



SEALS Product Overview



INDEX

| | |
|-------------------------------------|-------|
| CUSTOMISED SEALS | 1 |
| QUAD, BACK-UP & O-RINGS | 2 |
| SEALANTS, ADHESIVES & LUBRICANTS | 3 |
| ROTARY COUPLING & CIRCLIPS | 4 |
| OIL SEALS | 5 |
| FLUID SEALING | 6 |
| MECHANICAL SEALS & GLAND PACKING | 7 |
| WAVED, BONDED WASHERS & NILOS RINGS | 8 |
| HYDRAULIC & PNEUMATIC SEALS | 9 |
| HYDRAULIC & PNEUMATIC | 10 |
| NOTES | 11-12 |





SEAL MAKER CUSTOMISED SEALS

DESCRIPTION

- A high performance CNC machine system for seals up to 520mm diameter
- One hour manufacturing. An 8-station disc turret for rapid tool change and setup time
- Any quantity

MATERIALS:

- Nitrile
- Polyurethane
- PTFE
- A range of FDA grade materials available
- Viton
- Silicone
- Acetal

PROFILES

145 Standard types of profiles available:

- Poly-U seals
- Double acting seals
- O-rings
- Non-standard profiles to suite the customer's requirements if within the machine's capabilities.
- Rod and piston Kopper / Composite seals
- Wiper seals
- Back-ups

TYPICAL APPLICATIONS

- Hydraulic & pneumatic cylinder seals
- Rotary shaft sealing
- Static & dynamic sealing
- O-ring sealing





O-RINGS

Designed to deform, an o-ring “flows” to fill a diametrical clearance in a static or dynamic application to block any leakage. Available in imperial or metric o-ring kits, splicing kits, earthmoving equipment o-ring kits, hydraulic hose end o-ring kits, and lengths of o-ring cord.

MATERIALS:

- NBR-Nitrile
- Silicone
- EPDM
- HNBR
- Kalrez (on request)
- Aflas (on request)
- FKM - Viton
- Polyurethane
- ACM - Polyacrylate Acrylic Rubber
- Polyurethane
- Chemraz (on request)

Standard shore hardness: 70°-90° shore.

QUAD RINGS

A quad ring is a self-energising four lipped seal and in contrast to the “O” ring it has the following advantages:

- Avoids twisting in the groove and does not roll in the groove during reciprocating movement.
- A lubricant reservoir formed between the sealing lips improves start up.

Quad rings are available in standard o-ring sizes and materials.

BACK-UP RINGS

A back-up ring is used in conjunction with an o-ring or quad ring to prevent extrusion of the pressurised elastomeric sealing element into the “extrusion gap”

TYPES:

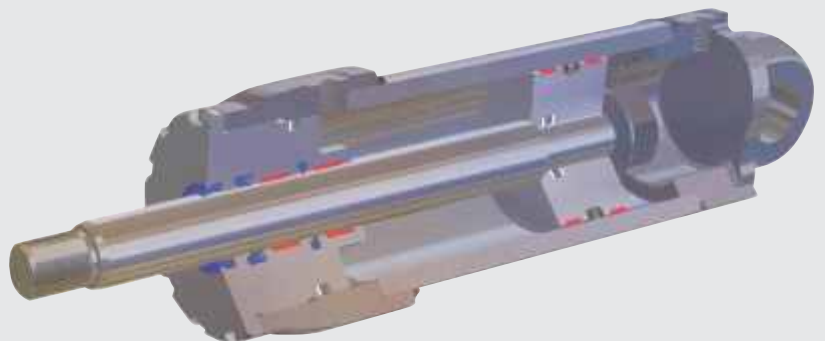
- Solid
- Spiral
- Contoured
- Split
- Flat

MATERIALS:

- PTFE
- 90° shore Nitrile & Viton
- Thermoplastic

TYPICAL APPLICATIONS

- Industrial static & dynamic sealing



SEALANTS, ADHESIVES & LUBRICANTS



DESCRIPTION

A wide range of high quality industrial, general-purpose sealants and adhesives, lubricating and surface treatment aerosols for use wherever there is a need for specialised solutions.

Product types:

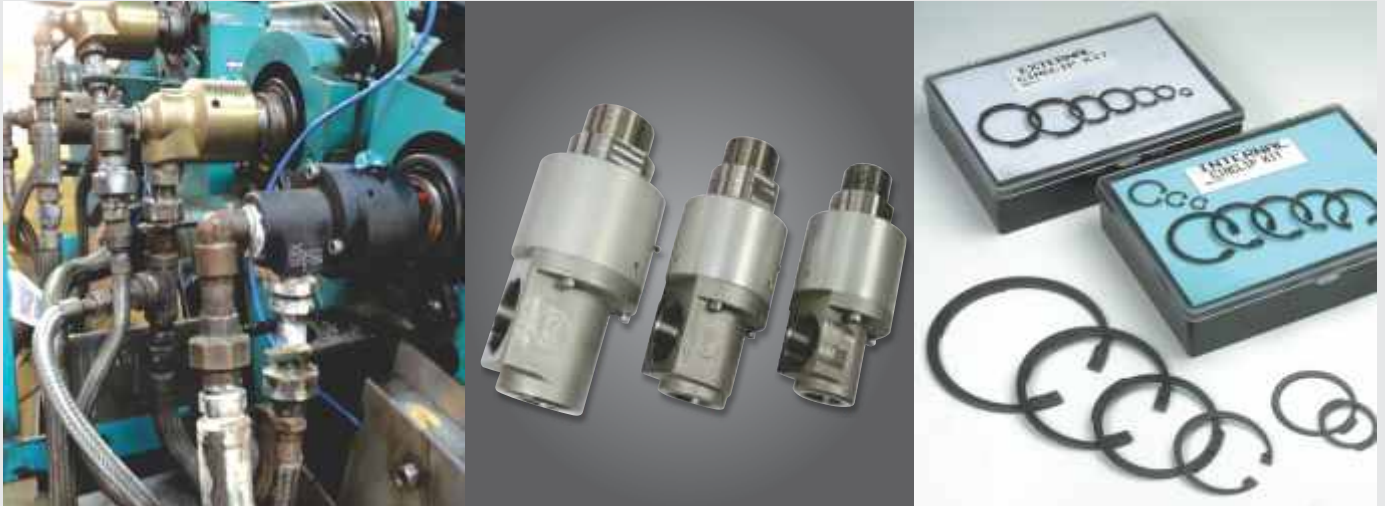
- Thread locking compounds in low, medium, and high strengths, and high temperature ranges. Resists vibration and can be used on all sizes of fasteners.
- Retaining compounds for diametrical clearances up to 0.25mm and temperatures from minus 50° C to + 175° C. Secures bearings, bushes and cylindrical parts into housings or onto shafts.
- Gasket maker for machined rigid metal flanges and flexible flanges, and machined or cast surfaces. Reduces the need for a fine surface finish of flanges
- Universal flange sealant for completely filling spaces between flanged surfaces in composite machine parts or pipe connections.
- Silicone sealants/adhesives are designed to elastically absorb and or compensate dynamic stresses, prevents material fatigue and failure by achieving uniform stress distribution. Silicone sealants have a very good gap fill, wide temperature range, and good weather resistance qualities.
- Teflon pipe and thread sealant replaces hemp, pastes, or PTFE tape and provides an instant, low-pressure seal.
- “Super glue” anaerobic or cyanoacrylate instant adhesives suitable for a range of materials requiring high-performance bonding on clean or “oily” surfaces in an instant.
- Lubricating and surface treatments to overcome problems in manufacturing and maintenance, repair and overhaul. Clean and de-grease work surfaces and parts.

APPLICATIONS

- Locking of threaded fasteners to eliminate the risk of fasteners working themselves loose in a wide range of applications.
- Securing cylindrical assemblies in automotive, industrial, and earth moving equipment.
- Gasket forming sealant for most flanged, machined, or cast surfaces.
- A flange sealant for a variety of applications across all industries.
- Silicone sealant range for industrial, construction, marine, mining, and domestic applications.
- All instant high strength bonding of ceramics, plastic, rubber, metal, leather, wood etc.
- Lubrication aerosols reduce friction, wear, ensures protection against corrosion and dissipate heat. Ideal for maintenance and line production.

TYPICAL APPLICATIONS

- Low & high temperature applications



ROTARY COUPLINGS

DESCRIPTION

A rotary coupling (also known as rotary unions or rotary joints) provides a leakfree seal, between a stationary supply and a rotating workpiece.

FEATURES

- Available in mono, and dual-flow configurations.
- High wear resistant faces available for harsh conditions

ADVANTAGES

- No springs in the media results in optimal flow rates
- Hydraulically balanced mechanical seal faces, reduces rotor torque
- Stainless steel rotors prevent scale build up.
- Non standard units available on request.
- Can be manufactured from various materials such as: stainless steel, brass and aluminium.
- Available in threaded, flanged or quick release options.

RANGE & SIZES

- General purpose range from 1/2" up to 2"
- Heavy duty range from 2" up to 4" (on request)
- Steam range in final development and testing stage

CIRCLIPS

DESCRIPTION

A circlip is an instant fastening and retaining method used for fastening machined collars on shafts or washer and pin assemblies. Circlips are available in single units or in kits.

TYPES:

- Standard DIN 471 is the most common form of axially fitted circlips for shafts with grooves.
- Standard DIN 472 is the most common form of axially fitted circlips for bores with grooves
- Heavy duty DIN 471 & DIN 472 also available.
- Other types available are internal and external snap rings, and E clips.

MATERIALS:

- Carbon Spring Steel
- Stainless Steel

CIRCLIP APPLICATIONS

- Automotive
- Engineering
- Mining
- Power tools
- Electric motors

ROTARY COUPLING APPLICATIONS

- Ball Mills (Aluminium)
- Paper & Pulp Mills (Printing)
- Continuous Casting Lines
- Rubber Mixers
- Flexible Packaging
- Textiles



ROTARY SHAFT SEALS

Rotary shaft seals are used to seal rotary elements, such as shafts or rotating bores. Permissible working pressures of standard rotary shaft seals are 0.2 bar at higher peripheral speeds or 0.5 bar at low speeds. High-pressure rotary shaft seals are available on request.

TYPES:

- Sealing lip with garter spring.
- Sealing lip with garter spring and dust lip
- Heavy duty sealing lip
- Double sealing lip for sealing against both internal and external media to separate two liquids.
- Axle (oil bath) seals
- Agricultural seals
- Split seals
- PTFE lipped seal

CASE DESIGNS:

- Rubber covered metal case to prevent corrosion or damage to housing bore.
- Metal case periphery for shafts below 150mm
- Reinforced metal case for extra strength or shafts over 150mm.
- The above are available in either cold rolled steel or stainless steel.
- Rubber or rubber and fabric for split seal applications.

MATERIALS:

- Nitrile
- Silicone
- PTFE
- Viton
- Polyacrylic
- Leather

TORRIC SEALS

Toric seals/face seals/floating seals/duo cone seals are specifically engineered for rotating applications in extremely arduous environments where they withstand severe wear and prevent ingress of harsh and abrasive external media.

TYPES:

- O-ring Type is the most common form that uses an o-ring as a secondary seal
- Trapezoidal Type has an elastomer with a diamond shaped cross section secondary sealing element instead of an o-ring

MATERIALS:

- Seal Ring - Duronit V
- Secondary Seal - Nitrile, Viton, Silicone.

GAMMA SEALS

An axial face single lip contact seal with a protective metal ring suitable for tough environments

CASE DESIGN:

- Cold rolled steel
- Stainless steel

V-RINGS

Elastomer axial seals for shafts and bearings

TYPES

- VA
- VL
- VS
- VE

MATERIALS

- Nitrile
- EPDM
- Viton
- Neoprene

TYPICAL APPLICATIONS

- Mining machinery
- Concrete mixers
- Automotive
- Drive mechanisms for tracked & conventional earthmoving equipment.
- Agriculture
- Concrete Mixers
- Conveyor Systems



DESCRIPTION

Garlock offers fluid sealing solutions to virtually any industry you can think of.

RANGE:

- Klozure
- Mill-Right oil seals for medium to heavy-duty applications

MODELS

- 23
- 59
- 87
- P/S-1
- ISO-Guard
- SGI
- 26
- 64
- 145
- Bearing Isolators
- Guardian
- EnDuro

GASKETS AND SHEETS:

- Gylon
- Stress Saver
- Rubber
- Leak-gard
- Non-asbestos gasket materials that comply with the most stringent environmental regulations
- Blue-Gard
- G-9900
- Graph-lock
- Gylon Gen 2

EXPANSION JOINTS:

- Styles 204
- 204EVS
- Guardian 200
- Styles 214/215: Sabre metallic expansion joints
- 204HP
- 206 EZ-FLO
- 306 EZ-Flo

RESILIENT METAL SEALS:

- Helicoflex
- Metallic C Seals
- Metallic O-Rings
- Ultra-Flex seal

TYPICAL APPLICATIONS

- Light & heavy duty industry
- Pulp & paper
- Petrochemical
- Mining

MECHANICAL SEALS:

- GPA
- PK
- GMP-1 and II
- 3-D mixer seal
- P/S-11

METALLIC GASKETS:

- Flexseal
- Kammprofile
- Edge Graphanic
- Heat Exchanger gasket

COMPRESSION PACKING:

- 9000 EVSP
- 1303-FEP
- PTFE
- 8093 DSA
- Carbon/Graphite
- Synthepak

ELASTOMER METAL SEALS:

Cefil'air inflatable seals, Profiles of extruded seals for food processing and other industries

MECHANICAL SEALS & GLAND PACKING



MECHANICAL SEALS

DESCRIPTION

There are thousands of different applications where single spring mechanical seals can be applied. They can be used in pumps, mixers, fans, or even on wheels and can operate in media such as water, ice cream, slurry, acids, chemicals, vacuum, or very high pressures. Temperatures of up to 220° C and very high speeds are possible depending on the material selections.

TYPES: - SINGLE SPRING

- Tapered spring
- Parallel spring - elastomer bellows.
- Parallel spring - elastomer diaphragm
- Parallel spring - PTFE bellows
- Wave spring

FACE MATERIALS

- Carbon
- Silicon carbide
- Stainless steel
- Tungsten carbide
- Ceramic
- Glass filled PTFE

ELASTOMER MATERIALS

- FKM Viton
- EPDM
- NBR Nitrile
- HNBR
- VQM Silicone
- PTFE

GLAND PACKING

DESCRIPTION

- Less expensive than mechanical seals
- It is an extremely reliable method and simple to install and maintain
- Tolerates poor mechanical conditions
- Works well in abrasive media and corrosive environments

MATERIALS:

- Natural Fibre, Synthetic yarn, PTFE Fibre, Graphite yarn, Carbon Fibre, Aramid Fibre
- All available with a variety of lubricants, fillers and reinforced material
 - PTFE
 - Silicon
 - Graphite
 - Cotton Fibre
 - Inconel Wire
 - Stainless Steel Wire
 - Fibreglass
 - Carbon Fibre
 - Aramid Fibre

GLAND PACKING APPLICATIONS

- Pumps
- Agitators
- Valves
- Mixers
- Extreme abrasion / corrosive chemical applications

MECHANICAL SEAL APPLICATIONS

- Chemical pumps
- Swimming pool pumps
- Mining

WAVED, BONDED WASHERS & NILOS RINGS



WAVED WASHERS

DESCRIPTION:

Waved washers are stamped metal washers with a waved profile to provide a preload between two surfaces. Waved springs offer an alternative to coiled springs with specific advantages such as: reduced working height with equal deflection and equal force which is ideal for tight radial and axial spaces.

TYPES

- Single turn
- Crest to Crest

MATERIALS:

- Carbon Steel,
- 302 & 316 Stainless steel

BONDED (DOWTY WASHER)

DESCRIPTION:

Originally designed to replace copper washers in high-pressure systems. The bonded washer comprises a metal washer & an elastomeric ring bonded inside the diameter of the washer.

TYPES:

- Metric or imperial standard bonded washer
- Metric or imperial self centering bonded washer

MATERIALS:

- Carbon Steel
- Stainless Steel (On request)

ELASTOMER

- Nitrile
- Viton

NILOS RINGS

DESCRIPTION:

A Nilos ring is an external metal bearing seal that produces a small labyrinth like sealing surface on the inner or outer ring of a bearing. The "seal" is obtained when the leading edge of the nilos ring, rotating under slight pressure, laps the surface of the inner or outer bearing ring. This lapping process creates the sealing surface which keeps the grease in and contaminants out of the bearing.

TYPES:

STANDARD

- AV: fitted to a ball bearing for outer ring sealing.
- JV: fitted to a ball bearing for inner ring sealing
- ZAV: fitted to a ball bearing with shields on both sides for outer ring sealing.
- ZJV: fitted to a ball bearing with integral seals on both sides for inner ring sealing.
- LSTO: labyrinth type design for applications which are exposed to extremely contaminated conditions

TAPER ROLLER

- AV: This type of Nilos ring is specified by the suffix "AV" in the part number. i.e. Nilos p/no 525/522 AV
- AK: Nilos ring with double outer sealing lips for taper roller bearing. i.e. p/no Nilos 418/414 AK

MATERIAL:

- Galvanized Steel
- Stainless Steel

WAVED WASHER APPLICATIONS

- Pressure valves
- Slip clutches
- Electric motors

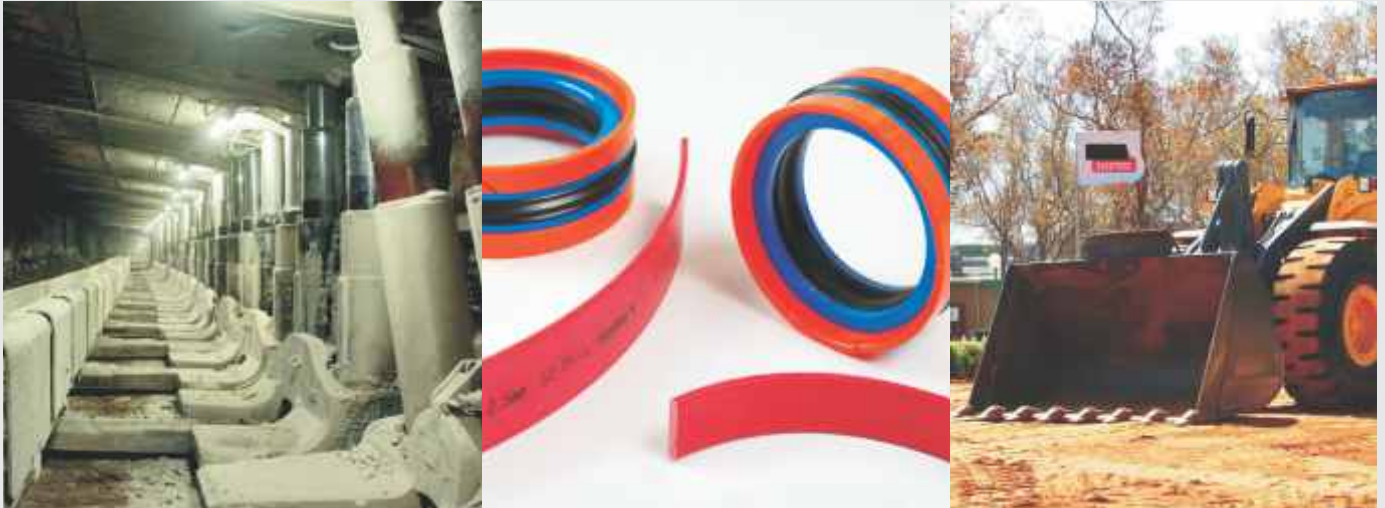
BONDED WASHER APPLICATIONS

- Screw connections
- Pipe joints
- Hose couplings

NILOS RING APPLICATIONS

- Escalators
- Shock absorbers
- Articulated vehicles
- Idler bearings
- Free wheeling hub
- Agricultural equipment





World renowned Hallite seals have been at the cutting edge of fluid technology, manufacturing a wide range of rod/gland, piston and static seals as well as support and bearing components for technically challenging hydraulic applications for industrial, mining, agriculture, and earthmoving equipment.

Performance requirements of fluid seals have become even more exacting with the advent of new types of fluid and a general trend towards increasing working pressures and temperatures.

OUR RANGE OFFERS THE FOLLOWING:

- A wide range of types for the best solution to any specific application requirement.
- Pressure energising to ensure that maximum safety and efficiency are achieved.
- Special technical solutions to withstand the most severe stresses for extended periods.
- Special materials designed to achieve & maintain the properties necessary for correct seal functionality.
- Imperial or metric sizes.

HYDRAULIC APPLICATION TYPES

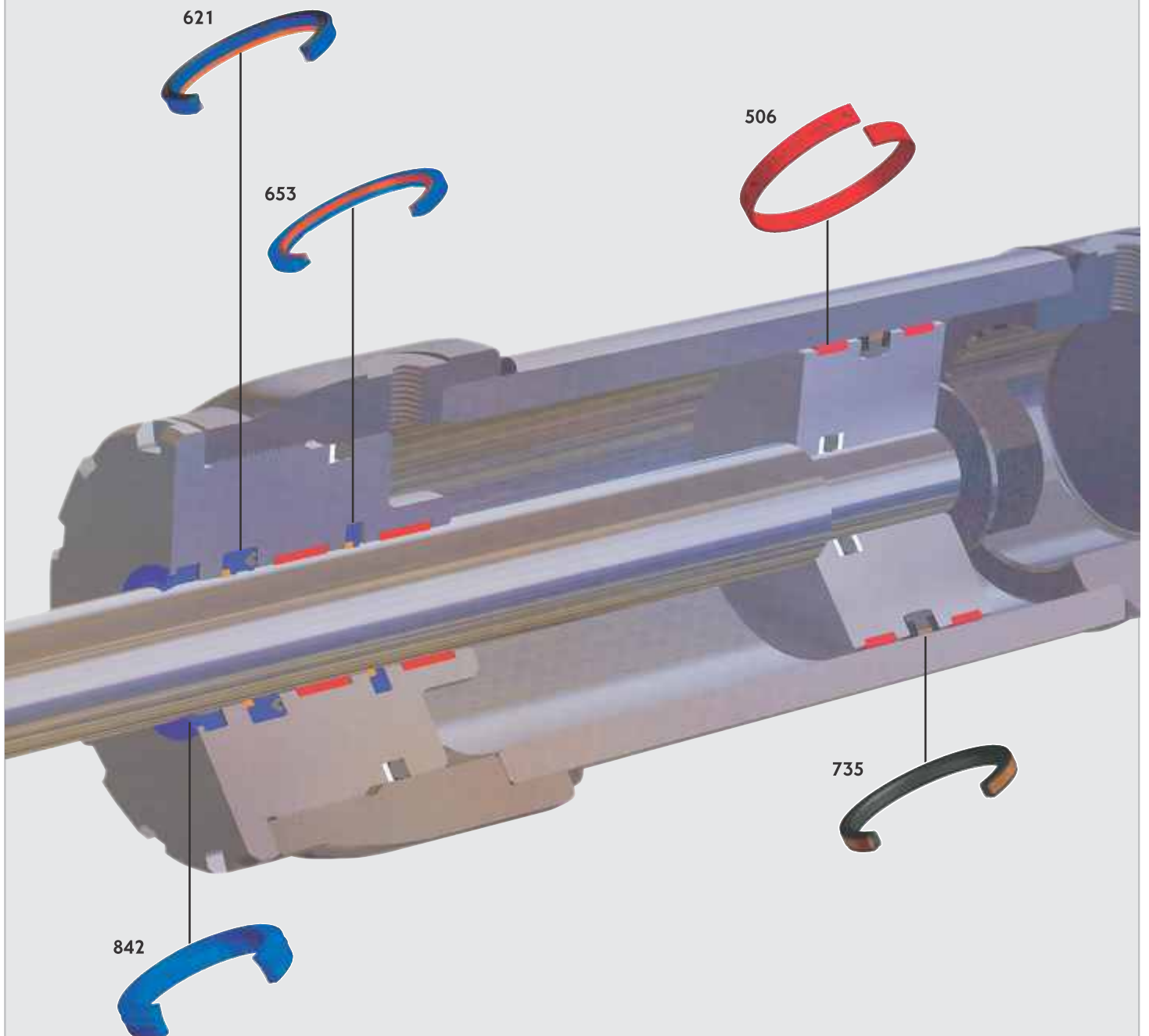
- Wiper seals - Soft or metal encased.
- Rod seals - Rubber & fabric single acting, Poly U, Kopper/Composite, Chevron, Buffer
- Piston seals - Rubber & fabric single acting, Poly U, Kopper/Composite, Double acting, Unitised piston & seal.
- Bearing/bushes - PTFE with a range of fillers, Woven fabric & resin wear strip, Phenolic, Glacier type.

PNEUMATIC APPLICATION TYPES:

- Wiper seals - soft or metal encased.
- Rod seals - Rubber/poly U, Kopper/Composite
- Pistons - Rubber/poly U, Cup, Kopper/Composite, TDUO.
- Bearing/bushes - Nylon, PTFE with fillers.

TYPICAL APPLICATIONS

- Light & heavy-duty earthmoving equipment
- Mining machinery & roof supports
- Agriculture equipment
- Pulp & Paper
- Cranes & lifting equipment
- Light & heavy-duty tipper equipment
- General industry
- Sugar



24 HR TOLL-FREE EMERGENCY
BRANCH HELPLINE:

0800 022 224

WEBSITE:

www.bmgworld.net



 An Invicta Holdings Group Company

BEARINGS • SEALS • POWER TRANSMISSION • DRIVES & MOTORS
MATERIALS HANDLING • FASTENERS & TOOLS • HYDRAULICS
PNEUMATICS • FILTRATION • LUBRICATION • VALVES
TECHNICAL RESOURCES • FIELD SERVICES

