon® Rimseal is a single-acting rod seal energized by an elastomer O-Ring and it has a high static and dynamic tightness. The installation spaces are identical to those used for the Turcon® Stepseal® 2K, making the Zurcon® Rimseal an ideal secondary system element. The main application fields are rod seals with redundant sealing systems and double wipers in mobile hydraulics, machine tools, injection molding machines and in general machine construction.

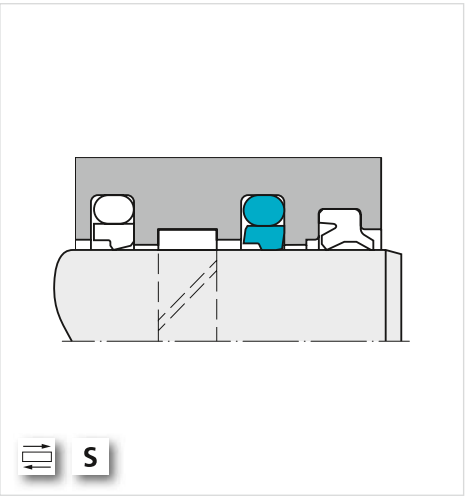
Ø Range	Pressure Range	Temperature Range	Velocity
8 – 2,200 mm	60 MPa (in tandem)	-45 °C +110 °C	5 m/s (in tandem)
0.315 in – 87 in	8,700 psi (in tandem)	-50 °F +230 °F	16 ft/s (in tandem)



Zurcon® Rimseal IM

Zurcon® Rimseal IM is a single-acting rod seal energized by an elastomer O-Ring with good static and dynamic tightness. The design is optimized for injection molding technology and improves contact pressure distribution with improved back pumping and extrusion behavior. The installation grooves are identical to those used for Turcon® Stepseal® 2K, making Zurcon® Rimseal an ideal secondary system element. Zurcon® Z13 material allows the seal to withstand higher temperatures and many hydraulic media. Mainly used for rod seals with redundant sealing systems and double-acting wipers in a wide range of hydraulic applications.

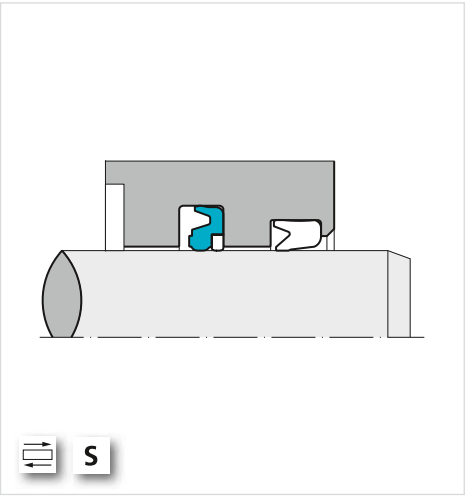
Ø Range	Pressure Range	Temperature Range	Velocity
8 – 999.9 mm	60 MPa (in tandem)	-30 °C +110 °C	5 m/s (in tandem)
0.315 in – 39 in	8,700 psi (in tandem)	-22 °F +230 °F depending on O-Ring Material	16 ft/s (in tandem)



Zurcon® Buffer Seal LM

In heavy-duty applications, leak-free performance and good service life cannot be assured by a single sealing element; therefore, specially developed “system seals” are arranged in series, building a “tandem configuration”. This innovative design incorporates large radius rounded edges on both seal ring and back-up ring that lower the contact pressure, allowing a thicker amount of fluid to lubricate and better activate the secondary seal.

Ø Range	Pressure Range	Temperature Range	Velocity
40 – 140 mm	40 MPa	-35 °C +110 °C	1 m/s
2 in – 8 in	5,800 psi	-30 °F +230 °F	3.2 ft/s

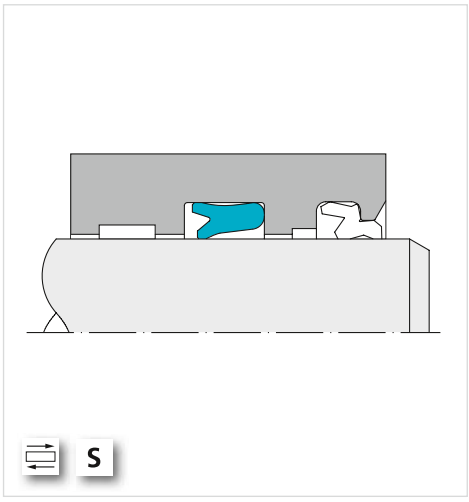


KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Zurcon® U-Cup RU9

Rod seals are particularly exposed to pressure and friction and a long service life is a specific requirement of piston rods. Zurcon® U-Cup RU9 can offer this with its outstanding wear and extrusion resistance. It is also compatible with virtually all media, has a wide operating temperature range, and gives low friction. It has compact installation dimensions and is easy to assemble.

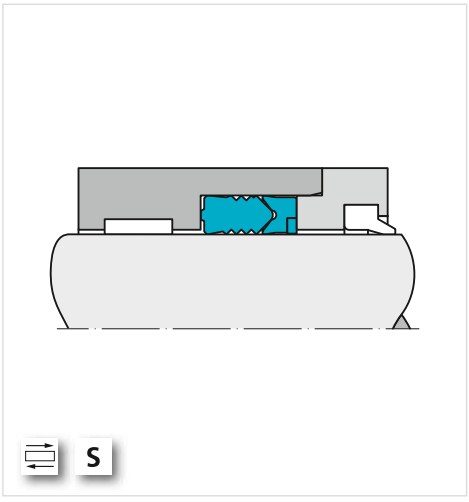
Ø Range	Pressure Range	Temperature Range	Velocity
6 – 140 mm	40 MPa	-35 °C +110 °C	0.5 m/s
0.375 in – 8 in	5,800 psi	-30 °F +230 °F	1.6 ft/s



POLYPAC® Selemaster SM

Compact rod seal designed for Veepac grooves and high pressure applications. The multi-lip elastomer sealing element is supported by a fiber-reinforced back with an integrated Back-up Ring.

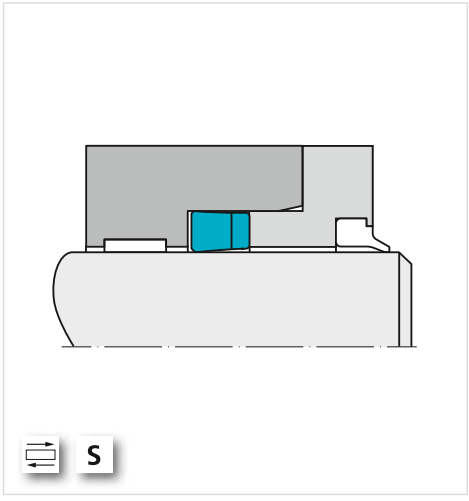
Ø Range	Pressure Range	Temperature Range	Velocity
27 – 360 mm	70 MPa	-40 °C +130 °C	0.5 m/s
1.06 in – 14 in	10,150 psi	-40 °F +270 °F	1.6 ft/s



POLYPAC® Balsele

A single-acting compact seal comprised of an elastomer sealing lip, supported by a fiber-reinforced back with optional integrated plastic Back-up Ring for high pressure applications. Recommended for use in standard hydraulic cylinders, presses and mobile hydraulics.

Ø Range	Pressure Range	Temperature Range	Velocity
10 – 1,200 mm	40 MPa	-30 °C +130 °C	0.5 m/s
0.394 in – 47 in	5,800 psi	-20 °F +270 °F	1.6 ft/s

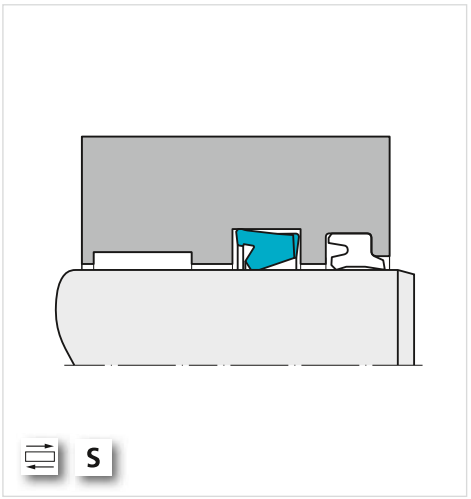


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Zurcon® L-Cup

A single-acting rod seal, Zurcon® L-Cup is an alternative to the U-Cup. It is a highly effective sealing system offering optimized sealing performance and extended service life. With exceptionally low friction properties, it has high wear resistance, back pumping ability along with high static and dynamic tightness.

Ø Range	Pressure Range	Temperature Range	Velocity
8 – 270 mm	40 MPa	-35 °C +110 °C	0.5 m/s
0.315 in – 10.5 in	5,800 psi	-30 °F +230 °F	1.6 ft/s

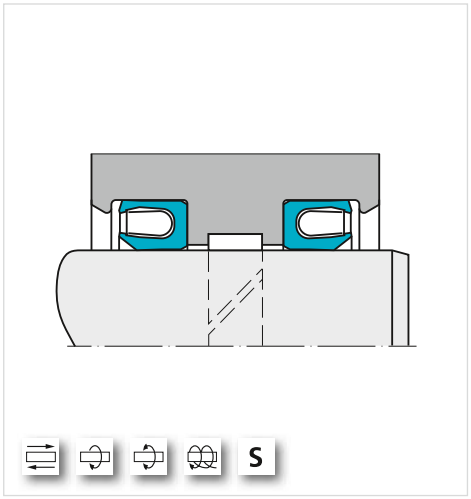


Turcon® Variseal® M2

A single-acting sealing element comprised of a U-shaped Turcon® ring and metallic energizing finger spring. If offers low friction with no stick-slip, minimal break out force and high wear resistance. Resistant to most liquids and chemicals, it has unlimited shelf life.

Ø Range	Pressure Range	Temperature Range	Velocity
3 – 3,300 mm	S: 40 MPa D: 20 MPa	-70 °C +300 °C	L: 15 m/s R/O/H: 1.3 m/s
0.118 in – 130 in	S: 5,800 psi D: 2,900 psi	-95 °F +570 °F	L: 50 ft/s R/O/H: 4.2 ft/s

S = Static, D = Dynamic, L = Linear, R/O/H = Rotary/Oscillating/Helix

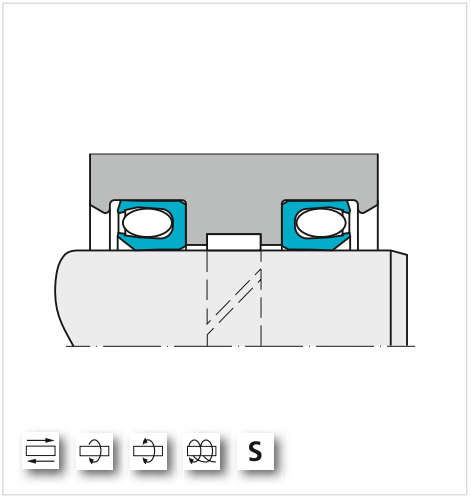


Turcon® Variseal® W2

Turcon® Variseal® W2 is a single-acting rod seal energized by a special Slantcoil® spring. The advantage of the Turcon® Variseal® W2 lies in its low friction and relatively constant preloading force over a relatively large deformation range. The seal is used wherever friction has to be kept within a narrow tolerance zone, for instance in pressure switches.

Ø Range	Pressure Range	Temperature Range	Velocity
3 – 3,300 mm	S: 40 MPa D: 20 MPa	-70 °C +300 °C	L: 15 m/s R/O/H: 1.3 m/s
0.118 in – 130 in	S: 5,800 psi D: 2,900 psi	-95 °F +570 °F	L: 50 ft/s R/O/H: 4.2 ft/s

S = Static, D = Dynamic, L = Linear, R/O/H = Rotary/Oscillating/Helix

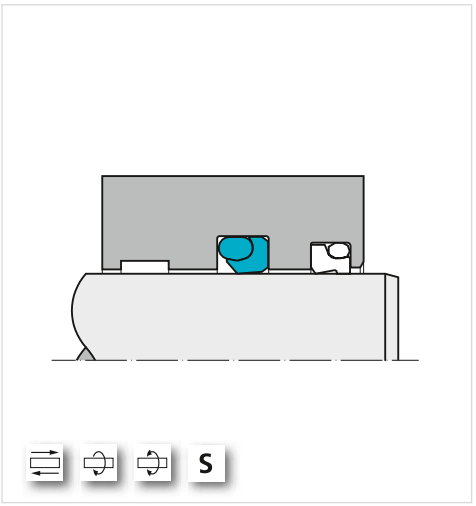


KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Turcon® VL Seal®

A single-acting L-shaped Turcon® seal with an elastomer energizer for dynamic applications. The design provides low friction, no stick-slip, high wear resistance and features the Turcon® Stepseal® back pumping effect. Available in Turcon® and Zurcon® materials. Installed in standard O-Ring groove.

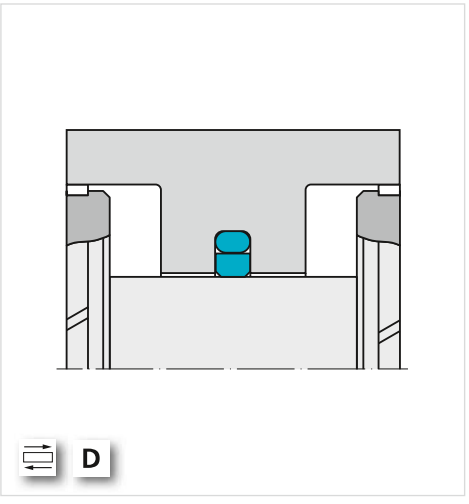
Ø Range	Pressure Range	Temperature Range	Velocity
6 – 2,600 mm	60 MPa	-45 °C +200 °C	15 m/s
0.236 in – 102 in	8,700 psi	-50 °F +390 °F	50 ft/s



Turcon® Glyd Ring®

Turcon® Glyd Ring® is a double-acting O-Ring energized rod seal for dynamic applications. It provides low friction with no stick-slip, minimal break out force and high wear resistance. Installed in grooves to ISO 7425.

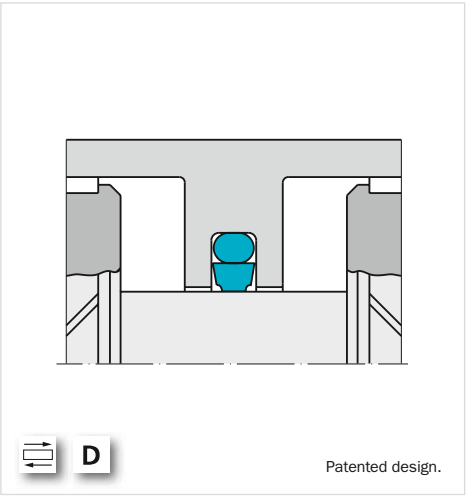
Ø Range	Pressure Range	Temperature Range	Velocity
3 – 2,600 mm	60 MPa	-45 °C +200 °C	15 m/s
0.118 in – 102 in	8,700 psi	-50 °F +390 °F	50 ft/s



Turcon® Glyd Ring® T

A further development of the Turcon® Glyd Ring® T provides improved leakage control and better resistance to extrusion. It is a double-acting O-Ring energized rod seal for dynamic applications that can be installed in grooves to ISO 7425. It offers low friction with no stick-slip, minimal break out force and high wear resistance.

Ø Range	Pressure Range	Temperature Range	Velocity
3 – 2,600 mm	60 MPa	-45 °C +200 °C	15 m/s
0.118 in – 102 in	8,700 psi	-50 °F +390 °F	50 ft/s



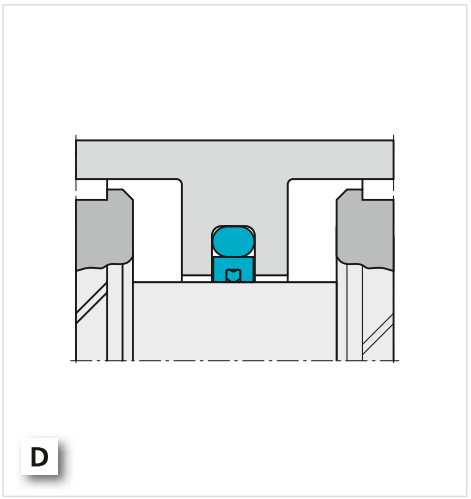
Patented design.

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Turcon® AQ Seal® with Bean Seal

A double-acting O-Ring energized seal developed for sealing between two media such as fluid and gas. It incorporates a limited footprint polyurethane Bean Seal inset into the dynamic sealing face. Installed in grooves to ISO 7425.

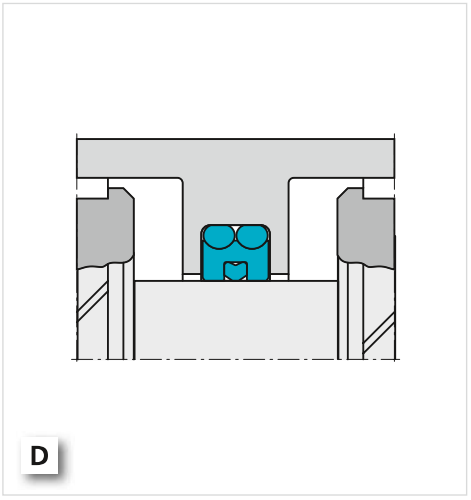
Ø Range	Pressure Range	Temperature Range	Velocity
18 – 2,200 mm	50 MPa	-45 °C +110 °C	2 m/s
0.725 in – 87 in	7,250 psi	-50 °F +230 °F	6.5 ft/s



Turcon® AQ Seal® 5 with Bean Seal

A further development of the standard Turcon® AQ Seal® double-acting seal with a polyurethane Bean Seal in the dynamic sealing face. It is energized by two O-Rings to improve sealing behavior.

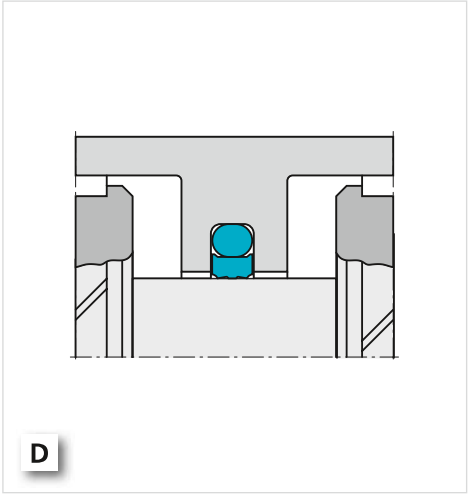
Ø Range	Pressure Range	Temperature Range	Velocity
32 – 2,200 mm	60 MPa	-45 °C +110 °C	3 m/s
1.275 in – 87 in	8,700 psi	-50 °F +230 °F	10 ft/s



Zurcon® Wynseal M

A double-acting O-Ring energized rod seal for dynamic applications in a machined version for all diameters up to 2,600 mm / 102 in. It can be installed in grooves to ISO 7425 and provides high sealing efficiency in tear and abrasion resistant Zurcon® polyurethane. Also available in Turcon® materials.

Ø Range	Pressure Range	Temperature Range	Velocity
3 – 2,600 mm	50 MPa	-45 °C +200 °C	10 m/s
0.120 in – 102 in	7,250 psi	-50 °F +390 °F	33 ft/s

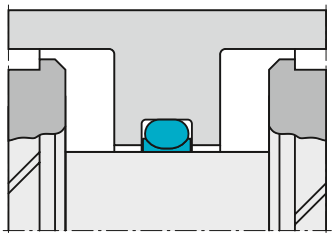


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Turcon® Double Delta®

The Turcon® Double Delta® is a double-acting sealing element which is energized by an elastomer O-Ring. The Turcon® Double Delta® seal can be fitted in existing O-Ring grooves (US standard AS 568 A, MIL-P-5514) and demonstrates good friction properties, stick-slip free starting and excellent dry-running. The Turcon® Double Delta® is used in light and medium-duty industrial hydraulics.

Ø Range	Pressure Range	Temperature Range	Velocity
2 – 1,000 mm	35 MPa	-45 °C +200 °C	15 m/s
0.080 in – 39 in	5,000 psi	-50 °F +390 °F	50 ft/s

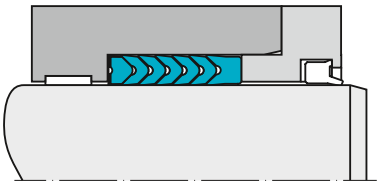


D

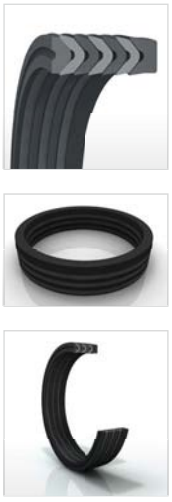
POLYPAC® Veepac

POLYPAC® Veepac is an assembly of fabric-reinforced, highly wear resistant, chevron sealing rings with a support ring and a pressure energizing ring. POLYPAC® Veepac seals are designed with preloaded radial lips to provide good sealing results. They are very robust, insensitive to sealing surface finish and dimensionally adjustable. They are especially suited to applications where there is a risk of damage and contamination.

Ø Range	Pressure Range	Temperature Range	Velocity
10 – 700 mm	40 MPa	-30 °C +200 °C	0.5 m/s
0.394 in – 28 in	5,800 psi	-20 °F +390 °F	1.6 ft/s



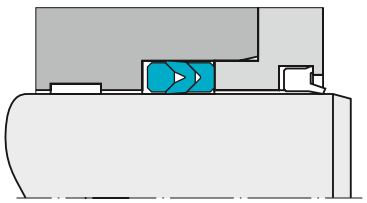
S



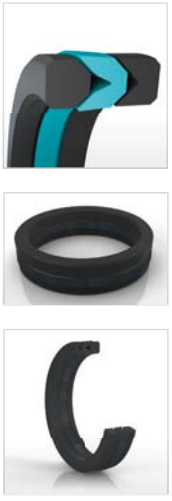
Turcon® V-Stack (Chevron Seal)

Turcon® V-Stack is a multi-element lip seal which provides high sealing efficiency due to a combination of seal elements.

Ø Range	Pressure Range	Temperature Range	Velocity
18 – 2,700 mm	140 MPa	-45 °C +260 °C	2 m/s
0.709 in – 106.3 in	20,000 psi	-50 °F +500 °F	6.5 ft/s



S D

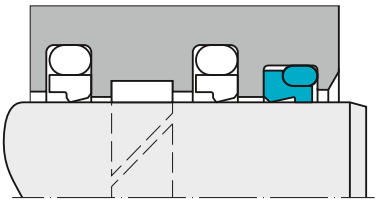


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Turcon® Excluder® 2

A double-acting O-Ring energized scraper that prevents the ingress of mud or other contaminants, increasing effective system service life. It has a secondary sealing capability for use with back pumping performance seals such as Turcon® Stepseal® 2K and Zurcon® Rimseal.

Ø Range	Temperature Range	Velocity
6 – 2,600 mm	-45 °C +200 °C	15 m/s
0.236 in – 102 in	-50 °F +390 °F	50 ft/s

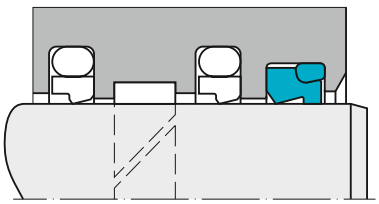


D

Turcon® Excluder® 5

A double-acting O-Ring energized scraper which prevents the ingress of mud or other contaminants, increasing effective system service life. It has a secondary sealing capability for use with back pumping performance seals such as Turcon® Stepseal® 2K and Zurcon® Rimseal. It is ideal for heavy duty mobile hydraulics applications. Primarily available in Turcon® or Zurcon® materials.

Ø Range	Temperature Range	Velocity
20 – 2,600 mm	-45 °C +200 °C	15 m/s
0.787 in – 102 in	-50 °F +390 °F	50 ft/s



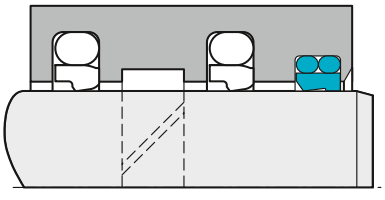
D

Patented design.

Turcon® Excluder® F

Double-acting O-Ring energized scraper which prevents the ingress of mud or other contaminants to increase effective system service life. Used in light and medium-duty industrial hydraulics. Offers easy installation in small diameters. Secondary sealing capability for use with back pumping performance seals such as Turcon® Stepseal® 2K and Zurcon® Rimseal. Available in Turcon® or Zurcon® materials.

Ø Range	Temperature Range	Velocity
19 – 1,000 mm	-45 °C +200 °C	15 m/s
0.750 in – 39 in	-50 °F +390 °F	50 ft/s



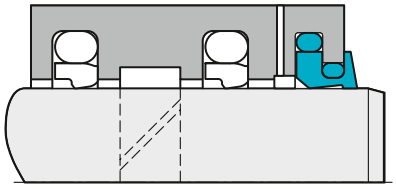
D

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Turcon® Excluder® G

Double-acting O-Ring energized scraper which prevents the ingress of mud or other contaminants to increase effective system service life. Advanced scraping lip prevents dirt from being trapped in front of the scraper element Used in medium to heavy duty hydraulics. Secondary sealing capability for use with back pumping performance seals such as Turcon® Stepseal® 2K and Zurcon® Rimseal. Available in Turcon® or Zurcon® materials.

Ø Range	Temperature Range	Velocity
100 – 1,000 mm	-45 °C +200 °C	5 m/s
4 in – 39 in	-50 °F +390 °F	16 ft/s

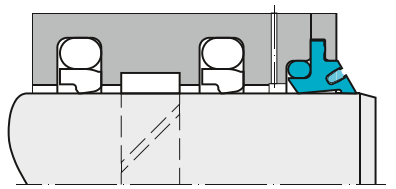


D

Turcon® Excluder® S

Turcon® Excluder® S is a double-acting O-Ring energized scraper for linear dynamic applications for installation in open grooves. Turcon® Excluder® S has a V-Spring activated scraping lip for optimal scraping effect.

Ø Range	Pressure Range	Temperature Range	Velocity
16 – 2,600 mm	1.5 MPa	-45 °C +200 °C -50 °F +390 °F Turcon®	5 m/s 16 ft/s Turcon®
–	217.5 psi	-45 °C +110 °C -50 °F +390 °F Zurcon® Z53/Z54	1 m/s 3 ft/s Zurcon® Z53/Z54
		-60 °C +80 °C -76 °F +176 °F Zurcon® Z80/Z82	2 m/s 6.5 ft/s Zurcon® Z80/Z82

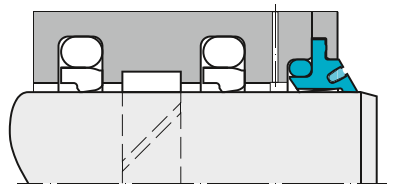


D

Turcon® Excluder® SN (Notch)

Turcon® Excluder® SN is a double-acting O-Ring energized scraper for linear dynamic applications for installation in open grooves. Turcon® Excluder® SN has a V-Spring activated scraping lip for optimal scraping effect and the internal sealing lip has an axial notch for relieving the pressure under the scraping lip.

Ø Range	Pressure Range	Temperature Range	Velocity
16 – 2,600 mm	1.5 MPa	-45 °C +200 °C -50 °F +390 °F Turcon®	5 m/s 16 ft/s Turcon®
–	217.5 psi	-45 °C +110 °C -50 °F +390 °F Zurcon® Z53/Z54	1 m/s 3 ft/s Zurcon® Z53/Z54
		-60 °C +80 °C -76 °F +176 °F Zurcon® Z80/Z82	2 m/s 6.5 ft/s Zurcon® Z80/Z82



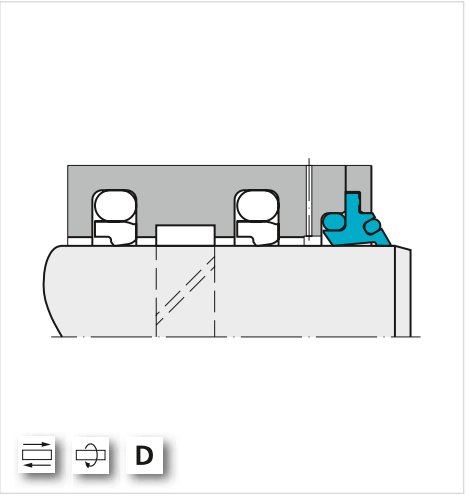
D

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Turcon® Excluder® SR (2 x O-Ring)

Turcon® Excluder® SR is a double-acting O-Ring energized scraper for linear dynamic applications for installation in open grooves. Turcon® Excluder® SR has an O-Ring activated scraping lip for optimal scraping effect.

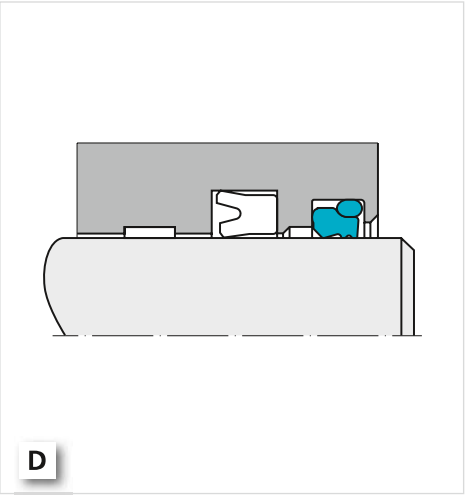
Ø Range	Pressure Range	Temperature Range	Velocity
16 – 2,600 mm	1.5 MPa	-45 °C +200 °C -50 °F +390 °F Turcon®	5 m/s 16 ft/s Turcon®
–	217.5 psi	-45 °C +110 °C -50 °F +390 °F Zurcon® Z53/Z54	1 m/s 3 ft/s Zurcon® Z53/Z54
		-60 °C +80 °C -76 °F +176 °F Zurcon® Z80/Z82	2 m/s 6.5 ft/s Zurcon® Z80/Z82



Zurcon® Excluder® Z

A double-acting O-Ring energized scraper which prevents the ingress of mud or other contaminants, increasing effective system service life. It has a secondary sealing capability for use with back pumping performance seals such as Zurcon® RU9 and Zurcon® Rimseal IM. The design is optimized for injection molding technology and guarantees increased scraping and sealing function due to optimized rod contact force distribution. It is ideal for heavy duty mobile hydraulics applications. The Zurcon® Z13 material allows the seal to withstand higher temperatures, resist more hydraulic media and is easier to assemble.

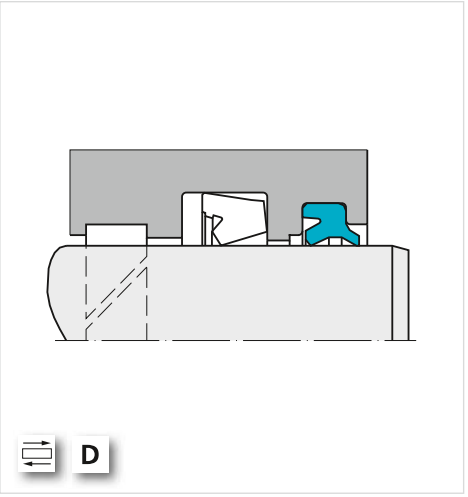
Ø Range	Temperature Range	Velocity
Designs available from 12 mm – 400 mm	-30 °C to +110 °C	Up to 2 m/s
–	-22 °F to +230 °F	6.5 ft/s



Zurcon® Scraper DA22

A double-acting scraper with a sealing and scraping lip in injection molded polyurethane that can be installed in grooves to ISO 6195 type C. For applications in conjunction with seals that give back pumping performance, such as Turcon® Stepseal® 2K and Zurcon® Rimseal.

Ø Range	Temperature Range	Velocity
5 – 180 mm	-35 °C +100 °C	1 m/s
0.197 in – 7 in	-30 °F +210 °F	3 ft/s

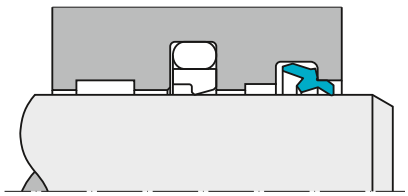


KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Zurcon® Scraper DA24

The Zurcon® Scraper DA24 is a double-acting polyurethane scraper for severe operating conditions and heavy dirt attack. It is especially suitable for construction machinery and mobile hydraulics. It can be used where there is side pressure on the piston rod.

Ø Range	Temperature Range	Velocity
45 – 290 mm	-35 °C +100 °C	1 m/s
1.6 in – 11 in	-30 °F +210 °F	3 ft/s



D

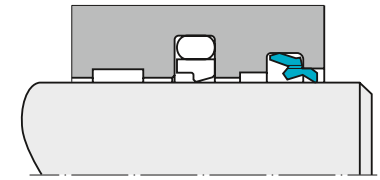
Patented design.

Zurcon® Scraper DA24 Venting

Zurcon® Scraper DA24 is a new double-acting thermoplastic polyurethane scraper design for severe operating conditions and heavily contaminated environments, enhancing overall performance. Axial holes through the section operate as pressure relief valves, allowing oil to be released in the case of overpressure without any risk of dirt passing through the holes.

Ø Range	Pressure Range	Temperature Range	Velocity
–	standard version: max. 5 MPa 725 psi	-35 °C +100 °C	Up to 1 m/s 3 ft/s*
–	venting version: max. 2 Mpa 290 psi	-30 °F +210 °F	

* At high strokes and higher speed, please contact your local Trelleborg Sealing Solutions marketing company.

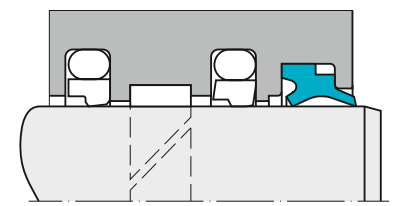


D

Zurcon® Scraper DA17

A double-acting scraper with both a sealing and a scraping lip in NBR. For applications in conjunction with seals that give back pumping performance, such as Turcon® Stepseal® 2K and Zurcon® Rimseal.

Ø Range	Temperature Range	Velocity
10 – 440 mm	-30 °C +100 °C	1 m/s
0.394 in – 17 in	-20 °F +210 °F	3 ft/s



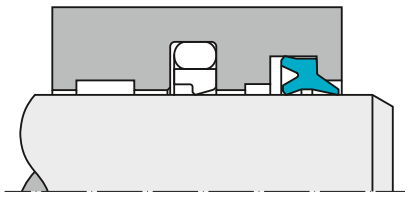
D

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Zurcon® Scraper DA27

The double-acting rubber Zurcon® Scraper DA27 is designed for large diameter hydraulic applications. With its "heavy" cross section it is a natural extension of scraper DA17 for diameters over 400 mm / 15.75 in. The DA27 scraper is produced by vulcanizing the required diameter from a 600 mm / 24 in master mold.

Ø Range	Temperature Range	Velocity
400 – 2,600 mm	-30 °C +100 °C	1 m/s
15.75 in – 102 in	-20 °F +210 °F	3 ft/s

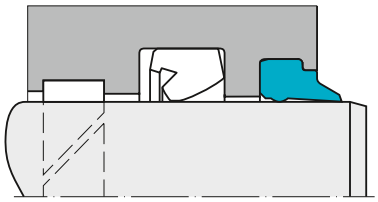


D

Zurcon® Scraper ASW

Injection molded polyurethane scraper with one scraping lip and inner support bead that gives improved seating in the groove. It has good abrasion and tear resistance.

Ø Range	Temperature Range	Velocity
8 – 125 mm	-35 °C +110 °C	1 m/s
0.315 in – 5 in	-30 °F +210 °F	3 ft/s

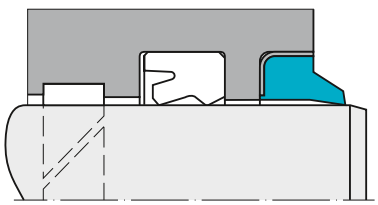


S

Scraper WSA

Metal caged Scraper with an NBR lip. For installation in open grooves including grooves to ISO 6195 Type B.

Ø Range	Temperature Range	Velocity
6 – 270 mm	-30 °C +110 °C	1 m/s
0.236 in – 10.5 in	-20 °F +230 °F	3 ft/s



S

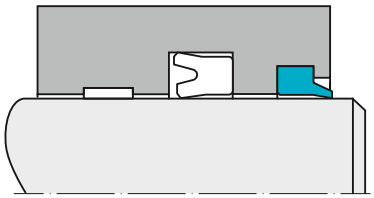
Patented design.

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Scraper WRM

Scraper WRM is a single-acting, heat-molded elastomer scraper. It possesses a comb-profile sealing surface on its outer diameter which guarantees a firm seat in the groove. It is easy to install in closed grooves.

Ø Range	Temperature Range	Velocity
12 – 260 mm	-30 °C +110 °C	1 m/s
0.472 in – 10.25 in	-20 °F +230 °F	3 ft/s

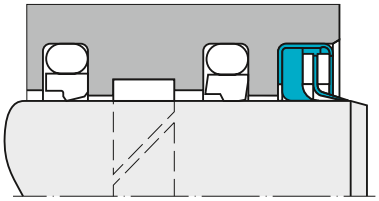


S

Metal Scraper

Metal scraper consists of a thin spring brass scraper lip in tandem with an NBR wiping lip encased in a steel shell. It is capable of removing dried or frozen mud, tar, ice and other contaminants from the rod. Also available in Stainless Steel with an FKM wiper lip.

Ø Range	Temperature Range	Velocity
12 – 220 mm	-40 °C +120 °C	1 m/s
0.472 in – 8.5 in	-40 °F +250 °F	3 ft/s

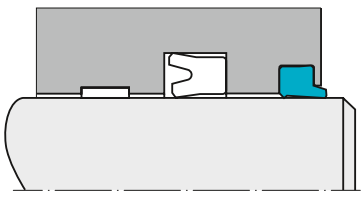


S

Zurcon® Scraper WAE

The Zurcon® Scraper WAE is a single-acting polyurethane scraper. The special feature of this scraper is an additional support on the inner surface. It prevents tilting or twisting of the scraper. At the same time this support improves seating in the groove, preventing the ingress of contaminants via the back of the scraper. This represents a technical improvement compared to similar scraper types.

Ø Range	Temperature Range	Velocity
18 – 2,600 mm	-35 °C +100 °C	1 m/s
0.500 in – 102.4 in	-31 °F +212 °F	3 ft/s



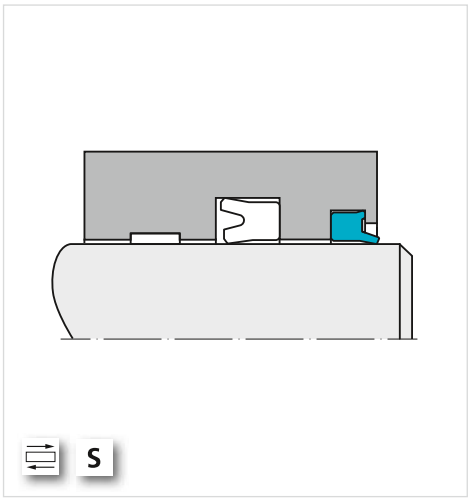
S

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Zurcon® Scraper WNE

A single-acting polyurethane scraper with a static sealing lip to prevent any water or dirt ingress into the sealing groove. It is recommended for applications in mobile hydraulics and agricultural machinery.

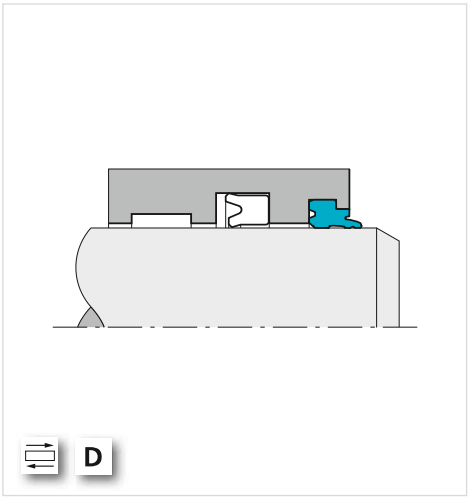
Ø Range	Temperature Range	Velocity
4 – 280 mm	-35 °C +100 °C	1 m/s
0.157 in – 11 in	-30 °F +210 °F	3 ft/s



Zurcon® Scraper WNV

Zurcon® Scraper WNV is a double-acting scraper. Its dynamic scraping lip is specially designed with an additional inward sealing edge to keep the residual oil film in the system. If the volume of this oil film can not be backpumped by the main rod seal, a pressure build-up between main rod seal and scraper will be prevented by lifting the scraper lip to reduce pressure. The static sealing lip and edge ensure against ingress of dirt and fluids.

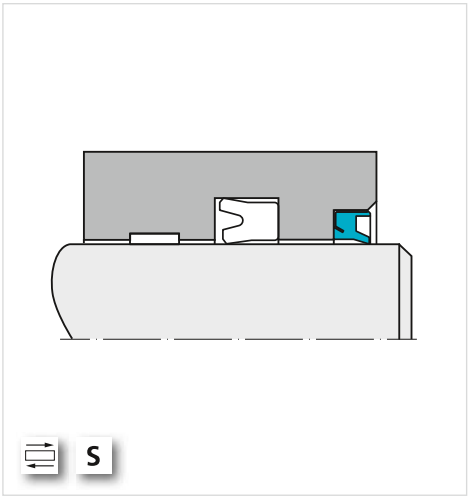
Ø Range	Temperature Range	Velocity
16 – 100 mm	-35 °C +100 °C	1 m/s
0.625 in – 4 in	-30 °F +210 °F	3 ft/s



Zurcon® Scraper SWP

A single-acting Zurcon® scraper encased in a steel carrier, Zurcon® Scraper SWP gives excellent wear resistance and is easily installed into open grooves. The scraper is recommended for mobile hydraulic applications and as a rotary link pin seal.

Ø Range	Temperature Range	Velocity
25 – 190 mm	-35 °C +100 °C	1 m/s
1 in – 7.5 in	-30 °F +210 °F	3 ft/s

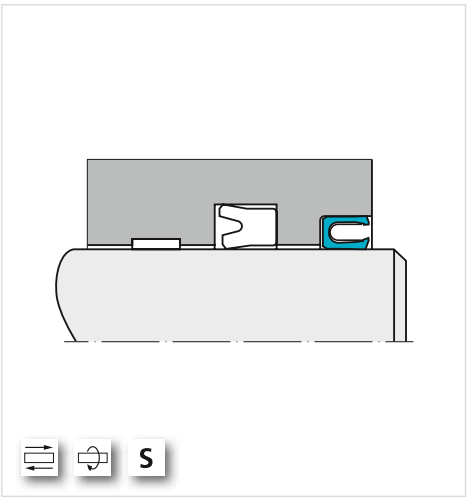


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Turcon® Variseal® M2S

A single-acting sealing element comprised of a U-shaped Turcon® ring and metallic energizing finger spring. It offers low friction with no stick-slip, minimal break out force and high wear resistance. Effective in function as a scraper and resistant to most liquids and chemicals with an unlimited shelf life.

Ø Range	Pressure Range	Temperature Range	Velocity
–	Maximum dynamic load: 20 MPa 2,900 psi Maximum static load: 40 MPa 5,800 psi (207 MPa with customs designs)	-70 °C to +260 °C in T40 -45 °C to +260 °C in T40 with HiClean -70 °C to +93 °C in Z80 -196 °C (custom design option available)	Reciprocating up to 15 m/s in T40 up to 2 m/s in Z80 Rotating up to 1.27 m/s in T40

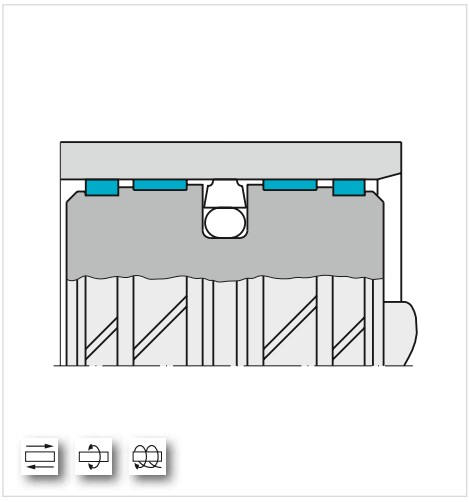


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Turcite® Slydring®

Turcite® Slydring® prevents metal-to-metal contact between piston / rod and bore / gland, absorbing transverse loads. Turcite® material gives good load capacity with low friction and stick-slip-free operation. The Slydring® protects critical sealing lips from contamination and dieseling effects. Cost-effective, it allows designers freedom in hardware material selection. Higher static loads are permissible.

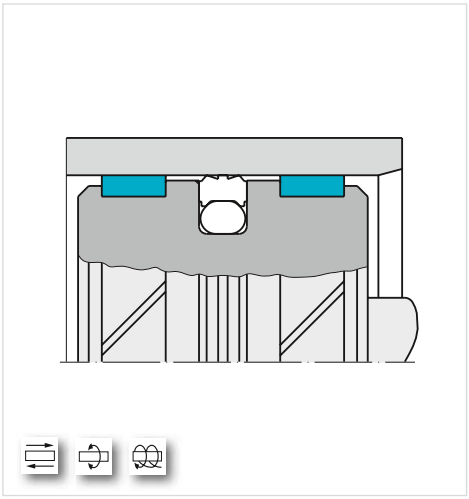
Ø Range	Radial Bearing Pressure	Temperature Range	Velocity
8 – 4,200 mm	15 MPa	-60 °C +200 °C	15 m/s
0.315 in – 165 in	2,200 psi	-75 °F +390 °F	50 ft/s



HiMod® Slydring®

HiMod® Slydring® prevents metal-to-metal contact between piston / rod and bore / gland, absorbing transverse loads. The modified polymeric material provides an economical solution for applications with medium transverse loads, while giving good wear and compression properties. The Slydring® is easily installed by snap-fitting and offers good dry-running and wiping performance. Higher static loads are permissible.

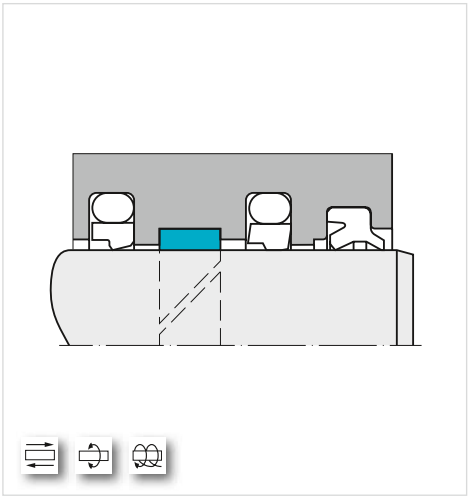
Ø Range	Radial Bearing Pressure	Temperature Range	Velocity
8 – 915 mm	50 MPa	-40 °C +135 °C	1 m/s
0.315 in – 36 in	7,200 psi	-40 °F +275 °F	3 ft/s



Orkot® Slydring®

Orkot® Slydring® prevents metal-to-metal contact between piston / rod and bore / gland, absorbing high transverse loads. Orkot® is a resin-impregnated, fine weave fabric material with added lubricants. It is capable of withstanding high side loads, damping vibrations and embedded foreign particles. Higher static loads are permissible.
Special materials are available with operating temperatures up to +250 °C / +482 °F.

Ø Range	Radial Bearing Pressure	Temperature Range	Velocity
8 – 1,500 mm	120 MPa	-60 °C +130 °C	1 m/s
0.315 in – 59 in	17,400 psi	-75 °F +270 °F	3 ft/s

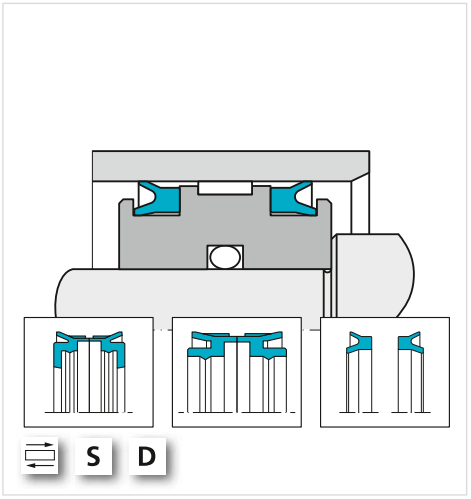


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Pneumatic Piston Seal

The pneumatic product range offers single- and double-acting seals for piston applications. Made from extremely wear resistant material including Zurcon® polyurethane and FKM, these seals fit into small housings and are easily installed. The pneumatic piston seal range is recommended for standard and pneumatic cylinders with dry air.

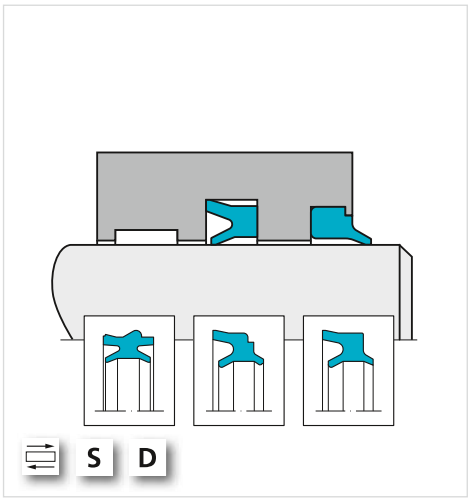
Ø Range	Pressure Range	Temperature Range	Velocity
4 – 250 mm	1.6 MPa	-40 °C +85 °C	1 m/s
0.157 in – 10 in	232 psi	-40 °F +185 °F	3 ft/s



Pneumatic Rod Seal and Rod Seal - Scraper Combination

Pneumatic rod seals are available as lip seals and rod seal/scraper combinations for closed and open housings. Special materials provide high abrasion resistance and low friction cost-effectively. They are recommended for applications in standard cylinders, installed with a separate scraper or as rod seal/ scraper combination for dry air.

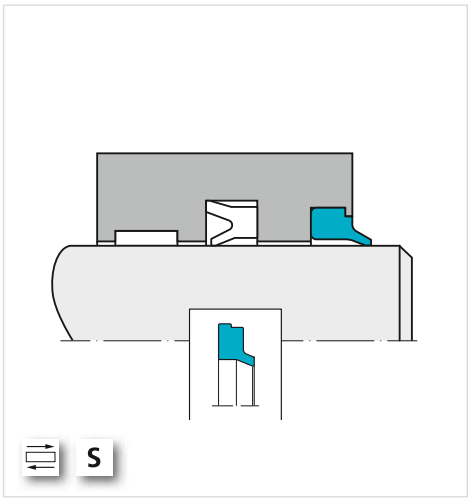
Ø Range	Pressure Range	Temperature Range	Velocity
3 – 100 mm	1.6 MPa	-40 °C +150 °C	up to 5 m/s
0.118 in – 4 in	232 psi	-40 °F +300 °F	up to 16 ft/s



Pneumatic Scraper / Scraper for Guiding Units

These two versions of scrapers snap easily into open or semi-open grooves. Their special flexible lip design protects the cylinder from contamination. Where space is at a premium, the 3 mm / .118 in long type AWBB, is recommended (guiding units only).

Ø Range	Pressure Range	Temperature Range	Velocity
6 – 60 mm	–	-40 °C +80 °C	up to 4 m/s
0.236 in – 2.5 in	–	-40 °F +175 °F	up to 13 ft/s

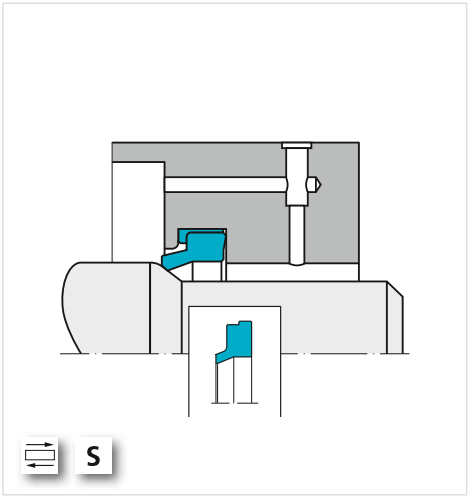


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Pneumatic Cushioning Seal

Cushioning seals provide end-of-stroke damping in pneumatic cylinders, eliminating the need for check valves. These polyurethane, high performance seal elements are user-friendly and provide an automatic centering check valve function and easy, snap-in installation.

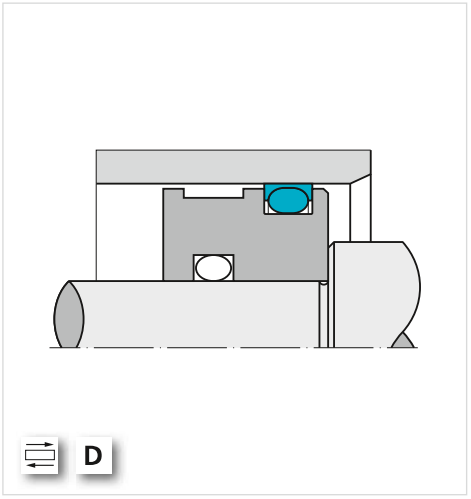
Ø Range	Pressure Range	Temperature Range	Velocity
6 – 60 mm	1.6 MPa	-40 °C +110 °C	1 m/s
0.236 in – 2.5 in	232 psi	-40 °F +230 °F	3 ft/s



Pneumatic Glyd Ring® for Piston and Rods

Double-acting Glyd Ring® is available as piston or rod seal and is comprised of a slipper seal and an energizing O-Ring. This means less installation space is required. Different material combinations provide solutions suitable for special pneumatic applications where minimum static and dynamic friction, low stick-slip, high speed performance or wide temperature range are required.

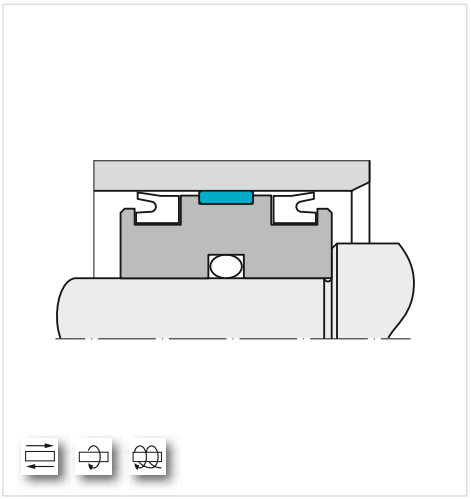
Ø Range	Pressure Range	Temperature Range	Velocity
3 – 2,700 mm	1.6 MPa	-30 °C +200 °C	5 m/s
0.118 in – 106 in	232 psi	-20 °F +390 °F	16 ft/s



Pneumatic Wear Ring for Pistons and Rods

A complete range of seals and bearings for pneumatics including the most common dimensions for pistons and rods. The guide rings are made of a specially developed, self-lubricating plastic material to provide low friction, wear resistance, long term compression stability and excellent service life.

Ø Range	Pressure Range	Temperature Range	Velocity
8 – 250 mm	40 MPa	-40 °C +110 °C	1 m/s
0.315 in – 10 in	5,800 psi	-40 °F +230 °F	3 ft/s



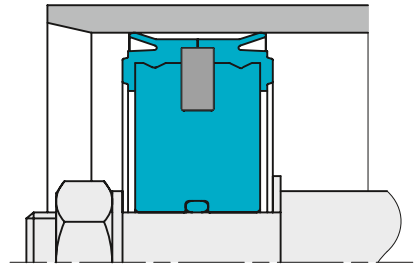
KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Complete Magnet Piston

The Complete Magnet Piston fulfills a large number of technical requirements within the pneumatics industry with its double-acting operation, dynamic sealing capability, guidance feature and mechanical end cushioning.

An NBR O-Ring acts as a static seal and seals the rod while an integrated magnet detects position. The dimension, magnet flux and return spring groove can all be customized to specific requirements.

Ø Range	Pressure Range	Temperature Range	Velocity
32 – 100 mm	1.6 MPa	-40 °C +80 °C	up to 1 m/s
1.25 in – 3.94 in	232 psi	-40 °F +175 °F	up to 3 ft/s

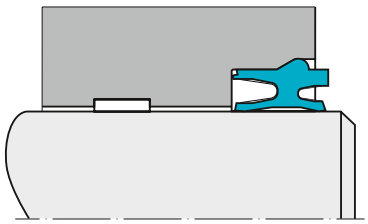


D

Pneumatic Seals ARV

Asymmetric Variseal® type seal with spring energized sealing lip and scraper lip. Suitable for poor lubrication, high speeds or foodstuff applications (FDA compliant). Very good protection against dirt ingress and Hi-Clean version available with Silicone-filled spring cavity prevents contaminants from being entrapped. A special groove and seal design allows fast installation either automatically or manually.

Ø Range	Pressure Range	Temperature Range	Velocity
10 – 25 mm	1.6 MPa	-30 °C +80 °C	<= 5 m/s
0.39 in – 0.98 in	232 psi	-22 °F +176 °F	16 ft/s



D

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Rubber-to-Metal and Rubber-to-Plastic Bonded Parts

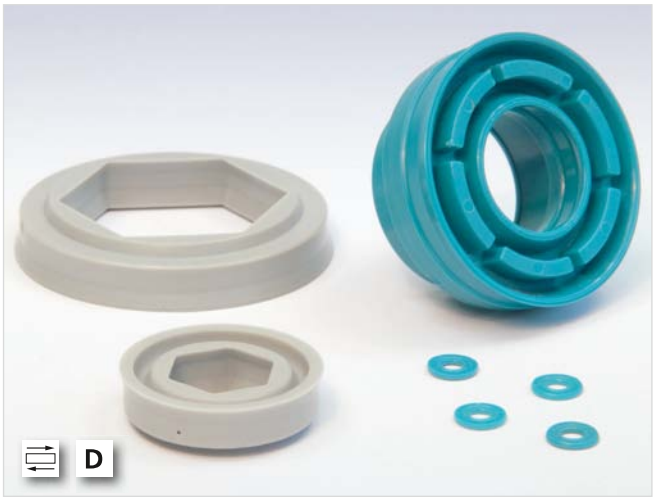
For certain applications custom seals are most suited. As your development partner, Trelleborg Sealing Solutions can work with you to design, develop and supply rubber-metal parts and bonded seals to your requirements.

Metal such as brass, aluminum, steel or stainless steel can be offered with bonding to all elastomer types.

Special and Customized Solutions in Polyurethane

Polyurethane materials have excellent elastic properties and optimum abrasion resistance. Outstanding tensile strength and low compression set offers numerous possibilities for sealing applications within the pneumatic industry.

For certain applications custom seals are most suited. As your development partner, Trelleborg Sealing Solutions can work with you to design, develop and supply precision elements and sealing systems suited to your requirements.



Engineered Molded Parts

Specialized molded parts with small profiles and specific cross sections can be offered according to ISO 3301-1/M1.

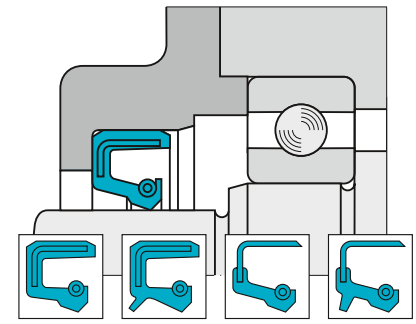
Custom-molded parts and static seals are manufactured to close tolerances in a wide range of engineered materials. These are developed in conjunction with Trelleborg Sealing Solutions to the specific requirements of the customer.

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Radial Oil Seal

Radial oil seals are designed for sealing shafts and spindles. Providing long-lasting sealing efficiency, they consist of a rubber sealing lip, metal case and a spiralled tensioning spring. Available with or without external dust lip, they are self-retained in an open groove to ISO 6194 and DIN 3760. Versions come without the spring for grease applications, for use as a scraper or for helical movement.

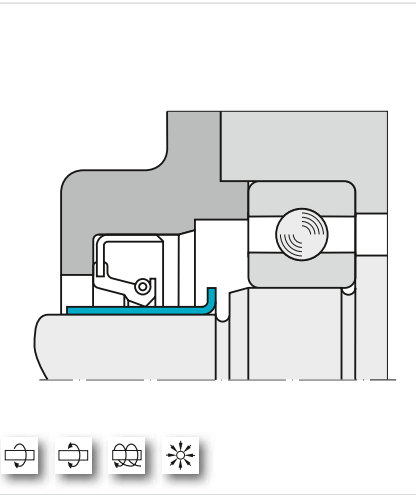
Ø Range	Pressure Range	Temperature Range	Velocity
4 – 1,800 mm	1 MPa	-40 °C +200 °C	30 m/s
0.157 in – 71 in	145 psi	-40 °F +390 °F	100 ft/s



Shaft Repair Kit

Suitable for the repair of worn shafts or for original equipment manufacturing to avoid the need to harden the shaft. Shaft repair kits are thin-walled stainless steel sleeves which do not require any modification to the existing seal sizes. Tools for installation on the shaft are included in the kit.

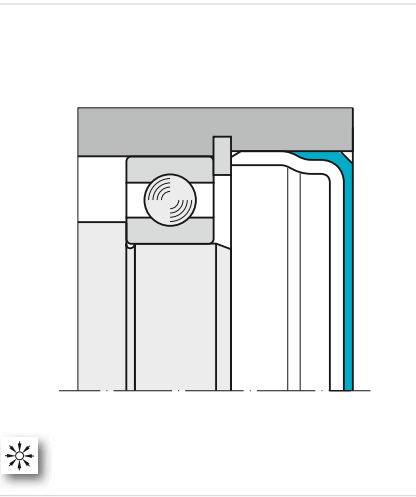
Ø Range	Pressure Range	Temperature Range	Velocity
12 – 200 mm	–	–	–
0.472 in – 8 in	–	–	–



Sealing Cap

Sealing Caps consist of a metal cap which has been rubber coated. They are used to plug seal gaps or holes. They are often used as a substitute for sealing flanges and covers in gear manufacturing.

Ø Range	Pressure Range	Temperature Range	Velocity
16 – 180 mm	–	-30 °C +200 °C	–
0.63 in – 7 in	–	-20 °F +390 °F	–

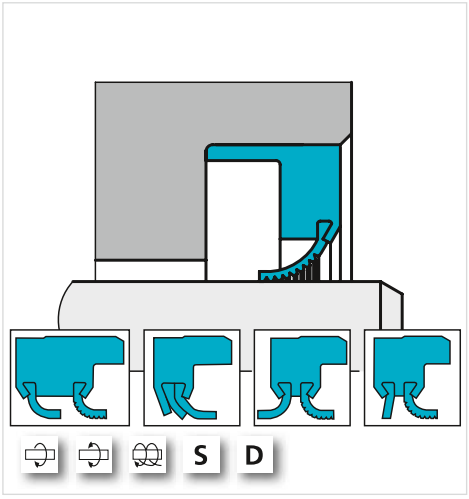


KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Turcon® Varilip® PDR

Turcon® Varilip® PDR seals are PTFE rotary shaft lip seals suitable for high surface speeds with low pressure. They provide stick-slip-free running with low friction and wide media and temperature range compatibility.

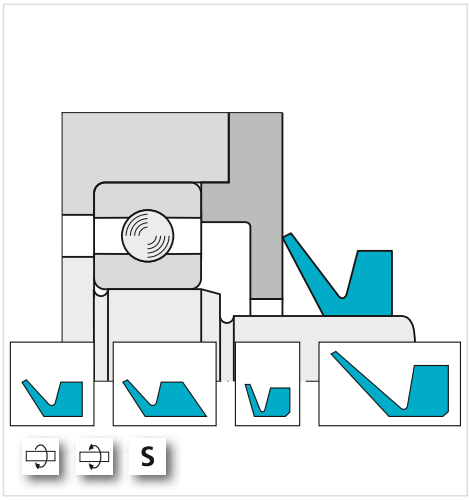
Ø Range	Pressure Range	Temperature Range	Velocity
6 – 170 mm	1 MPa	-60 °C +200 °C	60 m/s
0.438 in – 4.25 in	145 psi	-75 °F +390 °F	197 ft/s



V-Ring

The V-Ring fits directly onto the shaft and seals axially against a counterface, such as shaft collar, thrust washer or bearing face. Its light lip pressure generates low friction.

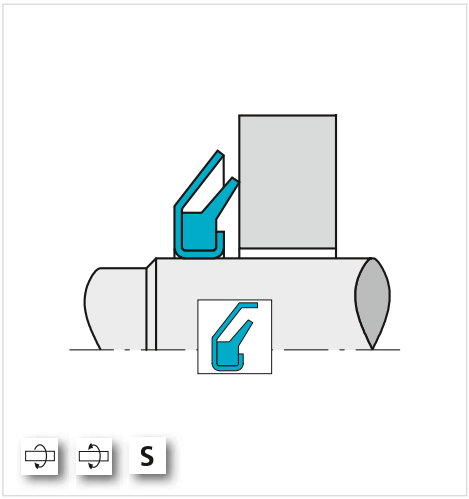
Ø Range	Pressure Range	Temperature Range	Velocity
3 – 11,500 mm	–	-40 °C +200 °C	12 m/s
0.118 in – 452 in	–	-40 °F +390 °F	40 ft/s



GAMMA Seal

The GAMMA Seal is an axial rotary seal that excludes contamination, moisture and grease. It consists of an elastomer sealing lip contained in a metal carrier. This design copes with arduous static and dynamic conditions in mobile hydraulics and power transmission applications.

Ø Range	Pressure Range	Temperature Range	Velocity
10 – 225 mm	–	-30 °C +200 °C	10 m/s
0.394 in – 9 in	–	-20 °F +390 °F	32 ft/s

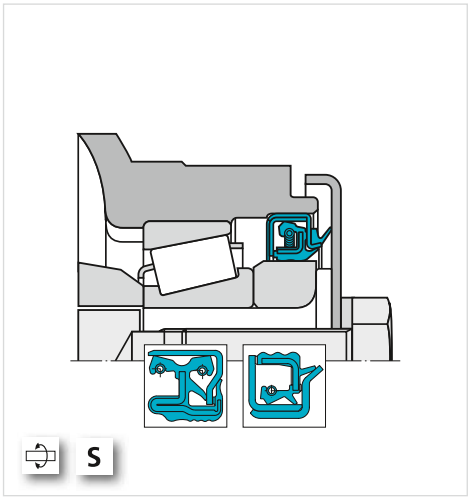


KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

STEFA System 500 / 3000 / 5000 Cassette Seal CSL 1500

The STEFA System is a completely enclosed seal providing the functions of oil seal, wear sleeve and dust protection in one unit. It has been developed to meet the ever increasing requirements of long service life, high functional reliability, environmental safety and easy installation. STEFA System 500 / 3000 / 5000 Cassette Seals are used in heavy duty vehicle axles, hubs and industrial gearboxes.

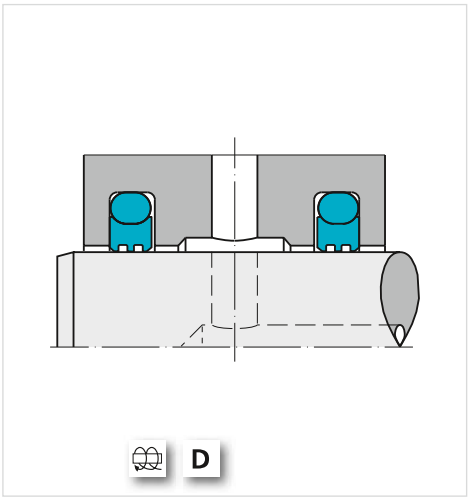
Ø Range	Pressure Range	Temperature Range	Velocity
90 – 320 mm	0.05 MPa	-30 °C +200 °C	15 m/s
3.5 in – 12.5 in	7 psi	-20 °F +390 °F	50 ft/s



Turcon® Roto Glyd Ring®

A double-acting O-Ring energized seal designed for rotating, oscillating and helically moving pistons, rods and shafts. It is installed in grooves to ISO 7425 and is available in a single-acting version for higher rotating speeds.

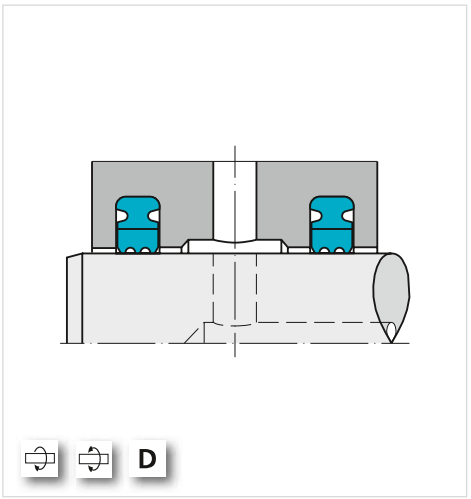
Ø Range	Pressure Range	Temperature Range	Velocity
6 – 2,500 mm	30 MPa	-45 °C +200 °C	2 m/s
0.236 in – 98 in	4,350 psi	-50 °F +390 °F	6.5 ft/s



Turcon® Roto Glyd Ring® II

The Turcon® Roto Glyd Ring® II is a double-acting, bi-directional seal for demanding applications. In rotary applications, the Turcon® Roto Glyd Ring® II offers outstanding stability in the gland hardware. It consists of a permanently bonded elastomer energizer and a PTFE-based seal ring to form a one-piece bonded contruction that gives increased service life by preventing the seal's PTFE-based sealing ring from spinning with the shaft against the elastomer energizer.

Ø Range	Pressure Range	Temperature Range	Velocity
2.5 – 1,016 mm	35 MPa	-60 °C +200 °C	2.5 m/s
0.100 in – 40.0 in	5,000 psi	-76 °F +392 °F	8 ft/s

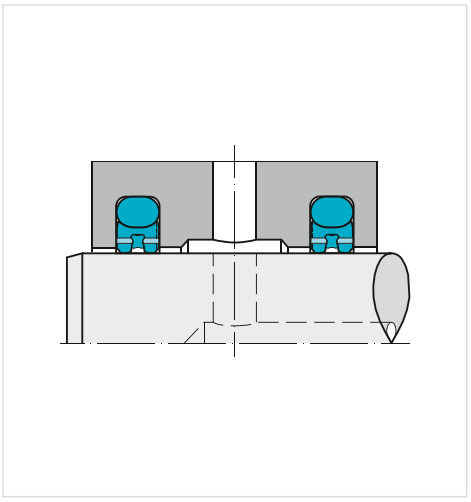


KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Turcon® Roto Glyd Ring® V

The seal has a built-in valve function that bypasses the upstream “leg” facing the pressure. This ensures that only the downstream “leg” is pressurized and sealing, whereas the upstream part of the seal is pressure-balanced and does not contribute to torque. This reduces the contact surface to improve friction, wear resistance and tightness.

Ø Range	Pressure Range	Temperature Range	Velocity
Shaft 35 to 500 mm Bore 22 to 500 mm	30 MPa	+100 °C (up to +150 °C at lower PV-values)	2 m/s
–	4,350 psi	+212 °F (up to +302 °F at lower PV-values)	6.5 ft/s

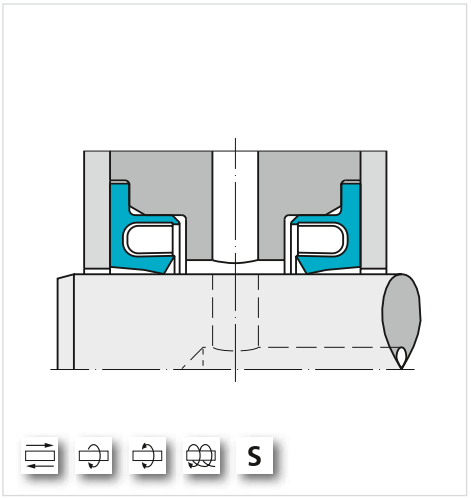


Turcon® Roto Variseal®

A single-acting sealing element comprised of a U-shaped Turcon® ring and metallic energizing finger spring. It offers low friction with no stick-slip, minimized break out force and high wear resistance. Its constrained flange eliminates potential seal rotation and it is resistant to most liquids and chemicals. Unlimited shelf life.

Ø Range	Pressure Range	Temperature Range	Velocity
5 – 3,300 mm	S: 25 MPa D: 20 MPa	-70 °C +300 °C	L: 15 m/s R: 2 m/s
0.197 in – 130 in	S: 3,625 psi D: 2,900 psi	-95 °F +570 °F	L: 50 ft/s R: 6.5 ft/s

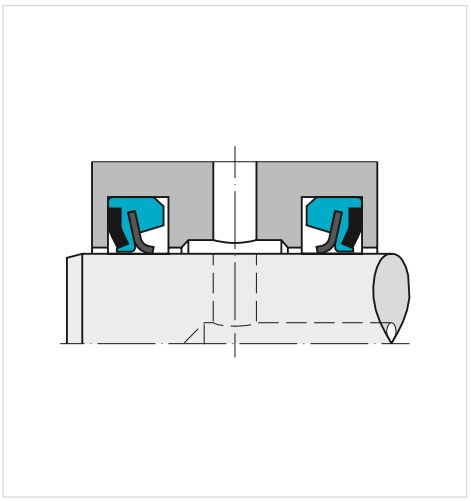
S = Static, D = Dynamic, L = Linear, R = Rotary

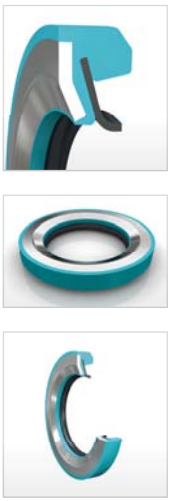


Turcon® Roto L

The Turcon® Roto L seal is engineered to extend the life time of Central Tire Inflation Systems by lowering friction, also saving energy and fuel. This is achieved by only sealing when it is required during tire pressure adjustment. The seal body is availble in NBR, HNBR and FKM materials and the sealing lip in Turcon® M12 and Turcon® M83.

Ø Range	Pressure Range	Temperature Range	Velocity
shaft 10 mm to 400 mm	0 – 9 bar	-40 °C +200 °C	25m/s (PV11barm/s)
–		-50 °F +390 °F	82 ft/s



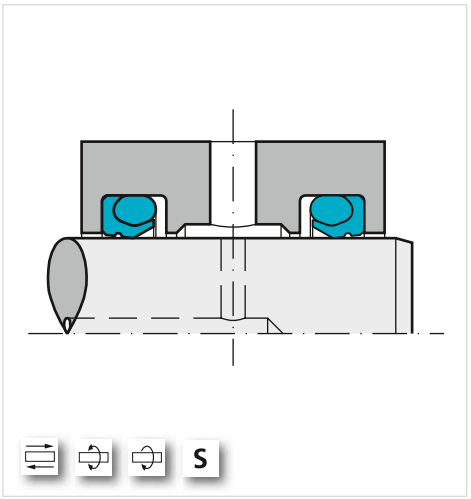


KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Turcon® Roto VL Seal®

Single-acting seal for rotary, turning and oscillating movements for pistons, rods and shafts in a wide range of machinery. The O-Ring activated L-shaped Turcon® or Zurcon® seal element gives optimized low frictional static and dynamic sealing performance. Offers high wear and chemical resistance depending on seal and O-Ring material. Installed in closed, standard O-Ring grooves.

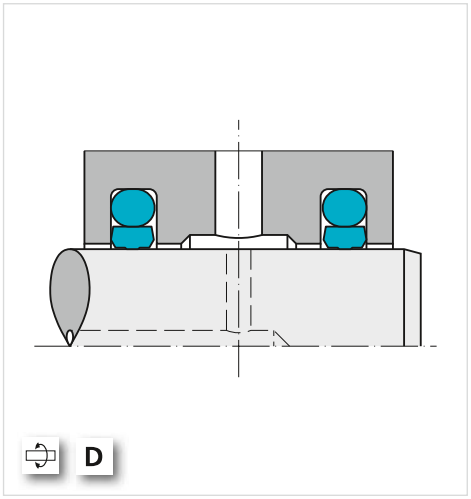
Ø Range	Pressure Range	Temperature Range	Velocity
6 – 2,600 mm	30 MPa	-45 °C +200 °C	2 m/s
0.236 in – 102 in	4,350 psi	-50 °F +390 °F	6.5 ft/s



Zurcon® Roto Glyd Ring® S

Double-acting O-Ring energized seal designed for oscillating moving pistons, rods and shafts. It offers low friction performance in rotary transmission lead throughs and indexing tables.

Ø Range	Pressure Range	Temperature Range	Velocity
12 – 2,700 mm	40 MPa	-30 °C +100 °C	6.5 MPa x m/s
0.472 in – 106 in	5,800 psi	-20 °F +210 °F	2,916 psi x ft/s

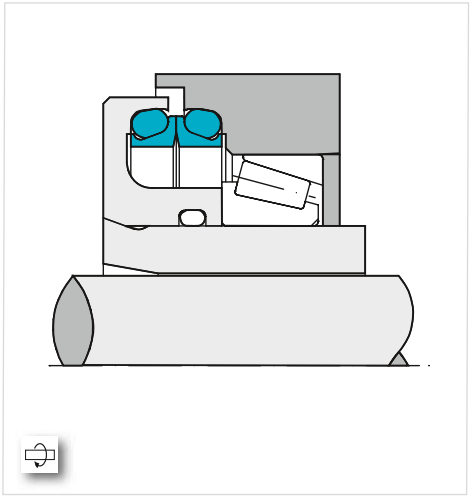


Mechanical Face Seals

Mechanical Face Seals are a special form of mechanical seals. They are also known under other designations, such as lifetime seals, floating seals, duo cone seals, toric seals and heavy duty seals.

There are two different types of Mechanical Face Seals:
- Type DO is the most common form that uses an O-Ring as a secondary sealing element.
- Type DF has an elastomer with a diamond-shaped cross section as a secondary sealing element instead of the O-Ring.

Ø Range	Pressure Range	Temperature Range	Velocity
45 – 750 mm	0.3 MPa	-45 °C +200 °C	3 m/s
1,772 in – 29.5 in	43.5 psi	-50 °F +390 °F	10 ft/s

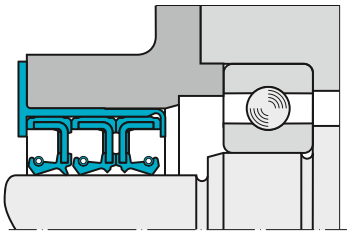


KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Cartridge-ROS

Cartridge-ROS is a metal cartridge containing two or three tailored Radial Oil Seals, additional Turcon® or Zurcon® seals and a greasing pack, combining in a single package several features for easier assembly and removal during maintenance.

Ø Range	Pressure Range	Temperature Range	Velocity
shaft: 30 to 200 mm	-0.5 to 6 bar	-50 °C +130 °C	4 m/s
–		-58 °F +266 °F	13 ft/s

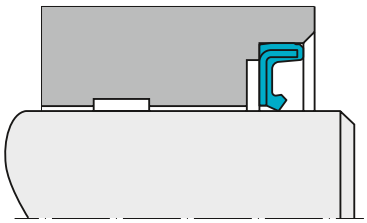


D

HP20 Rotary Oil Seal

HP20 is an elastomeric rotary oil seal suitable for sealing medium to high hydraulic oil pressure at low to medium shaft speeds. Available in FPM and HNBR for standard and low temperature environments.

Ø Range	Pressure Range	Temperature Range	Velocity
shaft: 17 to 300 mm	0 to 200 bar	-30 °C +100 °C	4 m/s
–	max PV = 140	-20 °F +210 °F	13 ft/s

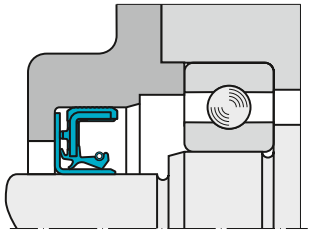


S

HS-APJ Cassette Seal

The HS-APJ Cassette Seal is an evolution of the APJ Cassette Seal, suitable for high speed applications. It includes a sleeve, usually made from stainless steel, that simplifies customer hardware, and a Radial Oil Seal with integrated axial V-Rings. Supplied pre-greased.

Ø Range	Pressure Range	Temperature Range	Velocity
shaft: 30 to 180 mm	–	-30 °C +130 °C	8 m/s
–		-20 °F +266 °F	26 ft/s



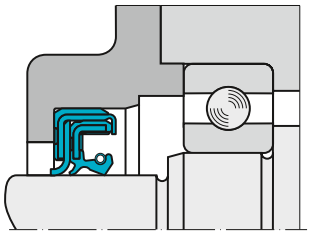
D

KEY TO APPLICATIONS: **Reciprocating =** **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Skyseal

Skyseal combines the benefits of an elastomeric rotary oil seal with advantages of a Turcon® Varilip® PDR on the air side within a single, compact seal.

Ø Range	Pressure Range	Temperature Range	Velocity
shaft: 17 to 200 mm	-0.5 to 3 bar	-50 °C +100 °C	8 m/s
–		-58 °F +210 °F	26 ft/s



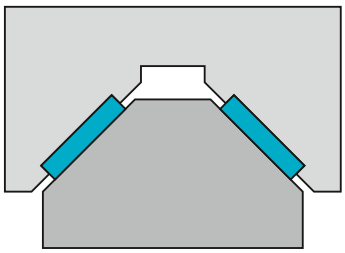
D

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Turcite® -B Slydway®

Turcite® -B Slydway® is a low friction linear bearing strip C for use primarily, on the ways and gibs of machine tools. It provides low friction, stick-slip-free operation, long life and minimum wear. Turcite® -B Slydway® is applied using a two-part epoxy resin after cleaning and degreasing the bare metal surface thoroughly. Turcite® -B Slydway® is dimensionally stable, maintenance free and can be operated with or without lubrication.

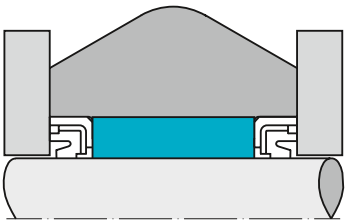
Ø Range	Radial Bearing Pressure Range	Temperature Range	Velocity
–	9 MPa	up to +260 °C	1 m/s
–	1,300 psi	up to +500 °F	3 ft/s



Turcite® Bearings

High load bearings made from Turcite® are dimensionally stable, wear resistant and provide excellent performance under dry and boundary lubrication conditions.

Ø Range	Radial Bearing Pressure Range	Temperature Range	Velocity
2 – 3,000 mm	15 MPa	-60 °C +200 °C	15 m/s
0.079 in – 118 in	2,200 psi	-75 °F +390 °F	50 ft/s



Orkot® Marine and Hydro Bearings

Orkot® is a composite consisting of technical fabrics impregnated with thermosetting resins, evenly dispersed solid lubricants and other additives. Orkot® bearings offer significant advantages over traditional metal bearings. All are dimensionally stable, have excellent wear resistance and outstanding low-friction characteristics, giving them unrivalled performance in dry running conditions or with boundary lubrication. With virtually no swell in seawater, they are ideal for marine and hydropower applications.

Ø Range	Radial Bearing Pressure Range	Temperature Range	Velocity
2 – 3,000 mm	S: 120 MPa D: 90 MPa	-60 °C +250 °C	6 m/s
0.079 in – 118 in	S: 17,400 psi D: 13,000 psi	-75 °F +480 °F	20 ft/s

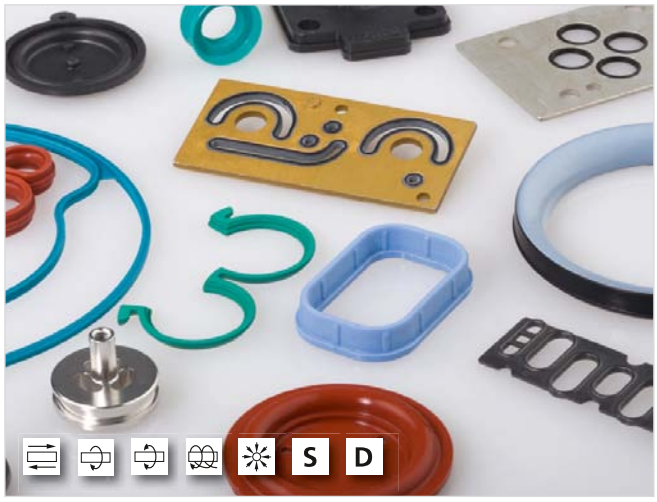
S = Static, D = Dynamic

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting = S** **Double-acting = D**

Engineered Molded Parts

Customized seals and other components in a wide range of standard and specialized elastomers, including Isolast®, are manufactured to close tolerances for all types of industries and applications. As your development partner, Trelleborg Sealing Solutions can work with you to design, develop and supply custom engineered molded parts to suit your application requirements.

Temperature Range
up to +325 °C
up to +615 °F



Engineered PTFE Components

A wide range of filled and unfilled engineered PTFE components are made available to all types of industry. They include valve seats, pump diaphragms, chevron packings, nozzles, bellows, guides, bearings and electrical insulators. These are developed in conjunction with Trelleborg Sealing Solutions to the specific requirements of the customer.

Temperature Range
up to +260 °C
up to +500 °F

Engineered HiMod® FlatSeal™

Flat gaskets are primarily fitted in flanges and widely used in sanitary and industrial applications. For the more demanding petrochemical and chemical processing sectors, superior materials that are compliant with blowout and fugitive emission regulations are offered. For food and beverage applications, materials compliant with stringent food contact standards such as FDA, are provided. For Pharma and medical applications materials with USP Class VI can be provided. HMF product range offers several grades like fiber reinforced NBR blended, Expanded graphite, Expanded PTFE, Mica and pure elastomers (NBR, EPDM, FKM; Silicone, FKM).

Pressure Range	Temperature Range
up to 25 MPa	-210 °C +1,000 °C
up to 3,625 psi	-345 °F +1,832 °F

KEY TO APPLICATIONS: Reciprocating = Rotary = Oscillating = Helix = Static = Single-acting = S Double-acting = D

Rubber-to-Metal and Rubber-to-Plastic Bonded Parts

In many applications, a composite molded part has advantages in terms of technical robustness, quality, performance and total cost of ownership. Bonding of either standard or specialized elastomers, including Isolast® , is feasible with a large variety of metals and thermoplastics. As your development partner, Trelleborg Sealing Solutions can work with you to design, develop and supply a component to suit your application requirements.

Temperature Range
-60 °C +325 °C
-75 °F +615 °F

Rubber and Rubber-to-Metal Bonded Gaskets

Precision homogeneous or rubber-to-metal bonded gaskets are custom molded from a large variety of engineered elastomers for high performance engine and other applications. Metals such as cold-rolled or stainless steel, brass or aluminum can be offered bonded to all elastomer types. As your development partner, Trelleborg Sealing Solutions can work with you to design, develop and supply gaskets to suit your application requirements.

Temperature Range
-60 °C +325 °C
-75 °F +615 °F

Ground Balls

Ground Balls are rubber spheres of high dimensional accuracy. They guarantee sealing without leaks, are resistant to dirt and produce little noise. Ground Balls are used primarily as sealing elements in non-return check valves to seal against hydraulic fluid, water or air.

Temperature Range
-30 °C +200 °C
-20 °F +390 °F

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Diaphragms

Diaphragms are available in many forms and designs, in a variety of homogeneous or fabric-reinforced elastomers. Technically challenging applications are solved through composite design and material technology. This includes the application of PTFE and other barrier materials for chemically aggressive environments. Plastic or metal-to-rubber bonding can be incorporated to simplify assembly and provide precision control of movement or pressure.

Pressure Range (Not reinforced)	Pressure Range (Not reinforced)	Temperature Range
up to 0.05 MPa	10 MPa	-50 °C +325 °C
up to 7 psi	1,450 psi	-55 °F +615 °F

Custom-made HiMod® High Modulus Plastics

A wide range of high performance, high modulus thermoplastics are available for use as custom-molded components, reinforcing rings and Back-up Rings. Grades can optimize operation on structural, chemical, electrical and high performance bearing applications.

Temperature Range
up to +300 °C
up to +570 °F

Liquid Silicone (LSR) Molded Parts

High-precision LSR parts, often delicate or micro-sized, are manufactured by injection molding techniques for many industrial sectors including medical technology, household appliances, the food and pharmaceutical industries and electrical engineering. As a result of high-performance, precision tool making and sophisticated process engineering and expertise, alongside fully automated production, LSR injection-molded parts continue to be developed for a wide range of challenging applications.

Temperature Range
-40 °C +175 °C
-40 °F +350 °F

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Two Component (2K) Liquid Silicone Parts

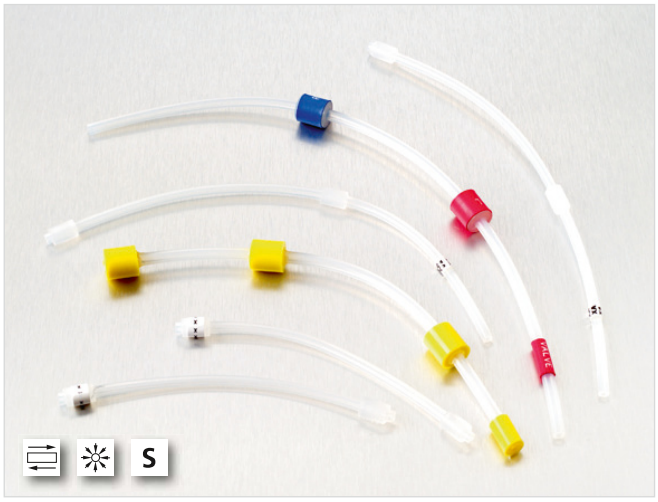
Specially developed, proprietary tool design and process innovation are the foundation of our advanced two-component injection technology, allowing the production of complex, high-precision parts. In a two-shot molding process, either two dissimilar silicones or a combination of silicone and thermoplastics are injected in two shots into a single tool using a fully automated process. 2K solutions offer increased design latitude and eliminate the need for secondary handling and assembly operations.

Temperature Range
-40 °C +175 °C
-40 °F +350 °F

Silicone Hose and Tube

A comprehensive range of platinum cured silicone hose and tube is produced to the most stringent performance and purity standards demanded in the Life Sciences, biotechnology and pharmaceutical markets. PharmaTube™ is used either as singular tube or value-added tube sets and assemblies in a wide variety of applications such as peristaltic pumps, drug delivery or catheters. As your development partner, Trelleborg Sealing Solutions can work with you to design, develop and supply a PharmaTube™ solution to suit your application requirements.

Temperature Range
-40 °C +175 °C
-40 °F +350 °F



Rubore® Seals

The Rubore® process is a unique rubber-metal layering technology permitting complex seal designs that have never before been possible. Rubore® Seals provide overall cost benefits, reducing weight and frequently eliminate the need for surface finishing and after treatments. The stiffness of the product reduces handling costs and logistics requirements, and makes automated seal installation achievable.

Temperature Range
-40 °C +165 °C
-40 °F +329 °F

KEY TO APPLICATIONS: Reciprocating = **Rotary =** **Oscillating =** **Helix =** **Static =** **Single-acting =** S **Double-acting =** D

Flexcoat™ coatings

Micro-thin, high-performance coatings and surface modification provide the ultimate choice, maximizing friction characteristics during assembly and in dynamic applications. Most of the assembly and application professionals provide a UV-indicator. This is highlighted under ultraviolet lamps.

Temperature Range
-40 °C +175 °C
-40 °F + 350 °F

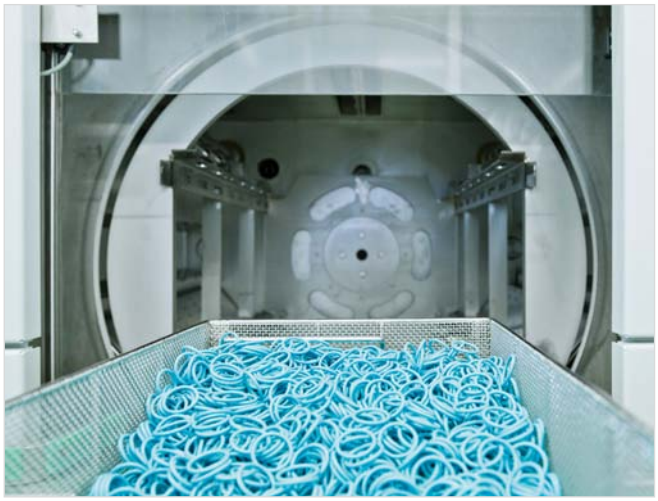
Flexcoat™ colored coatings

The primary function of any coating is to improve the friction characteristics of an elastomer seal. In addition, colored coatings enable effective differentiation of seals and 100 percent detection in production and assembly process.

Temperature Range
-40 °C +150 °C
-40 °F +300 °F

Flexclean™ cleaning solutions

Elastomeric seals can be offered in clean conditions to various cleanliness standards. These include seals free of paint wetting impairment substances (PWIS-free), maximum allowed particle sizes of 400 µm or 200 µm based on ISO 16232 or seals washed and packed in a cleanroom class 5 according to ISO 14644-1.



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Product Name	Product Range	Overview Page	Description Page
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Complete Magnet Piston	Pneumatic Seals	32	69
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POLYPAC® Selemaster SM	Hydraulic Seals – Rod Seals	25	53
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Product Name	Product Range	Overview Page	Description Page
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Turcon® Excluder® S	Hydraulic Scrapers	28	59
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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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