HYDRAULIC SEALING SOLUTIONS FOR UNDERGROUND MINING

HIGH PERFORMANCE CUSTOMISED ENGINEERED SEALING SOLUTIONS

CHESTERTON
CUSTOMSEAL

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Important Note: *This Catalog provides general guidelines and general information about product operating conditions and product options for experienced users to consider. Operating conditions not referred to in this catalogue may affect product selection and/or product performance. This Catalog should not be considered advice, a guarantee of product performance, or a replacement for addressing product application questions with a qualified professional. Chesterton Customseal and its affiliates assume no responsibility for any action or inaction you take based on or made in reliance on the information contained in this document.*

We are Chesterton Customseal part of Chesterton® group of companies

Visit us at chestertoncustomseal.com.au

At Chesterton Customseal we produce high-performance elastomeric polymer seals designed for use in a wide range of hydraulic, pneumatic and rotary equipment.

The solutions we offer range from a vast collection of standardised polymeric seals to customised solutions designed for specific applications, to always provide an optimal product to our customers.

Our fully integrated state-of-the-art production facility relies on advanced computer-controlled equipment combined with flexible tools and semifinished material to offer a wide selection of proven designs and a wide range of high-performance materials with the capabilities of providing same-day shipping.

The real strength of Chesterton Customseal stems from the depth of industry knowledge, quality of the skills and experience that our technical-leading team has.

This experience triggers our ability to implement economic and innovative solutions, always in support of a professional and transparent service for our client.

Chesterton Polymer Seals Program

Chesterton Customseal provides Chesterton polymer seals

Speed of Service

Dedicated Service Centers

Chesterton® is a technology leader in the polymer seal industry.

Our SpeedSeal™ capability brings same-day service of this advanced technology to customers worldwide.

Strategically located and integrated service centers use innovative manufacturing methods to provide you with the broad selection of proven designs and wide range of high-performance materials.

Superior Materials

Chesterton's world-renowned materials are widely considered the highest-performing polyurethane materials for heavy-duty fluid power applications on the market today.
In addition, we utilize the full range of advanced materials for the most demanding applications.

- Polyurethanes
- Fluoroplastics Metal
- Elastomers (rubbers)
- Engineered plastics
- Detectable (MDx)

Engineered Solutions

High Performance Custom Seals

We leverage our engineering experience in design and materials to develop custom seals that solve today's most difficult sealing challenges.

Our custom designs provide leading-edge technology that has been used around the world with documented success and recognition.

CHESTERTON
Global Solutions, Local Service.

Equipment Upgrade

Systematic Approach to Improve MTBR and Reduce MTTR

Chesterton's equipment upgrade program applies a systematic approach for improving seal performance during repair and overhaul of equipment. This approach, in combination with high-performance sealing products and systems, will assist in improving equipment reliability, availability, and performance productivity.

One-stop Solutions

Wide Range of Product Portfolio

We specialize in the development, design, and manufacture of system solutions tailor-made to customer's requirements. Polymer sealing products is the term to describe the broad range of sealing devices to provide sealing function in all types of fluid power and associated equipment in dynamic linear, rotational, and oscillating motion.

Customer Support

Global Solutions, Local Service

Chesterton's skilled field specialists work in collaboration with customers to understand their needs and provide the best solution for their applications.

Our local service is supported by a global distribution and logistics network that enables us to reach and react to the shifting needs of industrial customers around the world.

Training Programs

The Know-How Advantage

Build a skilled workforce of fluid power equipment specialists by providing Chesterton's maintenance and operational best practices training to impact reliability, efficiency, and life cycle costs.

Chesterton has been in the business of providing knowledge of this type for decades and can assist you with your training and development needs.

Underground Mining

Our Product, Service, and Technical Expertise

MINING OPERATION

In mining operations, small improvements in uptime can have a major impact on profitability. The sealing in pumps and cylinders used throughout various mining applications can play a major role.

We provide a comprehensive collection of seals to boost your mining operation's efficiency and long-term reliability.

Stress, high impact, slurries, dust and dirt, corrosion, and lack of water can greatly impact mining equipment reliability and uptime. For decades, Chesterton Customseal specialists have helped mining operations around the globe meet these challenges with expertise and advanced solutions in sealing, lubrication, and protective coatings.

Benefits of using Chesterton Customseal products are:

- Customised innovative solutions designed to withstand extreme operating conditions
- Optimal levels of process performance improvements
- Extension of your equipment life and lower overall operational costs
- Maximised uptime and reduced maintenance time

HYDRAULIC AND PNEUMATIC SEALING SOLUTIONS

Chesterton Customseal offers a range of high-performance seals made from state-of-the-art polymer technologies that have been field-tested and proven worldwide in the most demanding sealing applications.

Our hydraulic sealing solutions provide optimal value by extending the hours of operation between maintenance intervals of your equipment. Custom and turnkey cylinder repair kits combine proprietary polymer technologies with unique seal geometries to increase reliability and productivity.

The sealing system's reliability and performance essentially determine your equipment's reliability and performance.

Chesterton Customseal's high-performance cylinder repair kits extend equipment operation time between maintenance intervals. These kits help companies manage costs and maintain margins by optimizing the value of equipment investments.

Chesterton's proprietary thermoset polymer technologies offer high abrasion and wear resistance. Our unique seal geometries are specifically designed to offset known sealing issues related to pressure spikes, side loading, contamination, and low-pressure leakage.

IT'S ALL ABOUT THE SEAL: SOLUTIONS FOR RELIABLE MINING & ORE PROCESSING

The little things in life count, and in the world of mining, they don't come much smaller than the seals that drive the efficiency of rotating, stationary, and fluid power equipment platforms.

When it comes to reliability, much effort is directed to the larger components so vital for processing ability. However, a failure to pay the same devotion to the quality of the sealing solutions within these assets can lead to a variety of unfavourable outcomes, including:

- Reduced lifespan of components
- Lowered productivity
- Increased maintenance costs
- Unnecessary repairs
- Catastrophic failure incidents

When considering the ultimate in hydraulic seals for example, it's necessary to focus on the four following attributes:

- The seal material: overwhelmingly, the most important improvement that can increase reliability is to upgrade the material that the seals are made from. A high-performing polymer ensures the ultimate suitability to the fluids within a system, the environment, the equipment itself and the operating conditions
- The seal profile: this must be designed for the specific application, be able to effectively withstand high stresses and of the correct size to fit the equipment.
- The bearing components: the ability to handle incredibly potent radial forces is key for seal protection. Bearings should also keep contaminants out and prevent any metal-on-metal contact within cylinders.
- Configuration of the seal system: customised, application-specific solutions designed by engineers ist he crucial difference that ensures the highest level of performance.

STANDARDS AND REGULATIONS

Our production and quality processes are independently controlled by the International Organization for Standardization (ISO). We are ISO 9001: 2015 certified which covers the quality management system for the production of seals and seal kits for hydraulic, pneumatic, rotary and static applications. We constantly focus on improving customer experience, with a goal of providing the best service & product on the market, with an eye always open to continuous improvement and sustainability.

Material certification provided upon request.

Premium Materials

MATERIAL CHOICE

Unique thermoset urethanes and proprietary polymer technology provide the ultimate resolution to the rigours that continually affect hydraulic seals.

Offering the highest level of abrasion and cut resistance, such material is wholly designed to withstand the harshest of elements. This results in extended hours of operation between scheduled maintenance and greatly increased reliability.

Chesterton's proprietary polymer technologies offer high abrasion and cut resistance designed to withstand the elements and extend the hours of equipment operation between maintenance intervals.
Whether extreme heat or cold, our exclusive thermoset materials allow your equipment to run longer, thereby helping

UNIQUE CUSTOM DESIGN

Adaptability is vital, and the need for multiple seal profiles specifically designed for mining use is essential. Mobile mining equipment needs a mobile solution with consummate longevity. This is best achieved by having a selection of seal designs to suit all cylinder options.

- Wiper seals: to effectively reduce contaminants entering the closed cylinder system
- Rod seals: that combat low-pressure leakage
- Piston seals: the ultimate in bi-direction sealing systems
- Static Seals: provides excellent performance in applications found in hydraulic or pneumatic equipment.
- Wear Rings: designed to protect cylinders from the impact of transverse forces that can shorten equipment life

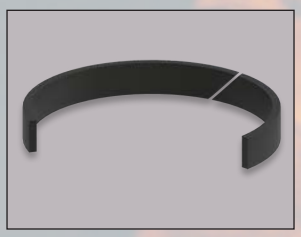
Cutting-edge technology has led to the creation of seals that truly withstand the pressures that today's mining equipment is under. This includes higher bucket payloads than ever, reduced space and weight of cylinders and tank capacity, as well as the working 24/7 in the harshest of environments.

The nature of mining also calls for on-site solutions, something mobile kits for custom and turnkey repairs can effectively service. The ability to carry out such maintenance in the field means assets can remain in use for longer, extending the working hours between scheduled downtime for service and repair.

Mining is tough in any environment. But this is never more relevant than in Australia's harsh climate. The reliability and longevity of cylinder seals plays a critical role in asset management, as does taking advantage of the very latest technological solutions.

Global supplier, Chesterton®, sets the benchmark for the ultimate in seal production. Their world-leading expertise is now available within Australia through Chesterton Customseal brand offering industry-proven hydraulic sealing solutions, including off-the-shelf and custom-made mobile mining kits that meet your critical demands each and every time.

Heavy-duty Hydraulic Cylinder

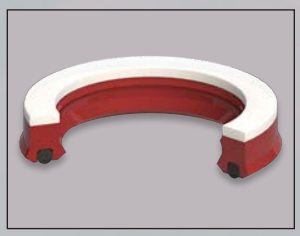


Wear Ring

These split, replaceable bearings prevent metal-to-metal contact of moving parts and help prolong equipment and seal life. These bearings reduce radial movement, therefore extending seal life and reducing the risk of reoccurring damage.

Piston Seal

The function of a piston seal is to prevent fluid bypass between the piston head and cylinder bore under various operating conditions and to act as a pressure barrier. It helps to maintain system efficiency and plays an important role in controlling the cylinder motion and maintaining position.



Rod Seal

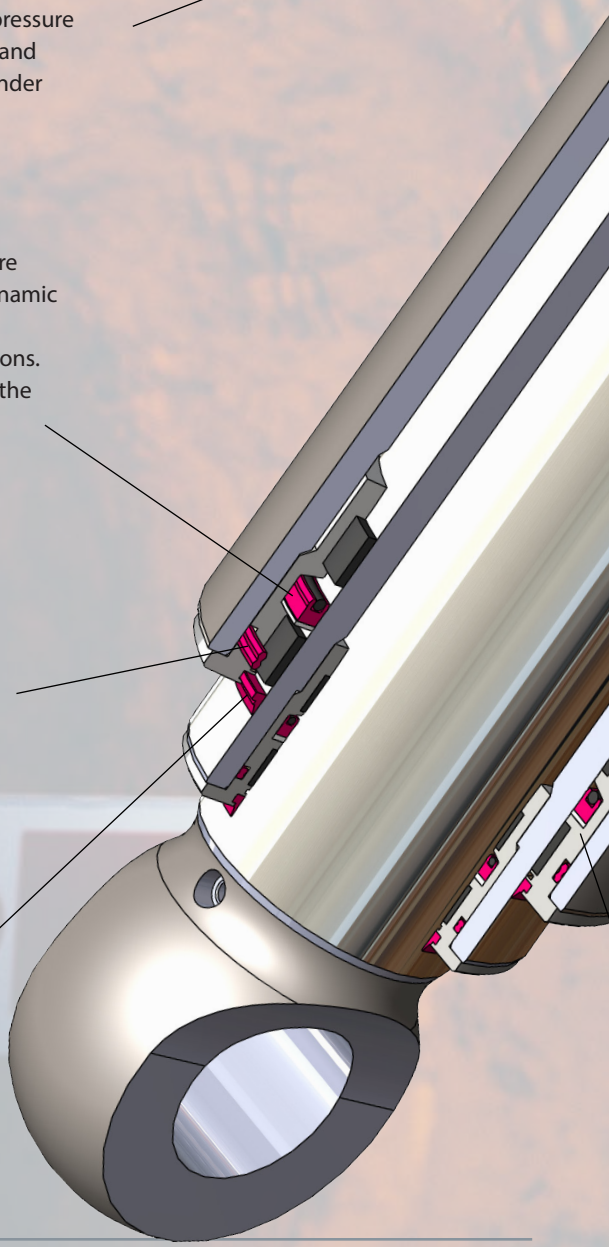
The function of a rod seal is to act as a pressure barrier and prevent fluid bypass along the dynamic (rod/ram) surface and the static (stuffing box bore) surface under various operating conditions. It regulates the fluid film during extension of the cylinder rod.

Static Seal

The function of a static seal is to prevent fluid bypass between mating surfaces in which there is little or no relative motion when exposed to zero, low, or high pressures. There are various profiles used in industry with the o-ring being the most common, while custom profiles can be used based upon equipment and operating conditions.

Wiper

The function of a wiper is to effectively clean and to dislodge foreign matter from a reciprocating rod/ram to prevent contaminants from entering the system.



Pressure Port
Piston Head
Piston Rod
Cylinder Jacket/Tube
Gland

9K Anti-extrusion Rings

Prevent Extrusion of Dynamic and Static Seals

Chesterton 9K Anti-extrusion Rings, often called backup rings, have no intended sealing function. 9K protects pressurized dynamic and static seals (including O-Rings) from extruding into equipment clearances under pressure, thus protecting seal components from premature failure and prolonging their service life. The tight fit of the anti-extrusion rings in the seal groove provides protection to minimize the extrusion gap. In addition, 9K provides seals support, improving the seal's high-pressure handling capability and can assist seals in compensating for large temperature fluctuations.

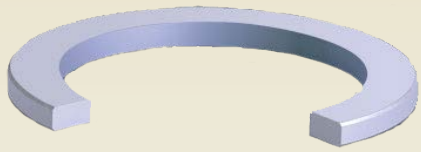
9K anti-extrusion rings are recommended to use when:

- Hydraulic system pressure exceeds the seal's extrusion resistance limitation
- Fluid pressure spikes exceed the normal system pressure
- The system temperature is high enough to lower the extrusion resistance of the seal
- The use of nonmetallic bearing bands increases the radial clearance and extrusion gap

9K rings are installed in the seal cavity with either the elastomer or polyurethane sealing element located on the backside or the low-pressure side of the sealing element they support. In the case of double-acting seals, anti-extrusion rings are located on both sides of the seal.
9K anti-extrusion rings are available in various extrusion-resistant materials (high durometer-engineered plastics) and custom profiles. The most popular design is with a rectangular cross-section; however other profiles such as contoured and concave cross sections are also available.

The concave design provides larger contact areas to prevent O-Rings' excessive deformation and improve dimensional stability for the best performance.

Split design options, for ease of installation, are available.
Each ring is individually manufactured and provides excellent performance, as a supporting element, to the piston, rod, and face seals generally found in static or dynamic applications.



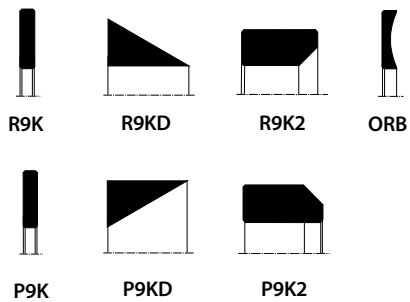
- Provide protection against extrusion of sealing elements into equipment clearances; improve MTBR
- Improve high-pressure handling capability of the seals
- Static and dynamic applications; plant-wide usage
- Machining process allows the flexibility to create any size
- Available in various profiles and materials

SPECIFICATIONS

Material (designation)	Size Range* mm (inch)	Temperature °C (°F)
AWC650 (Acetal)	6 – 381 (1/4 – 15)	-30 – 90 (-20 – 200)
AWC800 (EU)	6 – 1320 (1/4 – 52)	**-50** 85 (-60 185)
AWC808 (AU)	6 – 400 (1/4 – 15.75)	**-20** 85 (-4 185)
AWC860 (EU)	6 – 508.0 (1/4 – 20)	**-50** 120 (-60 250)
AWC300 (Glass-Filled PTFE)	6 – 600 (1/4 – 23.62)	**-35** 120 (-30 250)
AWC400 (Carbon-Filled PTFE)	6 – 600 (1/4 – 23.62)	**-35** 120 (-30 250)
AWC500 (Bronze-Filled PTFE)	6 – 600 (1/4 – 23.62)	**-35** 120 (-30 250)
AWC520 (Virgin PTFE)	6 – 600 (1/4 – 23.62)	**-35** 120 (-30 250)
AWC630 (Unfilled PEEK)	6 – 152 (1 – 6)	**-45** 175 (-50 350)
AWC635 (Glass-Filled PEEK)	6 – 152 (1 – 6)	**-45** 175 (-50 350)

** Please contact your Chesterton Customseal representative for larger sizes.*

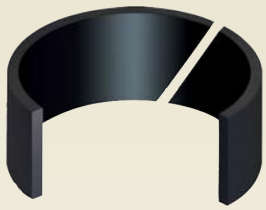
PRODUCT PROFILES



CHESTERTON CUSTOMSEAL

18K / 19K Wear Rings

High Performance, Replaceable Wear Rings for Cylinders



Chesterton replaceable wear rings are the solution to costly cylinder re-machining and repairs for medium- to heavy-duty hydraulic or pneumatic equipment. These split, replaceable wear rings reduce the probability of metal-to-metal contact of moving parts and help prolong equipment life. The risk of recurring damage is significantly reduced when installed during the cylinder repair.

The easy-to-use split 18K and 19K designs are manufactured from a glass fibre-reinforced thermoplastic polyimide resin (heat stabilized nylon) for high bearing capacity and can support transverse loads. These wear rings reduce radial movement, therefore helping to extend seal life. The lower Young's modulus and higher material flexibility (compared to metal bearings) let the nonmetallic wear rings have more elastic deformation under load, and the larger contact area will transfer the load and cause lower surface pressure.

The exceptional physical properties allow for use in a broad range of temperature conditions and provide excellent fluid compatibility. The built-in lubricants help reduce friction between mating surfaces and the risk of fretting and seizing, which further provides good dry running capabilities. 18K and 19K wear rings have excellent dimensional stability.

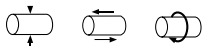
The use of nonmetallic wear rings helps to prevent the buildup of hydrodynamic pressure in small clearances of the cylinders and helps to prevent the diesel effect.

The precise manufacturing technology of the 18K and 19K wear rings provide accurate dimensional and geometrical tolerances and improved fitting. According to industrial standards sizing, the 18K and 19K are a direct retrofit to existing wear ring grooves, eliminating the need for equipment modification.

The split design makes the cut wear rings easy (snap-in fitting) installation, allowing them to be universally used on rods, rams, or pistons in reciprocating applications.

- Heat stabilized nylon with high bearing-load capacity for medium- to heavy-duty applications
- Replaceable wear rings prevent metal-to-metal scoring and prolong equipment life
- Reduce radial movement, therefore extending seal life
- Retrofit existing wear rings grooves and eliminate unnecessary modifications
- Split design minimizes downtime

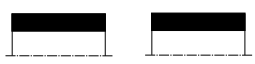
SPECIFICATIONS



Material (designation)	Size Range* mm (inch)	Temperature ˚C (˚F)	Compressive Strength MPa (psi) ASTM D965	Permissible Compressive Load MPa (psi)	Speed m/sec (ft/min)
AWC660 40% (Glass-Filled Nylon)	to 500 (20)	-40 – 121 (-40 – 250)	158.6 (23,000)	55 (7,975)	1.25 (250)

** Please contact your Chesterton Customseal representative for larger sizes.*

PRODUCT PROFILES



18K 19K

20KD Face and Static Seals

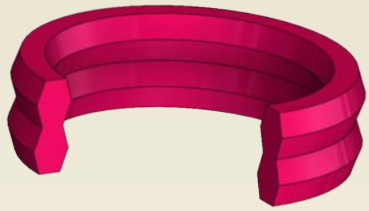
High Performance O-Ring Upgrade for Static Sealing

Chesterton 20K D-Ring is a continuous compression seal designed for use in static applications and is often applied as an upgrade from conventional face seals or O-Ring designs. That is why 20K D-Rings are interchangeable for O-Ring housing and O-Ring designs with backup rings. 20K D-Ring design provides excellent performance in static applications found in hydraulic or pneumatic equipment, including flange and valve control units.

The optimum design provides minimum seal deformation by better fit in the seal cavity and excellent pressure distribution through the seal cross-section by working with better geometrical and dimensional stability. 20K D-Rings can withstand higher operating pressure compared to conventional O-Rings.

20K D-Rings are manufactured from high extrusion-resistant polyurethane materials, which helps to prolong seal service life and improve reliability even in critical high-pressure, heavy-duty hydraulic applications.

Each seal is individually manufactured from our high-precision CNC machining process, eliminating the need for tooling costs associated with new sizes. Designs are available for internal face sealing and external face sealing commonly found in single- or double-acting applications.



- Upgrade performance of conventional face seal and O-Ring designs
- Superior wear and extrusion resistance versus conventional materials
- Low compression set characteristics
- Unique manufacturing process allows the flexibility to create any size
- Sizes made to accommodate international standards including ISO

PRODUCT PROFILES

SPECIFICATIONS

Material (designation)	Size Range* mm (inch)	Temperature °C (°F)	Pressure MPa (psi)
AWC704 (FKM)	6 – 304.8 (1/4 – 12)	-30 – 200 (-20 – 400)	16 (2320)
AWC800 (EU)	6 – 2540 (1/4 – 100)	**-50** 85 (-60 185)	103.5 (15000)
AWC808 (AU)	6 – 400 (1/4 – 15.75)	**-20** 85 (-4 185)	40 (5800)
AWC825 (EU)	6 – 2540 (1/4 – 100)	**-40** 85 (-40 185)	52 (7500)
AWC830 (EU)	6 – 254 (1/4 – 10)	**-35** 75 (-30 175)	52 (7500)
AWC860 (EU)	6 – 508.0 (1/4 – 20)	-50 – 120 (-60 – 250)	103.5 (15000)

** Please contact your Chesterton Customseal representative for larger sizes. Applicable standard: ISO 3601-2*

P20K Piston Seals

Heavy-duty, Bidirectional, Low-Speed Hydraulic Sealing

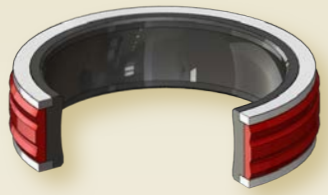
Chesterton P20K is a continuous, bidirectional compression seal with dual independent sealing points for hydraulic piston applications. The robust, durable, dual lip profile is used for single groove cavities in heavy-duty, high-pressure, hydraulic applications.

The entire seal cross-section of the seal is preloaded by the seal groove when installed to provide tight sealing even at low pressure, thus reducing the risk of the fluid bypass from start-up. When the system pressure increases, the hydraulic fluid energizes the seal, increasing the sealing area and sealing efficiency of the component.

The heavy-duty seal design with an incorporated anti-extrusion ring helps P20K to withstand transverse loads and extreme pressure conditions, just like pressure peaks and shock load during operation, and it further increases the extrusion resistance of the seal component at larger clearances. 20K is an ideal solution for static and dynamic applications, even in the most demanding applications.

The P20K Duoseals are made from our unique machining process, eliminating the need for tooling costs associated with new sizes.

Additional designs were developed for specific application and equipment needs, including incorporating various anti-extrusion devices for combating excessive clearances and pressure spikes.



- Reduces risk of fluid bypass from start-up of the hydraulic system
- Ideal replacement for 2-, 3-, or 4-piece cap seal and compression seal assemblies
- Superior extrusion, transverse load, and wear resistance
- Ideal solution for static and dynamic applications
- Unique manufacturing process allows the flexibility to create any size

PRODUCT PROFILES

P20K1 P20K2 P20K3 P20K4 P20K5 P20K6 P20KDAER P20K2P4 DK123D

SPECIFICATIONS

Material (designation)	Size Range* mm (inch)	Temperature °C (°F)	Pressure MPa (psi)	Speed m/s (ft/min)
AWC704 (FKM)	6 – 304.8 (1/4 – 12)	-30 – 200 (-20 – 400)	16 (2320)	1.5 (300)
AWC800 (EU)	6 – 2540 (1/4 – 100)	-50 – 85 (-60 – 185)	103.5 (15000)	1 (200)
AWC808 (AU)	6 – 400 (1/4 – 15.75)	-20 – 85 (-4 – 185)	40 (5800)	0.5 (100)
AWC825 (EU)	6 – 2540 (1/4 – 100)	-40 – 85 (-40 – 185)	52 (7500)	0.5 (100)
AWC830 (EU)	6 – 254 (1/4 – 10)	-35 – 75 (-30 – 175)	52 (7500)	0.9 (185)
AWC860 (EU)	6 – 508.0 (1/4 – 20)	-50 – 120 (-60 – 250)	103.5 (15000)	1.25 (250)

**Please contact your Chesterton Customseal representative for larger sizes. Applicable standard: ISO 6547*

Innovative Sealing Solutions

W21K Wiper Seals

Protect the System from Entering Contaminants

Chesterton positive rake wipers are designed to effectively clean and dislodge foreign matter from retracting rods or rams, thus preventing scoring and system contamination. The sharp, rugged, flared profile provides protection against abrasive particles, which can contaminate the system and lead to premature equipment failure. These wipers provide excellent performance on rods or rams in hydraulic and pneumatic applications.

Single- and double-acting wiper designs are available, thus providing the best possible function and performance, depending on the application, operating conditions, and utilized seal system. The single-acting wiper seal's function is to prevent contamination from the operating environment. Double-acting wiper seals wipe off the possible residual oil film from the rod, reducing the risk of hydraulic media's external leakage.

The W21K design is manufactured using a machining process allowing the flexibility to create any size based on equipment dimensions.

This design incorporates a built-in static seal on the flange to block contaminants from migrating along the stationary side of the wiper during operation.

Additional custom designs were developed to meet specific application and equipment needs, including snap-in, stepped, and bidirectional wipers.

- Positive rake lip design effectively wipes contaminants away from surface
- Outstanding protection against ingress of particles into the system
- Prolongs service life of seals and hydraulic/pneumatic cylinders
- Manufacturingprocess allows flexibility to create any size
- Sizes made to accommodate international standards including ISO

PRODUCT PROFILES

W21K W21KF W21KT5 W21KC W21KC1 W21KCS W21KM W21KR W21KS

SPECIFICATIONS

Material (designation)	Size Range* mm (inch)	Temperature °C (°F)	Speed m/s (ft/min)
AWC704 (FKM)	6 – 304.8 (1/4 – 12)	-30 – 200 (-20 – 400)	1.5 (300)
AWC800 (EU)	6 – 2540 (1/4 – 100)	-50 – 85 (-60 – 185)	1 (200)
AWC808 (AU)	6 – 400 (1/4 – 15.75)	-20 – 85 (-4 – 185)	0.5 (100)
AWC825 (EU)	6 – 2540 (1/4 – 100)	-40 – 85 (-40 – 185)	0.5 (100)
AWC830 (EU)	6 – 254 (1/4 – 10)	-35 – 75 (-30 – 175)	0.9 (185)
AWC860 (EU))	6 – 508.0 (1/4 – 20)	-50 – 120 (-60 – 250)	1.25 (250)

**Please contact your Chesterton Customseal representative for larger sizes. Applicable standards: ISO 6195A, ISO 6195C*

R22KE Rod Seals

Special Geometry Provides Optimal Sealing Performance

The Chesterton R22KE is a single-acting, continuous U-Cup design incorporating an O-Ring to increase preload capabilities. The O-Ring energizes the seal without system pressure, helps to increase sealing force, thus inhibiting hydraulic media bypass, and provides stability at higher temperature conditions. System pressure rise will increase sealing force, completely actuating the lips through the O-Ring.

The excellent resistance to abrasion and trimmed seal lips provide outstanding performance in medium- to heavy-duty hydraulic applications. The rubber energizer cushions the seal against shock load and pressure peaks. An Incorporated anti-extrusion ring helps the seal to withstand transverse loads and extreme pressure conditions during operation and further increases extrusion resistance of the seal component at larger clearances. This seal design is offered as a rod seal.

The R22KE design is manufactured using a machining process that allows the flexibility to create any size based on equipment dimensions.

- Single-acting U-cup design; zero leakage throughout the entire operating range
- O-Ring loader energizes seal and provides stability at higher pressures
- Abrasion-resistant design; excellent performance in hydraulic applications
- High resistance against transverse load, pressure peaks, and extrusion
- Machining process allows the flexibility to create any size

PRODUCT PROFILES

R22KE R22KEAER R22KEAER1

SPECIFICATIONS

Material (designation)	Size Range* mm (inch)	Temperature °C (°F)	Pressure bar (psi)
AWC704 (FKM)	6 – 304.8 (1/4 – 12)	-30 – 200 (-20 – 400)	150 (2,175)
AWC800 (EU)	6 – 1320 (1/4 – 52)	-50 – 85 (-60 – 185)	150 (2,175)
AWC808 (AU)	6 – 400 (1/4 – 15.75)	-20 – 85 (-4 – 185)	150 (3,620
AWC825 (EU)	6 – 1320 (1/4 – 52)	-40 – 85 (-40 – 185)	150 (2,175)
AWC830 (EU)	6 – 254 (1/4 – 10)	-35 – 75 (-30 – 175)	400 (5,800)
AWC860 (EU)	6 – 508.0 (1/4 – 20)	-50 – 120 (-60 – 250)	103.5 (15000)

** Please contact your Chesterton Customseal representative for larger sizes.*

Applicable standard: ISO 5597

R22K Rod Seals

Special Geometry Provides Optimal Sealing Performance

The Chesterton R22K is a single-acting, asymmetric, continuous U-Cup design.
A unique seal lip geometry, in combination with a twin lip arrangement on the dynamic side, provides zero leakage throughout the entire operating range, resulting in a tight, dry rod sealing operation. The sturdy, static lip stabilizes the seal to prevent rolling, while the dynamic lip design mitigates issues associated with low-pressure sealing, provides additional stability, and eases installation.

The optimum seal design enables controlled pressure distribution through the entire seal component, while the proper expansion space provides free space for deformation under pressure, optimizing the seal contact area on the sliding surface.

This seal design is offered as a rod seal and provides excellent performance in light-to-heavy-duty hydraulic applications. Robust seal construction makes R22K insensitive to pressure fluctuation and, combined with high-performance polyurethane materials, has outstanding pressure/shock load capability.

The 22K design is manufactured using a machining process which allows the flexibility to create any size based on equipment dimensions. Several additional designs have been derived from the original R22K design to address specific needs and applications in the market. These include using anti-extrusion rings for use in equipment with excessive clearances.

- Single-acting, U-Cup design, zero leakage throughout the entire operating range
- Abrasion-resistant design; excellent performance in hydraulic applications
- Insensitive to pressure fluctuation and excellent pressure/shock load capability
- Machining process allows the flexibility to create any size
- Sizes made to accommodate international standards including ISO

PRODUCT PROFILES

R22K R22KAER R22KAER1

SPECIFICATIONS

Material (designation)	Size Range* mm (inch)	Temperature °C (°F)	Pressure MPa (psi)	Speed m/s (ft/min)
AWC704 (FKM)	6 – 304.8 (1/4 – 12)	-30 – 200 (-20 – 400)	16 (2320)	1.5 (300)
AWC800 (EU)	6 – 2540 (1/4 – 100)	-50 – 85 (-60 – 185)	103.5 (15000)	1 (200)
AWC808 (AU)	6 – 400 (1/4 – 15.75)	-20 – 85 (-4 – 185)	40 (5800)	0.5 (100)
AWC825 (EU)	6 – 2540 (1/4 – 100)	-40 – 85 (-40 – 185)	52 (7500)	0.5 (100)
AWC830 (EU)	6 – 254 (1/4 – 10)	-35 – 75 (-30 – 175)	52 (7500)	0.9 (185)
AWC860 (EU)	6 – 508.0 (1/4 – 20)	-50–120 (-60 – 250)	103.5 (15000)	1.25 (250)

**Please contact your Chesterton Customseal representative for larger sizes. Applicable standard: ISO 5597*

WR Custom Wear Rings

Custom Replacement Bearing Bands

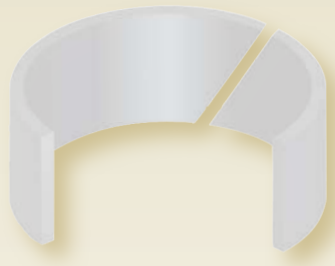
Chesterton Custom Wear Rings (WR) are the solution to costly cylinder re-machining and repairs for pneumatic and light- to heavy-duty hydraulic equipment. These split, replaceable wear rings reduce the probability of metal-to-metal contact of moving parts and help prolong equipment life. The risk of recurring damage is significantly reduced when installed during the cylinder repair.

The easy-to-use split WR designs are manufactured from various engineered plastic materials to provide the best possible bearing solution based on operating conditions and hardware configuration. Utilized plastic compounds have a good bearing capacity and can support transverse loads. These bearings reduce radial movement, therefore helping to extend seal life.

The use of nonmetallic wear rings helps to prevent the buildup of hydrodynamic pressure in small clearances of the cylinders and helps to prevent the diesel effect.
Each seal is individually manufactured from our unique machining process, eliminating the need for tooling costs associated with new sizes.

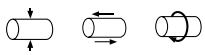
The precise CNC lathe manufacturing technology of the WR provides accurate dimensional and geometrical tolerances and improved fitting. Flexible manufacturing technology allows for virtually any size and shape, thus providing retrofit-bearing solutions.

Various designs and materials are available, including the WR, P9KL, R9KL, WRTP, WRTR, WRUP, and WRUR, which address specific needs and applications in the market.



- Replaceable wear rings; cost-effective method for improving equipment performance
- Reduce radial movement; reduce probability of metal-to-metal contact while extending seal life
- Custom Wear Rings eliminate unnecessary modifications
- Reduce probability the buildup of hydrodynamic pressure, thus prolonging seal life
- Machining process allows the flexibility to create any size

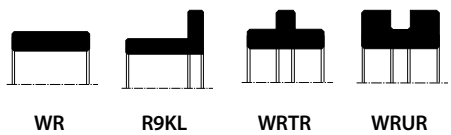
SPECIFICATIONS



Material (designation)	Size range* mm (inch)	Temperature °C (°F)	Compressive Strength MPa (psi) ASTM/ISO Testing	Permissible Compressive Load MPa (psi)	Speed m/sec (ft/min)
AWC650 (Acetal)	6 – 381 (1/4 – 24)	-30 – 90 (-20 – 200)	55.2 (8000)	20 (2900)	3 (600)
AWC300 (Glass-Filled PTFE)	6 – 600 (24)	-35 – 120 (-30 – 250)	10.6 (1540)	3.5 (510)	5 (1000)
AWC400 (Carbon-Filled PTFE)	6 – 600 (24)	-35 – 120 (-30 – 250)	8.5 (1230)	2.5 (365)	5 (1000)
AWC500 (Bronze-Filled PTFE)	6 – 600 (24)	-35 – 120 (-30 – 250)	10.1 (1540)	4.5 (652)	5 (1000)
AWC520 (Virgin PTFE)	6 – 600 (24)	-35 – 120 (-30 – 250)	7.9 (1145)	2.5 (365)	5 (1000)
AWC630 (Unfilled PEEK)	6 – 152 (1 – 6)	-45 – 175 (-50 – 350)	138.1 (20000)	–	1 (200)
AWC635 (Glass-Filled PEEK)	6 – 152 (1 – 6)	-45 – 175 (-50 – 350)	179.5 (26000)	–	1 (200)

**Please contact your Chesterton Customseal representative for larger sizes. Applicable standard: ISO 10766*

PRODUCT PROFILES



More than a Seal

Training

The Know-How Advantage

Continual development of personnel is one way of attracting and retaining a capable workforce, and it is an area which receives a great deal of attention from Chesterton Customseal. We regard training as a value adding product which delivers tangible benefits, both short and long term. Appropriate training ensures the correct use of equipment which will deliver longer life for the lowest overall total cost of ownership, and a rapid return on your training investment.

Contact us to know about our latest training schedule.

Chesterton® Legacy

Wide Range of Product Portfolio

View the full line of Chesterton® Polymer Seals including hydraulic and pneumatic seals, rotary seals, and spring-energized seals visiting **chesterton.com** or contact us to request our new polymer seals catalogue.

Chesterton ISO certificates available on

chesterton.com/corporate/iso

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Where to from here?

Contact your local Sales Representative to discuss your specific needs.

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