CORE PRODUCTS CATALOG

VALUE-DRIVEN SOLUTIONS TO MEET INDUSTRY NEEDS

Mechanical Seals

Packing and Gaskets

Polymer Seals

Industrial Lubricants and MRO Products

ARC Industrial Coatings

Equipment Monitoring

1884 • 2024

140 Years of Excellence

CHESTERTON®

CHESTERTON®

Global Solutions, Local Service.

Innovative Products and Custom Solutions

A.W. Chesterton Company is a leading international manufacturer and distributor of mechanical seals, packing and gaskets, polymer seals, industrial lubricants and MRO products, and ARC industrial coatings, as well as equipment monitoring solutions. Each product line is positioned to provide value-driven solutions to meet industry needs.

Since 1884, we have worked closely with our customers to provide solutions that help them operate more reliably, efficiently, and economically.

A.W. Chesterton Company is ISO 9001/2008 and ISO 14001/2004.

Value-Driven Global Solutions

Chesterton uses high performance materials, formulations, and designs to solve your toughest industrial applications. We provide value-driven solutions with documented success and recognition across the globe.

Local Service

The expertise of your local Chesterton® Technical Specialist combined with the support of our engineering staff will enable you to enjoy significantly reduced operating costs, increased reliability, and years of trouble-free service.

For a full range of products and services, visit our website at chesterton.com

CHESTERTON®
Global Solutions, Local Service.

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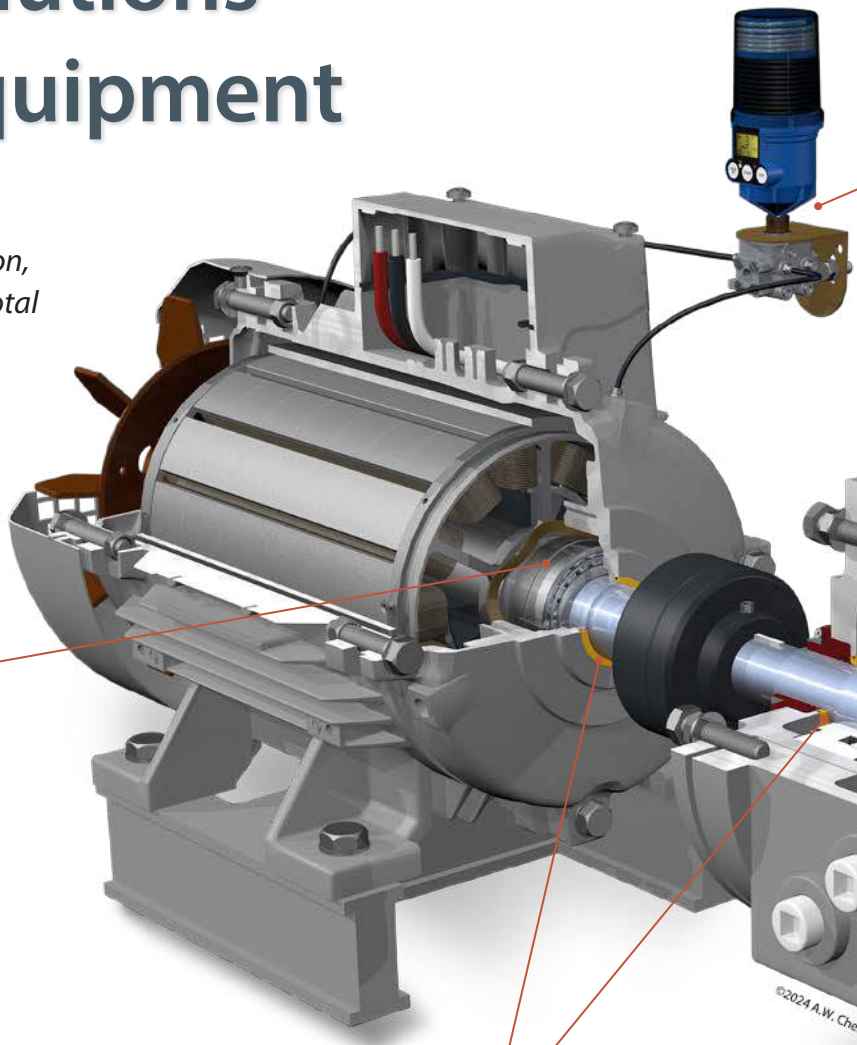

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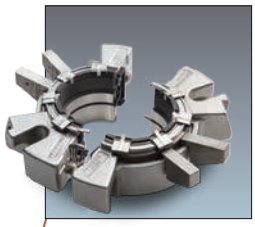

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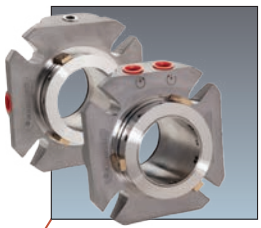

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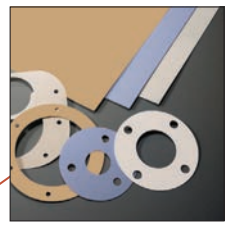

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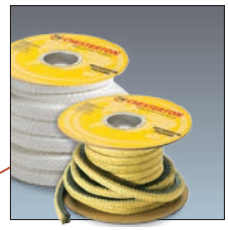

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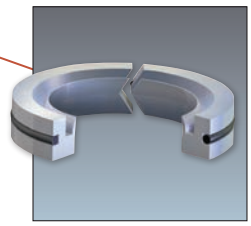

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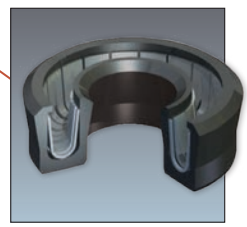

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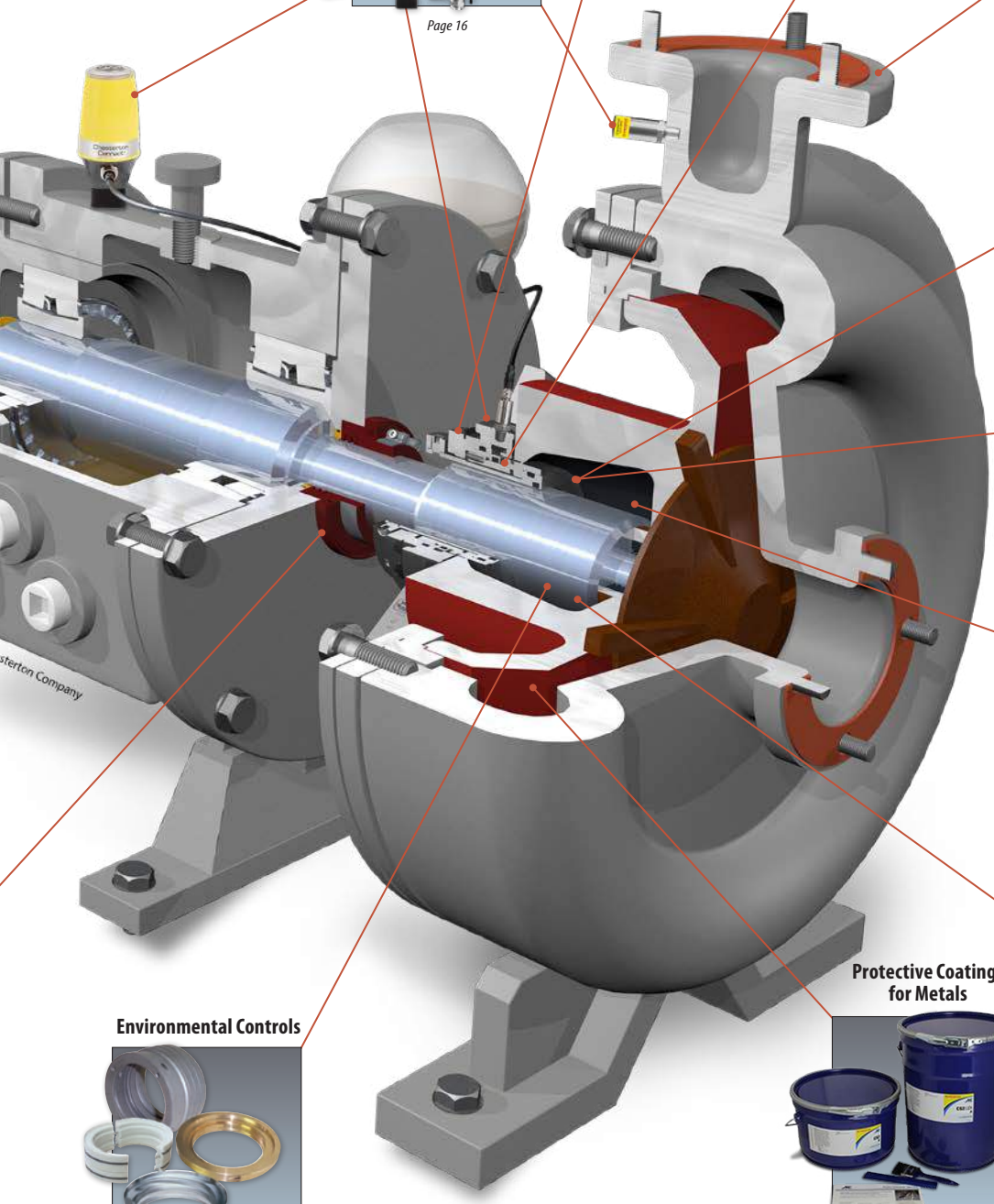
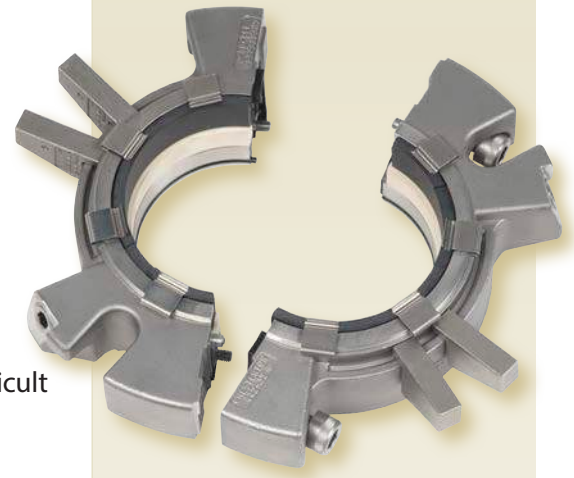


SPLIT SEALS

442

Split Mechanical Seal



Eliminates the need for equipment disassembly during seal installation and reduces maintenance costs

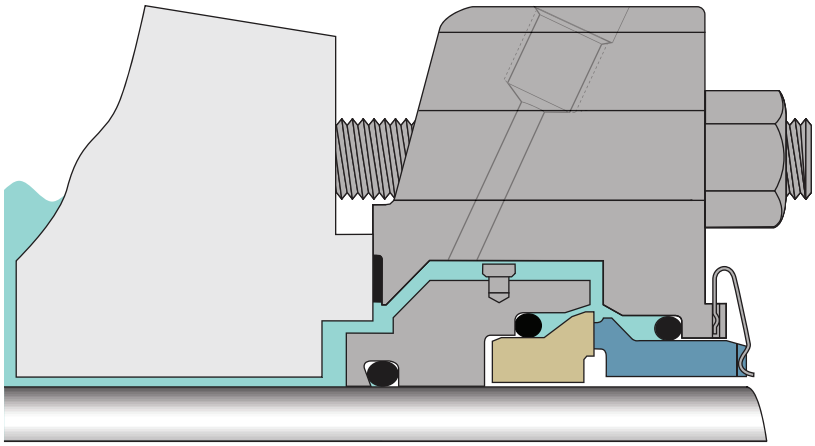
The 442 Split Mechanical Seal is ideal for equipment that is difficult and time-consuming to disassemble, such as large pumps, vertical pumps, and horizontal split case pumps. This proven, compact design can be used in a wide variety of equipment and process fluids.

The high performance split technology allows the 442 to operate from vacuum to high pressures. Its compact design allows for easy installation and a fit advantage on most equipment. Split, low-cost repair kits reduce ongoing maintenance costs even further. Designed with the installer in mind, the ball-and-socket O-Rings provide a quick and easy seal without the use of adhesives. Captive screws cannot fall out, making installation straightforward and reliable.

- Easy and fast to install without equipment disassembly
- Proven design with superior performance
- Non-fretting to equipment
- Compact design

Variants

- Mixer version available



Operating Conditions		Materials	
Size	20 mm – 990 mm (0.750" – 39.000")	**Faces**	CB, RSC, CR
Pressure	711 mm (28") Hg Vacuum – 30 bar g (450 psig)*	**Elastomers**	FKM, EPDM, FEPM
Temperature	120°C (250°F)	**Metals**	EN 1.4401 (316SS) *Other Metallurgies available on request*
Speed	20 m/s (4000 fpm)	**Springs**	Elgiloy®

Standards and Approvals: ISO-3069-S, ASME B73.1, ASME B73.2, NSF61, ACS, ATEX

**Seal pressure capabilities are dependent on the fluid sealed, temperature, speed, and seal face combinations. For operation outside the limits and additional materials consult Chesterton Mechanical Seal Engineering.*

SPLIT SEALS

442C

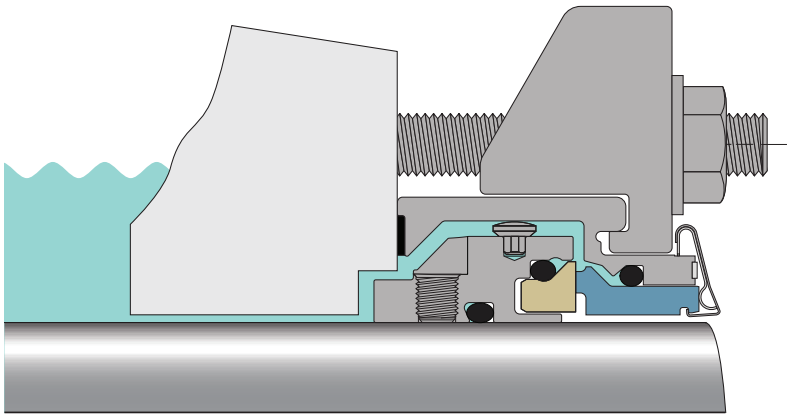
Cartridge Split Mechanical Seal

Enhanced design for simple installation and greater sealing reliability

The 442C Cartridge Split Mechanical Seal is the latest innovation in split seal technology combining superior performance with the ease of installation of a cartridge split seal. Our split seal technology addresses the inherent limitations found in conventional cartridge split seal designs by minimizing installation complications and excessive leakage. As with all split seals, it offers easy installation and replacement without the need for teardowns.

The 442C design also offers maximum installation flexibility with its short axial length and flexible gland positioning. It simplifies split mechanical seal repair by using a standard spare parts kit, enabling you to lower your inventory costs to maintain operations.

- Simplified split seal installation—without equipment disassembly
- Innovative design with superior performance
- Fits most rotating equipment
- Easy field repair



Operating Conditions		Materials	
Size	25 mm – 195 mm (1.000" – 7.750")	**Faces**	CB, RSC, CR
Pressure	711 mm (28") Hg Vacuum – 30 bar g (450 psig)*	**Elastomers**	FKM, EPDM, FEPM, FFKM
Temperature	120°C (250°F)	**Metals**	EN 1.4401 (316SS) *Other Metallurgies available on request*
Speed	20 m/s (4000 fpm)	**Springs**	Elgiloy®

Standards and Approvals: ISO-3069-S, ASME B73.1, ASME B73.2, NSF–61

**Seal pressure capabilities are dependent on the fluid sealed, temperature, speed, and seal face combinations. For operation outside the limits and additional materials consult Chesterton Mechanical Seal Engineering.*

CARTRIDGE SEALS

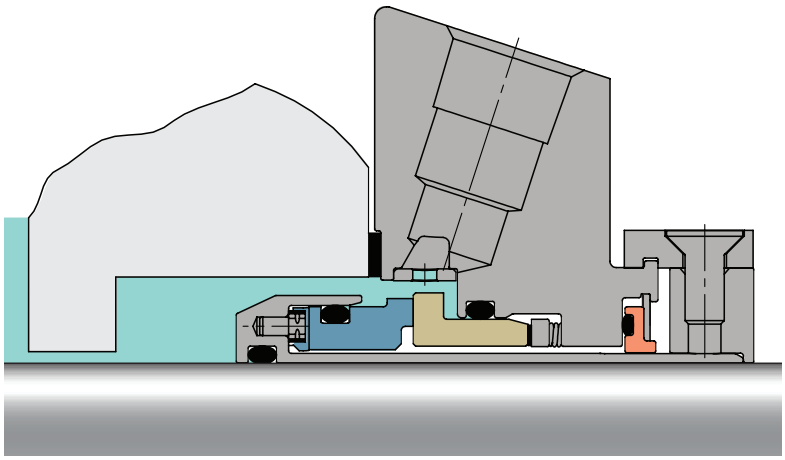
1810

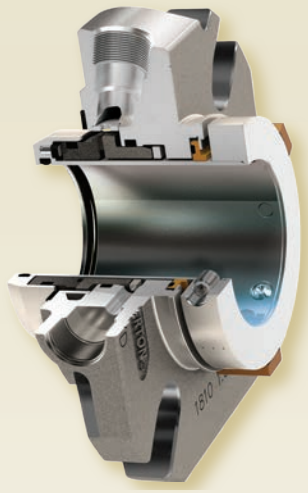
Heavy-Duty Modular Single Cartridge Seal

Built on Chesterton's AXIUS™ modular platform for simple configuration and installation plant-wide

The 1810 Single Cartridge Seal offers you the ultimate in seal quality, flexibility, and convenience. Leveraging Chesterton's proprietary AXIUS modular platform, the 1810 can be configured with several different face profiles and auxiliary components which allows seal performance to be tailored to a wide range of process conditions.

A plant-wide sealing solution, the 1810 is effective for both simple and highly demanding applications. It offers selectable features around a common gland housing. This flexibility allows for the creation of the best sealing parameters for your equipment and application needs to maximize single seal reliability.





AXIUS™
Chesterton® Modular Platform

- Simplifies configuration and maximizes seal performance with the AXIUS™ modular platform
- Maintains reliability through-out temperature cycling and stop/start processes with monolithic seal faces
- Increases face life and reduces contact stress with cushioned drive pins
- Allows for easy, positive seal identification with ViewIn™ technology

ViewIn™
Chesterton® Technology

Five Key Seal Design Features

Characteristics of Good Mechanical Seal Design — 5 — FIVE STAR

- ✔ *Balanced Design*
- ✔ *Non-Fretting*
- ✔ *Monolithic Seal Faces*
- ✔ *Stationary Design*
- ✔ *Protected Springs*

Operating Conditions		Materials	
Size	25 mm – 200 mm (1.000" – 8.000")	**Faces**	CB, SSC, TC
Pressure	711 mm (28") Hg Vacuum – 40 bar g (600 psig)*	**Elastomers**	FKM, EPDM, FEPM, FFKM
Temperature	-55°C – 300°C (-67°F – 570°F)	**Metals**	EN 1.4401 (316SS) *Other Metallurgies available on request*
Speed	25 m/s (5000 fpm)	**Springs**	EN 2.4819 (Alloy C-276)

Standards and Approvals: ISO-3069C, ASME B73.1, ASME B73.2, NSF–61

**Seal pressure capabilities are dependent on the fluid sealed, temperature, speed, and seal face combinations. For operation outside the limits and additional materials consult Chesterton Mechanical Seal Engineering.*

CARTRIDGE SEALS

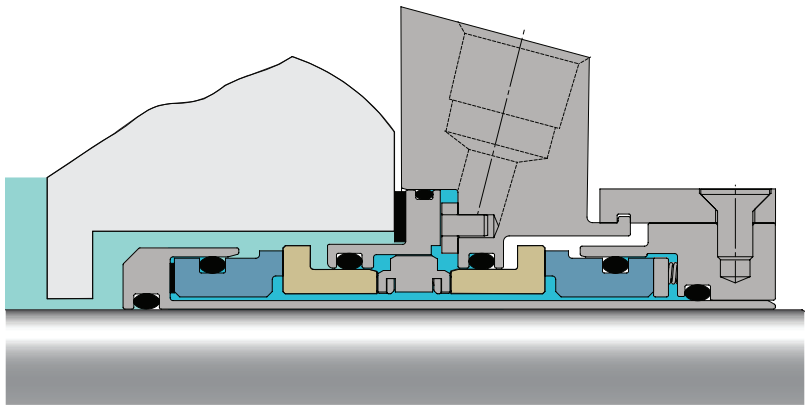
2810

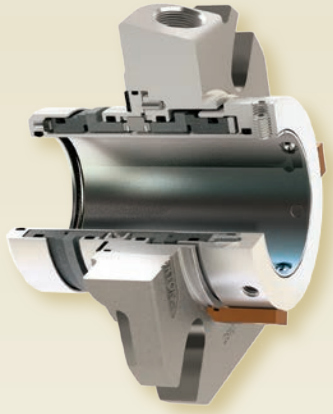
Heavy-Duty Modular Double Cartridge Seal

Built on Chesterton's AXIUS™ modular platform for simple configuration and emission control plant-wide

The 2810 Double Cartridge Seal offers you the ultimate in seal quality, flexibility, and emissions control. Leveraging Chesterton's proprietary AXIUS modular platform, the 2810 can be configured with several different face profiles and auxiliary components within a common gland housing. This flexibility allows seal performance to be tailored to a wide range of process conditions.

A plant-wide sealing solution, the 2810 uses a geometric double-balanced seal face design. An optimized barrier/buffer channel for enhanced fluid flow provides greater seal reliability even at elevated temperatures.





AXIUS™ Chesterton® Modular Platform

- Simplifies configuration and maximizes seal performance with the AXIUS™ modular platform
- Maintains reliability through-out temperature cycling and stop/start processes with monolithic seal faces
- Increases face life and reduces contact stress with cushioned drive pins
- Accommodates axial, radial, and angular shaft movement through unified seal face alignment
- Allows for easy, positive seal identification with ViewIn™ technology

ViewIn™ Chesterton® Technology

Five Key Seal Design Features

Characteristics of Good Mechanical Seal Design — 5 — FIVE STAR

- ✔ *Balanced Design*
- ✔ *Non-Fretting*
- ✔ *Monolithic Seal Faces*
- ✔ *Stationary Design*
- ✔ *Protected Springs*

Operating Conditions		Materials	
Size	25 mm – 200 mm (1.000" – 8.000")	**Faces**	CB, SSC, TC
Pressure	711 mm (28") Hg Vacuum – 40 bar g (600 psig)*	**Elastomers**	FKM, EPDM, FEPM, FFKM
Temperature	-55°C – 300°C (-67°F – 570°F)	**Metals**	EN 1.4401 (316SS) *Other Metallurgies available on request*
Speed	25 m/s (5000 fpm)	**Springs**	EN 2.4819 (Alloy C-276)

Standards and Approvals: ISO-3069C, ASME B73.1, ASME B73.2, ATEX

**Seal pressure capabilities are dependent on the fluid sealed, temperature, speed, and seal face combinations. For operation outside the limits and additional materials consult Chesterton Mechanical Seal Engineering.*

CARTRIDGE SEALS

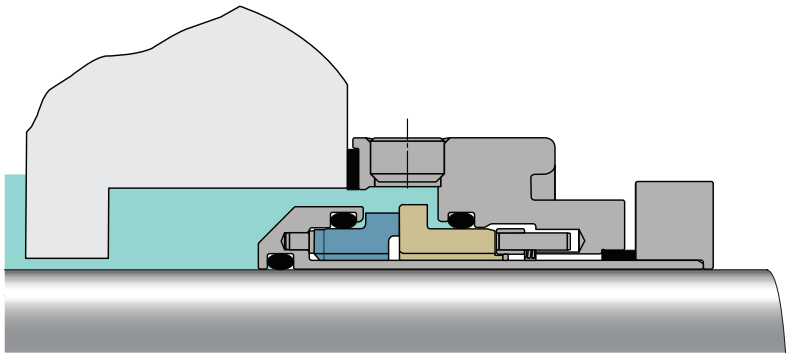
1510

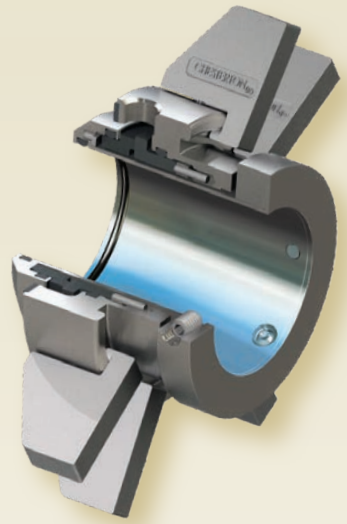
General Duty Single Cartridge Seal

Simple installation and increased reliability plant-wide in general duty applications

Maximize maintenance efficiency and increase plant productivity with the 1510 Single Cartridge Seal. Designed to fit process equipment plant-wide by incorporating Chesterton T.A.B.S.™ (Tapered Adjustable Bolting System), the compact profile makes seal installation easy.

The use of monolithic seal faces and true non-fretting construction offers reliability through temperature variations and intermittent operations. Impeller adjustments after seal fitment are accommodated with the unique resettable centering strap, even when adjustment is required between routine maintenance. Incorporating Chesterton's 5 key features of good mechanical seal design, the 1510 sets the new standard for general duty cartridge seals.





- Reliable through temperature cycling and intermittent process with monolithic seal faces
- In-service impeller adjustment is possible with the unique centering strap
- Mounts easily on various types of rotating equipment using Chesterton T.A.B.S.
- Prevents damage to your equipment and internal components via true non-fretting design

Variants

- 1510L
  Single Screw Clamp Lock Ring

Five Key Seal Design Features

- ✔ *Balanced Design*
- ✔ *Non-Fretting*
- ✔ *Monolithic Seal Faces*
- ✔ *Stationary Design*
- ✔ *Protected Springs*

Operating Conditions		Materials	
Size	25 mm – 120 mm (1.000" – 4.750")	**Faces**	CB, SSC, TC
Pressure	711 mm (28") Hg Vacuum – 20 bar g (300 psig)*	**Elastomers**	FKM, EPDM, FEPM, FFKM
Temperature	55°C – 300°C (-67°F – 570°F) *Temperature limits depend on actual elastomers used*	**Metals**	EN 1.4401 (316SS) *Other Metallurgies available on request*
Speed	25 m/s (5000 fpm)	**Springs**	EN 2.4819 (Alloy C-276)

Standards and Approvals: ISO-3069C, ASME B73.1, ASME B73.2, NSF–61, WRAS

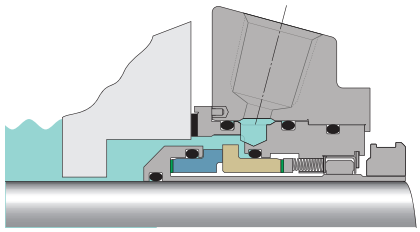
**Seal pressure capabilities are dependent on the fluid sealed, temperature, speed, and seal face combinations. For operation outside the limits and additional materials consult Chesterton Mechanical Seal Engineering.*

CASSETTE SEALS

S10

High Performance Single Cassette Seal

A unique, modular cassette that combines advanced seal technology with flexibility in maintenance and repair.



ViewIn™ Chesterton® Technology

Operating Conditions		Materials	
Size	25 mm – 120 mm (1.000" – 4.750")	**Faces**	CB, SSC, TC
Pressure	711 mm (28") Hg Vacuum – 31 bar g (450 psig)*	**Elastomers**	FKM, EPDM, FEPM, FFKM
Temperature	-55°C – 300°C (-67°F – 570°F)	**Metals**	EN 1.4401 (316SS) *Other Metallurgies available on request*
Speed	25 m/s (5000 fpm)	**Springs**	EN 2.4819 (Alloy C-276)

Standards and Approvals: ISO-3069C, ASME B73.1, ASME B73.2, NSF61

**Seal pressure capabilities are dependent on the fluid sealed, temperature, speed, and seal face combinations. For operation outside the limits and additional materials consult Chesterton Mechanical Seal Engineering.*

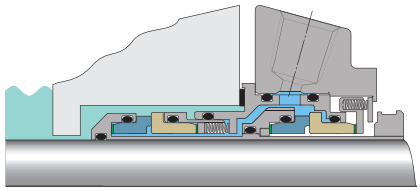
One optimized sealing concept for plant-wide standardization

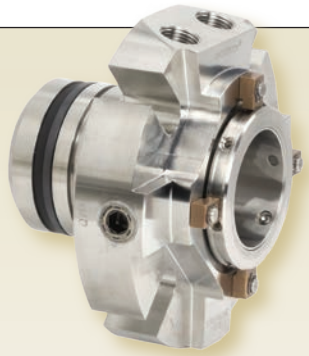
- ViewIn™ enabled RFID seal tracking technology which identifies the serial number
- Full-featured universal gland with quench/drain and multi-port flush
- Quick to repair with innovative cassette feature

S20

High Performance Double Cassette Seal

A unique, modular cassette that combines advanced seal technology with flexibility in maintenance and repair.





ViewIn™ Chesterton® Technology

Operating Conditions		Materials	
Size	25 mm – 120 mm (1.000" – 4.750")	**Faces**	CB, SSC, TC
Pressure	711 mm (28") Hg Vacuum – 31 bar g (450 psig)* 17 bar g (250 psig) inboard differential*	**Elastomers**	FKM, EPDM, FEPM, FFKM
Temperature	-55°C – 300°C (-67°F – 570°F)	**Metals**	EN 1.4401 (316SS) *Other Metallurgies available on request*
Speed	25 m/s (5000 fpm)	**Springs**	EN 2.4819 (Alloy C-276)

Standards and Approvals: ISO-3069C, ASME B73.1, ASME B73.2

**Seal pressure capabilities are dependent on the fluid sealed, temperature, speed, and seal face combinations. For operation outside the limits and additional materials consult Chesterton Mechanical Seal Engineering.*

One optimized sealing concept for plant-wide standardization

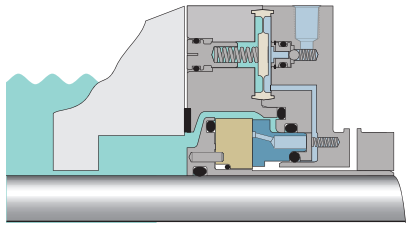
- ViewIn™ enabled RFID seal tracking technology which identifies the serial number
- Quick to repair with innovative cassette feature

GAS SEALS

4400

Double Concentric Gas Seal

Advanced technology made simple in a gas seal design. The 4400 is a seal for all purposes and provides for an easy gas seal upgrade option. It is an ideal choice for upgrading under-performing, liquid lubricated seals to high performance, non-contacting operation.



Operating Conditions		Materials	
Size	25 mm – 90 mm (1.000" – 3.625")	**Faces**	CB, SSC
Pressure	711 mm (28") Hg Vacuum – 20 bar g (300 psig)*	**Elastomers**	FKM, EPDM, FEPM, FFKM
Temperature	-55°C – 300°C (-67°F – 570°F)	**Metals**	EN 1.4401 (316SS) *Other Metallurgies available on request*
Speed	8 m/s (1500 fpm), 25 m/s (5000 fpm)	**Springs**	EN 2.4819 (Alloy C-276)

Standards and Approvals: ISO-3069, ASME B73.1, ASME B73.2, ACS

**Seal pressure capabilities are dependent on the fluid sealed, temperature, speed, and seal face combinations. For operation outside the limits and additional materials consult Chesterton Mechanical Seal Engineering.*

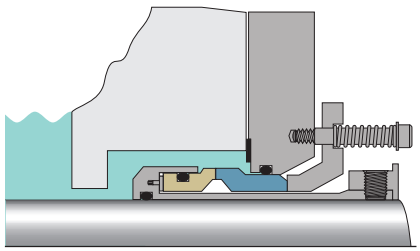
- Offers low cost-of-ownership for a broad range of applications
- Advanced technology that is easy to install and operate
- Exclusive In-Gland Control System eliminates the need and expense of an external gas panel
- Eliminates atmospheric emissions

SLURRY SEALS

170

Slurry Single Cartridge Seal

Engineered to operate in harsh, heavy consistency slurry environments and to eliminate costly external seal flushes in the majority of applications.



Operating Conditions		Materials	
Size	25.5 mm – 228.6 mm (1.000" – 9.000")	**Faces**	SSC, TC
Pressure	711 mm (28") Hg Vacuum – 17 bar g (250 psig)*	**Elastomers**	FKM, EPDM, FEPM, FFKM
Temperature	-55°C – 300°C (-67°F – 570°F)	**Metals**	EN 1.4401 (316SS), EN 1.4462 (A2205) *Other Metallurgies available on request*
Speed	11 m/s (2200 fpm)	**Springs**	EN 2.4819 (Alloy C-276)

**Seal pressure capabilities are dependent on the fluid sealed, temperature, speed, and seal face combinations. For operation outside the limits and additional materials consult Chesterton Mechanical Seal Engineering.*

- Runs longer in heavy abrasive slurries without the need for flush or quench water
- Stationary springs located outside the seal for maximum reliability
- Easy to maintain
- Clamp ring available for ease of installation

SEAL SUPPORT SYSTEMS

SpiralTrac®

Environmental Controller

When used with Chesterton mechanical seals, SpiralTrac Environmental Controllers greatly enhance seal reliability by effective removal of solids and improved cooling of the stuffing box.

Version		Materials
F (Split)	Greatly reduced flush	EN 1.4401 (316SS)
N	Reduced/no flush in non-fibrous fluids	416SS
D	Reduced/no flush in fibrous fluids	PTFE - Glass-Filled
P (Split)	Packing version	PTFE - Carbon Graphite-Filled
C	With drain for crystallizing media	Bronze
Arrangements		EN 3.7035 (Ti)
Type A	Counter bore fit	AWC800 - Red Polymer
Type B	Bore fit	EN 2.4360 (Monel® K400)
Type S	Axial split	
Type I	Impeller side installation	
Type E	Externally keyed	

- Extends seal reliability in most rotating equipment applications
- Reduces cost of flushing in abrasive applications
- Fits all rotating equipment

Intelli-Flow™ HT

Water Saver

Features a thermally activated valve that automatically drains hot barrier fluid (only when necessary) to keep double seals running cool and reliable. Valve opening temperature preset to work with S20 Seals.

Operating Conditions	
Pressure	20 bar g (300 psig)
Temperature	125°C (250°F)
Temperature Set Point	80°C (176°F)
Connections	1/4 NPT
Materials	EN 1.4401 (316SS)

- Clean-in-place
- Maintenance-free
- Easy to install
- Up to 95% water savings compared to open barrier fluid supply

SEAL SUPPORT SYSTEMS

BSS

Buffer Support System for Double Seals

Plan 52 Non-Pressurized Tank. Easy to install, complete, non-pressurized solution for reliable operation of double seals.

Technical Data	
Tank Capacity	28 l (7.4 gal) 12 l (3.2 gal) Maximum 9 l (2.4 gal) Operating
Tank Operating Pressure	17 bar (250 psi) Maximum
Tank Material	EN 1.4307 (304L)
Cooling Capacity	400 W Tank Only 1.5 kW with Cooling Coil 4 kW with Cooling Coil and Circulation Pump
Auxiliary Connection	1" x 2" NPT and 1" x 1/2" NPT

- Pre-configured system; simplified ordering process
- Simple maintenance of fluid level

PSS

Pressurized Support System for Double Seals

Standard Plan 53A Tank. Easy to install, complete, pressurized solution for reliable operation of double seals.

Technical Data	
Tank Capacity	28 l (7.4 gal) 12 l (3.2 gal) Maximum 9 l (2.4 gal) Operating
Tank Operating Pressure	17 bar (250 psi) Maximum
Tank Material	EN 1.4307 (304L)
Cooling Capacity	400 W Tank Only 1.5 kW with Cooling Coil 4 kW with Cooling Coil and Circulation Pump
Auxiliary Connection	1" x 2" NPT and 1" x 1/2" NPT

- Preconfigured system; simplified ordering process
- Simple maintenance of fluid level
- Standard Plan 53A tank

WSS

Water Saving System for Double Seals

Plan 53P Automatic Water Support Tank. Easy to install, complete solution with minimal water consumption for reliable operation of double seals.

Technical Data	
Tank Capacity	28 l (7.4 gal) 12 l (3.2 gal) Maximum 9 l (2.4 gal) Operating
Tank Operating Pressure	17 bar (250 psi) Maximum*
Tank Material	EN 1.4307 (304L)
Cooling Capacity	400 W
Auxiliary Connection	1" x 1" NPT and 1" x 1/2" NPT

*Pressure regulator limit: 125 psi.

- Maintenance-free: automatic level and pressure management
- Minimizes seal support water usage
- Pre-configured system and options for a simplified ordering process

Mechanical Seals Product Selection Guide

Please contact your local Chesterton Representative to help you select the best product for your application.

Family	Product	Equipment Type	Fit			Duty						
			ISO-3069-S	ISO-3069-C	ASME B73.1 and 73.2	Light Duty	Large Equipment	Solids	Crystallizing Media	Emissions Control	Corrosive Media	High Temperature
Split Seals Why disassemble the equipment? Chesterton's split mechanical seals offer a reliable sealing solution —reducing maintenance costs for larger equipment that is difficult and time-consuming to disassemble.	442 and 442C	Pumps, Agitators, and Mixers	✓		✓	✓+	✓++	✓+*	✓		✓	✓
Cartridge Seals Cartridge seals have been designed to be rugged performers in sealing applications across industry segments. They are proven performers for plant-wide standardization, providing maximum reliability.	1810	Pumps	✓	✓	✓	✓+	✓+	✓+	✓+		✓+	
	2810	Pumps	✓	✓	✓		✓	✓+	✓++	✓++	✓++	✓++
	1510	Pumps	✓	✓	✓	✓++	✓	✓	✓		✓	
Cassette Seals All the wearing parts are contained in a single, replaceable cassette unit. Single and double cassettes share a common, universal gland. Repair becomes a matter of exchanging cassettes, making it faster and easier while significantly reducing costs associated with repair.	S10	Pumps	✓	✓	✓	✓+	✓	✓	✓+		✓+	✓
	S20	Pumps	✓	✓	✓		✓	✓+	✓+	✓++	✓+	✓++
Gas Seals Chesterton gas seal technology decreases performance limitations common to double liquid cartridge seals. Help reach your plant reliability goals with the addition of simple gas seal technology.	4400	Pumps	✓	✓	✓		✓			✓++	✓	✓++
Slurry Seals A unique, non-clog design extends the life of a slurry pumps in tough slurry sealing applications.	170	Pumps		✓	✓		✓+	✓++	✓+		✓+	
Seal Support Systems Improve seal performance levels by enhancing the environment in which they operate. These products help meet your operation's MTBR goals.	Spiral-Trac®	Pumps, Agitators, and Mixers	✓	✓	✓	✓+	✓++	✓+	✓		✓	✓
	Intelli-Flow™	Pumps, Agitators, and Mixers				✓	✓	✓	✓	✓	✓	✓
	BSS Tank	Pumps, Agitators, and Mixers	Double Seal Support System									
	PSS Tank											
	WSS Tank											

*Solids handling capabilities enhanced by use of SpiralTrac split environmental controller.

✓++ = Best Choice ✓+ = Better Choice ✓ = Good Choice

Chesterton Connect™ System

Simplified Pressure, Vibration, and Temperature Equipment Monitoring System

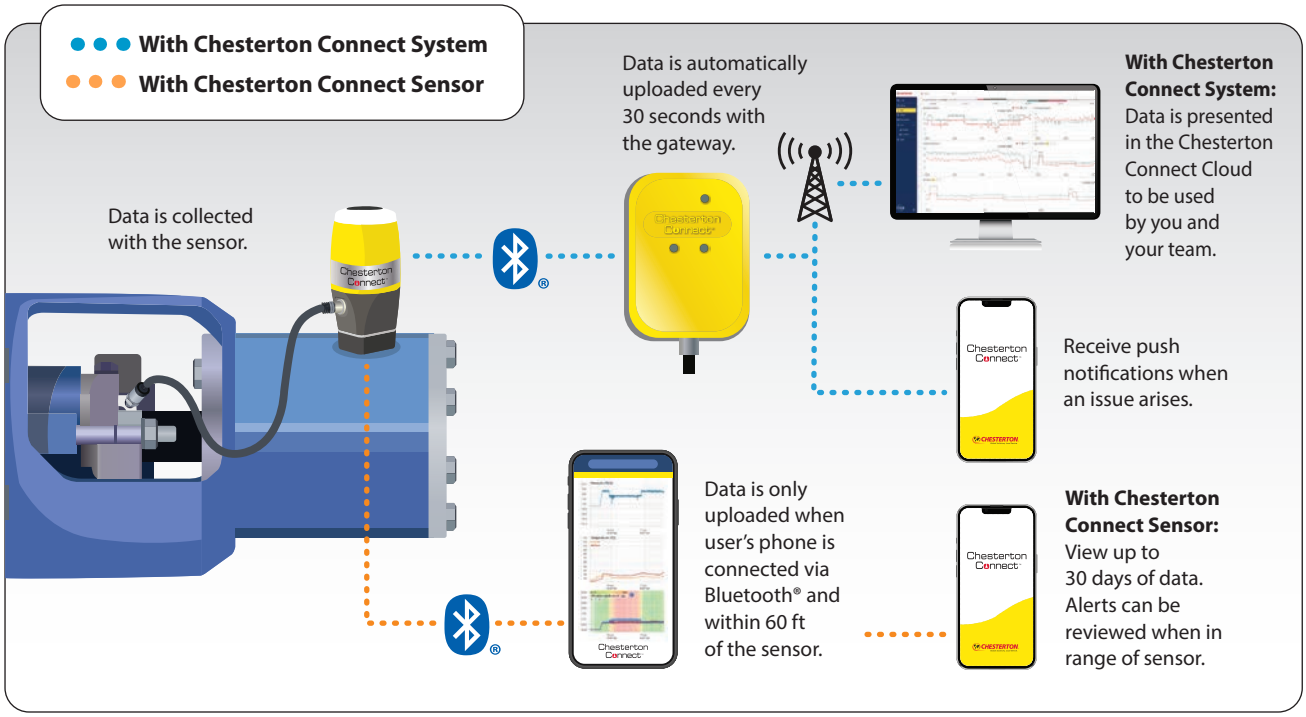
The Chesterton Connect System is a simplified cloud-based equipment monitoring solution that provides 24/7 visibility of an equipment's condition. This real-time equipment monitoring can help you to correlate and identify anomalies early to make operational improvements that increase reliability and minimize unplanned downtime.

The Chesterton Connect System is geared towards pumps and sealing systems but can also be used to monitor vibration on other rotating equipment such as motors and gearboxes.

Chesterton Connect System makes it easy to safely monitor:

- Process temperature
- Process pressure
- 3-Axis vibration (Acceleration, Peak, and Velocity RMS)
- Surface temperature
- Replaceable battery

Chesterton Connect System Facilitates 24/7 Remote Condition Monitoring of Pumps and Rotating Equipment

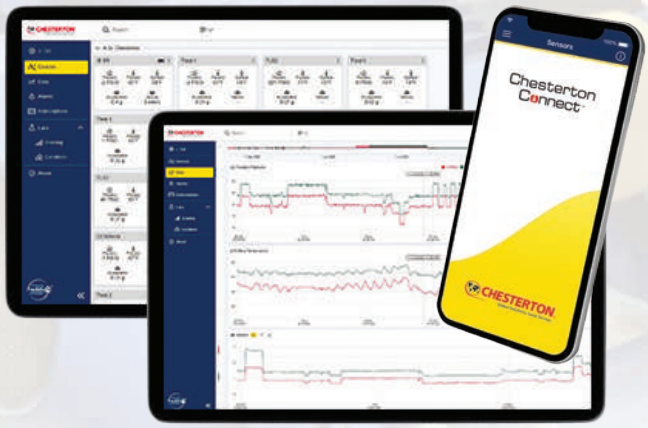


Chesterton Connect™ Cloud

For Early Detection and Reliable Automated Equipment Monitoring

Get full-system connectivity with the cloud

- Receive real-time performance notifications, alerts, and automated reports
- View overall performance and compare and correlate data for multiple pieces of equipment
- Explore variances and trends or compare against published standards
- Add notes for to-do items to make data actionable



Hardware Technical Specifications

Chesterton Connect™ Sensor Operating Parameters

Pressure sensor limit	-1 bar g – 68 bar g (-14.7 psig – 1000 psig)
Temperature limit (body)	-20°C – 85°C (-4°F – 185°F)
Temperature limit (sensor)	-20°C – 125°C (-4°F – 257°F)
Vibration sensor	3-axis accelerometer ±16g
Battery	3.6V lithium thionyl chloride battery (replaceable)
Fitting	1/4" NPT 17-4 PH connection
Mount	Magnetic mounting base (additional options sold separately)
Certifications	FCC, IC, RoHS, IP66, NSF61, ACS, CE

Hazardous Areas Option

Certifications

ATEX/IECEx	Ⓔx II 1 G Ex ia IIB T4 Ga Ⓔx II 1 D Ex ia IIIB T200 166°C Da
Zone	Class I Zone 0 AEx ia IIB T4 Ga Zone 20 AEx ia IIIB T166°C Da
Division	Class I Div 1 Groups C D T4 Class II Div 1 Groups F G T4
Rated Temp	-20°C ≤ Ta ≤ +85°C

Part numbers: Standard Sensor 403700, Intrinsically Safe Sensor 403699

Chesterton Connect™ Gauge Operating Parameters

Pressure	-1 bar g to 68 bar g (-14.7 psig – 1000 psig)
Temperature	-20°C – 85°C (-4°F – 185°F) with the CR2050 battery
Power	Battery CR2050 (replaceable)
Fitting	1/4" NPT
Material	17-4PH and polycarbonate enclosure
Certifications	IP66/IP67, FCC, CE, RoHS
Pressure Accuracy	±0.25%
Temperature Output Accuracy	±3°C
Wireless	Bluetooth® 4.0

Part number: 418217

Chesterton Connect™ Gateway Operating Parameters*

Temperature	Operating range -40°C – 80°C (-40°F – 176°F)
Power	Input DC 5V 2A; Power supply 120 – 240VAC
Wireless	Bluetooth® 5.0 Single-mode; Category LTE M wireless cellular network
Enclosure Rating	IP66 (Power adapter is not IP66 rated)
Sensor Range	Up to 182 m (600 ft)
Sensor Support	Up to 50 Chesterton Connect devices

Hazardous Areas Option

Certifications

Ⓔx II	3 (3) G Ex ec [ic Gc] nR IIC T6 Gc 3 D Ex ec ic tc IIIC T85°C Dc
cMETus	Class I, Div 2, Groups A - D Class II, Div 2, Groups F - G
cMETus	Class I, Zone 2 AEx ec ic nR IIC T6 Gc Class II, Zone 22 AEx ec ic tc IIIC T85°C Dc -40°C <= Tamb <= 60°C

Part numbers: Standard Gateway 415198, Explosion Proof Gateway 414494

*Internet connectivity required.

Packing Product Selection Guide

Please contact your local Chesterton Representative to help you select the best product for your application.

		Media				Duty			Key Benefits	
Family	Product	Water	Chemicals	Slurries	Food and Beverage	High Temperatures	pH	High Speeds	Reliability	Economical
Rotary Packings	DualPac® 2211	✓++	✓	✓++		✓+	✓+	✓+	✓++	✓+
	DualPac® 2212	✓++	✓	✓++		✓+	✓+	✓	✓++	✓
	370	✓++	✓++	✓		✓++	✓+	✓++	✓++	✓
	377	✓+	✓++	✓+		✓	✓+	✓++	✓++	✓+
	1760	✓++	✓++	✓++		✓++	✓++	✓++	✓++	✓
	477-1*	✓++	✓++	✓+		✓++	✓++	✓++	✓+	✓++
	1725A	✓		✓+	✓++	✓+	✓++	✓+	✓+	✓
	1727	✓++	✓+	✓+		✓	✓+	✓	✓++	✓
	1730 / 1730SC	✓++	✓+	✓++		✓+	✓+	✓	✓++	✓+
	1830-SSP	✓++	✓++	✓++		✓+	✓++	✓++	✓++	✓++
	GraphMax™*	✓++	✓++	✓		✓++	✓++	✓++	✓++	✓+
	CMS 2000	✓++			✓++		✓	✓	✓+	✓++
Environmental Enhancers	SuperSet™	✓	✓	✓++		✓			✓++	✓

		Media			Key Benefits		Equipment		
Family	Product	Steam	Chemicals	Emissions	Reliability	Economical	Control Valves	Block Valves	Motor Operating Valves
Stationary Packings	1600	✓+	✓++	✓	✓+	✓+		✓++	✓++
	1601	✓++	✓+		✓++	✓+		✓++	✓++
	1622	✓	✓++	✓++	✓++	✓+		✓++	✓++
	1724	✓	✓++	✓+	✓++	✓	✓++	✓+	✓+
	5800	✓++	✓++		✓++	✓+	✓++		✓++
	GraphMax™*	✓	✓+	✓	✓+	✓+		✓	✓
	477-1*	✓+	✓+		✓	✓++	✓+	✓	✓+

✓++ = Best Choice	✓+ = Better Choice	✓ = Good Choice

*Denotes packing can be used in either pump or valve applications.

DualPac® Technology

Combining Two Complementary Materials in One Packing

By inventing a new braiding process, Chesterton has successfully combined two materials in a unique way allowing easier expansion under gland load, creating better shaft contact, and increasing leak control even in worn equipment. Both lab and field tests have shown that DualPac packing requires fewer gland adjustments, resulting in drastically extended life in severe service applications.

DualPac® Technology

- Significantly fewer gland adjustments than traditional packing
- Simplifies your inventory: you can use the same packing for end rings and sealing rings
- Better utilization of gland load in sealing configuration
- Requires less overall maintenance
- Minimizes shaft scoring

DualPac® 2212 Packing

High Performance Multi-Purpose Packing

DualPac 2212 packing combines a burn-resistant material on the packing's shaft side with a highly resilient outer fiber.

Technical Data	
Material	Synthetic fibers with lubricants and blocking agents
Applications	Demanding rotating equipment such as agitators, mixers, stock pumps, sludge pumps, slurry pumps, and process pumps.
Available Sizes	6.4 mm – 25.4 mm (1/4" – 1")
Pressure Limit	35 bar g (500 psig)
Shaft Speed	10 m/s (2000 fpm)
Temperature Limit	260°C (500°F)
Chemical Resistance	pH 3 – 11

DualPac® 2211 Packing

Severe Slurry Packing

DualPac 2211 packing provides all of the performance advantages of ePTFE and aramid without the compromises of traditional mixed fibers packing.

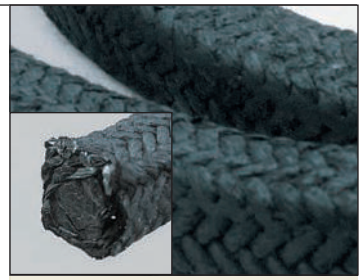
Technical Data	
Material	ePTFE and aramid
Applications	Slurry processing applications such as ore slurries, mineral handling, and dewatering tailing pumps.
Available Sizes	8 mm – 25.4 mm (5/16" – 1")
Pressure Limit	20 bar g (300 psig)
Shaft Speed	10 m/s (2000 fpm)
Temperature Limit	260°C (500°F)
Chemical Resistance	pH 3 – 11

PUMP, MIXER, AND AGITATOR PACKING

370

Heat-Dissipating, High-Grade Carbon Yarn Packing

A premium carbon yarn, heat-dissipating pump packing for maximum plant-wide reliability.



Technical Data	
Material	High quality, carbon yarn incorporated with particles of pure graphite, high-temperature tolerant oils, and molybdenum disulfide
Applications	Pulpers, stock pumps, agitators, fan pumps, vacuum pumps, condensate pumps, screw feeders, and refiners
Available Sizes	3.2 mm – 38 mm (1/8" – 1 1/2")
Pressure Limit	35 bar g (500 psig)
Shaft Speed	18 m/s (3600 fpm)
Temperature Limit	315°C (600°F) steam
Chemical Resistance	pH 0 – 14 except oleum, fuming nitric acid, aqua regia, and fluorine

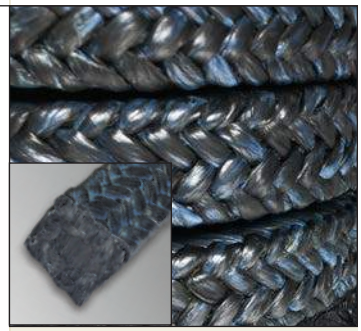
Note: Can be certified to less than 200 ppm leachable chloride. Consult factory for specific chemical assay.

- Designed for high-temperature seal conditions
- Fast break-in
- Controls leakage with minimal friction
- Reduced leakage and flushing
- PTFE-free

377 CarbMax™

Superior Carbon Fiber Packing

Chesterton 377 CarbMax™ packing combines one of the highest carbon-content fiber yarns using the latest formulations with the newest blocking agents. This yarn provides the enhanced strength and toughness of a continuous multi-filament carbon fiber with additional increased durability.



Technical Data	
Material	Continuous filament carbon yarn with a non-silicone proprietary lubricant
Applications	Digesters, feeders, impregnation and steaming vessels in the pulp and paper industry, centrifugal pumps, mixers, agitators, and other rotating equipment in a variety of industries
Pressure Limit	34.5 bar g (500 psig)
Shaft Speed	15 m/s (3000 fpm)
Temperature Limit	288°C (550°F)
Chemical Resistance	pH 1 – 14 (except strong oxidizers)*

**Consult Chesterton MP Application Engineering for concerns on compatibility*

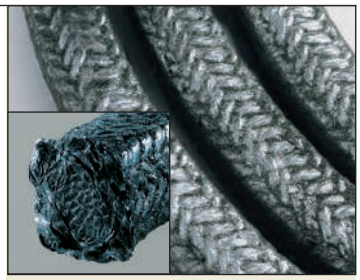
- Densely and tightly braided strong resistance to abrasives
- High carbon content for tensile strength
- Low relaxation reduces maintenance
- High thermal conductivity ensures extended packing life
- High chemical resistance

PUMP, MIXER, AND AGITATOR PACKING

477-1

Carbon Fiber Packing

A carbon yarn formulation combined with superior blocking agents for greater flexibility and sealing.



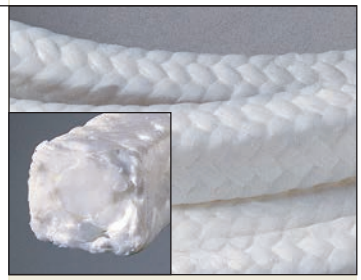
Technical Data	
Material	Low modulus carbon fiber
Applications	Virtually all pumps and valves against most solvents, gases, and other liquids
Available Sizes	3.2 mm – 25.4 mm (1/8" – 1")
Pressure Limit	250 bar g (3600 psig) valves; 14 bar g (200 psig) pumps
Shaft Speed	15 m/s (3000 fpm)
Temperature Limit	565°C (1050°F)
Chemical Resistance	pH 0 – 13 except with strong oxidizers

- Strong, yet pliable, continuous filament carbon yarn
- Unique inorganic blocking agent inhibits gas/liquid penetration
- Molybdenum-based corrosion inhibitor protects against stem pitting

1725A

Food Process Packing

A premium, expanded PTFE yarn with a specially designed lubricant to provide superior sealing capability in rotating equipment.



Technical Data	
Material	Expanded PTFE yarn
Applications	Chemical- and food-grade rotating equipment except for strong oxidizers and molten alkali metals
Available Sizes	6.4 mm – 25.4 mm (1/4" – 1")
Pressure Limit	22 bar g (325 psig)
Shaft Speed	9 m/s (1800 fpm)
Temperature Limit	Minimum: -29°C (-20°F) Maximum: 232°C (450°F)
Chemical Resistance	pH 0 – 14

- Meets USDA requirements for minimal food contact
- Meets FDA requirements 21 CFR 178.3297, 21 CFR 177.2800, 21 CFR 177.1550
- Approved by NSF/ANSI and ACS standards for use in drinking water systems
- Completely inert to most materials
- Handles high shaft speeds

PUMP, MIXER, AND AGITATOR PACKING

1730 / 1730SC

1730: Glaze-Resistant General Service Packing

A superior, user-friendly, pump packing that drastically reduces the chance of glazing the packing and damaging the shafts.

1730SC: Silicone Core Packing

Chesterton 1730SC packing combines a resilient, silicone rubber core with the heat-resistant fiber of Chesterton 1730 packing.

Technical Data	
Material	Heat-resistant fibers with lubricants and blocking agents
Applications	Black liquor pumps, chemical pumps, agitators, mixers, blenders, washers, pulpers
Available Sizes	1730: 6 mm – 25.4 mm (1/4" – 1") 1730SC: 9.5 mm – 25.4 mm (3/8" – 1")
Pressure Limit	28 bar g (400 psig)
Shaft Speed	10 m/s (2000 fpm)
Temperature Limit	1730: 290°C (550°F), 1730SC: 230°C (450°F)
Chemical Resistance	1730: pH 1 – 13, 1730SC: pH 2 – 12

1730

- Easy and fast break-in
- Abrasion-resistant, while non-scoring
- Good chemical resistance
- Glaze-resistant
- User-friendly

1730SC

- Rugged, easy-to-use, general service packing
- Withstands radial shaft motion and vibration
- Handles shaft/bore eccentricity

1760

Chemical Packing

Strong and dense PTFE fiber packing for chemical applications with the heat dissipating properties of graphite.

Technical Data	
Material	Graphite coated PTFE yarn with engineered break-in lubricants
Applications	High shaft speed, and low friction applications
Available Sizes	3.2 mm – 25.4 mm (1/8" – 1")
Pressure Limit	17 bar g (250 psig)
Shaft Speed	18 m/s (3600 fpm)
Temperature Limit	260°C (500°F)
Chemical Resistance	pH 0 – 14

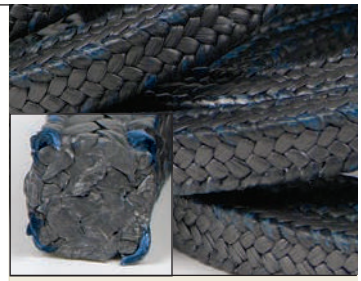
- Dense braid ensures excellent leakage control and helps prevent solid embedment
- Excellent chemical resistance
- High shaft speed

PUMP, MIXER, AND AGITATOR PACKING

1830-SSP

Slurry Packing

Designed with a hybrid yarn and combining advanced, expanded, graphite PTFE yarn with carbon yarn reinforcement.



Technical Data	
Material	Carbon-reinforced, expanded, graphite PTFE
Applications	Bauxite slurries, bottom ash slurry pumps, mineral handling slurries, tailings pumps, and other slurry processing applications
Available Sizes	8.0 mm – 25.4 mm (5/16" – 1")
Pressure Limit	28 bar g (400 psig)
Shaft Speed	18 m/s (3600 fpm)
Temperature Limit	260°C (500°F)
Chemical Resistance	pH 0 – 14 with exception of strong oxidizers in the 0 – 2 pH range

- Developed to meet rigid demands of slurry sealing applications
- Excellent chemical resistance
- Low friction, less heat generation, non-abrasive, saves shafts and shaft sleeves

CMS 2000

Injectable Packing System

Chesterton CMS 2000 Injectable Packing System is an advanced, flushless, stuffing box leakage control sealant made of high-purity, reinforced fiber.

Technical Data	
Applications	Stock pumps, white water pumps, river water pumps, condensate pumps, water treatment pumps, and also rotating equipment applications in the food processing and handling industry.
Pressure Limit	14 bar g (200 psig) White 7 bar g (100 psig) FP
Shaft Speed	10 m/s (2000 fpm) White 6 m/s (1200 fpm) FP
Temperature Limit	205°C (400°F)
Chemical Resistance	pH 1 – 13 White not recommended for oxidizers, fluorine, chlorine trifluoride and related compounds, and molten alkali metals pH 0 – 14 FP

- Eliminates flush and reduces leakage to insignificant levels
- Will not score shaft sleeves
- Effective with worn, fretted sleeves
- Never disassemble to repack again

Also available: Online Injector

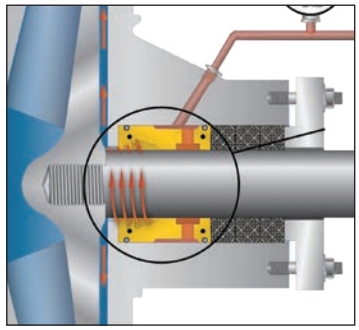
The Online Injector can be attached directly to the lantern ring inlet port with a fitting that allows for topping off of the CMS 2000 as needed—without the need to carry additional equipment.

PUMP, MIXER, AND AGITATOR PACKING

SuperSet™

Flush Management Combination Set

Chesterton performance pump packing combined with the patented SpiralTrac® environmental controller increases pump uptime by maximizing packing life and reducing sleeve wear with innovative technology.



- Increases equipment MTBR
- Reduces shaft sleeve wear

Versions Available	Applications
DualPac® 2211 SuperSet	Highly aggressive slurry processing applications
DualPac® 2212 SuperSet	High performance, multi-purpose packing
1730 SuperSet	General service in slurries and clean fluids
1400R SuperSet	Worn equipment, high-speed and high-temperature applications
1760 SuperSet	Highly aggressive chemical environments oxidizers in the 0 – 2 pH range
370 SuperSet	High performance, high-temperature applications
GraphMax™	High-temperature and applications needing extrusion resistance

The AMPS™ System

The AMPS System: Automated Readjustments

The AMPS Unit automatically keeps a constant force on the packing at all times while the pump is in service. This process, known as Active Loading, maintains a uniform and consistent load that eliminates manual packing adjustments and maximizes performance and packing life.

The AMPS System is made of two components that work together to automatically and efficiently seal packed rotating equipment.

AMPS Unit

- Piston actuators
- Single or dual design
- Attaches to existing box glands and bolts
- Provides constant energizing force to packing

Control Unit

- Single-point adjustment of pressure regulator
- Mounted remotely at a convenient location
- Compressed air and water powered system

- Keeps leakage low
- Reduces maintenance
- Improves sealing performance
- Increases operator safety
- Remote gland load management

VALVE PACKING

1622

Emission Control Packing for Block Valves

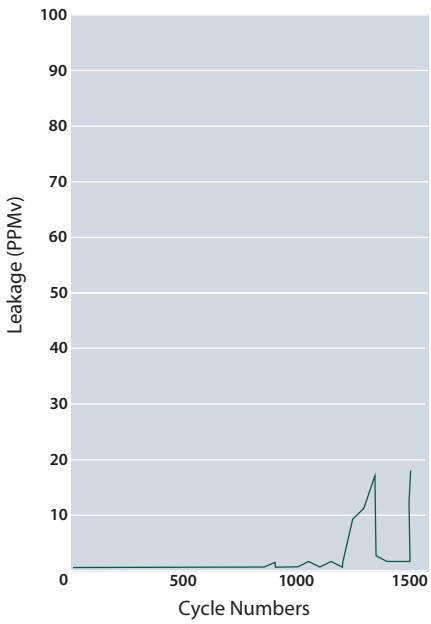
Low E Packing for Exceptional Emissions Control

Chesterton 1622 Emissions Packing is designed to minimize valve emissions and exceeds current emissions requirements for the refinery, petrochemical, and chemical industries. 1622 packing has received both the 2010 National Pollution Prevention Roundtable MVP[2] and the 2011 Vaaler Award for emission and pollution reduction technology.

Guaranteed* to seal less than 100 ppm for 5 years per EPA method 21.

Independently tested and proven to provide an average <2 ppm

In API 622 testing, 1622 packing had an average emissions rate of <2 ppm and a onetime maximum of 18 ppm. These extremely low rates were achieved without gland adjustments for 1510 strokes and five temperature cycles. Now you can easily meet emissions compliance for block valves utilizing Chesterton 1622 Emissions Packing.



Yarmouth Research and Technology, www.yarmouthresearch.com

Applications

Light and heavy hydrocarbons, VOCs, VHAPs, steam, and most non-oxidizing chemicals.

Technical Data	
Material	Nickel alloy, wire-reinforced, flexible graphite packing with special blocking agents
Available Sizes	3.2 mm – 25.4 mm (1/8" – 1")
Pressure Limit	345 bar g (5000 psig)
Temperature Limit	Max 650°C (1200°F) steam 450°C (850°F) oxidizing atmosphere
Chemical Resistance	pH 0 – 14 except in strong oxidizers

- Extremely low emissions
- Fire safe to API 607
- Single spool packing
- High-pressure capability
- API 622 3rd edition tested and qualified
- API 624 tested a qualified for numerous valve OEMs
- ChevronTexaco Standard tested and passed
- Valve packing emission warranty
- ISO 15848-1 passed CO^2 at 200˚C to the tightness class BH
- ISO 15848-1 passed CO^2 at 400˚C to the tightness class BH

*conditions apply

Chesterton® Solutions for Stationary Equipment

1 ***Tools***

For proper installation and removal of stem packing, use **tamping tools, packing cutters, and packing extractors** to minimize errors and equipment damage during valve repacks.

2 ***Gasketing***

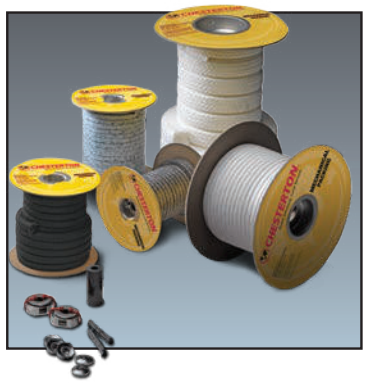
Chesterton offers a variety of **joint sealing solutions** where we apply the best available technology to your critical flanged joints, and provide recommendations for your specific applications. **Form-in-place, compression, and semi-metallic gaskets** address most process flanges.

3 ***Thread Lubrication***

Chesterton anti-seize assists in accurate bolt load and resists bolt/nut seizing for easy adjustment and disassembly on flanges, bonnets, and packing followers. These products achieve consistent and correct bolt tensioning.

4 ***ARC Industrial Coatings***

Rebuild, restore, and coat pipe linings, flanges, valve bodies, and discs with **ARC Industrial Coatings** to help resist corrosion and/or abrasion from process media and from the effects of cavitation on valve internals.



5 ***Valve Stem Sealing***

Improve equipment reliability, meet VOC emissions requirements, and lower the total cost of valve ownership with **Chesterton valve stem sealing solutions**. Low emissions, steam, and chemical-resistant packings reduce valve maintenance and provide years of operation.

VALVE PACKING

GraphMax™

Interbraided Exfoliated Graphite Packing for Pumps and Valves

Structurally reinforced graphite packing for demanding applications to dramatically improve the packing's resistance to extrusion.

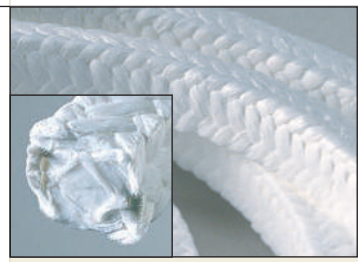
Technical Data	
Material	Interbraided graphite packing with carbon yarns incorporated in the braided structure in a way that allows a very tight braid
Applications	Boiler feed, condensate, hot water, heater drains, and other high demanding pump applications. Also can be used on valves in hard to seal service.
Available Sizes	9.5 mm – 25.4 mm (3/8" – 1")
Pressure Limit	206 bar g (3000 psig) valves; 28 bar g (400 psig) pumps
Shaft Speed	17 m/s (3400 fpm)
Temperature Limit	Minimum -240°C (-400°F) Maximum 650°C (1200°F) steam service
Chemical Resistance	pH 0 – 14 except oleum, fuming nitric acid, and aqua regia

- Exclusive construction for plant-wide use in pumps and valves
- Maintains structural integrity for easy removal
- Carbon fiber-reinforced graphite strands provide maximum extrusion resistance and high-pressure capability

1724

High Quality, Interbraided PTFE Valve Packing

Chesterton 1724 is a unique PTFE valve packing material specially treated with protective lubricants that will not harden and deteriorate in a wide range of chemical applications.



Technical Data	
Material	Non-hardening, high grade PTFE yarn with PTFE coating
Applications	Block valves, motor operated valves, control valves
Available Sizes	3.2 mm – 25.4 mm (1/8" – 1")
Pressure Limit	206 bar g (3000 psig)
Temperature Limit	260°C (500°F)
Chemical Resistance	pH 0 – 14

- Non-hardening
- Treated with protective lubricants
- Extrusion resistant
- Excellent chemical resistance

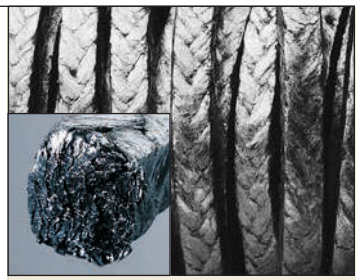
VALVE PACKING

1600

Advanced, Reinforced Exfoliated Graphite Packing

Off the spool nickel alloy wire mesh graphite packing with blocking agents for multi-service performance.

Technical Data	
Material	Nickel alloy wire-reinforced flexible graphite packing
Applications	Block valves, as an end ring on control valves, motor operated valves and sootblowers
Available Sizes	3.2 mm – 25.4 mm (1/8" – 1")
Pressure Limit	580 bar g (8400 psig)
Temperature Limit	650°C (1200°F) steam 455°C (850°F) oxidizing environment
Chemical Resistance	pH 0 – 14 except in strong oxidizers



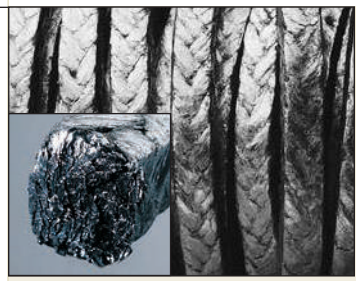
- Extreme high-pressure capability
- Remains flexible in service
- Excellent sealing in many services

1601

Reinforced Graphite Steam Service Packing

A nickel alloy wire mesh graphite packing designed for the power industry for superior leakage control and high performance without PTFE lubrication.

Technical Data	
Material	Nickel alloy wire-reinforced, flexible graphite packing
Applications	All isolation and steam valves
Available Sizes	3.2 mm – 25.4 mm (1/8" – 1")
Pressure Limit	345 bar g (5000 psig)
Temperature Limit	650°C (1200°F) steam 455°C (850°F) oxidizing environment
Chemical Resistance	pH 0 – 14 except in strong oxidizers



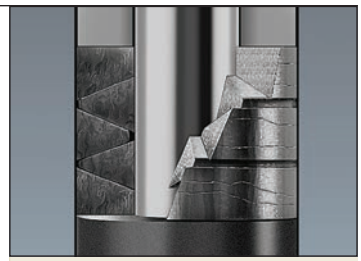
- Proven in high-pressure, high-temperature steam service
- A corrosion inhibitor is applied to deter stem pitting
- PTFE-free

VALVE PACKING

5800

Die-Formed Graphite Wedge Low Friction Sealing Rings

5800 is designed to drastically lower valve stem friction while maintaining excellent sealabilty in high-temperature applications and requires minimum gland loads.



Technical Data	5800
Material	Die-formed, high-purity graphite
Applications	Nuclear and process industry services to seal MOVs, AOVs, and steam services.
Pressure Limit	210 bar g (3000 psig) no end ring, 310 bar g (4500 psig) 1600 end ring*
Temperature Limit	2760°C (5000°F) in non-oxidizing atmospheres, 430°C (800°F) in oxidizing atmospheres
Chemical Resistance	pH 0 – 14

** When combining 5800 with 1600 end rings the maximum temperature limit is:*
650ºC (1200ºF) for non-oxidizing atmospheres;
430ºC (800ºF) in oxidizing atmospheres

- Dramatically improves valve stem response
- Excellent chemical and temperature resistance

VALVE LIVE LOADING

Valve Live Loading

Engineered valve sealing solution for improved reliability and ease of maintenance.

Technical Data	Name	Description
	**Cartridge Live Loading Assembly (CLL)**	The stainless steel outer guide makes packing installation easier and more reliable by using spring deflection as a reference of gland load. The assembly also gives more travel to the packing set, allowing it to handle more thermal cycles without leakage. CLLs provide an easy visual indicator to reapply and maintain proper load to the packing set.
	**5150 Live Loading Assembly**	5150 live loading assemblies in conjunction with applied torque dramatically increase bolt travel due to deflection of the disc springs. The assemblies reduce valve leakage due to thermal cycling and packing wear.
	**5300**	A square graphite precise density sealing ring with a low minimum gland load that creates a seal without large torque valves and friction. 5300 has a corrosion inhibitor to deter stem pitting.
	**5100 Carbon Spacers**	5100/5101 is a 99% carbon spacer that is used to retrofit deep stuffing boxes to reduce the number of rings to 5 in a valve. It is made to highly engineered tolerances to avoid scoring of the valve stem.

- Automatic gland adjustment for constant pressure
- Zero leakage rates
- Eliminates the need for excessive gland force
- Continually compensating for in-service packing consolidation
- Used in demanding applications in harsh environments
- Safeguards critical applications with reliable technology

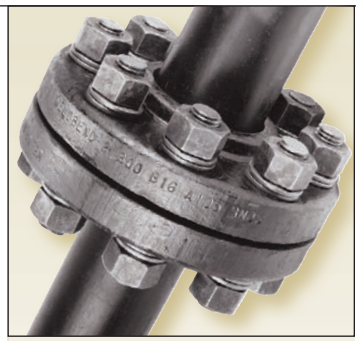
GASKET AND FLANGE SEALING

Flange Live Loading

Flange Discs

Increase reliability, lower emissions, and reduce total costs by using tailored sealing solutions for critical flanges.

Technical Data	5500	5505H
Material	Specialized stainless steel alloy	Chromium steel with black oxide coating
Temperature Limit	-200°C – 300°C (-328°F – 575°F)	0°C – 600°C (32°F – 1100°F)
Corrosion Resistance	better	good
Applications	Use in combination with Chesterton® Camprofile or Steel Trap™ gaskets on process flanges, heat exchangers, vessels, reactors, valve bonnets, housings, sight glasses	
Warranty	3 year warranty (see flange live loading warranty for conditions)	



- Shutdown to shutdown reliability
- Significantly reduces downtime on critical equipment
- Lowers emissions and meets environmental regulations
- Reduces leakage and product loss
- Reduces housekeeping concerns
- Improves plant efficiency and reduces total cost

Manway Sealing

Manway Gaskets

Improper manway sealing can result in a door gasket failure and significant safety risks. Chesterton has developed a more reliable manway sealing solution.

Please contact your local Chesterton Representative to help you select the best product for your application.

Technical Data	SteelTrap™	459
Material	Metal carrier from virtually any metal with graphite, PTFE, or ceramic sealing elements	Graphite sheet with nickel foil reinforcement
Pressure Limit	415 bar g (6000 psig)	140 bar g (2000 psig) Compressibility (ASTM-F36) 35% minimum
Temperature Limit	Atmosphere -200°C – 500°C (-328°F – 932°F) Steam up to 650°C (1200°F) Inert media -200°C – 900°C (-328°F – 1650°F)	870°C (1600°F) non-oxidizing 450°C (850°F) oxidizing
Chemical Resistance	pH 0 – 14	pH 0 – 14

- Reduces housekeeping concerns
- No hot retorquing
- Reduces maintenance requirements

SHEET GASKETS

457

High-Temperature Carbon Fiber Sheet

*Chesterton 457 Carbon Fiber/Nitrile Binder Sheet is a high-temperature sheet gasket material formulated for a wide variety of gasketing needs. 457 is recommended for use in a broad range of steam, water, oil, and hydrocarbon applications.**

Technical Data	
Material	Carbon fiber with nitrile binder
Applications	A broad range of steam, water, oil, and hydrocarbon applications
Available Thickness	0.4 mm – 3.2 mm (1/64" – 1/8")
Temperature Limit	450°C (840°F)
Pressure Limit	100 bar g (1470 psig)

- High-temperature capability
- Material formulated for a wide variety of gasketing needs

*This product is not recommended for use in chlorinated hydrocarbons, aromatic, and ester ketones.

459

Graphite Sheet with Nickel Reinforcement

Technical Data	
Material	Flexible graphite with a 0.026 mm nickel flat insert
Applications	Pipe flanges, vessels, reactors, valve bonnets, housings
Available Thickness	1 mm, 1.6 mm (1/16"), 2 mm, and 3.2 mm (1/8")
Sheet Size	0.8 mm – 2.4 mm (1/32" – 3/32")
Temperature Limit	870°C (1600°F) non-oxidizing, 454°C (850°F) oxidizing, minimum -200°C
Pressure Limit	140 bar g (2000 psig)
Chemical Resistance	pH 0 – 14

- Easy to cut manually
- Excellent pressure capability
- High-temperature capability
- High chemical resistance

ECS-T

PTFE Sheet Gasket

Filled PTFE sheet with excellent mechanical properties and outstanding chemical resistance.

Technical Data	
Material	PTFE with fillers
Applications	High pressure and temperature services, especially in chemical and hydrocarbon plants in strong acids
Available Thickness	1 mm, 1.5 mm, 2 mm, and 3 mm
Sheet Size	0.8 mm – 3.2 mm (1/32" – 1/8")
Temperature Limit	260°C (500°F)
Pressure Limit	83 bar g (1200 psig)
Chemical Resistance	pH 0 – 14

- High chemical resistance
- Excellent in strong acids

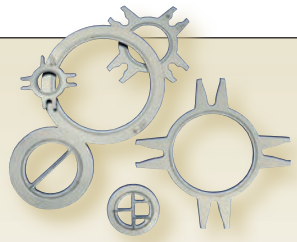
SEMI-METALLIC GASKETS

Steel Trap™

High Performance, Semi-Metallic Gasket

An innovative flange sealing system for safe and permanent sealing of flanges in severe services.

Technical Data	
Material	Metal carrier from virtually any metal with graphite, PTFE, or ceramic sealing elements
Applications	Pipe flanges, heat exchangers, vessels, reactors, valve bonnets, and housings
Pressure Limit	415 bar g (6000 psig)
Temperature Limit	Atmosphere -200°C – 500°C (-328°F – 932°F) Steam up to 650°C (1200°F) Inert media -200°C – 900°C (-328°F – 1650°F)
Chemical Resistance	pH 0 – 14



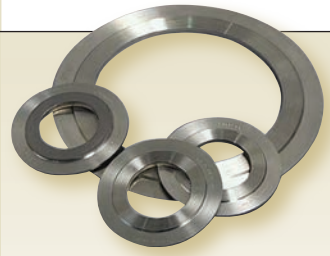
- Thin design and soft sealing material encapsulation provide increased blow-out safety
- Replaces sheet gasketing without equipment modification
- Can be manufactured in virtually any shape

Camprofile

High Performance, Semi-Metallic Gasket

Highly reliable flange gasket with excellent emission control.

Technical Data	
Material	Stainless steel carrier with a graphite or PTFE sealing element (more materials available)
Applications	Pipe flanges, heat exchangers, vessels, reactors, valve bonnets, housings
Pressure Limit	300 bar g (4350 psig)
Temperature Limit	graphite sealing layer 550°C (1020°F) inert media -200°C – 900°C (-328°F – 1650°F) PTFE sealing layer 300°C (572°F)



- Certified low emission performance
- High reliability
- DIN and ANSI standard gaskets
- Custom shapes available, including heat exchanger gaskets

Spiral Wound

Economical, Semi-Metallic Gasket

Excellent emission performance in an all-around general plant gasket.

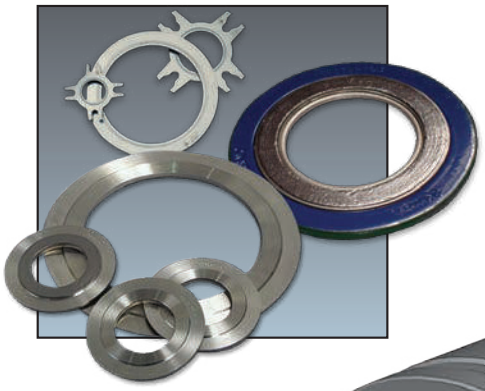
Technical Data	
Material	Stainless steel windings with graphite or PTFE sealing layer, stainless steel inner ring, coated carbon steel outer ring (more materials available)
Applications	Pipe flanges, vessels, reactors, valve bonnets, and housings
Pressure Limit	350 bar g (725 psig)
Temperature Limit	graphite sealing layer 450°C (840°F) PTFE sealing layer 300°C (570°F)
Chemical Resistance	pH 0 – 14

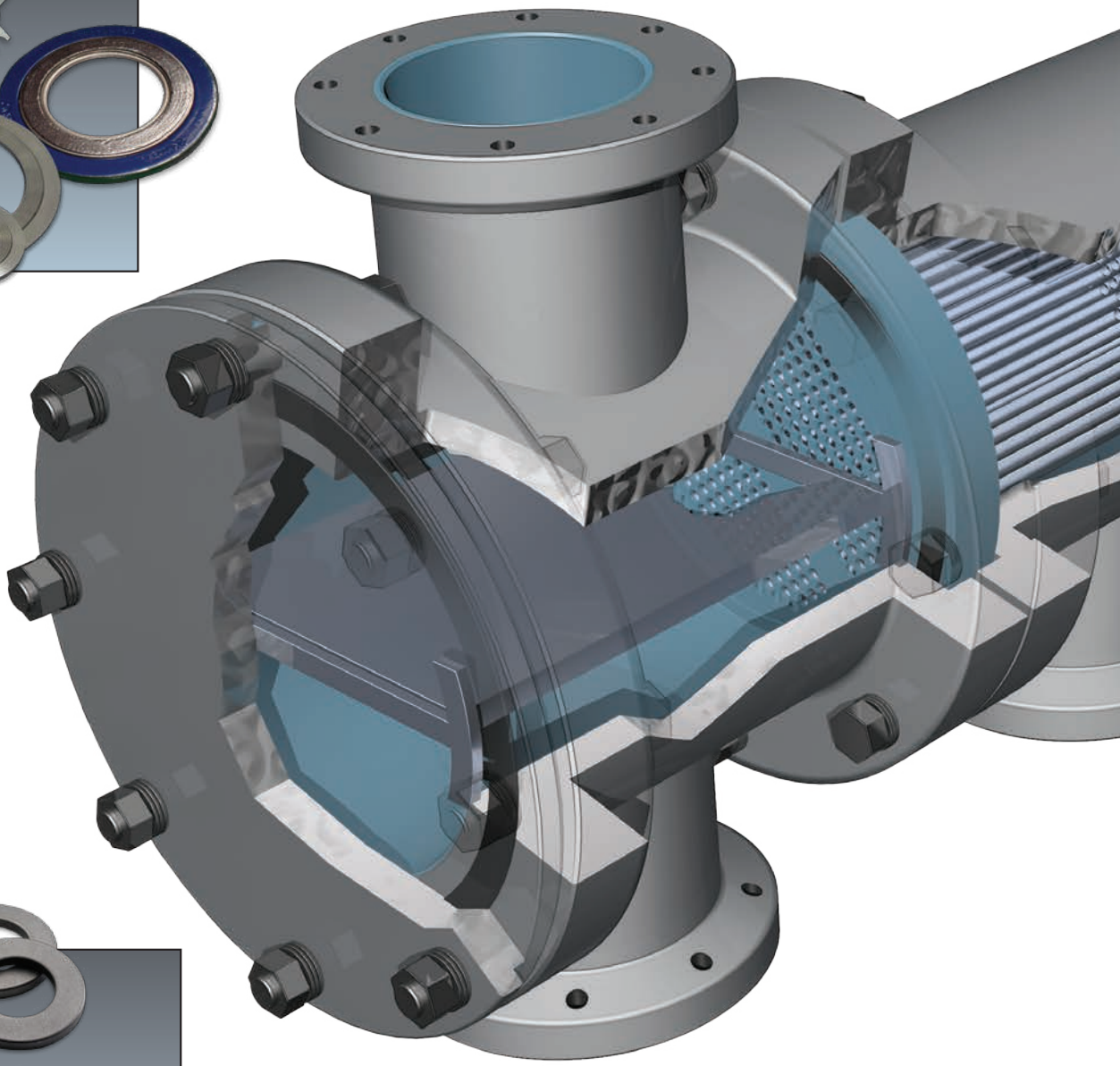
- Economical, semi-metallic solution
- Low emissions
- DIN and ANSI standard gaskets and custom shapes available
- Various configurations

Chesterton® Flange Sealing Solutions

1 ***Metal Gaskets***

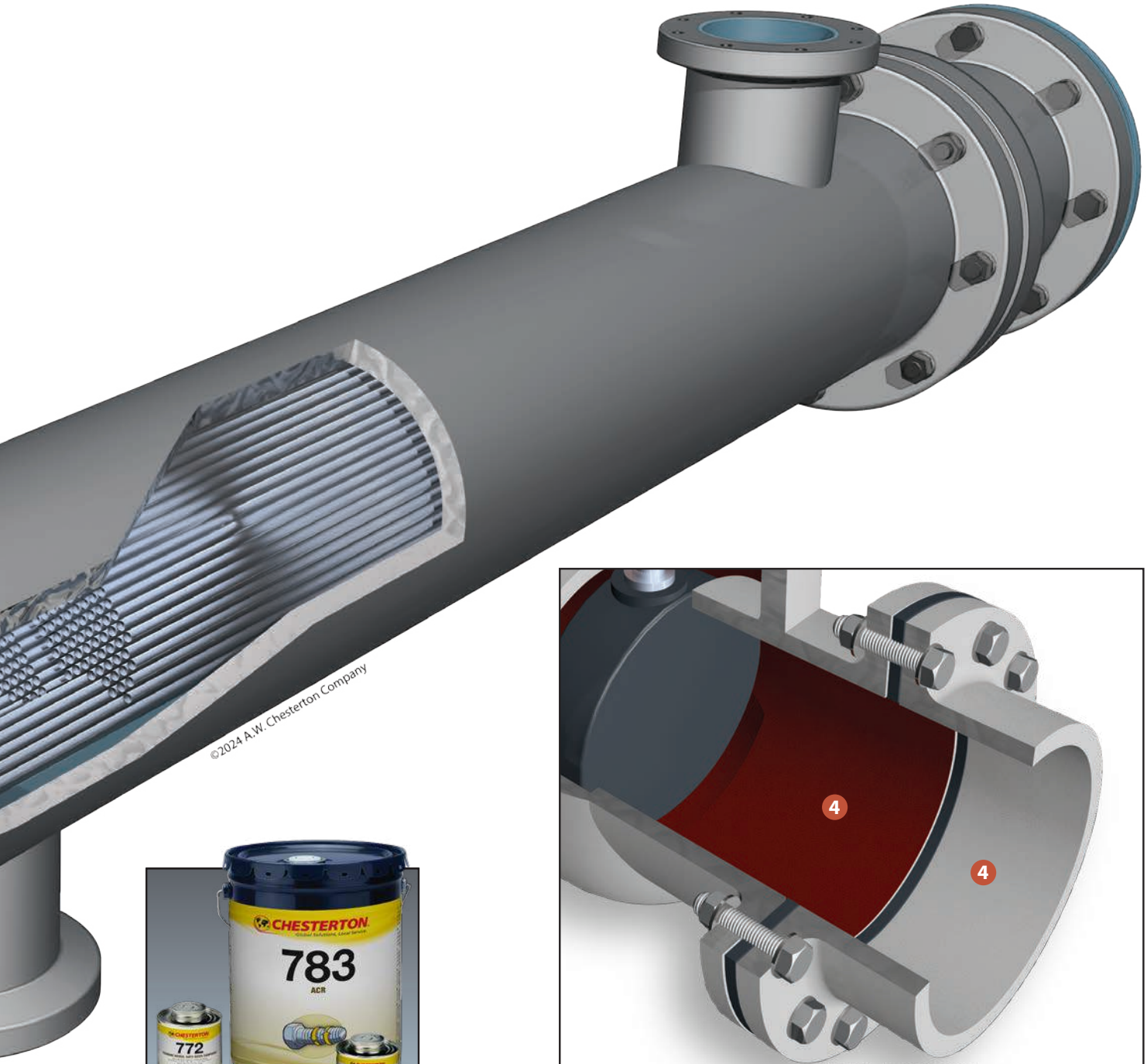
Chesterton metallic gaskets are used in high-temperature and high-pressure applications. Engineered for extreme performance.





2 ***Flange Springs***

Flange springs are used to address differential thermal expansion issues. They provide added life span to the joint and lower the bolt load decay during thermal cycling.



3 *Thread Lubrication*

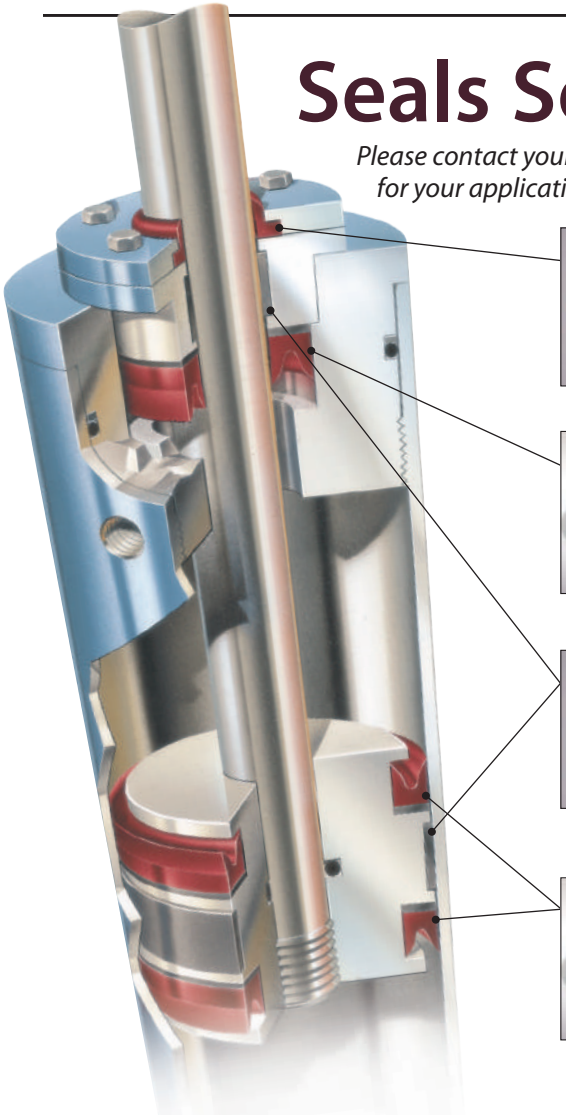
Chesterton anti-seize assists in accurate bolt load and resists bolt/nut seizeing for easy adjustment and disassembly on flanges, bonnets, and packing followers. These products achieve consistent and correct bolt tensioning.

4 *ARC Industrial Coatings*

Rebuild, restore, and coat pipe linings, flanges, valve bodies, and discs with **ARC Industrial Coatings** that help resist corrosion and/or abrasion from process media and from the effects of cavitation on valve internals.

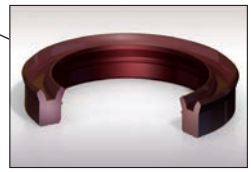
Seals Selection Guide

Please contact your local Chesterton representative to help you select the best product for your application.



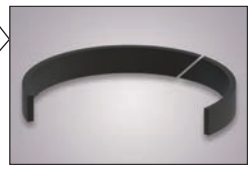
Wiper

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



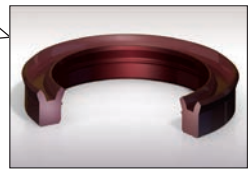
Rod Seal

The function of a rod seal is to act as a pressure barrier and minimize 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.



Wear Ring

These split, replaceable bearings minimize 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 minimize 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.

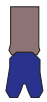
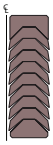
Rotary Sealing Solutions

For most Rotary applications, including, but not limited to, bearing protection on industrial pumps, conveyor belts, and rotary swivel joints, the following profiles should be adequate. For special requirements and profiles, Chesterton has a database of more than 175 profiles to choose from for specific requirements. All rotary seals are made to order.

Seal Picture	Seal Type	Seal Profile	Product Page	Function	Seal Material Recommended	Split/Continuous	Max Operating Speed m/s (ft/min)	Max Operating Temp. ˚C (˚F)	Max Operating Pressure MPa (psi)	Seal Size Range mm (in)
	High-Speed Continuous Rotary Lip Seal	30K	44	Continuous Lip Seal for bearing protection, reduced shaft wear.	AWC100, AWC300, AWC400	Continuous	20 (4000)	200 (400)	0.07 (10)	20 – 508 (0.787 – 20)
	Split Rotary Seal	33K	46	Split Rotary Seal for ease of installation without the need for equipment disassembly.	AWC800, AWC860, AWC300, AWC400	Split	12.7 (2500)	200 (400)	No pressure applications	25 – 600 (1 – 24)
	High-Pressure Slow Rotary Seal	24K	46	Unidirectional Split Rotary Seal for very low speed applications.	AWC800, AWC860	Split and Continuous	0.75 (150)	120 (250)	10.0 (150)	6 – 2438 (1/4 – 96)
	Rotary Seal for High Runout	Matrix Rotary Seal	47	Split Rotary Seal for large shaft runout and worn shafts.	AWC860	Split	15 (3000)	120 (250)	No pressure, oil mist lubricated bearings	50 – 890 (2 – 30)
	High-Speed Non-Contact Labyrinth Seal	PLS and SPLS	45	Non-contact Seal for gearboxes, pumps in splash applications.	AWC800	PLS Continuous, SPSL Split	30 (6000)	85 (185)	Non-presurized non-flooded oil mist bearing appplications	25 – 508 (1 – 20)
	Spring Energized Seal	SES 100	50	Unidirectional seal for rotary sealing at low/high pressures for a wide range of temperatures.	AWC300, AWC400, AWC510, AWC520, AWC610, AWC630	Continuous	5 (1000)	200 (400)	150K PV Limit	Up to 4000 (157)

Reciprocating Sealing Solutions

For most hydraulic applications, including, but not limited to light-, medium-, and heavy-duty hydraulics used in mining/mobile and underground cylinders, industrial cylinders, injection molding presses, steel mill hydraulic presses, and automotive hydraulics, the following standard profiles will be adequate. For special profiles and requirements, Chesterton offers more than 175 different profiles to pick from per specific application needs.

Seal Picture	Seal Type	Seal Profile	Configu-ration	Product Page	Function	Seal Material Recom-mended	Split/ Continu-ous	Max Operating Speed m/s (ft/min)	Operating Temp. Range ˚C (˚F)	Max Operating Pressure MPa (psi)	Seal Size mm (in)
	U-Cup	22K	Piston/Rod	39	Piston or Rod Seal to retain hydraulic oil within the cylinder. Significantly minimizes leaks along static/ dynamic surfaces.	AWC800	Continuous and Split	0.9 (185)	-50 – 85 (-60 – 185)	105 (15000)	Up to 4000 (157)
						AWC860	Continuous and Split	1.25 (250)	-50 – 120 (-60 – 250)		
	Wiper/ Scraper	21K	Rod	38	Wiper/Scraper to exclude contaminants, keep abrasives out of the cylinder.	AWC800 AWC825	Continuous	0.5 (100)	-50 – 85 (-60 – 185)	N/A	Up to 4000 (157)
						AWC860	Continuous	1.25 (250)	-50 – 120 (-60 – 250)		
	Bearing Elements	18K / 19K	Piston/Rod	41	Split Bearing to minimize metal-to-metal contact, reduce radial movement.	AWC660	Split	1.25 (250)	-40 – 121 (-40 – 250)	N/A	Up to 500 (20)
	Cap Seal (Piston/ Rod)	CCS	Piston/Rod	40	Bidirectional Cap Seal to reduce friction and stick slip effects.	AWC500	Continuous	15 (3,000)	-35 – 200 (-30 – 400)	40 (5800)	Up to 600 (24)
						AWC860	Continuous	1.25 (250)	-35 – 120 (-30 – 250)		6 – 1320 (1/4 – 52)
	Stacked Set	11K	Piston/Rod	43	Single-acting, two-piece split, Stacked Set for hydraulic cylin-ders and presses. No shimming. Reduced friction vs V-Ring sets.	AWC800 AWC825	Continuous and Split	1 (200)	-50 – 85 (-60 – 185)	105 (15000)	Up to 4000 (157)
	Stacked Set	27K	Piston/Rod	43	Single-acting V-Ring set for heavy-duty hydraulic applications.	AWC800	Continuous and Split	1 (200)	-50 – 85 (-60 – 185)	105 (15000)	Up to 4000 (157)
						AWC860	Continuous and Split	1.25 (250)	-50 – 120 (-60 – 250)		
						AWC704 AWC825	Continuous and Split	1.5 (300)	-35 – 200 (-30 – 400)	16 (2320)	6 – 304.8 (1/4 – 52)

Static Sealing Solutions

For most hydraulic applications, including, but not limited to, light-, medium-, and heavy-duty hydraulics used in mining/mobile and underground cylinders, industrial cylinders, injection molding presses, steel mill hydraulic presses, and automotive hydraulics, the following standard profiles will be adequate. For special profiles and requirements, Chesterton offers more than 175 different profiles to pick from per specific application needs.

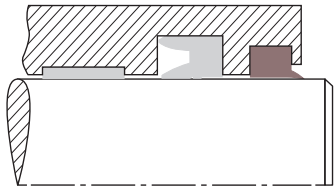
Seal Picture	Seal Type	Seal Profile	Configura-tion	Product Page	Function	Seal Material Recommended	Split/Con-tinuous	Operating Temp. Range ˚C (˚F)	Max Operat-ing Pressure MPa (psi)	Seal Size mm (in)
	Static Compression Seal	20KD	Piston/Rod/ Face	49	Bidirectional Continuous Compression Seal to replace O-Ring offering better stability and extrusion resistance.	AWC800	Continuous	-50 – 120 (-60 – 250)	105 (15000)	Up to 4000 (157)
						AWC860	Continuous			
	Spring Energized Seal (SES)	SES 200 Series - Elliptical Coil Spring Energized	Rod	51	Single-acting with cantilever spring for highly dynamic applications.	AWC400 AWC610 AWC630	Continuous	-156 – 204 (-250 – 400)	105 (15000)	Up to 4000 (157)
		SES 300 Series - Cantilever Spring Energized	Rod	52	Single-acting with helical spring for static or slow speeds.					
		SES 600 Series - Continuous Spring	Face	53	Excellent in low temperature, heavy-duty applications. Best suited for cryogenics.	AWC300, AWC400, AWC510, AWC520, AWC630	Continuous			

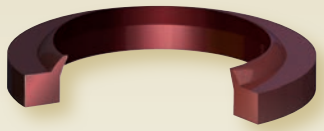
WIPER SEAL

21K

Wipers for Hydraulic and Pneumatic Applications

High performance protection of hydraulic and pneumatic actuators/systems.





- Positive rake lip design effectively wipes contaminants away from surface
- Minimizes scoring and system contamination
- Abrasion-resistant design withstands demanding environments
- Prolongs lifetime of equipment and components

SPECIFICATIONS

Cap Material	Temperature °C (°F)	Speed m/s (ft/min)
AWC704	-30 – 200 (-20 – 400)	1.50 (300)
AWC800	-50 – 85 (-60 – 185)	0.90 (185)
AWC825	-50 – 85 (-60 – 185)	0.50 (100)
AWC830	-35 – 75 (-30 – 165)	0.90 (185)
AWC860	-50 – 120 (-60 – 250)	1.25 (250)

PRODUCT PROFILES

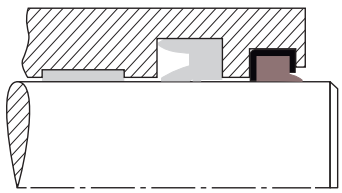
W21K W21KF W21KC

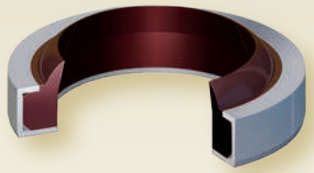
CANNED WIPER SEAL

CW21K

Protect the System from Entering Contaminants

Chesterton positive rake wipers effectively clean and dislodge foreign matter from retracting rods or rams, thus mitigating scoring and system contamination in open cavity designs. These wipers provide excellent performance for hydraulic applications.





- Interference press-fit design does not require support of other external devices
- Space saving and easy, open construction groove
- Single-acting, abrasion-resistant design for hydraulic applications
- Positive rake lip design effectively wipes contaminants away from surface
- Manufacturing process allows flexibility to create any size

SPECIFICATIONS

Material	Temperature °C (°F)	Speed m/s (ft/min)
AWC704	-30 – 200 (-20 – 400)	1.50 (300)
AWC800	-50 – 85 (-60 – 185)	0.90 (185)
AWC825	-40 – 85 (-40 – 185)	0.50 (100)
AWC830	-35 – 75 (-30 – 175)	0.90 (185)
AWC860	-50 – 120 (-60 – 250)	1.25 (250)

PRODUCT PROFILES

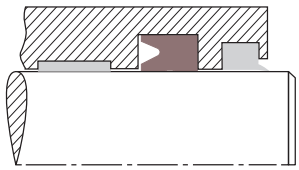
CW21K CW21K1 CW21K2 CW21K3

NEGATIVE LIP U-CUP SEAL

22K

Single-Acting, U-Cup for Rod and Piston Applications in Hydraulics

Flexible family of high performance hydraulic seals for standard and high-pressure applications.



- Single-acting, U-Cup design, zero leakage throughout the entire operating range
- Abrasion-resistant design, excellent performance in hydraulic applications
- Lip geometry stabilizes seal to prevent twisting and eases installation
- Application-specific solutions, including anti-extrusion ring, energizer, and dynamic/static lip designs

SPECIFICATIONS

Material	Temperature °C (°F)	Pressure MPa (psi)	Speed m/s (ft/min)
AWC704	-30 – 200 (-20 – 400)	35.0 (5000)	1.50 (300)
AWC800	-50 – 85 (-60 – 185)	105 (15000)	1.00 (200)
AWC825	-40 – 85 (-40 – 185)	52.0 (7500)	0.50 (100)
AWC830	-35 – 75 (-30 – 175)	35.0 (5000)	1.00 (200)
AWC860	-50 – 120 (-60 – 250)	105 (15000)	1.25 (250)

Please contact your Chesterton representative for larger sizes.

PRODUCT PROFILES

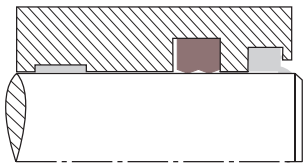
R22K R22KAER P22K P22KAER

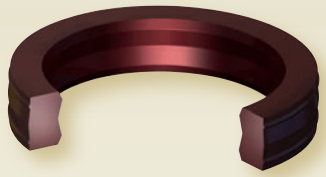
BIDIRECTIONAL COMPRESSION SEAL

20K

Heavy-Duty Bi-Directional Hydraulic Seal

Robust seal design combined with high performance polymer technology for most demanding heavy-duty, high-pressure applications.





- Ideal replacement for 2-, 3-, or 4-piece cap seal assemblies
- Excellent extrusion resistance
- Abrasion-resistant design withstands demanding environments
- Outstanding resistance to shock loading and pressure spikes

SPECIFICATIONS

Material	Temperature °C (°F)	Pressure MPa (psi)	Speed m/s (ft/min)
AWC704	-30 – 200 (-20 – 400)	35.0 (5000)	0.75 (150)
AWC800	-50 – 85 (-60 – 185)	105 (15000)	0.50 (100)
AWC825	-40 – 85 (-40 – 185)	52.0 (7500)	0.50 (100)
AWC830	-35 – 75 (-30 – 175)	345.0 (5000)	0.50 (100)
AWC860	-50 – 120 (-60 – 250)	105 (15000)	0.62 (125)

Please contact your Chesterton representative for larger sizes.

PRODUCT PROFILES

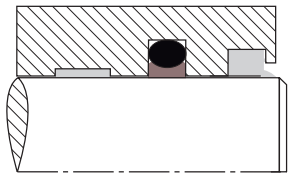
R20K1 P20K1

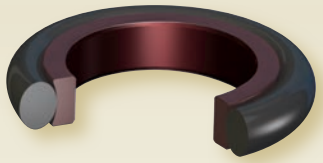
CUSTOM CAP SEAL

CCS (Custom Cap Seal)

Rod and Piston Seals

High performance, dual component system for bidirectional sealing in hydraulic and pneumatic applications.





- Second generation PTFE and high performance polymers offer improved performance
- Compression seal design increases sealing force with system pressure
- Dramatically reduced friction and eliminated "Stick-Slip" effect
- Excellent chemical- and heat-resistant characteristics

SPECIFICATIONS

Cap Material	Temperature °C (°F)	Pressure MPa (psi)	Speed m/s (ft/min)
*AWC300	-35 – 200 (-30 – 400)	40 (5800)	15.00 (3000)
*AWC800	-35 – 85 (-30 – 185)		0.85 (185)
*AWC860	-35 – 120 (-30 – 250)		1.25 (250)
**AWC400	-35 – 200 (-30 – 400)		15.00 (3000)
**AWC500	-35 – 200 (-30 – 400)		15.00 (3000)

**NBR energizer **FKM energizer* *Please contact your Chesterton representative for larger sizes.*

PRODUCT PROFILES

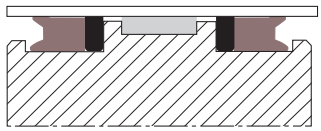
RCCS3 RCCS PCCS WCCS

ANTI-EXTRUSION RING

9K

Anti-Extrusion Rings for Hydraulic Applications

Designed to prevent seals from extruding into equipment clearances for heavy-duty, high-pressure applications.



- Prevents extrusion of sealing element into equipment clearances: improves MTBR
- Machining process allows the flexibility to create any size
- Available in various profiles and materials
- Split design for ease of installation

SPECIFICATIONS

Material	Temperature °C (°F)
AWC650	-30 – 90 (-20 – 200)
AWC665	-40 – 105 (-40 – 212)
AWC800	-50 – 85 (-60 – 185)
AWC860	-50 – 120 (-60 – 250)
AWC300	-35 – 200 (-30 – 400)
AWC400	-35 – 200 (-30 – 400)
AWC500	-35 – 200 (-30 – 400)
AWC520	-35 – 200 (-30 – 400)
AWC630	-45 – 175 (-50 – 350)

PRODUCT PROFILES

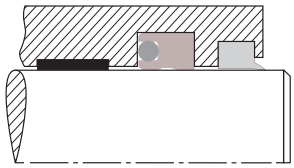
9K

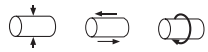
BEARING BAND

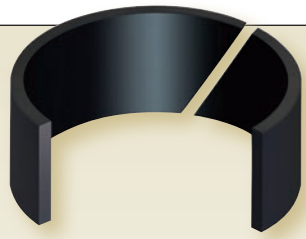
18K / 19K

Bearing Bands for Hydraulic and Pneumatic Applications

High performance replaceable bearing bands for cylinders.







- Heat-stabilized nylon—the same carrying load as bronze
- Replaceable bearings prevent metal-to-metal contact and prolong equipment life
- Reduces radial movement, therefore extending seal life
- Split design minimizes downtime

SPECIFICATIONS

Material	Temperature °C (°F)	Compressive Strength MPa (psi) ASTM D965	Permissible Compressive Load MPa (psi)	Speed m/sec (ft/min)
AWC660	-40 – 121 (-40 – 250)	158.6 (23000)	55.0 (7975)	1.25 (250)

18K INCH DESIGN

Cross Section (S) inch	Height (H_1) inch	Diameter Range (d/D) inch
0.125	0.375	1.0 – 4
	0.500	1.5 – 6
	0.750	3.5 – 8
	1.000	4.0 – 20

19K METRIC DESIGN

Cross Section (S) mm	Height (H_1) mm	Diameter Range (d/D) mm
2.5	5	20 – 140
	9	55 – 220
	14	70 – 400
	24	315 – 400

Please contact your Chesterton representative for larger sizes.

PRODUCT PROFILES

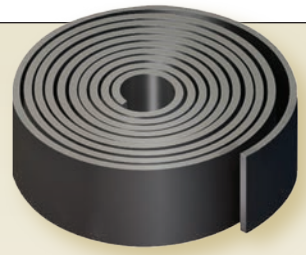
18K – INCH 19K – METRIC

BEARING BAND STRIP

16K / 17K

Bearing Band Strips for Hydraulic and Pneumatic Applications

High performance, replaceable bearing strips for heavy-duty hydraulic cylinders and forming machines. The exceptional physical properties and built-in lubricants make is suitable for use on rams or pistons on most of reciprocating applications.



- Prevents metal-to-metal scoring, helps prolong equipment life
- Reduces radial movement, extends seal life
- Built-in lubricant for lower coefficient of friction between mating surfaces
- Split continuous coil accommodates large diameter equipment

SPECIFICATIONS

Material	Temperature °C (°F)	Compressive Strength MPa (psi) ASTM D695	Permissible Compressive Load MPa (psi)	Speed m/sec (ft/min)
AWC640	-40 – 121 (-40 – 250)	345.0 (50000)	100.0 (14500)*	1.00 (200)

**At 20°C (68°F)*

16K METRIC DESIGN

Cross Section (S) mm	Height (L_2) mm	Diameter Range (d/D) mm
2.50 – 4.00	15	300 – 1575
	20	300 – 1575
	25	300 – 1575
	30	300 – 1575

Applicable standards: ISO 10766

17K INCH DESIGN

Cross Section (S) inch	Height (L_2) inch	Diameter Range (d/D) inch
0.125	0.375	12 – 62
	0.500	12 – 62
	0.625	12 – 62
	0.750	12 – 62
	1.000	12 – 62
	1.500	12 – 62
	2.000	12 – 62

PRODUCT PROFILES

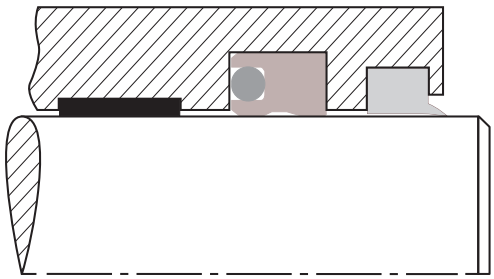
16K – METRIC 17K – INCH

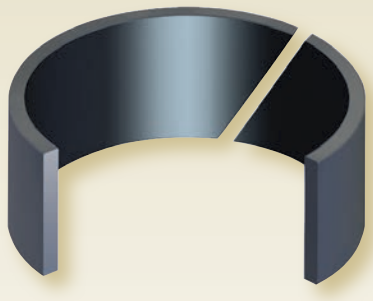
CUSTOM WEAR RING

WR

Machined Bearing Bands for Hydraulic and Pneumatic Applications

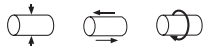
Custom bearing bands for hydraulic and pneumatic applications machined to equipment groove size.





- Replaceable bearings; a cost-effective method for improving equipment performance
- Reduces radial movement, prevents metal-to-metal contact while extending seal life
- Custom wear rings eliminate unnecessary modifications
- Machining process allows the flexibility to create any size

SPECIFICATIONS



Material (designation)	Temperature °C (°F)	Compressive Strength MPa (psi) ASTM/ISO Testing	Permissible Compressive Load MPa (psi)	Speed m/sec (ft/min)
AWC650	-30 – 90 (-20 – 200)	55.2 (8000)	20.0 (2900)	3.00 (600)
AWC663	-40 – 105 (-40 – 212)	90.0 (13050)	30.0 (4500)	3.00 (600)
AWC665	-40 – 105 (-40 – 212)	96.7 (14000)	30.0 (4500)	3.00 (600)
AWC300	-35 – 200 (-30 – 400)	10.6 (1540)	3.5 (510)	5.00 (1000)
AWC400	-35 – 200 (-30 – 400)	8.5 (1230)	2.5 (365)	5.00 (1000)
AWC500	-35 – 200 (-30 – 400)	10.1 (1540)	4.5 (652)	5.00 (1000)
AWC520	-35 – 200 (-30 – 400)	7.9 (1145)	2.5 (365)	5.00 (1000)
AWC630	-45 – 175 (-50 – 350)	138.1 (20000)	–	1.00 (200)
AWC635	-45 – 175 (-50 – 350)	179.5 (26000)	–	1.00 (200)

PRODUCT PROFILES

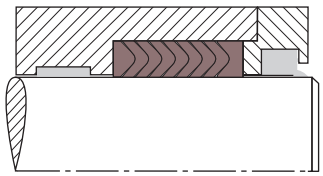
WR R9KL WRTR WRUR P9KL WRTP WRUP

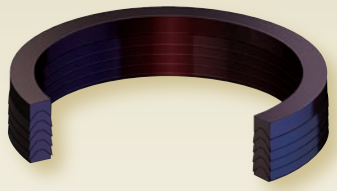
V-RING STACKED SET

27K

Split, Stacked Set for Hydraulic Rod Applications

Advanced stacked set technology for high-speed hydraulic applications and for scored, mechanically damaged rod and ram surfaces.





- Split components for ease of installation
- Light gland offers greater speed capability than conventional sets
- Pressure sensitive lip design minimizes friction and extends service life
- Material combinations designed for use in both new and worn equipment

SPECIFICATIONS

Material (designation)	Temperature °C (°F)	Pressure MPa (psi)	Speed m/s (ft/min)
AWC704	-30 – 200 (-20 – 400)	16.0 (2320)	1.50 (300)
AWC800	-50 – 85 (-60 – 185)	105 (15000)	1.25 (250)
AWC825	-40 – 85 (-40 – 185)	52.0 (7500)	0.50 (100)
AWC830	-35 – 75 (-30 – 175)	35.0 (5000)	0.90 (185)
AWC860	-50 – 120 (-60 – 250)	105 (15000)	1.25 (250)

Please contact your Chesterton representative for larger sizes.

PRODUCT PROFILES

R27K R27K1 P27K 27KHD

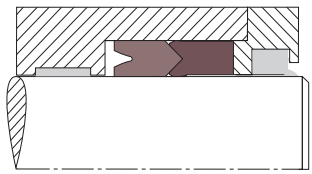
For large diameters with exceptionally deep stuffing boxes, the 27K Heavy-Duty (HD) seal profile is available as a customer order.

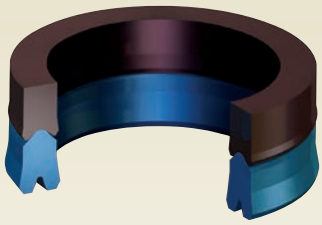
TWO-PIECE SPLIT STACKED SET

11K

Split, Dual-Component Hydraulic Rod Seal

Adaptive solution for heavy-duty hydraulic cylinder. Eliminates the equipment disassembly during seal installation, wand provides sealing on worn, scored surfaces.





- Replaces the stacked set assembly
- Split design eliminates the need to disassemble equipment
- One optimized seal concept for different press applications
- Dual material combination works in both new and worn equipment
- Design eliminates shimming and future adjustments
- Fusion program
- Helps reduce energy consumption

SPECIFICATIONS

Material	Temperature °C (°F)	Pressure MPa (psi)	Speed m/s (ft/min)
AWC704/704	-30 – 200 (-20 – 400)	35.0 (5000)	1.5 (300)
AWC800/800	-50 – 85 (-60 – 185)	105 (15000)	1.00 (200)
AWC800/825	-50 – 85 (-60 – 185)	35.0 (5000)	0.5 (100)
AWC830/830	-35 – 75 (-30 – 165)	34.5 (5000)	0.9 (185)
AWC860/860	-50 – 120 (-60 – 250)	105 (15000)	1.25 (250)

Please contact your Chesterton representative for larger sizes.

PRODUCT PROFILES:

R11K 11KE R11KSPCR R11KWSOR

CONTINUOUS PTFE LIP SEAL

30K

Advanced Lip Seal

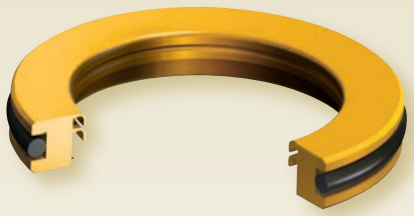
Bearing and Gearbox Protection

Advanced sealing protection technology keeps the lubricant in and the dirt out for long-term sealing.

Chesterton 30K lip seals are high performance lip seals that are ideal for dynamic rotary seal applications. These seals block penetration of external contaminants from entering the housing and provide excellent service in bearing and gearbox applications that utilize conventional oil lip seals.

The 30K is manufactured individually, using our unique machining process, which eliminates the need for tooling costs associated with new sizes. The 30K is offered in other unique designs based on your application requirements—whether a built-in wiper is required or space limited.

The unique 30K lip seal design is mechanically formed to provide optimal sealing force and is available in four distinct PTFE materials developed specifically for sealing applications. The PTFE compounds, coupled with the seal design, provide excellent fluid compatibility and outstanding performance.



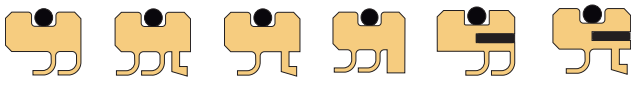
- New designs and materials to outperform conventional lip seals
- High performance PTFE compounds offer advanced wear and abrasion resistance
- Unique design provides lower friction and decreased shaft wear
- High performance lip seals block contaminants from entering housing

SPECIFICATIONS

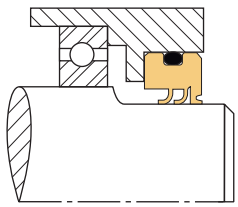
Material Adapters/Sealer Rings	Size Range mm (inch)	Temperature °C (°F)	Speed m/s (ft/min)	Pressure MPa (psi)	Surface Finish µm (µ inch)	Recommended Use	Mating Surface (Rockwell C)
AWC100	20 – 600 (0.787 – 23.62)	-35 – 200 (-30 – 400)	Up to 20 (4000)	0.07 (10)	Dynamic 0.2 – 0.4 (8 – 16)	Excellent dry Excellent low viscosity No water and steam	≥45
AWC300						Excellent high viscosity Good dry and good in water	≥55
AWC400					Static 0.4 – 0.8 (16 – 32)	Excellent in water Good dry and low viscosity	≥55
AWC510						Excellent dry Good in water and steam No petroleum liquids	≥45

Applicable standard: ISO 6194-1

PRODUCT PROFILES



30K 30KW 30KSW 30KP 30KB* 30KWB*



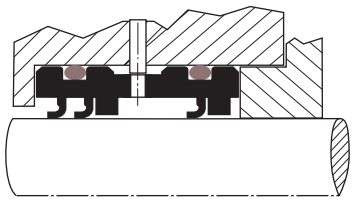
**Metal band reinforced for additional stability*

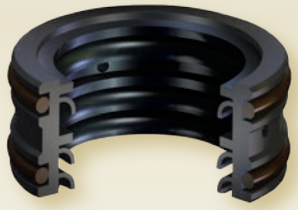
CARTRIDGE MULTI LIP SEAL

30KC

Cartridge Design for Sealing Powders and Viscous Fluids

Chesterton 30KC polymer cartridge seals are designed for use in dynamic rotary seal applications. This cartridge design uses high performance, filled PTFE materials proven to withstand the high shear rates, frictional heat, and abrasives common when pumping high viscosity products and powders.





- Outperforms conventional packing, sealing viscosity fluids, and dry powders
- Decreases downtime, easy-to-install, versatile cartridge design
- Improves performance of compression packing, distinct PTFE materials
- Custom-designed cartridges made to equipment dimensions

SPECIFICATIONS

Material*	Temperature °C (°F)	Speed m/s (ft/min)	Pressure MPa (psi)	Mating Surface (Rockwell C)	Surface Finish µm (µ inch)	Recommended use
AWC100	-35 – 200 (-30 – 400)	Up to 5.0 (984)	Up to 1.0 (150)	45	Dynamic 0.2 – 0.4 (8 – 16) Static 0.4 – 0.8 (16 – 32)	**Excellent dry** Excellent low viscosity (<2,000cp) Powders, oil, resins, glues, paints No water or steam
AWC300				55		**Excellent high viscosity** (>2,000cp) Good dry, water or steam
AWC400				55		**Excellent in water or steam** Good dry and low viscosity powders, asphalt, clay, slurries
AWC510				45		**Excellent dry** Good in water or steam chocolate and syrups No petroleum liquids

**Fluoroelastomer O-Rings provided (FDA listed w/AWC510) **Run-out to 0,15mm (.005") Applicable standards: ISO 3069*

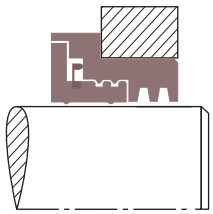
PRODUCT PROFILES

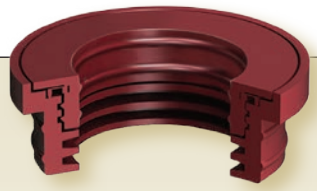
30KC

Polymer Labyrinth Seal (PLS)

Unitized, Non-Contacting Seal for Bearing Protection

Made from Chesterton's proprietary polymer material technology, the Chesterton patented Polymer Labyrinth Seal (PLS) is a non-contact bearing seal which protects pumps, motors, gearboxes, and other rotating equipment in splash applications.





- High performance, non-contact design eliminates fretting caused by lip seals
- Keeps lubrication in and seals out external contamination
- Unitized design and durable, non-sparking material provide easy, reliable installation
- Available in a variety of configurations to meet plant-wide equipment needs
- IP56 (third party certification) designed to be resistant to dust and water

SPECIFICATIONS

Material	Temperature °C (°F)	Speed* m/s (ft/min)	Eccentricity mm (inch)
AWC800	-50 – 120 (-60 – 250)	30.50 (6000)	0.75 (0.030)
AWC860	-50 – 120 (-60 – 250)	30.50 (6000)	0.75 (0.030)

**Contact engineering for speed beyond these limits.*

PRODUCT PROFILES

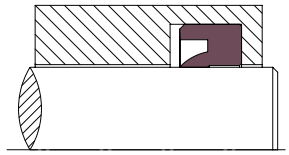
PLS1 PLS2

SLOW ROTARY SEAL

24K

Design for Slow Rotating Applications Exposed to Large Shaft Runout

Chesterton 24K Rotary Split Seals, with their robust design, are ideal for low-speed dynamic rotary seal applications exposed to large shaft runout. These seals provide excellent sealing and protective solutions for heavy-duty rotating equipment, even in severe application conditions, thus prolonging bearing and equipment service life.



- Flexible dynamic lip design for large shaft runout compensation
- Split configuration simplifies installation
- Positive rake lip design wipes contaminants away from the mating surface
- Robust static lip design allows stack set arrangement and provides stability
- Excellent abrasion-resistance; withstands demanding environments
- Manufacturing process allows flexibility to create any size

SPECIFICATIONS

Material	Temperature °C (°F)	Pressure MPa (psi)	Speed m/s (ft/min)
AWC704	-30 – 200 (-20 – 400)	0.7 (100)	1.00 (200)
AWC 800	-20 – 85 (-4 – 185)	0.7 (100)	0.25 (50)
AWC825	-40 – 85 (-40 – 185)	0.7 (100)	0.25 (50)
AWC830	-35 – 75 (-30 – 175)	0.7 (100)	0.50 (100)
AWC860	-50 –120 (-60 – 250)	0.7 (100)	0.75 (150)

PRODUCT PROFILES

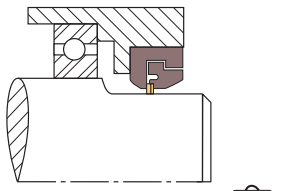
24K

LOW-PRESSURE ROTARY SEAL

33K

Split Seal for Bearing and Gearbox Protection

This innovative, split seal technology minimizes penetration of external contaminants entering the housing, and provides excellent service in bearing and gearbox applications.



- Split design eliminates the need for equipment disassembly
- New design and materials proven to outperform conventional lip seals
- Patented design combines high performance PTFE and polymer materials
- Filled PTFE materials provide high wear and abrasion resistance

SPECIFICATIONS

Material Adapters/Sealer Rings	Temperature °C (°F)	Speed m/s (ft/min)	Pressure bar (psi)	Recommended Use	Mating Surface (Rockwell C)
AWC800 Adapters					
AWC100	85 (185)	12.70 (2500)	No pressure applications	Excellent dry. Excellent low viscosity.	≥45
AWC300	200 (400)	12.70 (2500)	No pressure applications	Excellent high viscosity. Good dry and good in water.	≥55
AWC400	200 (400)	12.70 (2500)	No pressure applications	Excellent in water. Good dry and low viscosity.	≥55
AWC860 Adapters					
AWC100	121 (250)	12.70 (2500)	No pressure applications	Excellent dry. Excellent low viscosity. No water and steam.	≥45
AWC300	200 (400)	12.70 (2500)	No pressure applications	Excellent high viscosity. Good dry and good in water.	≥55
AWC400	200 (400)	12.70 (2500)	No pressure applications	Excellent in water. Good dry and low viscosity.	≥55

Applicable standard: ISO 6194-1

PRODUCT PROFILES

33K

LOW-PRESSURE ROTARY SEAL

Matrix Seal

Easy-to-Install, Patented, Split Rotary Seal for Worn Shaft Applications

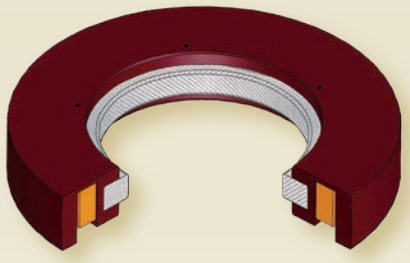
The Chesterton patented Matrix Rotary Seal is a split-bearing seal developed to work on worn equipment and large runout shafts. This unique seal protects pumps, gearboxes, and other rotating equipment.

The innovative split design minimizes equipment disassembly, and downtime to help ensure optimal continuous operation of critical equipment.

This product is a robust, maintenance-friendly, easy-to-install solution to address equipment with:

- Worn Shafts/Sleeves
- Large Runout
- High Vibration
- Blind Installations

Targeted applications: Pumps, gearboxes, conveyors, motors, and fans



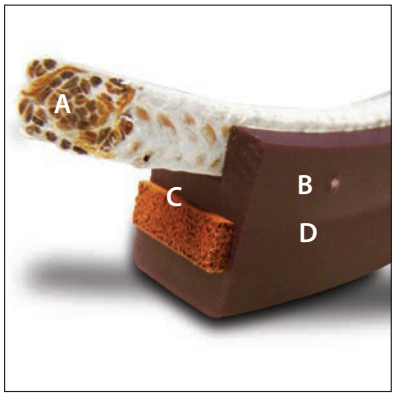
- Engineered for large runout and worn equipment
- Minimizes cumbersome equipment teardown and downtime
- Excludes external contamination, preserves internal lubrication
- Flexible design provides ease of installation
- Manufactured to custom equipment dimensions and requirements
- Suitable for various industries, including steel, mining, paper, and agricultural

SPECIFICATIONS

Seal Housing	Sealing Element	Temp °C (°F)	Speed m/s (ft min)	Pressure bar (psi)	Eccentricity mm (Inch)	Chemical Resistance
AWC800	1727NP	85 (185)	15.00 (3000)	No pressure, oil mist lubricated bearings	up to 1.5 (0.060)	Compatible with all commonly used bearing and gearbox oils and greases
AWC860	1727NP	120 (250)	15.00 (3000)	No pressure, oil mist lubricated bearings	up to 1.5 (0.060)	

Matrix Split Seal Design and Function

The innovative unitized design combines Chesterton's leading polyurethane and impregnated synthetic fiber packing technology to maximize seal performance and reliability.



A. Compression Packing – Impregnated synthetic fiber creates a seal against rotating shaft

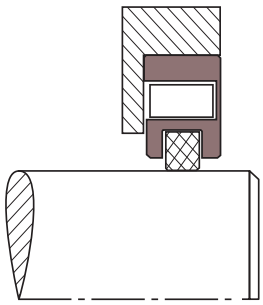
B. Nylon Pin – Minimizes rotation of compression packing

C. Energizer – Closed cell foam energizes compression packing against the shaft to help create a seal

D. Polymer Housing – Durable, flexible material unitizes the seal assembly and energizes the sealing element

PRODUCT PROFILES

MATRIX

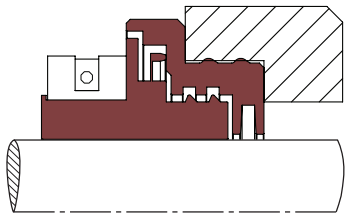


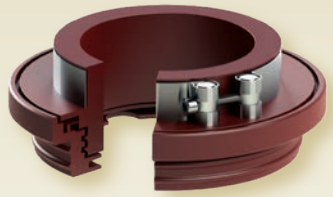
ROTARY SEALS - STUFFING BOX SOLUTIONS

SPLS (Split Polymer Labyrinth Seal)

Non-Contact Split Rotary Seal for Bearing Protection

This SPLS uses Chesterton's exclusive, industry-leading thermoset polymer to create a non-contact, three-piece seal design that includes a rotor with an integrated valve, a stator, and a metal clamp with no wearing parts.





- A split, non-contact design that reduces installation time and minimizes downtime for critical equipment
- Reduces the chances of fretting caused by lip seals
- Keeps lubrication in and seals out external contamination
- Unitized design and durable material provide easy, reliable installation
- Available in a variety of configurations to meet plant-wide equipment needs
- Standard sizes available for popular equipment; custom sizes available upon request
- IP65 protection against water jets and dust

SPECIFICATIONS

Material (designation)	Temperature °C (°F)	Speed m/s (ft/min)*	Eccentricity mm (inch)
AWC800	-50 – 85 (-60 – 185)	30.50 (6000)	0.75 (0.030)

**Contact engineering for speeds beyond these limits.*

PRODUCT PROFILE

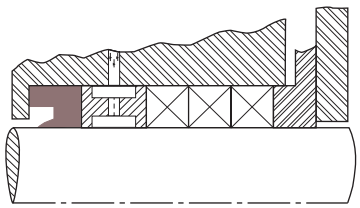
SPLS

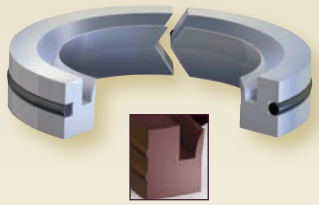
RESTRICTION BUSHINGS

14K

Robust, Restriction Bushing for Rotary Equipment

Chesterton 14K reduces the number of packing rings required in the stuffing box, which helps to decrease frictional force. This restriction bushing also helps keep the lantern ring in its position and maintain the optimum flush rate. The 14K is manufactured from superior abrasion-resistant polymers, and the PTFE compound offers broad media compatibility with high-temperature capability.





- Split design simplifies installation
- Minimizes particles from entering the stuffing box, extending packing and seal life
- Tapered lip design controls fluid bypass
- Designed for pumps and other rotating equipment such as agitators, mixers, and refiners

SPECIFICATIONS

Material (designation)	Temperature °C (°F)	pH
AWC520	Up to 200 (400)	0 – 14
AWC800	Up to 85 (185)	4 – 10

Applicable standard: ISO3069

PRODUCT PROFILES

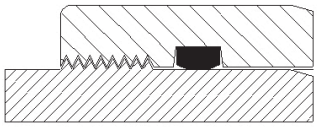
R14K | R14KRBS | R14KPF

STATIC COMPRESSION SEAL

20KD

High Performance O-Ring Upgrade for Static Sealing

The Chesterton 20K D-Ring is a continuous compression seal designed for use in static applications, and is often applied as an upgrade to conventional face seals or O-Rings. The 20KD design provides excellent performance in static applications in hydraulic or pneumatic equipment including flange and valve control units.



SPECIFICATIONS

Material (designation)	Size Range* mm (inch)	Temperature °C (°F)	Pressure MPa (psi)
AWC704	6 – 304.8 (1/4 – 12)	-30 – 200 (-20 – 400)	16.0 (2320)
AWC800	6 – 2540 (1/4 – 100)	-50 – 85 (-60 – 185)	105 (15000)
AWC825	6 – 2540 (1/4 – 100)	-40 – 85 (-40 – 185)	52.0 (7500)
AWC830	6 – 254 (1/4 – 10)	-35 – 75 (-30 – 175)	52.0 (7500)
AWC860	6 – 508.0 (1/4 – 20)	-50 – 120 (-60 – 250)	105 (15000)

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

PRODUCT PROFILE

R20KD P20KDR F20KD

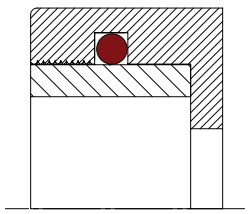
- Upgrade performance from conventional face seal and O-Ring designs
- Superior wear and extrusion resistance versus conventional materials
- Low compression set characteristics
- Unique manufacturing process allows the flexibility to create any size*
- Sizes made to accommodate international standards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

FACE AND STATIC SEAL

OR

O-Ring for Static Sealing

Chesterton offers O-Rings for static applications in several materials including FKM, FEPM, NBR, and Polyurethanes. The OR1 designation represents machined O-Rings made from our industry-leading thermoset polyurethanes, which offer excellent extrusion resistance. The OR designation refers to all other commonly used materials.

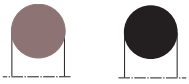


SPECIFICATIONS

Material (designation)	Temperature °C (°F)
AWC704	-30 – 200 (-20 – 400)
AWC800	-50 – 85 (-60 – 185)
AWC825	-40 – 85 (-40 – 185)
AWC830	-35 – 75 (-30 – 175)
AWC860	-50 – 120 (-60 – 250)

**Please contact Applications Engineering for pressure ratings and extrusion gap recommendations*

PRODUCT PROFILES



OR1 OR

- Polyurethane O-Rings offer superior wear extrusion and 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 and DIN

*Up to 4000 mm (158 inches)

CANTILEVER SPRING DESIGN

SES 100 Series

Cantilever Spring Energized Seals, Highly Dynamic Applications

Cantilever Spring Energized Seals (SES) are primarily used in highly dynamic applications for rotary and reciprocating equipment, but they can also be used in static applications, when higher deflection springs are needed. The improved spring and seal deflection capability can be required due to excessive expansion or contraction or wide hardware tolerance.

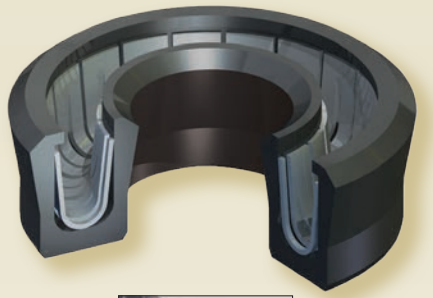
The 100 Series incorporates a U-shaped seal jacket with a high performance, stainless steel V-shaped cantilever spring to apply positive sealing force to the mating surface.

This design utilizes an asymmetric seal profile, where the dynamic lip has a robust profile in combination with a front angle, providing excellent leakage control and good scraping effect in case of highly viscous medias. The V-shaped cantilever spring design provides the spring tension at the leading edge of the seal only, which helps to optimize lip load and minimize frictional force.

Seal jackets are made from high performance fluoroplastic compounds and engineered plastics that provide, low coefficient of friction, high abrasion resistance, dimensional stability, and outstanding resistance to most fluids, chemicals, and gases.

This is the most popular spring energized seal design series due to its unique attributes, which help to maximize seal and hardware life.

The 100 Series is available in different unique jacket materials to address a broad range of applications.

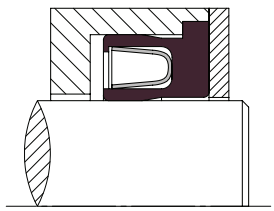


- Highly dynamic and static applications; plant-wide usage
- Unidirectional designs; available as rod, piston, flange, or static seals
- Single-point profile yields high sealability while minimizing frictional force
- All seals are made-to-order; no equipment modifications required
- Custom designs and materials available upon request

SPECIFICATIONS

Material (designation)	Temperature °C (°F)
AWC300	-156 – 200 (-250 – 400)
AWC400	-156 – 204 (-250 – 400)
AWC510	-156 – 204 (-250 – 400)
AWC520	-156 – 204 (-250 – 400)
AWC610	-253 – 82 (-425 – 180)
AWC630	-73 – 204 (-100 – 400)

PRODUCT PROFILES



ELLIPTICAL COIL SPRING DESIGN

SES 200 Series

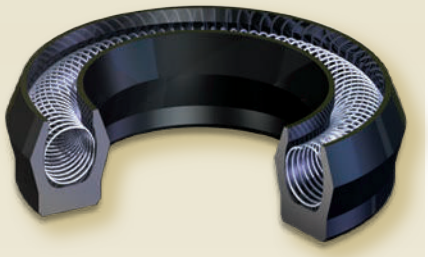
Elliptical Coil Spring Energized Seals with Constant Lip Load

Elliptical Coil Spring Energized Seals (SES) are commonly used in rotary, reciprocating, and static applications, where constant lip load or constant friction for low-pressure applications is needed. The elliptical coil spring provides an almost constant load on seal lips independent of hardware tolerances, eccentricity, and seal wear.

The 200 Series incorporates a U-shaped seal jacket with a high performance, stainless steel elliptical coil spring with high spring loading, which provides excellent sealing at zero or low system pressure, even in the case of fluid and gas applications.

Seal jackets are made from high performance fluoroplastic compounds and engineered plastics that provide a low coefficient of friction, high abrasion resistance, dimensional stability, and outstanding resistance to most fluids, chemicals, and gases as well as a resistance to aging.

The 200 Series is available in six unique jacket materials to address a broad range of applications. Each seal jacket is used in combination with a high performance, stainless steel elliptical coil spring to apply positive sealing force to the mating surface.



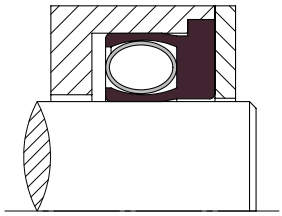
- Unidirectional design accommodates excessive tolerances or misalignment
- Elliptical coil spring design; high load vs. deflection
- Miniature profiles accommodate small diameters
- All seals are made-to-order; no equipment modifications required
- Custom designs and materials available upon request

SPECIFICATIONS

Material (designation)	Temperature °C (°F)
AWC300	-156 – 200 (-250 – 400)
AWC400	-156 – 204 (-250 – 400)
AWC510	-156 – 204 (-250 – 400)
AWC520	-156 – 204 (-250 – 400)
AWC610	-253 – 82 (-425 – 180)
AWC630	-73 – 204 (-100 – 400)

PRODUCT PROFILES

SES200 SES204 SES205

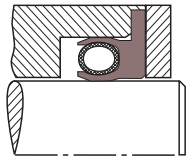


HELICAL WOUND SPRING DESIGN

SES 300 Series

Helical Wound Design for Slow Speed and Static Applications

This custom seal has excellent loading capabilities with minimal deflection, making it ideal for use in static applications, slow speeds, extremely low temperatures, and/or infrequent dynamic conditions when friction and wear are secondary concerns.



SPECIFICATIONS

Material (designation)	Size Range* mm (inch)	Temperature °C (°F)
AWC400	1.2 – 2032 (0.050 – 80)	-156 – 204 (-250 – 400)
AWC630	1.2 – 254 (0.050 – 10)	-73 – 204 (-100 – 400)
AWC610	1.2 – 2032+ (0.050 – 80+)	-253 – 82 (-425 – 180)

Please contact your Chesterton representative for larger sizes.

PRODUCT PROFILES

SES300 SES304 SES305

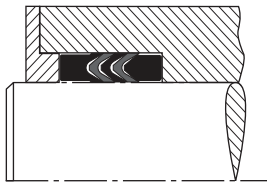
- Unidirectional design for slow speed and static applications
- Helical wound spring design with high-load, minimal deflection
- Concentrated load design when friction and wear are secondary concerns
- All seals made to order; no equipment modifications required
- Custom designs and materials available upon request

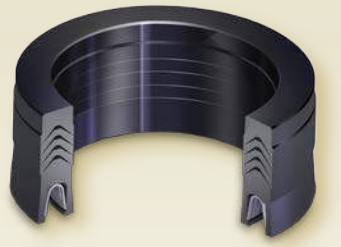
STACKED V-RING SEAL

SES 500 Series

High Performance, Multi-Purpose V-Rings

These stacked V-Ring sets are specifically designed to accommodate hardware with deep stuffing boxes. They are used in both rotary and reciprocating applications and are available in solid and spilt designs, depending upon your application requirements.





SPECIFICATIONS

Material (designation)	Temperature °C (°F)
AWC300	-156 – 200 (-250 – 400)
AWC400	-156 – 204 (-250 – 400)
AWC510	-156 – 204 (-250 – 400)
AWC520	-156 – 204 (-250 – 400)
AWC610	-253 – 82 (-425 – 180)
AWC630	-73 – 204 (-100 – 400)

PRODUCT PROFILES

SES500 SES520 SES521

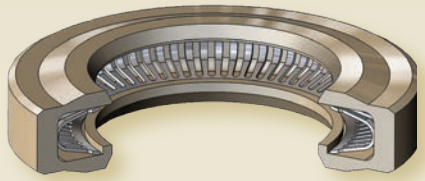
- Unidirectional design accommodates hardware with deep stuffing boxes
- Multi-purpose stacked sets available in solid and split designs
- All seals made to order; no equipment modifications required
- Custom designs and materials available upon request

CONTINUOUS CONTACT SEAL

600 Series

Continuous Contact Seals

Heavy-duty, High Load Seals



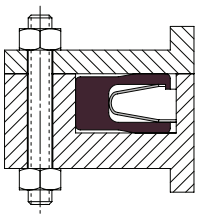
Continuous contact, robust Spring Energized Seals (SES) are primarily used where very high axial loading is required for challenging static and slow rotary, oscillating applications. This design is best utilized in difficult static sealing applications such as gas, cryogenic temperatures, and vacuum. This spring design can also be used in dynamic applications where high torque and clamping forces are present. The geometry of this spring lends itself to larger cross section and diameters.

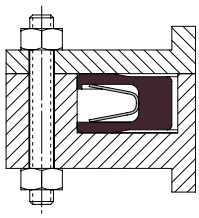
The continuous spring is a U-shaped spring manufactured with independent grooves originating in the center of the ring and progressing to the outside diameter. This unique spring design produces a continuous, heavy load at the sealing points. The continuous geometry of the spring, when wound in a circumference, minimizes expansion and contraction due to thermal effects.

The SES Series 600 is available in multiple unique jacket materials to address a broad range of applications. Each seal jacket is used in combination with a high performance, metallic, continuous spring to produce the required high contact load for the positive sealing force against the mating surface.

The materials used for the 600 Series consist of high performance fluoroplastic compounds and engineered plastics that provide a low coefficient of friction, high abrasion resistance, and dimensional stability, as well as outstanding resistance to most fluids, chemicals, and gases.

- Continuous contact, robust spring design for tight sealing
- Sealing solution for challenging static and rotary applications
- Ideal solution for large cross sections
- All seals are made-to-order; no equipment modifications required
- Custom profiles available





SPECIFICATIONS

Material (designation)	Temperature °C (°F)
AWC300	-156 – 200 (-250 – 400)
AWC400	-156 – 204 (-250 – 400)
AWC510	-156 – 204 (-250 – 400)
AWC520	-156 – 204 (-250 – 400)
AWC610	-253 – 82 (-425 – 180)
AWC630	-73 – 204 (-100 – 400)

PRODUCT PROFILES

SES600

Seal Materials

Just like hydraulic and pneumatic systems, fluid power transmission systems are utilized in a wide variety of applications and under broad operating and environmental conditions. The seals used in fluid power transmission systems significantly influence the functionality, reliability, and effectiveness, as well as the environmentally friendly operation of those systems.

Similar to how using the proper type of seal for a given application/system is critical, choosing the appropriate seal material is important for achieving the best possible seal performance. There are a variety of materials to choose from when solving different sealing problems presented by technical, reliability, and environmental challenges. The proper selection of seal material will help to achieve reasonable, expected service intervals and a full service life.

There are four major groups of synthetic polymers available for utilization across a broad range of industrial applications:

- **Polyurethanes:** thermoplastic (AU) and thermoset (EU) polyurethanes (Table 1 shows a list of common polyurethanes)
- **Elastomers (rubbers):** nitrile rubber (NBR), hydrogenated nitrile rubber (H-NBR), ethylene propylene diene monomer rubber (EPDM), fluorocarbon rubbers (FPM), vinyl methyl silicon rubber (MVQ), tetrafluoroethylene (TFE) (Table 2 shows a list of common elastomers)
- **Fluoroplastics:** PTFE and its different compounds such as bronze-filled, glass, carbon/graphite (Table 3 shows a list of common PTFE compounds)
- **Engineered Hard Plastics:** rigid thermoplastics and thermosets and their different composites (Table 4 shows a list of common engineered hard plastics)

Seal material properties provide and maintain the sealing function of the seal components during the service life. The most important considerations during the material selection process are the following:

- Proper durometer (hardness) and flexibility for tight sealing (sealability) and to avoid leaks
- Proper temperature resistance through a broad temperature range
- Good chemical resistance against utilized medias in order to maintain physical properties of the seal material and seal components, which enables material to be used in a wide diversity of hydraulic fluids and medias
- Excellent gap extrusion resistance to withstand elevated system pressure and shear stress caused by fluid pressure
- Ability to maintain the elasticity over a broad operating temperature range
- Elasticity maintained over the expected service life, having resistance against compression set, and good stress relaxation behavior
- Mating surface roughness will create wear on the seal's contact area, which should be reduced as much as possible using wear-resistant material in order to avoid early wear out
- Improved tribological properties by low frictional values
- Proper durometer (hardness) and flexibility for easy installation

TABLE 1– POLYURETHANES

Polyurethanes				
Material Code	Description	Color	Durometer Shore A	Available Sizes
AWC800	Thermoset polyether urethane (EU)	Dark maroon	95	ID of 10 mm (0.394") up to an unlimited OD utilizing our exclusive fusion process.
AWC825	Thermoset polyether urethane (EU)	Dark blue	85	ID of 10 mm (0.394") up to an unlimited OD utilizing our exclusive fusion process.
AWC830	Thermoset polyether urethane (EU) FDA	Off white	94	ID of 10 mm (0.394") up to an unlimited OD utilizing our exclusive fusion process.
AWC860	Thermoset polyether urethane (EU) high temp	Bright red	95	ID of 10 mm (0.394") up to an unlimited OD utilizing our exclusive fusion process.

Seal Materials

TABLE 2 – ELASTOMERS

Elastomer				
Material Code	Description	Color	Durometer Shore A	Available Sizes
AWC742	NBR	Black	85	ID of 10 mm (0.394") up to an OD of 1400 mm (55").
AWC743	H-NBR	Green	85	ID of 10 mm (0.394") up to an OD of 1400 mm (55").
AWC752	EPDM	Black	85	ID of 10 mm (0.394") up to an OD of 1400 mm (55").
AWC727	TFE/FEPM	Black	85	ID of 10 mm (0.394") up to an OD of 965 mm (38").
AWC704	FPM	Black	85	ID of 10 mm (0.394") up to an OD of 1400 mm (55").

TABLE 3 – FLUOROPLASTICS

Fluoroplastics				
Material Code	Description	Color	Durometer Shore D	Available Sizes
AWC100	PTFE Polyimide filled	Dark yellow	57	ID of 1.20 mm (0.50") up to an OD of 2032 mm (80").
AWC300	PTFE Glass + MoS_2-filled	Dark grey	56	ID of 1.20 mm (0.50") up to an OD of 2032 mm (80").
AWC400	PTFE Carbon/ graphite-filled	Black	62	ID of 1.20 mm (0.50") up to an OD of 2032 mm (80").
AWC500	PTFE Bronze-filled	Bronze	67	ID of 1.20 mm (0.50") up to an OD of 2032 mm (80").
AWC510	PTFE Mineral filled-FDA	White	66	ID of 1.20 mm (0.50") up to an OD of 2032 mm (80").
AWC520	PTFE unfilled	White	62	ID of 1.20 mm (0.50") up to an OD of 2032 mm (80").

TABLE 4 – ENGINEERED HARD PLASTICS

Engineered Hard Plastics					
Material Code	Description	Color	Durometer Shore D	Material Characteristics	Typical Uses
AWC650	POM Polyacetal	Black	85	Excellent creep resistance under continuous load, fatigue as well as endurance under repeated cycles.	Anti-extrusion rings for dynamic and static applications, wear rings guiding components in light- and medium-duty applications, gland adapters for V-Ring sets.
AWC665	PA6 Nylon MoS_2-filled	Black	85	Better wear properties with MoS_2 than unfilled material. Bearing material. Compressive strength 100 –110 MPa (14,500 –15,950 psi).	Anti-extrusion rings for dynamic and static applications, wear rings and guiding components in medium- and heavy-duty applications, gland adapters for V-Ring sets.
AWC630	PEEK unfilled	Tan	86	Better wear characteristics. Tough, reliable, and dimensionally stable, even under continuous elevated temperatures. Excellent wear characteristics for seals and wear rings.	Anti-extrusion rings for dynamic and static applications, wear rings and guiding components in heavy-duty applications, spring energized seals.
AWC635	PEEK glass-filled	Cream	88	Designed for improving the wear rate of unfilled PEEK™ (AWC630) in high performance applications. Tough, reliable, and dimensionally stable, even under continuous elevated temperatures. Good backup ring material in backup ring applications.	Anti-extrusion rings for dynamic and static applications, wear rings and guiding components in heavy-duty applications, spring energized seals.
AWC615	UHMWPE	White	68	Excellent low friction and wear material. Great option for low temperature applications. Rated from -162°C – 110°C. High impact strength material resistant to chemical attack and moisture absorption.	Anti-extrusion rings for dynamic and static applications, wear rings guiding components in light and medium-duty applications, gland adapters for V-Ring sets.

PEEK™ is a trademark of Victrex Manufacturing Limited and its group of companies.

Oils Product Selection Guide

Industrial Grade Oil								
Name	Base Oil	ISO VG (ASTM D2422)	Operating Temperature	Specific Gravity	Viscosity @ 40 C (cSt) (ASTM D445)	Viscosity @ 100 C (cSt) (ASTM D445)	Viscosity Index (ASTM D2270)	Pour Point (ASTM D97)
601	Mineral	22	-23°C – 150°C (-10°F – 300°F)	0.90	22	4	58	-25°C (-13°F)
610 HT	Synthetic POE	460	-25°C – 250°C (-15°F – 482°F)	0.97	473	71	230	-40°C (-40°F)
610 Plus	Synthetic POE	68	-25°C – 270°C (-15°F – 520°F)	0.99	68	11	130	-45°C (-49°F)
610 MT Plus	Synthetic POE	220	-25°C – 270°C (-15°F – 520°F)	0.98	220	22	130	-25°C (-13°F)
652	Mineral	22	-23°C – 150°C (-10°F – 300°F)	0.90	22	4	58	-25°C (-13°F)
715	Semi-Synthetic	58000	N/D	0.89	58000 in service	330 in service	50	25°C (77°F)
715 Gold	Proprietery Synthetic	10000	N/D	0.89	9600	393	179	25°C (77°F)
Food-Grade Oil								
Name	Base Oil	ISO VG (ASTM D2422)	Operating Temperature	Specific Gravity	Viscosity @ 40 C (cSt) (ASTM D445)	Viscosity @ 100 C (cSt) (ASTM D445)	Viscosity Index (ASTM D2270)	Pour Point (ASTM D97)
690 FG	Mineral	22	-9°C – 120°C (15°F – 250°F)	0.88	22	<4	58	-40°C (-40°F)
650 AML	Plant-Based Esters	22	-21°C – 200°C (-6°F – 392°F)	0.88	20.4	4.9	176	-21°C (-6 °F)
720 CCG	Polymer-modified synthetic	680	-20°C – 215°C (-4°F – 419°F)	0.91	707	57	143	N/D

Greases Product Selection Guide

Industrial Grade Grease									
Name	Thickener	Base Oil	NLGI Grade	Base Oil Viscosity	Dropping Point ASTM D2265	Service Temp	Four Ball Wear Weld Load, ASTM D2596	Water Washout Resistance ASTM D1264	Corrosion Resistance ASTM B117
613 Moly Grease (Not available in EMEA)	Lithium Complex	Mineral	2	150	304°C (580°F)	-18°C – 150°C (0°F – 302°F)	500 kg	<1.0	300 hours @50 microns
615 HTG #1	Calcium Sulfonate Complex	Mineral	1	100	300°C (572°F)	-45°C – 204°C (-50°F – 400°F)	620 kg	<1.0	>1000 hours @50 microns
615 HTG #2	Calcium Sulfonate Complex	Mineral	2	100	318°C (604°F)	-40°C – 204°C (-40°F – 400°F)	620 kg	<0.05	>1000 hours @50 microns
615 HTG #2-460	Calcium Sulfonate Complex	Mineral	2	460	300°C (572°F)	-40°C – 204°C (-40°F – 400°F)	620 kg	<3.0	>1000 hours @50 microns
635 SXC	Calcium Sulfonate Complex	Synthetic (PAO)	2	100	318°C (604°F)	-40°C – 240°C (-40°F – 464°F)	800 kg	<0.05	>1000 hours @50 microns
638 EMG 100	Proprietery Sulfonate Complex	Synthetic (PAO)	2	100	318°C (604°F)	-40°C – 240°C (-40°F – 464°F)	800 kg	<0.05	>1000 hours @50 microns
638 EMG 46	Proprietery Sulfonate Complex	Synthetic (PAO)	2	40	318°C (604°F)	-40°C – 240°C (-40°F – 464°F)	620 kg	<0.05	>1000 hours @50 microns
Food Grade Grease									
Name	Thickener	Base Oil	NLGI Grade	Base Oil Viscosity	Dropping Point ASTM D2265	Service Temp	Four Ball Wear Weld Load, ASTM D2596	Water Washout Resistance ASTM D1264	Corrosion Resistance ASTM B117
625 CXF	Calcium Sulfonate Complex	Mineral	2	100	318°C (604°F)	-30°C – 204°C (-22°F – 400°F)	620 kg	<0.05	>1000 hours @50 microns
630 SXCF	Calcium Sulfonate Complex	Synthetic (PAO)	2	40	318°C (604°F)	-40°C – 240°C (-40°F – 464°F)	620 kg	<0.05	>1000 hours @50 microns
630 SXCF 220 #1 (Not available in EMEA)	Calcium Sulfonate Complex	Synthetic (PAO)	1	220	316°C (600°F)	-40°C – 240°C (-40°F – 464°F)	400 kg	1.0	>1200 hours @50 microns

INDUSTRIAL OILS

610 Plus, 610 MT Plus, 610 HT

Synthetic Lubricating Fluid—High-Temperature Service

Premium-quality, 100% synthetic fluid that cleans as it lubricates over a wide temperature range of -25°C – 270°C (-15°F – 520°F).

Product Characteristics

- Low evaporation
- Low-carbonizing
- High-detergency—self-cleaning
- E.P. additives increase load carrying ability

Available Container Sizes:
610 Plus: 3.8 l (1 gal)*, 20 l, 208 l
610 HT: 20 l, 208 l

**5 l replaces 3.8 l in EMEA*

Applications

- Equipment operating at elevated temperatures
- Refrigerated areas
- Severe environments
- Oven and high-temperature chains

Typical applications include oven chains, chain conveyors, drying ovens, heat treating conveyors, ceramic ovens.

- Reduces lubricant consumption
- Reduced equipment cleaning and downtime
- Reduces energy consumption
- Increases equipment life

Technical Data 610 Plus

ISO VG (ASTM D2422, DIN 51 519)	68
Temperature Range	-25°C – 270°C (-15°F – 520°F)
Flash Point	310°C (590°F)
Four Ball Wear Test (ASTM D2266, DIN 51 350/5) Scar Diameter	0.38 mm

Technical Data 610 MT Plus

ISO VG (ASTM D2422, DIN 51 519)	220
Temperature Range	-25°C – 270°C (-15°F – 520°F)
Flash Point	>290°C (>554°F)
Four Ball Wear Test (ASTM D2266, DIN 51 350/5) Scar Diameter	0.38 mm

Technical Data 610 HT

ISO VG (ASTM D2422, DIN 51 519)	460
Temperature Range	-25°C – 250°C (-15°F – 482°F)
Flash Point, C.O.C. (ASTM D92, ISO 2592)	225°C (437°F)
Four Ball Wear Test (ASTM D2266, DIN 51 350/5) Scar Diameter	0.35 mm

INDUSTRIAL OILS

650 AML

Advanced Machinery Lubricant

High Performing, Readily Biodegradable

Chesterton 650 AML is a high performing, readily biodegradable lubricant designed to creep into internal workings of chains, cables, pneumatics, needle bearings, and sliding mechanisms. It is engineered with a unique blend of plant-based natural and synthetic esters making it environmentally friendly and worker-safe.

650 AML penetrates deep into valves, pistons, and other pneumatic components to protect against friction and wear improving energy efficiency. Inherent detergency in this lubricant disperses dirt and debris, and removes gums and varnish prolonging the life of chains, cables and mechanical equipment. It improves the efficiency of automatic lubrication systems by eliminating trace moisture and contaminants from distribution lines, controls, and components.

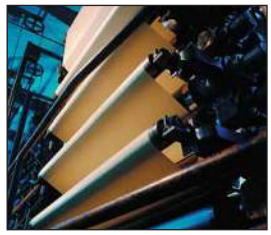
650 AML is NSF H1 certified and is free of any animal fats, oils, and animal derived by-products.

Product Characteristics

- Biodegradable
- Low mist hazard, low odor
- Reduces friction and wear
- Exhibits high load and extreme pressure capabilities
- NSF H1 certified

Applications

- Air actuated valves, pneumatic cylinders, solenoids
- Conveyor chains, slideways, and wire ropes
- Air mist or oil injected lubricated bearings, and equipment
- Assembly, packaging, and filling machines



Technical Data

ISO VG (ASTM D 2422, DIN 51 519)	22
Temperature Range	21°C – 200°C (-6°F – 392°F)
Flash Point (ASTM D 93, DIN 51 755)	211°C (412°F)
Four Ball Wear Test (ASTM D 4172)	
Scar Diameter	0.395 mm
Four Ball EP Test (ASTM D 2783) Weld Load	1961 N, 200 kg
Pin and Vee Block (ASTM D 3233)	
Failure Load, Max	17587 N, 1793 kgf
Torque	4.61 N-m
Coeficient of Friction	0.05

- Self-cleaning, removes residue and sticky buildup
- Low friction, significantly reduces power consumption
- Reduces wear, prolongs equipment life
- Environmentally friendly ester technology
- Free of any animal fats, oils, and animal derived by-products

Available Container Sizes

475 ml, 20 l, and 208 l

INDUSTRIAL OILS

601

Chain Drive Pin and Bushing Lubricant

Premium-quality, light oil that penetrates between the close clearance of chain drive bushings and pins to provide critical lubrication.

Product Characteristics

- Rapid penetration
- E.P. additives increase load carrying ability
- No dirt and dust buildup
- No sticky lubricant residues
- Long-lasting, non-drying film
- -23°C – 150°C (-10°F – 300°F)

Available Container Sizes: Aerosol, 3.8 l (1 gal)*, 20 l, 208 l
**5 l replaces 3.8 l in EMEA*

Applications

- Chain-driven machinery
- Conveyors
- Packaging equipment
- Hoist chains
- Forklift trucks
- Chain saws

- Increases chain life
- Reduces lubricant consumption
- Reduces energy consumption
- Creeps into pins and bushings
- Can be used with Spraflex® 715 or 715 Gold in severe wet conditions

652

Pneumatic Lubricant and Conditioner

High performance, low-viscosity formulation reduces up to 90% of pneumatic maintenance costs, decreases downtime. Cleans, protects, and prolongs the life of pneumatic equipment.

Product Characteristics

- Will not cause sludge buildup
- Prevents seals/O-Rings from drying out
- Reduces power consumption
- Cleans rust, sludge, and dirt from all air tools as it lubricates
- -23°C – 150°C (-10°F – 300°F)

Available Container Sizes: 475 ml, 20 l, 208 l

Applications

- Air tools
- Cylinders
- Air line lubricators
- Air impact wrenches, hammers, drills
- Production air systems
- CNC machines
- Robotics
- Assembly line tools

- Lowers friction and reduces air cost
- Cleans and lubricates
- Prevents corrosion
- Disperses dirt and dust

690 FG

Food-Grade Lubricant

High quality, multi-purpose penetrating lubricant used throughout food and beverage facilities to prolong the life of machinery and parts while reducing costs.

Product Characteristics

- Clear, colorless, odorless
- Safe and easy to use in bulk or aerosol
- -9°C – 120°C (16°F – 248°F)
- NSF registered H1

Available Container Sizes: Aerosol, 3.8 l (1 gal)*, 20 l, 208 l
**5 l replaces 3.8 l in EMEA*

Applications

Food, beverage, and pharmaceutical processing equipment, including

- Chain drives
- Pistons
- Valves
- Rollers
- Pneumatics

- Safe to use on food processing equipment*
- Reduces energy consumption
- Increases equipment life

*NSF H1 Registered

INDUSTRIAL OILS

720 CCG

Chain, Cable, Gear Lubricant

Extreme Pressure, Water, and Corrosion Resistant

Chesterton 720 CCG is a multi-use, off-white translucent, polymer-modified synthetic lubricant. This product is well suited for applications requiring a high-pressure resistance and a durable film to protect equipment.

Due to high shear strength and self-adhering film, 720 CCG will not fling off or extrude like ordinary oils and greases. Chesterton 720 CCG forms a robust "wear shield" which stays in place even under the most extreme pressures. The contact surfaces are cushioned, thereby extending life of chains, sprockets, wire ropes, and gear drives.

720 CCG lubricant's anti-corrosion action and water resistance protect chains, wire ropes, and gears exposed to moisture and corrosive liquids and vapors, far exceeding conventional grease technology.

Product Characteristics

- High pressure resistant
- Water and corrosion resistant
- Shear stable lubricant
- Light color, translucent film; off-white
- NSF registered H1

Applications

- Chain drives/sprockets
- Small pitch open gears
- Hoists/cranes, wire ropes/cables
- Oven chains and chain conveyors
- Worm drive gearboxes, motor-operated valves

Technical Data	720 CCG	720 CCG with Diluent
ISO VG (ASTM D 2422)	680	680 in service*
Texture	Tacky, Semi-Fluid Grease	Tacky, Thixotropic Fluid
Color	Off-white	Off-white
Apparent Viscosity, Brookfield, @25°C	150000 cPs	6200 cPs
Four Ball Weld (ASTM D 2596, DIN 51 350/4) Weld Load	800 kgf (1763 lbf)	800 kgf (1763 lbf)
Four Ball Wear (ASTM D 2266, DIN 51 350/5) Scar Diameter	0.57 mm	0.57 mm
Corrosion Resistance, 5% NaCl (ASTM B117)	>1000 hrs. @50 micron thickness	>1000 hrs. @50 micron thickness

- Lubrication and protection in one product
- Polymer-modified synthetic base
- Self-adhering, non-dripping lubricant

Available Container Sizes

475 ml, 20 l, and 208 l

** After diluent evaporated*

INDUSTRIAL OILS

715 Spraflex® and 715 Spraflex® Gold

Adhesive Surface Lubricant to Protect Gears, Sprockets, Chains, and Wire Ropes

A surface lubricant for chain drives, open gears, and wire rope. Provides a long-lasting, non-extruding "wear shield" to protect equipment operating under heavy loads.

Product Characteristics

- No lubricant squeeze-out
- Non-drip
- Self-adhering, flexible lubricant
- Resistant to acid fumes
- Guards against rust and corrosion

Available Container Sizes:

715: Aerosol, 20 l, 208 l
715 Gold: 3.8 l (1 gal)*, 20 l, 208 l
**5 l replaces 3.8 l in EMEA*

Applications

- Chains
- Open gears
- Wire ropes and cables
- Equipment in wet or underwater environment

Note: *Use Chesterton 715 Spraflex Gold where a clean, non-staining film is needed*

- Reduces lubricant consumption
- Water-resistant
- Provides long-term equipment life
- Can be used with 601 Chain Drive and Pin Bushing Lubricant

INDUSTRIAL GREASES

615 High-Temperature Grease

Available in Three Formulations: #1, #2, #2-460

High performance, corrosion-inhibited grease with outstanding extreme pressure capabilities and excellent water washout resistance.
Temperature limit -40°C – 204°C (-40°F – 400°F).

Product Characteristics

- Speed Factor (NDm) 40°C – 100°C:
  615 HTG#1 and 615 HTG#2: 70000 – 300000
  615 HTG#2 460: <70000
- Superior water resistance
- Excellent corrosion protection
- Compatible with most popular greases
- Exceptional shear resistance
- Antioxidants prevent hardening
- QBT™ Quiet Bearing Technology

Available Container Sizes:

615 HTG #1: 400 g, 18 kg, 55 kg, 180 kg
615 HTG #2: 400 g, 18 kg, 55 kg, 180 kg
615 HTG #2-460: 400 g, 18 kg, 180 kg

Applications

High water, temperature environment plants including

- Pulp and paper mills
- Mining operations
- Steel, aluminum, and metal processing
- Marine
- Power
- Water and wastewater

- Extends bearing life
- Reduces downtimes
- Increases productivity
- Reduces grease consumption

625 CXF

Corrosion-Resistant, Extreme-Pressure Food Grease

High performance, corrosion-inhibited grease with outstanding extreme-pressure capabilities and excellent water washout resistance.
Temperature limit -30°C – 204°C (-22°F – 400°F)

Product Characteristics

- Speed Factor D_m 40°C – 100°C (104°F – 212°F) 50000 – 300000*
- Excellent water washout
- Corrosion resistant
- NSF registered H1

Available Container Sizes: 400 g, 18 kg, 55 kg

**Consult Chesterton Application Engineering for concerns on compatibility.*

Applications

- Processing and packaging machinery
- Slides
- Grease lubricated chains
- Bottle and carton filling machines
- Paste and sauce fillers
- Conveyor belts
- Rollers
- Canning machinery

- Nearly impervious to water and steam
- Complies with sections 178.3570 of FDA food additives regulations

INDUSTRIAL GREASES

630 SXCF, 630 SXCF 220 #1*

Synthetic, Extreme-Pressure, Corrosion-Resistant Food Grease

High performance, food-grade, corrosion-inhibited grease with outstanding extreme pressure capabilities and excellent water washout resistance. Temperature limit -40°C – 240°C (-40°F – 464°F).

Product Characteristics

- Speed Factor (NDm):
  630 SXCF: 150 000 – 800,000
  630 SXCF 220#1: 50000 – 300000
- Superior water washout resistance
- Excellent corrosion protection
- Compatible with most popular greases
- Exceptional shear resistance
- Antioxidants inhibit hardening or crystallization
- NSF registered H1

Available Container Sizes:
630 SXCF: Aerosol, 400 g 18 kg, 55 kg
630 SXCF 220 #1*: 400 g 18 kg, 55 kg, 180 kg
**Product is not available in EMEA*

Applications

- Food, pharmaceutical, beverage industries
- Processing and packaging machines
- Bottling equipment
- Fruit feeders
- Paste and sauce fillers
- Canning machinery
- Meat packaging equipment
- Carton filling equipment
- Use 630 SXCF 220 #1 on larger bore bearings >75 mm (>3")

- Extends bearing life
- Reduces downtimes
- Increases productivity
- Reduces grease consumption

635 SXC

Synthetic, Extreme-Pressure, Corrosion-Resistant Grease

High performance, corrosion-inhibited grease with outstanding extreme pressure capabilities and excellent water washout resistance; 635 is synthetic-based and offers superior high-temperature stability and resistance to steam and corrosive chemicals. Temperature limit -40°C – 240°C (-40°F – 464°F).

Product Characteristics

- Speed Factor (NDm): 100000 – 500000
- Superior water washout resistance
- Excellent corrosion protection
- Compatible with most popular greases
- Exceptional shear resistance
- Antioxidants inhibit hardening or crystallization

Available Container Sizes: 400 g, 18 kg, 55 kg, 180 kg

Applications

- Electric motors
- HVAC/fans and blowers
- Conveyor bearings
- Mixers, agitators, and pumps
- Guides/slides

- Extends bearing life
- Reduces downtimes
- Increases productivity
- Reduces grease consumption

638 EMG 100 / 638 EMG 46

High Performance Electric Motor Grease Available in Two Formulations: EMG 100, EMG 46

Synthetic-base oil lubricating grease. Superior multi-purpose grease for heavy loads, high heat, and corrosive environments.

Product Characteristics

- Speed Factor (NDm):
  638 EMG 100: 80000 – 500000
  638 EMG 46: 200000 – 800000
- Superior water washout resistance
- Excellent corrosion resistance

Available Container Sizes: 400 g, 18 kg

Applications

- Electrical motors and generators
- Forced draft motors, induction draft fans, fin fans
- HVAC/fans and blowers
- Medium-to high-speed ball and roller bearings
- Motors operating in high speeds and low temperature conditions

- Excellent thermal and mechanical stability
- Virtually waterproof and steam-resistant
- Resistant to extreme pressure and vibration

ANTI-SEIZES

725

Nickel Anti-Seize Compound

A high performance, nickel-based anti-seize that combines the extreme pressure, corrosion-resistant, anti-seize abilities of colloidal nickel in an oil suspension that can withstand temperatures up to 1425°C (2597°F).

Product Characteristics

- Ultra-fine particles
- Guards against galling and corrosion
- Protects against self-welding
- Withstands extreme pressure
- Up to 1425°C (2597°F)
- Does not contribute to the formation of hexavalent chromium.

Available Container Sizes: Aerosol, 250 g, 500 g, 20 l (24 kg)

Applications

Covers all industries

Mechanical assembly of:

- Bolts
- Studs
- Flanges
- Press fits
- Valve stems
- Pump sleeves
- Gas Turbines
- Screws
- Bushings
- Gaskets

- Lubricates for assembly and disassembly
- Protects against corrosion
- No need for torque tension recalculation

772

Premium Nickel Anti-Seize Compound

High performance, premium quality, nickel-based anti-seize formulated specifically for the power industry. Conforms with specifications restricting the levels of halogens, sulfur, and low melting point metals.

Product Characteristics

- Water resistant
- Guards against galling and corrosion
- Protects against self-welding
- Withstands extreme pressure
- Applicable where copper use is prohibited
- Conforms to GE D5Y0P12

Available Container Sizes: 500 g

Applications

- Bolts
- Studs
- Flanges
- Press fits
- Valve stems
- Pump sleeves
- Steam Turbines
- Gaskets

- Meets MIL-A-907F
- Ultra-fine particles
- Eases mechanical assembly and disassembly

783 ACR

Corrosion-Resistant Anti-Seize

783 combines high performance, industrial anti-seize performance with extreme corrosion protection and water washout resistance. 783 is ideal when the primary cause of bolt seizure is corrosion.

Product Characteristics

- Eases disassembly up to 900°C (1652°F)
- Fills in microscopic voids
- No toxic heavy metals
- For extreme pressure up to 8928 kg/cm^2 (127000 psi)
- Safer than traditional metallic-based anti-seizes

Available Container Sizes: 250 g, 500 g, 20 l (24 kg)

Applications

Covers all industries

- Bolts
- Screws
- Studs
- Pipe threads
- Press fits
- Pump sleeves

- Extreme corrosion protection and water washout resistance
- Lubricates for assembly and disassembly

ANTI-SEIZES

785 / 785 FG

Parting Lubricant

The "new generation" anti-seize compound contains a blend of ultra-fine, inorganic solid lubricants in a non-carbonizing, ashless synthetic carrier. Withstands severe temperature and pressure conditions to assist in disassembly of threaded parts.

Product Characteristics

- Eases disassembly up to 1204°C (2200°F)
- Fills in microscopic voids
- No toxic heavy metals
- For extreme pressures up to 4730 kg/cm^2 (67570 psi)
- 785 FG is NSF registered H1

Available Container Sizes:
785: Aerosol, 200 g, 250 g, 500 g, 20 l (24 kg)
785 FG: 250 g, 500 g

Applications

Covers all industries
- Bolts
- Screws
- Studs
- Pipe threads
- Press fits
- Pump sleeves
- Use 785 FG for all food, beverage, and pharmaceutical applications
- 785 FG has extreme pressure capabilities up to 10609 kg/cm^2 (150000 psi)

- Lubricates for assembly and disassembly
- Protects against corrosion
- No need for torque tension recalculation

MAINTENANCE SPECIALTIES

390

Cutting Oil

A heavy-duty, multi-purpose, oil-based cutting fluid to provide maximum tool life and superior parts finish. The high viscosity oil clings to drills, taps, bores, etc. and will provide maximum friction reduction. Available in aerosol format only.

Product Characteristics

- Use on hard or soft ferrous metals
- Powerful extreme pressure additives
- Provides maximum tool life
- Excellent part finish
- Clings to vertical and overhead surfaces
- No unpleasant odors
- NSF registered H2, U2

Available Container Sizes: Aerosol

Applications

- Broaching
- Boring
- Drilling
- Sawing
- Reaming
- Milling
- Pipe threading
- Countersinking

- Cleaner cuts
- Deters metal-to-metal microwelding, galling, and built-up edges
- Protects from rust

723 / 723 FG Sprasolvo™

Penetrating Oil

Fast-acting, penetrating oil in a convenient, non-flammable propellant aerosol can. Excellent for hard to reach areas where rust, tar, grease, and dirt may prevent easy removal of nuts, bolts, and fittings.

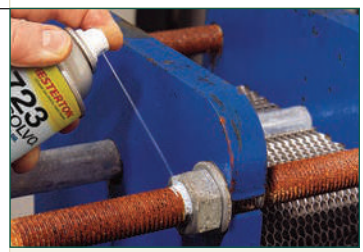
Product Characteristics

- Pinpoint spray
- Safe on plastic and painted surfaces
- Aromatic free
- Creeps into microscopic spaces
- Optimize bolting reliability with Chesterton 783 ACR or 785 Parting Lubricant

Available Container Sizes: 723: Aerosol, 475 ml
723 FG: Aerosol

Applications

- Use on all corroded or seized threaded assemblies in the harshest industrial environments
- Use 723 FG for food, beverage, and pharmaceutical applications



- Single function—optimizes performance
- Fast-acting
- Contains no harsh solvents

MAINTENANCE SPECIALTIES

730 Spragrip®

Belt Dressing

Superior, energy-efficient belt dressing in a convenient aerosol package. Lengthens life of leather, rubber, canvas, or plastic belts; reduces belt slippage for all V, flat, and round belts.

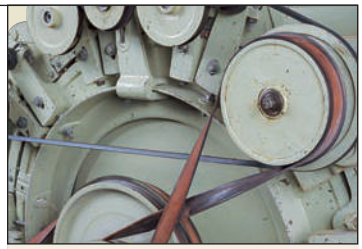
Product Characteristics

- Eliminates slippage
- No glazing or hardening
- Non-staining
- Preserves belts in inventory
- No rosins, asphalt, or hard solvents
- NSF registered P1

Available Container Sizes: Aerosol

Applications

- Belt drives
- Fans
- Conveyor belts
- Generators
- Pumps
- Compressors



- Waterproofs and prevents slipping even under the most humid conditions
- Extends belt life

740 and 775

740 Heavy-Duty Rust Guard and 775 Moisture Shield

These corrosion-preventative coatings provide heavy-duty metal protection for all areas constantly exposed to humidity and corrosive fumes—without critical surface preparation. For inventory part needs:

- *Short-term—775 is a thin, oily film for protection up to six months*
- *Long-term—740 is a thick, waxy film for protection up to two years*

Product Characteristics

- Self-healing, if scratched
- Transparent brown

Available Container Sizes:
740: Aerosol, 3.8 l (1 gal)*, 20 l, 208 l
775: Aerosol, 20 l, 208 l

**5 l replaces 3.8 l in EMEA*

Applications

- Molds, castings, and tooling
- Parts in process
- Parts in storage
- Pumps, valves, flanges, and pipe work
- Indoor structural steel

Note: *Product can be easily removed with Chesterton's 276 Electronic Component Cleaner or 274 Industrial Degreaser*

- Provides up to two years corrosion protection under sheltered outdoor conditions
- Does not peel or flake
- Excellent resistance to acid, alkali, and salt air fumes

752

Cold Galvanizing Compound

Zinc rich primer or final protective coating for metals exposed to atmospheric or corrosive conditions. The one-part system provides three types of corrosion protection: barrier, galvanic, and zinc oxide. A quick, cost-effective way to cold galvanize parts and finished product.

Product Characteristics

- Fast drying
- Self-healing
- One-part system
- Paintable
- Conforms to MIL-P-46105, MIL-P-21035, and MIL-P-26915

Available Container Sizes: Aerosol, 2.7 kg

Applications

- Steel and iron surface/structures
- Structural steel tanks
- Transmission towers
- Underground pipelines
- Automotive bodies
- Marine equipment
- Mining equipment
- Metal roofs
- Welds
- Ducts

- 95% pure zinc in dried film
- Three way corrosion protection

MAINTENANCE SPECIALTIES

763 Rust Transformer™

Surface Conversion Rust Treatment

A mild, natural acid-based product that electrochemically transforms rust into a corrosion inhibiting protective film. Provides an excellent, low-cost alternative to sandblasting for surface preparation.

Product Characteristics

- Cleans up with water
- No strong acids
- Biodegradable
- Forms protective film

Available Container Sizes: 3.8 l (1 gal), 20 l, 208 l

Applications

- Coatings on storage tanks
- Auto or truck bodies
- Heavy equipment
- Pumps, motors, and valves
- Transmission line towers
- Structural steel

- Easy to apply
- No sandblasting required
- Safe for workers
- Ideal for maintenance painting service preparation

800 GoldEnd® Tape

100% Pure PTFE Sealant Tape

Heavy-duty, high-density, tear-resistant, moldable, dry PTFE sealant tape for use on metal or plastic threads, pipes, or bolts.

Product Characteristics

- -240°C – 260°C (-400°F – 500°F)
- Seals tightly and opens easily
- Non-aging, non-hardening
- Chemically resistant
- Requires fewer wraps
- Resists tearing and breakage
- Won't clog lines
- NSF registered H1, S2

Available widths: 6.4 mm (1/4"), 12.7 mm (1/2"), 19.1 mm (3/4"), 25.4 mm (1")

Applications

- ***Liquids:*** Steam, water, salt water, air, fuels, refrigerants, acids, alkalis, all solvents
- ***Gases:*** Hydrogen, ammonia, oxygen, propane, butane, nitrogen
- ***Other:*** Pneumatic and hydraulic fittings up to 690 bar (10000 psi)

- Seals with 1½ to 2 wraps—virtually all chemicals
- Adjustable by 90°, no leakage
- No waste

900 GoldEnd® Paste

PTFE Thread Sealant and Lubricant

Non-hardening, non-corrosive, moldable PTFE thread sealant and lubricant for the most difficult of sealing demands on pipe joints, pneumatic fittings, and hydraulic line applications.

Product Characteristics

- UL Listed
- Non-corrosive and non-toxic
- Safe for PVC, CPVC, plastic pipe fittings
- NSF registered H2, S2

Available Container Sizes: 200 g, 500 g, 20 l

Applications

- Non-hardening thread sealant and lubricant for liquids, gases, or hydraulic fittings
- Ideal for stainless steel

- No volatile solvents
- Ultra-fine PTFE particles

MAINTENANCE SPECIALTIES

860

Moldable Polymer Gasketing

Easily and economically create an ultra-thin gasket that conforms to irregular and worn-out surfaces

Two-part, flexible gasketing material which fills in surface irregularities, stops leaks, and never sticks to surfaces after curing.

Use 860 Moldable Polymer Gasketing to handle almost every gasketing application, eliminating the need to inventory precut gaskets or sheets of gasketing. Disassembly of equipment is always easy when sealed with 860 Moldable Polymer Gasketing because it will not stick to the surface. Just peel the gasket off, no scraping is necessary.

- Economical
- Creates gaskets any size and shape
- Ease of application—speeds up maintenance

Available Container Sizes

Kit (includes 2 aerosols and 2 cartridges)

Product Characteristics

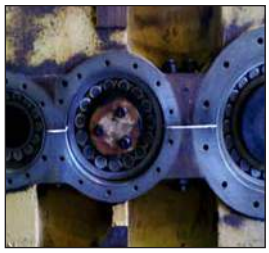
- Resistance to oils, water, chemicals, and solvents
- Never sticks to surfaces
- Fills voids and scratches, up to 6 mm (1/4") deep
- Remains elastic
- Temperatures up to 260°C (500°F)
- Steam pressure at 170°C (338°F) up to 6.8 kg/cm^2 (100 psi)

Applications

For sealing complex mechanical assemblies

- Gearboxes, inspection covers, bearing housings, fittings, oil sumps and reservoirs, turbine casings, electrical boxes, vacuum systems
- NSF Registered S2/P1

Caution: *Not for use in contact with concentrated acids or hot concentrated caustics*



Technical Data

Cure Time* at 25°C (77°F)	Gel time 3 – 4 hours (Full cure 24 hours)
Coverage per 400 grams	
3 mm (1/8") bead	3289 linear cm (108 linear feet)
6 mm (1/4") bead	822 linear cm (27 linear feet)
Temperature Limit (Continuous)	-51°C – +260°C (-60°F – +500°F)

**After application of curing agent. Cures faster at higher temperatures.*

Cleaners and Degreasers Product Selection Guide

✓+	= Excellent
✓	= Good

WATER-BASED CLEANERS			Recommended Chesterton Cleaners and Degreasers
Application	Soil/Deposit	Heavy Oil, Adhesives, Glues	803
		Grease, Petroleum Oil, Dirt	820
		Natural Oils—Animal Fat, Vegetable Oil	360
		Rust and Oxidation	338
	Parts Degreasing Shop	Manual Brush or Wipe	820
		Parts Degreasing Station	820
		Dip Tank	820
		Steam Cleaning	803
	Parts Degreasing	Agitated Tank	820
		Dip Tank	820
		Pressure Washing	803
		Ultrasonic	820
	Machinery/Plant Cleaning	Closed Circulation, Pipeline	803
		Tanks and Vessels	803
		Food Processing Equipment	803
		Building Structures, Floors, and Walls	820
		Floor Scrubbers	820

SOLVENT BASED CLEANERS		274 Industrial Degreaser	292 PDS Precision Degreasing Solvent*	294 CSD Critical Surface Degreaser
Surface	Paint and Plastic Safe	✓+	✓+	
Tough Soil	Heavy Oil, Adhesives	✓	✓	✓+
Equipment and Method	Dip Tank	✓		
	Ultrasonic	✓		
	Manual Brush or Wipe	✓	✓+	✓+
	Closed Circulation, Pipeline	✓		
General Purpose and Applications	Food Processing Equipment	✓+	✓	✓
	Molds, Patterns, Presses		✓+	✓+
	Vehicles and Transportation	✓	✓	✓+
	QC and Inspection		✓	✓+
	Textiles	✓	✓+	✓+
	Parts Preparation Cleaning	✓	✓+	✓+

ELECTRICAL CLEANERS		276 Electronic Component Cleaner	279 PCS Precision Cleaning Solvent*	296 Electro Contact Cleaner*
Surface	Paint and Plastic Safe	✓+	✓+	✓
	Sensitive Metal Safe	✓+	✓+	✓
Soil	Grease, Petroleum Oil, Dirt	✓+	✓	✓
Cleaning Purpose	Electrical Motors—Energized		✓+	✓**
	Electrical Motors—Non-Energized	✓+	✓	✓
	Electrical Components—Energized		✓+	✓**
	Electrical Components—Non-Energized	✓+	✓+	✓

To see all Chesterton cleaners and degreasers, please go to chesterton.com *Not available in EMEA.* **Contact Chesterton Application Engineering team.*

CLEANERS AND DEGREASERS

274

Industrial Degreaser

A hard surface degreaser for industrial and marine environments.

Product Characteristics

- Dissolves petroleum oil, grease, tar, and other inorganic soils
- Low odor, aromatic content
- Does not attack metal, most paints, and plastics
- Fast, penetrating action

Available Container Sizes: Aerosol, 475 ml, 20 l, 208 l

Applications

- Maintenance shops
- Dip tanks
- Hard surfaces
- Machined parts
- Recirculating and agitated parts washers

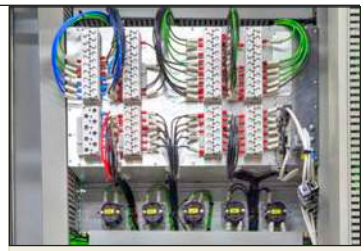
- Cost-effective
- Low evaporation, long lifetime, reduced consumption
- Improve worker safety
- High flash point

CLEANERS AND DEGREASERS

276

Electronic Component Cleaner

Fast evaporating, high performance, solvent based degreaser that does not contain ozone depleting solvents.



Product Characteristics

- Low residue
- Non-chlorinated
- No ozone depleting materials

Available Container Sizes: Aerosol, 20 l, 200 l

Applications

- ***Spray cleaning***
- Switches, controllers, panel meters
- Circuit boards, contacts, levers
- Control panels
- ***Hard surface degreasing***
- Equipment, motors
- Non-energized electrical equipment
- Parts in process

- Cleans quickly with a fast evaporation rate
- Does not attack plastic or metal

279 PCS*

Precision Cleaning Solvent

279 PCS is highly effective for use on electrical and electronic contacts and assemblies to remove light oils, particulates, grease, and other contaminants.

Product Characteristics

- Non-flammable
- Fast evaporation
- Low residue
- High dielectric strength
- No ozone depleting potential
- Safe for plastic and elastomers
- NSF registered K2

Available Container Sizes: Aerosol

**Product is not available in EMEA*

Applications

- Energized electrical equipment
- Control panels
- Switches
- Delicate instrumentation

- Environmentally friendly
- High purity

292 PDS* / 294 CSD

292 Precision Degreasing Solvent / 294 Critical Surface Degreaser

A general purpose, fast-acting, industrial degreaser for critical equipment. Reduces maintenance and operation costs associated with downtime.

Product Characteristics

- Safe on all metals
- Safe on most plastics, rubbers, and coatings
- Contains no aromatic solvents
- NSF registered C1, K1, K3
- 292 Moderate evaporation; flashpoint: 41˚C (105˚F)
- 294 Extremely fast evaporation; flashpoint: -18˚C (0˚F)

Available Container Sizes: 292: Aerosol*
294: Aerosol

**Product is not available in EMEA*

Applications

- Chains and cables
- Gearboxes
- Dies and molds
- Bearings, pumps
- Air tools
- Forklifts
- Brakes and clutches
- Material handling equipment
- Parts and tools

- Removes dust, dirt, oil, and other industrial soils
- Dissolves resins, polymers, adhesives, and petroleum residues
- Leaves no residue

CLEANERS AND DEGREASERS

296*

Electro Contact Cleaner

Environmentally friendly contact cleaner for non-energized electrical and electronic contacts and assemblies to quickly remove light oils and particulates from assemblies.

Product Characteristics

- Low residue
- No ozone depleting potential
- Safe for plastic
- Safer to use than petroleum-based products
- NSF registered K2

Available Container Sizes: Aerosol

**Product is not available in EMEA*

Applications

- Switches
- Controllers
- Panel meters
- Circuit boards
- Contacts
- Levers

- Fast evaporation
- High dielectric strength
- No rinsing required

803

*Industrial and Marine Solvent II***

A powerful, non-solvent-based degreaser. Its advanced surfactant technology offers maximum efficiency in soil removal, especially applications where solvent use is required.

Product Characteristics

- Cleaning dust, dirt, carbon black, petroleum-based oils
- Phosphate-free, no EDTA or toxic solvents
- No irritating fumes
- Compatible with pressure washers and steam cleaners
- 803 pH >12 diluted

Available Container Sizes: 3.8 l (1 gal)*, 20 l, 208 l, 1000 l

**5 l replaces 3.8 l in EMEA*

***Should not be used on aluminum or metals sensitive to high alkalinity.*

Applications

Covers all industries

- Cleaning production equipment, facilities, floors, walls, and steel structures

- Cost-effective—highly concentrated—dilute with water to use
- Strong, fast-acting
- Biodegradable

KPC 820 / 820N*

Moderate pH, Industrial, Water-Based Degreaser

Balance powerful performance with environmental compliance and worker safety. The ideal choice for process degreasing.

Product Characteristics

- Highly dilutable
- Safe on most metals
- No irritating fumes
- Compatible with pressure washer and steam cleaners
- 820 pH <10 diluted
- NSF registered A1

Available Container Sizes: KPC 820: 20 l, 208 l, 1000 l
820N*: 20 l, 208 l, 1000 l

**Product is not available in EMEA*

Applications

- Machine shop/maintenance
- Marine
- Pulp and paper
- Railroad equipment
- Chemical/oil processing
- Drilling rigs

- Safe for workers
- Biodegradable

AUTOMATIC LUBRICANT DISPENSERS

Lubri-Cup™ EM Series

Electro-Mechanical Automatic Grease Dispensers; Dispenses Grease Accurately at Timed Intervals

Automatic single-point lubricator dispenses Chesterton grease to critical areas, eliminating over- and under-greasing. Lithium ion battery recommended for cold temperatures. -15˚C – 60˚C (5˚F – 140˚F)

Product Characteristics

- Microprocessor-controlled, "pulse" delivery system
- Programmable—operates up to 24 months
- Lubricates up to 8 bearings (except EM-X)—up to 6 m (20 ft) away

Applications

All Industries Including:

- Pulp and paper mills
- Metal fabrication
- Marine
- Mining operations
- Steel mills

Versions Available

• Lubri-Cup EM 250cc and 500cc*	Battery operated
• Lubri-Cup EM-SP 250cc	Machine synchronized and externally powered (AC or DC power)
• Lubri-Cup EM-S 250cc*	Machine synchronized
• Lubri-Cup EM-XPL 250cc	Recommended for hazardous locations
• Lubri-Cup EM-X 250cc*	Recommended for hazardous locations
• Lubri-Cup EM-VS 60*/120*/240cc	Equipped with vibration sensor to only operate when vibration is detected

**Product is not available in EMEA*

- User-friendly
- Cost-effective
- Refillable
- Reliable lubrication system
- Explosion proof

Lubri-Cup EM-X

- UL: Class I, Div II, Group C, D IP: IP54

Lubri-Cup EM-XPL

- Intertek (ETL)
- Class I, Div II, Groups A, B, C, D, T4
- Class II, Div II, Groups F, G, T4
- ATEX certification: II 3 G Ex ic IIB T4 Gc

Lubri-Cup™ OL 500 Oiler

"Pulse" Delivery; Automatic Lubrication System for Oils

Automatic lubricator dispenses Chesterton oils to chains and other critical areas.

Product Characteristics

- Microprocessor-controlled, "pulse" delivery system
- Programmable—operates up to 12 months
- Lubricates up to 4 points
- Sealed microprocessor

Applications

All Industries Including:

- Pulp and paper mills
- Mining operations
- Food, pharmaceutical, beverage industries
- General industry
- Saw mills
- Steel mills

Versions Available

• Lubri-Cup 500cc oiler	Battery operated
• Lubri-Cup 500cc oiler	Machine synchronized and externally powered (DC power)
• Lubri-Cup 500cc oiler	Machine synchronized and externally powered (AC power)

- Cost-effective
- Environmentally friendly, refillable container
- User-friendly with a large LCD

AUTOMATIC LUBRICANT DISPENSERS

Lubri-Cup™ VG*

Variable Gas, Single-Point Automatic Lubricators

An automatic, single-point 250cc lubricator which dispenses Chesterton grease to critical areas, eliminating over- and under-greasing. VG pro-logic microprocessor chip control—simple programming.

Product Characteristics

- A compact, convenient, and sturdy design that is simple to install and operate
- Preset dispensing rates—1, 3, 6, 9, or 12 months
- Remote operation—up to 1 m (3 ft)
- Electrochemical operation (Nitrogen gas)

Applications

All Industries Including:

- Mining and ore processing
- Power
- Pulp and paper
- Water and wastewater
- Steel and metal processing

Versions Available

- Lubri-Cup VG 250cc 615 #1
- Lubri-Cup VG 250cc 615 #2
- Lubri-Cup VG 250cc 615 #2 460
- Lubri-Cup VG 250cc 630 SXCF
- Lubri-Cup VG 250cc 633 SXCM
- Lubri-Cup VG 250cc 635 SXC

**Product is not available in EMEA*

- Cost-effective
- Transparent container for lubricant inspection
- Reliable lubrication system
- UL: Class I, Div I, Group A, B, C, D
- ATEX: Ex ia IIC T4 Ga
- IP: IP 68

Lubri-Cup™ VG Mini

Variable Gas, Single-Point Automatic Lubricators

Automatic, single-point lubricator dispenses Chesterton grease to critical areas, eliminating over- and under-greasing.

Product Characteristics

- A compact, convenient, and sturdy design that is simple to install and operate
- Preset dispensing rates—1, 3, 6, 9, or 12 months
- Remote operation—up to 1 m (3 ft)
- Electrochemical operation (Nitrogen gas)
- Sealed microprocessor

Applications

All Industries Including:

- Mining and ore processing
- Power
- Pulp and paper
- Water and wastewater
- Steel and metal processing

Versions Available

- Lubri-Cup VG Mini 120cc 630 SXCF
- Lubri-Cup VG Mini 120cc 635 SXC*
- Lubri-Cup VG Mini 120cc 615 #2*
- Contact Chesterton for other greases available

**Product is not available in EMEA*

- Cost-effective
- Transparent container for lubricant inspection
- Reliable lubrication system
- Ability to turn on and off
- UL: Class I, Div I, Group A, B, C, D. Class II, Div I, Group E, F, G
- ATEX: Ex ia IIC T4 Ga
- IP: IP 68

Lubri-Cup™ Products—Featured Summary

Select the Lubri-Cup dispenser that best fulfills your application needs. Chesterton Application Engineers are always available to assist you.

Product	Model	Lubricant Volume	Dimensions	Available Dispensing Period	Max. Lube Points	Remote Installation	Operating Pressure	Operating Temperature Range	Certifications and Approvals
	**Lubri-Cup VG Mini**	120CC	77 mm (Ø3.03") x 111 mm (4.37")	1, 3, 6, 9, 12 months	Single-point only	Up to 1 m (3 ft)	Max 5 kgf/cm² (70 psi)	-20°C – 55°C (-4°F – 131°F)	UL: Class I, Div I, Group A, B, C, D. Class II, Div I, Group E, F, G ATEX: Ex ia IIC T4 Ga IP: IP 68
	**Lubri-Cup VG**	250CC	97 mm (Ø3.82") x 163 mm (6.42")	1, 3, 6, 12 months	Single-point only	Up to 1 m (3 ft)	Max 5 kgf/cm² (70 psi)	-20°C – 55°C (-4°F – 131°F)	UL: Class I, Div I, Group A, B, C, D ATEX: Ex ia IIC T4 Ga IP: IP 68
	**Lubri-Cup EM**	250CC	91 mm (Ø3.58") x 210 mm (8.27")	Half (H) 1 – 12 months	Up to 8 points	Up to 6 m (20 ft) per point, 10 m (33 ft) single point	Max 60kgf/cm² (850 psi)	-15°C – 60°C (5°F – 140°F) with alkaline battery pack -40°C – 60°C (-40°F – 140°F) with lithium battery pack	—
		500CC	92 mm (Ø3.62") x 260 mm (10.24")	Half (H) 1, 2, 3, 6, 12, 18, 24 months	Up to 8 points	Up to 6 m (20 ft) per point, 10 m (33 ft) single point	Max 60 kgf/cm² (850 psi)	-15°C – 60°C (5°F – 140°F) with alkaline battery pack -40°C – 60°C (-40°F – 140°F) with lithium battery pack	—
	**Lubri-Cup EM-S and EM-SP**	125CC, 250CC	91 mm (Ø3.58") x 210 mm (8.27")	Half (H) 1, 2, 3, 6, 12 months	Up to 8 points	Up to 6 m (20 ft) per point, 10 m (33 ft) single point	Max 60 kgf/cm² (850 psi)	-15°C – 60°C (5°F – 140°F) with alkaline battery pack -40°C – 60°C (-40°F – 140°F) with lithium battery pack	—
	**Lubri-Cup EM-VS**	60CC, 120CC, 240CC	91 mm (Ø3.60") x 181 mm (7.13")	1 – 12 months	Up to 8 points	Up to 6 m (20 ft) per point, 10 m (33 ft) single point	Max 60 kgf/cm² (850 psi)	-15°C – 60°C (5°F – 140°F) with alkaline battery pack -40°C – 60°C (-40°F – 140°F) with lithium battery pack	—
	**Lubri-Cup EM-X**	250CC	91 mm (Ø3.58") x 210 mm (8.27")	Half (H) 1 – 12 months	Single-point only	Up to 3 m (10 ft)	Max 15 kgf/cm² (200 psi)	-15°C – 60°C (5°F – 140°F)	UL: Class I, Div II, Group C, D IP: IP54
	**Lubri-Cup EM-XPL**	250CC	91 mm (Ø3.58") x 210 mm (8.27")	1, 3, 6, 9, 12 months	Up to 8 points	Up to 3 m (10 ft) per point, 6 m (20 ft) single-point	Max 60 kgf/cm² (850 psi)	-15°C – 60°C (5°F – 140°F) with alkaline battery pack -40°C – 60°C (-40°F – 140°F) with lithium battery pack	Intertek (ETL) Class I, Div II, Groups A, B, C, D, T4 Class II, Div II, Groups F, G, T4 ATEX certification: II 3 G Ex ic IIB T4 Gc
	**Lubri-Cup OL 500 Oiler**	500CC	94 mm (Ø 3.7") x 229 mm (9")	Half (H) 1, 2, 3, 6, 12, 18, 24 months	Up to 4 points	Up to 12 m (40 ft) per point	Avg. 10 kgf/cm² (142 psi)	-15°C – 60°C (5°F – 140°F) with alkaline battery pack -40°C – 60°C (-40°F – 140°F) with lithium battery pack	—

Note: Not all units available in EMEA. See pg 71 – 72

ARC Industrial Coatings Product Application Guide

These tables provide general guidelines for ARC product selection. Detailed product performance data can be found on product-specific data sheets and ARC chemical resistance guides.

Metal Coating Solutions

Wet Service Temperature

- <50°C (<120°F)
- 50 – 70°C (120 – 160°F)
- 70 – 90°C (160 – 195°F)
- 90 – 110°C (195 – 230°F)
- 110 – 130°C (230 – 265°F)
- 130 – 150°C (265 – 302°F)
- 150 – 180°C (302 – 360°F)

	Specialty Coatings		Erosion Resistant			Corrosion, Erosion, and Chemical Attack							Abrasion Resistant				FDA
	Patching/Repair/Rebuild	Machinable	Erosion/Corrosion Aqueous Solution	Erosion/Corrosion Mild Chemical	Erosion/Corrosion Elevated Temperature	Corrosion/Moderate Chemical	Corrosion/Harsh Chemical (Acid) Inorganic	Corrosion/Harsh Chemical (Acid) Organic and Bleaching Chemicals	Corrosion/Harsh Chemical (Alkalines)	Corrosion Flue Gasses	Potable Water Low Flow*	Potable Water High Flow*	Mild Sliding Abrasion	Moderate Sliding Abrasion	Severe Sliding Abrasion	Impact Abrasion	FDA Compliant
855 / 858	✓+	✓	✓+	✓+	✓+								✓				
HT-S			✓+	✓	✓+								✓				
S1PW*			✓	✓		✓+	✓				✓+		✓				
S1HB			✓	✓		✓+	✓						✓				
S3			✓	✓		✓+	✓						✓				✓
S2			✓+	✓+	✓	✓+	✓				✓	✓+	✓				
SD4i			✓+	✓+	✓	✓+	✓		✓	✓							
S4+						✓+	✓+		✓	✓							
S5						✓+	✓			✓+							
BX1													✓	✓+	✓	✓	
I BX1 / I BX1 RC													✓	✓+	✓	✓+	
BX2													✓+	✓	✓	✓	
BX5													✓+	✓	✓	✓	
MX1 / MX2													✓	✓	✓+	✓+	
MX FG													✓	✓	✓+	✓+	✓

**S1PW has NSF61 certification.*

Concrete Coating Solutions

- Moderate Chemical
- Severe Chemical

	Pitching Grout	Grading Grout	Chemical Process Spill Areas	Machine/Mechanical Room Floors	Clean Room Floors	Plating Rooms	Traffic Aisles	Food Processing/Packaging	Interior Chemical Containment	Exterior Chemical Containment	Floor Drains	Battery Charger Rooms	Locker/Shower Rooms	Broadcastable, Non-Slip Surfaces	Bottling Lines	Pump Bases	Fabrication/Manufacturing Floors	Manholes/Septic Systems
797	✓+	✓+												✓+				
EG-1 / EG-1 FC	✓+	✓+		✓			✓+									✓+	✓+	
791**	✓+	✓+	✓+	✓		✓+	✓	✓	✓+	✓+	✓+	✓+			✓+	✓+	✓+	✓+
988**			✓+	✓+		✓+	✓	✓	✓+	✓+	✓+	✓+				✓+	✓+	
SL-E				✓	✓		✓	✓					✓	✓			✓	
CS2***			✓+	✓+	✓	✓+	✓	✓	✓+	✓	✓+	✓+	✓	✓	✓	✓+	✓	✓
CS4***			✓+	✓+	✓+	✓+		✓+	✓+	✓+	✓+	✓+	✓+	✓+	✓+	✓+	✓+	

***Resurfacing coatings for mechanical and chemical exposures*
****Thin film coatings for chemical protection*

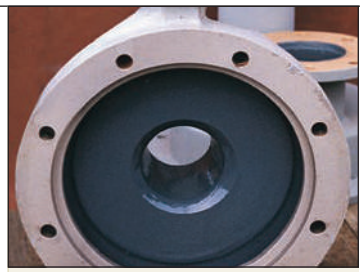
✓+ = Best Choice ✓ = Good Choice

EROSION RESISTANT COATINGS FOR METAL

ARC 855

Abrasion Control Liquid

100% solids, ceramic reinforced, thin film coating to protect metal against chemicals, abrasion, and corrosion.



Product Characteristics

- Low surface energy for improved flow characteristics
- Reinforced with SiC powders for improved erosion resistance
- Comes in black and gray for two coat verification

Applications

- Pump casings and impellers
- Fans and housings
- Bins/silos
- HVAC systems
- Pitted tanks and pipes
- Heat exchangers
- Valves

Technical Data	
Dry Temperature (Max)	120°C (250°F)
Wet Temperature (Max)	65°C (150°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	352 – 34.6 (5,020)
Available Sizes	0. 75 l , 1.5 l, 5 l, 16 l

- Upgrade new and old equipment exposed to abrasion, corrosion or chemical attack
- Replace traditional coatings, special alloys, engineered plastics, ceramics, etc.
- Easily apply by roller or brush

ARC 858

Abrasion Control Compound

An advanced, trowelable, ceramic composite for the repair and protection of all metal surfaces subjected to erosion, corrosion, and chemical attack.

Product Characteristics

- Applied by trowel or spatula
- Normally applied at a thickness of 1.5 mm (60 mils) or more
- Meets Milspec 24276 B "Hull smoothing and faring compound"

Applications

- Pump casings and impellers
- Fans and housings
- Pipe elbows
- Screws
- Pitted tanks and pipes
- Heat exchangers
- Valves

Technical Data	
Dry Temperature (Max)	160°C (320°F)
Wet Temperature (Max)	70°C (160°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	478.5 – 47 (6810)
Available Sizes	0.25 kg, 940 ml (cartridge), 0. 75 l , 1.5 l, 5 l, 16 l

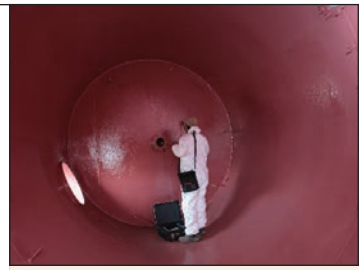
- Rebuilds damaged equipment
- Repairs and smooths pitted surfaces
- Able to be top-coated with other ARC Composites

COATINGS FOR CORROSION, EROSION, AND CHEMICAL ATTACK FOR METAL

ARC S4+

100% Solids, Mineral-Reinforced, Epoxy Novolac, Acid-Resistant Coating

An advanced, liquid, polymer coating formulated to protect equipment from extreme chemical attack and corrosion.



Product Characteristics

- Two-coat system
- Easily applied by spray, brush, or roller
- Minimum thickness of 375 µm (15 mils) per coat

Applications

- Chemical storage tanks
- Chimneys and stacks
- Exhaust gas ductwork
- Fans and housings
- Heat exchangers
- Tank linings
- Structural steel

Technical Data	
Dry Temperature (Max)	150°C (300°F)
Wet Temperature (Max)	60°C (140°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	330 – 32.4 (4700)
Available Sizes	1125 ml (cartridge), 5 l, 16 l

- Provides long-term protection
- Low permeability for immersion conditions
- Sprayable viscosity for rapid installation
- Spark testable for pinhole-free verification

ARC HT-S

Spark-Testable, High-Temperature, Sprayable, Erosion- Control Liquid

Advanced ceramic composites that are formulated to protect equipment from corrosion and erosion in elevated temperature immersion of aqueous solutions.

Product Characteristics

- Easily applied by spray, brush, or roller
- Minimum thickness of 250 µm (10 mils) per coat
- Available in gray and blue

Applications

- Hydrocyclones
- Heat exchangers
- Pump volutes and impellers
- Condensate pumps
- Tanks
- Valves
- Offshore equipment

Technical Data	
Dry Temperature (Max)	175°C (347°F)
Wet Temperature (Max)	150°C (302°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	365 – 35.9 (5200)
Available Sizes	5 l, 16 l

- Extends equipment life
- Spark testable for pinhole-free verification
- Reduces downtime
- Cures in service

COATINGS FOR CORROSION, EROSION, AND CHEMICAL ATTACK FOR METAL

ARC S5

Corrosion Protection in High-Temperature Immersion

Sprayable coating for extreme high-temperature immersion up to 180˚C (356˚F). Ideal for elevated temperature process vessels and equipment exposed to heated fluids where high temperature differentials may exist.

Product Characteristics

- Performs in immersed aqueous solution conditions up to 180°C (356°F)
- Replaces exotic alloys, engineered plastics, ceramics, and conventional coatings
- Easily applied by roller, brush, squeegee, or airless spray

Applications

- Transport oil pipelines
- Separators
- Deaerators
- Fans and housings
- Ducting
- Tanks and vessels
- Heat exchangers
- Pumps and valves

Technical Data	
Dry Temperature (Max)	210°C (410°F)
Wet Temperature (Max)	180°C (356°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	365.4 – 35.9 (3500)
Available Sizes	5 l, 16 l

- Spark testable per NACE SP018
- Passes NACE TM0185 at 180°C (356°F)
- Permeation resistant

ARC S2

Ceramic-Reinforced, Sprayable, Erosion-Resistant Coating

An advanced, liquid, ceramic-reinforced coating for the protection of all metal surfaces subject to erosive, corrosive, and severe fluid flow conditions.

Product Characteristics

- Two-coat system
- Applied via conventional airless spray systems, brush, or roller
- Wet film thickness of 0.25 – 0.5 mm (10 – 20 mils) per coat

Applications

- Flue gas ducts
- Heat exchangers
- Quench zones
- Flue gas particulate filters
- Chemical reactors
- Chemical storage and process tanks

Technical Data	
Dry Temperature (Max)	80°C (175°F)
Wet Temperature (Max)	52°C (125°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	463 – 45.5 (6590)
Salt Fog	>20000 hrs
Available Sizes	1125 ml (cartridge), 1.5 l, 5 l, 16 l

- Improves fluid flow efficiency
- Extends equipment life
- Sprayable viscosity for rapid installation
- Spark testable for pinhole-free verification

COATINGS FOR CORROSION, EROSION, AND CHEMICAL ATTACK FOR METAL

ARC S3

FDA Compliant, Thin Film Corrosion Resistant Barrier Coating

ARC S3 is suited for corrosive applications including those where direct food contact exposures is a requirement.

Product Characteristics

- Two-coat system
- Easily applied by spray, brush, or roller
- Minimum thickness of 250 µm (10 mils) per coat

Applications

- Storage tanks
- Structural steel
- Rail cars
- Process equipment
- Hoppers
- Chutes

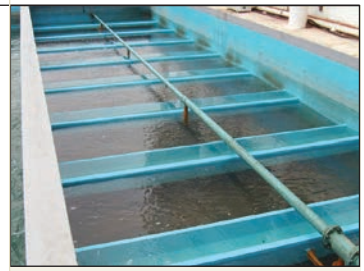
Technical Data	
Dry Temperature (Max)	74°C (165°F)
Wet Temperature (Max)	52°C (125°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	309 – 30.3 (4400)
Available Sizes	940 ml (cartridge), 5 l, and 16 l

- Permeation resistant
- Ceramic reinforcement resists erosion
- Spark testable for pinhole-free verification
- Complies to 21 CFR 175.300 Condition B&C
  - Acidic solution ≤pH5
  - Aqueous (acid/non-acid)
  - Dairy and bakery products
  - Oils and fats, dry solids

ARC S1PW

General Purpose, Sprayable, Corrosion Protection Coating

An advanced, ceramic-reinforced liquid composite formulated to protect metal surfaces from erosion, corrosion, and mild chemical attack.



Product Characteristics

- Two-coat system
- Easily applied by spray, brush, or roller
- Minimum thickness of 250 µm (10 mils) per coat
- Approved to NSF Std 61 for drinking water

Applications

- Structural steel
- Cooling water systems
- Pipeline coatings
- Service water systems
- Wastewater structures
- Tanks

Technical Data	
Dry Temperature (Max)	62°C (144°F)
Wet Temperature (Max)	52°C (126°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	477 – 46.8 (6790)
Salt Fog	>10000 hrs
Available Sizes	1125 ml (cartridge), 5 l, and 16 l

- Low permeability provides long-term protection
- Spark testable for pinhole-free verification
- Sprayable viscosity for rapid installation

COATINGS FOR CORROSION, EROSION, AND CHEMICAL ATTACK FOR METAL

ARC S1HB

High Build, Single Coat, Edge-Retentive Barrier Coating

ARC S1HB is a mineral reinforced, amidoamine cured modified epoxy lining for the protection of metallic and cementitious surfaces from corrosive exposures. Its high build, edge-retentive nature provides maximum coverage over hard 90° edges and corners with minimal thinning at the sharp edge.

- Greater than 70% edge retention
- 100% solids
- Low VOCs

Product Characteristics

- Provides excellent barrier protection against corrosion and chemical attack
- Provides resistance to erosive flow
- High build (1 – 2 mm/ 40 – 80 mils) coating designed for rough surfaces
- Easily applied by heated plural component spray with brush application for touch-up
- UV sensitive pigment for QC inspection

Applications

- Crude oil storage tanks
- Chemical storage tanks
- Thickener tanks
- Pipelines/penstocks
- Wastewater clarifiers
- Grit chambers
- Wet wells/junction boxes
- Manholes
- Acceptable for use with cathodic protection systems

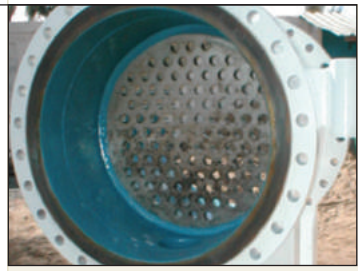
Technical Data	
Dry Temperature (Max)	80°C (175°F)
Wet Temperature (Max)	52°C (125°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	Metal: 309 – >30 (4400) Concrete: 28 – >2.7 (400)
Salt Fog	>10000 hrs
Available Sizes	1125 ml (cartridge), 60 l, 600 l kits*

**51 l and 480 l replace 60 l and 600 l kits in EMEA*

ARC SD4i

High-Temperature Ceramic-Reinforced Erosion-Resistant Coating

100% solids, advanced reinforced thin film coating to protect structures and equipment in extreme immersion services.



- Protect against corrosion and erosion
- Provide extended protection in aggressive chemical immersion services
- Apply by brush, roller, airless, or plural component spraying

Product Characteristics

- Erosion-resistant surface
- 100% solids, no VOCs
- Low viscosity, thin film
- Brush, roller and spray applied

Applications

- Flotation cells
- Heat exchangers
- Hoppers
- Hydrocyclones
- Bins and silos
- Deaerators
- Thickener tanks
- Slurry tanks
- Slurry pipes

Technical Data	
Dry Temperature (Max)	120°C (248°F)
Wet Temperature (Max)	65°C (149°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	241 – 23.7 (3430)
Taber Abrasion (ASTM D4060) H-18/1000 cycles/1 kg load	26 mg loss
Available Sizes	0.75 l, 1125 ml (cartridge), 1.5 l, 5 l, and 16 l

ABRASION RESISTANT COMPOSITES FOR METAL

ARC BX5

Rapid-Curing, Trowel-Grade Coating for Fine-Particle Moderate Sliding Wear

Rapid curing, 100% solids, ceramic-reinforced, multi-component system, formulated for moderate sliding-wear and abrasion caused by fine particles.

- Surface tolerant
- Greater than 60% ceramic reinforcement
- High adhesion

Product Characteristics

- Cure under adverse conditions with maximum adhesion
- Quickly patch and repair worn equipment and structures
- Easily apply by trowel

Applications

- Pneumatic conveyors
- Chipper and chip bins
- Turbo separators
- Ni-hard slurry pumps
- Fly ash separators
- Cyclones and hoppers
- Transport fans
- Hydro pulpers
- Wear plates
- Pipe elbows
- Pulverizers
- Screw conveyors

Technical Data	
Dry Temperature (Max)	120°C (248°F)
Wet Temperature (Max)	60°C (140°F)
Tensile Adhesion (ASTM D638) - kg/cm² - MPa (psi)	224 – 22.1 (3200)
Available Sizes	0.75 l, 2.5 l
Colors	Red* and gray

**RED not available in EMEA.*

Product Case Study

Challenge

Issue

Loss of ceramic tile results in abrasion and corrosion damage to structural steel requiring weld patching every 12 – 14 days. Maintenance shutdowns (12 hrs) allow for partial patching.

Goal

- Find reliable solution to extend operating interval to >6 months
- Solution must allow fast return to service

Root Cause

Failure of brittle ceramic tiles due to impact of coal particles as large as 4" (10 cm) diameter.

Solution

Preparation

- Exposed metal was patch welded
- Grit blast to Sa 2.5 with 3 mil (75 µm) angular profile

Application

1. Apply **ARC BX5** @ 120 – 200 mil (3 – 5 mm) to steel and butting up to ceramic tile
2. Total repair was completed in <12 hours

Results

Client Report

- Life of ceramic tile: 4 – 6 months
- Life of patch weld repair: <4 weeks
- **Life of ARC BX5 repair: >7 months**

Estimated Savings

Due to the success of this application the customer adopted ARC Coatings as the emergency "patch repair" for all tile-lined chutes and lines.

Failure of tile-lined chute after four months prior to patch weld.

*Application of **ARC BX5***

***ARC BX5** after 7 months*

ABRASION RESISTANT COMPOSITES FOR METAL

ARC I BX1

Impact- and Wear-Resistant Epoxy Composite

ARC I BX1 is a urethane modified amine cured epoxy coating highly reinforced with ceramic beads and flakes for resistance to severe sliding abrasion where impact forces or rapid vibration is a concern.

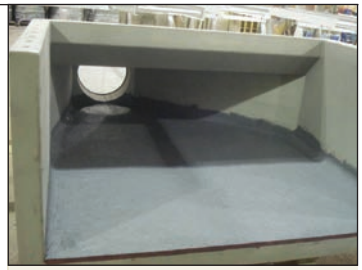
Product Characteristics

- High volumetric ceramic particle loading
- Applied by trowel or plastic applicator tool
- Applied at minimum thickness of 6 mm (1/4") or more

Applications

- Hoppers and chutes
- Slurry pumps
- Pipes and pipe elbows
- Pneumatic conveyors
- Pulverizers and impact zones

Technical Data	
Dry Temperature (Max)	205°C (400°F)
Wet Temperature (Max)	95°C (205°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	222.7 – 21.9 (3170)
Available Sizes	20 kg, 12 x 20 kg



- High impact resistance
- Reduces the need for spare parts
- Simplifies maintenance procedures
- Extends equipment life
- Improves safety by reducing hotwork

ARC I BX1 RC*

Rapid-Curing, Trowel-Grade Coating for Coarse Particle Severe Sliding Wear with Impact

A rapid-curing high impact-resistant, 100% solids, epoxy/urethane hybrid with ceramic reinforcements for severe wear regions and impact.

Product Characteristics

- High volumetric ceramic particle loading
- Applied by trowel or plastic applicator tool
- Applied at minimum thickness of 6 mm (1/4") or more
- Cures to functional state in less than 4 hours

Applications

- Rubber pump liners
- Slurry pump cutwaters
- Rubber-lined agitators
- FD/ID fan housings
- Vibrating screen decks
- Discharge plates
- Pipe elbows
- Tile-lined chutes
- Pulverized fuel lines

Technical Data	
Dry Temperature (Max)	205°C (400°F)
Wet Temperature (Max)	95°C (203°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	238.2 – 23.4 (3390)
Available Sizes	1.5 l, 2.5 l

**Product is not available in EMEA*

- Bonds to metal, concrete, ceramic, and many plastics
- High impact resistance
- Simplifies maintenance procedures

ABRASION RESISTANT COMPOSITES FOR METAL

ARC BX1

Coarse Grade, Sliding Wear Compound

Advanced, ceramic-reinforced composites for the repair and protection of all metal surfaces subjected to severe abrasion and erosion/corrosion.

Product Characteristics

- High volumetric ceramic particle loading
- Applied by trowel or plastic applicator tool
- Applied at a minimum thickness of 6 mm (1/4") or more
- Approved to NSF Std 61 for drinking water

Applications

- Separators and cyclones
- Hoppers/chutes
- Coal pulverizers
- Hydro pulpers
- Wear plates
- Slurry pumps
- Pipe elbows
- Pulverized fuel lines
- Screws

Technical Data	
Dry Temperature (Max)	205°C (400°F)
Wet Temperature (Max)	95°C (205°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	238 – 23.5 (3400)
Available Sizes	1.5 l, 20 kg, 12 x 20 kg

- Reduces the need for spare parts
- Simplifies maintenance procedures
- Extends equipment life
- Improves safety by reducing hotwork

ARC BX2

Fine Grade, Sliding Wear Compound

Advanced, ceramic-reinforced composites for the repair and protection of all metal surfaces subjected to severe abrasion and erosion/corrosion.

Product Characteristics

- High volumetric ceramic particle loading
- Applied by trowel or plastic applicator tool
- Applied at a minimum thickness of 3 mm (1/8") or more

Applications

- Separators and cyclones
- Hoppers/chutes
- Coal pulverizers
- Hydro pulpers
- Wear plates
- Slurry pumps
- Pipe elbows
- Pulverized fuel lines
- Screws

Technical Data	
Dry Temperature (Max)	205°C (400°F)
Wet Temperature (Max)	95°C (205°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	238 – 23.4 (3390)
Available Sizes	1.5 l, 5 l, 20 kg, 12 x 20 kg
Colors	Red* and gray

**Red not available in EMEA*

- Reduces the need for spare parts
- Simplifies maintenance procedures
- Extends equipment life
- Improves safety by reducing hotwork

ABRASION RESISTANT COMPOSITES FOR METAL

ARC MX1

Trowel-Grade Coating for Coarse Particle Extreme Sliding Wear and Impact

100% solids, ceramic-reinforced, multi-component system, formulated for extreme impact, sliding-wear abrasion, and impact caused by medium-to-coarse particle flow.

Product Characteristics

- >90% by weight ceramic reinforcement
- 100% solids; no VOCs; no free isocyanates
- Novel toughened polymer matrix for improved impact resistance

Applications

- Pulverizers
- Dredge pumps
- Hoppers and silos
- Conveyor screws
- Pumps and pipe elbows
- Fans/blowers/cyclones
- Slurry pipelines and pumps
- Ceramic tile deflector hoods
- Fan housings
- Ceramic tile-lined chutes
- Rubber-lined deflector hoods

Technical Data	
Dry Temperature (Max)	205°C (400°F)
Wet Temperature (Max)	95°C (203°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	224.8 – 22.1 (4200)
Available Sizes	6 kg, 20 kg

- Protects surfaces against dry coarse particle erosion, wet slurry abrasion, and impact
- Provides a longer lasting alternative to rubber linings and ceramic wear tiles
- Restores worn equipment to near original condition
- Replaces hard alloy blends as wear-resistant material
- Easily apply by trowel

ARC MX2

Trowel-Grade Coating for Fine Particle Severe Sliding Wear

100% solids, ceramic-reinforced, multi-component system, formulated for extreme sliding wear and abrasion caused by fine particles.

Product Characteristics

- Easily apply by trowel
- Applied up to 6 mm (1/4") without sag
- Bright white
- No primer required

Applications

- Cyclones
- Valves
- Hopper bins
- Pulp dewatering screws
- Wear plates
- Slurry pumps
- Agitators
- Mixers
- Cleaner cones
- Pipe spools
- Pulverizers

Technical Data	
Dry Temperature (Max)	205°C (400°F)
Wet Temperature (Max)	95°C (203°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	238.9 – 23.5 (3400)
Available Sizes	2.5 l, 16 l

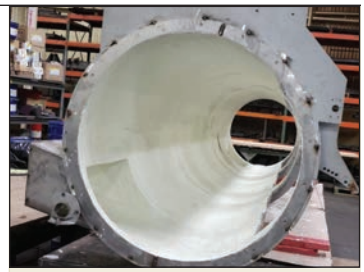
- 92% pure alumina ceramic reinforcement yields maximum hardness and abrasion resistance
- Preferred for slurries or particle flow with particulates less than 3 mm (1/8") in size

ABRASION RESISTANT COMPOSITES FOR METAL

ARC MX FG

Abrasion Resistant Coating for Fine Particle Wear

ARC MX FG is a trowel applied 100% solids, zero VOC, ceramic-reinforced epoxy coating designed for protecting surfaces against dry and wet slurry abrasive flow. This two-part system complies to 21 CFR 175.300 and is suited for direct food contact.



Product Characteristics

- Protects metal surfaces from extreme sliding-wear and abrasion caused by fine particles
- Restores worn equipment to near original condition
- Provides a longer lasting alternative to rubber linings and ceramic wear tiles
- Extends life of equipment exposed to fine particle wear
- Resists a broad pH spectrum
- Applies easily by trowel

Applications

- Cyclones
- Valves
- Hopper bins
- Transport screws
- Wear plates
- Slurry pumps
- Agitators
- Mixers
- Cleaner cones
- Pipe spools
- Pipe elbows
- Pulverizers

Technical Data	
Dry Temperature (Max)	205°C (400°F)
Wet Temperature (Max)	95°C (203°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	224.8 – 22.1 (4200)
Available Sizes	1.5 l, 5 l, and 16 l

- Tough, ceramic-reinforced coating that resists broad range of slurries
- Complies with 21 CFR 175.300 for direct food contact as follows:
  - **Type II** – Acidic (pH 5.0 or below), aqueous products; may contain salt or sugar or both, including oil-in-water emulsions of low or high fat content food.
  - **Type III** – Aqueous, acid or non-acid products containing free oil or fat; may contain salt, and including water-in-oil emulsions of low or high fat content.
  - **Type IVA** – Dairy products and modifications: Water in oil emulsion, high or low fat.
  - **Type IVB** – Dairy products and modifications: Oil in water emulsion, high or low fat.
  - **Type V** – Low moisture fats and oils, Condition C.
  - **Type VIII** – Dry solid foods.

RESURFACING COATINGS FOR CONCRETE

ARC EG-1 / EG-1 FC*

Fast-Setting Grout Resurfacer to Repair/Patch Concrete Surfaces

Use ARC EG-1 / EG-1 FC to resurface damaged concrete surfaces quickly, including voids up to 30 cm (12 inches). ARC EG-1 / EG-1 FC bond to damp or dry concrete, set fast, and can be rapidly coated within 4 hours with other ARC coatings for improved chemical or mechanical protection.

ARC EG-1 / EG-1 FC are 100% solids, three-part grout that use a low viscosity, moisture-tolerant epoxy chemistry that is reinforced with a dried blend of graded and pigmented silica aggregates.

Product Characteristics

- Resurfaces concrete damaged by a chemical attack or mechanical stress
- Fills voids prior to topcoating
- Bonds to damp concrete
- Sets fast, allowing rapid overcoating
- Applies easily by trowel

Applications

- Fill spalled areas
- Build up low areas
- Form curbs and pads
- Patch machinery footprint damage
- Create slopes to drains

Technical Data	
Wet Immersion (Continuous)	66°C (150°F)
Wet Immersion (Intermittent)	93°C (200°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	>35.1 – >3.4 (>500) concrete failure
Available Sizes	System Kit and Patch Kit (EG-1 only)

- No primer required
- Excellent for pitching and grading compound
- Accepts topcoat four hours after application

**EG-1 FC is not available in EMEA*

RESURFACING COATINGS FOR CONCRETE

ARC 791

100% Solids, Novolac Resin Blend, Trowel-Applied, Quartz-Reinforced Concrete, High-Build Concrete Coating

A quartz-reinforced composite that is designed to resurface and restore concrete surfaces, to protect new concrete and to repair concrete damaged by chemical and physical abuse.

Product Characteristics

- Trowelable overlayment
- Applied at minimum thickness of 6 mm (1/4")
- Can be applied to damp and vertical surfaces
- Non-shrinking, no solvents, 100% solids

Applications

- Chemical containment
- Floor drains and sumps
- Process floor
- Equipment bedding
- Pump bases/grouting
- Structural support columns

Technical Data	
Dry Temperature (Max)	93°C (200°F)
Wet Temperature (Max)	66°C (150°F)
Compressive Strength (ASTM C579) - kg/cm² - MPa (psi)	655 – 64.2 (9320)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	>35,1 – >3,4 (>500) concrete failure
Available Sizes	System Kit, Bulk Kit

- Low maintenance overlayment
- Provides long-term protection
- Avoids costly structural rebuild
- Non-sagging: easily applied to vertical surfaces

Product Case Study

Challenge

Issue

- Repair screws and troughs of effluent pumps to return system to specified productivity
- Eliminate waste hang-ups and excessive energy draw

Root Cause

Acidic stock waste had corroded the concrete pump sleeves, causing loss of pump efficiency. Three pumps were required to handle waste stream.

Solution

Preparation

Concrete was grit blasted and rebuilt with rapid set acrylic modified concrete.

Application

1. Prime with **ARC 797** to promote adhesion
2. Apply **ARC 791** and finish
3. Note: Screws were reinstalled 18 hours after application of coatings

Results

Client Reported One Year After Repair

- Effluent movement improved
- Plant reduced operation to 1 pump
- Plant reports 66% electricity savings

Three effluent pumps in operation prior to repair

***ARC 791** applied to properly prepared surfaces*

*All three pump troughs coated with **ARC 791***

RESURFACING COATINGS FOR CONCRETE

ARC 988

Highly Chemically Resistant, 100% Solids, Pure Novolac Resin-Based, Trowel Applied, Quartz-Reinforced Concrete, High-Build Concrete Coating

A high performance, quartz-reinforced composite that is designed to resurface and restore concrete surfaces, to protect new concrete, and to repair concrete damaged by severe chemical and physical abuse.

Product Characteristics

- Trowelable overlayment
- Applied at minimum thickness of 6 mm (1/4")
- Can be applied to damp concrete
- Non-shrinking, no solvents, 100% solids
- Colors: Gray, Red

Applications

- Chemical containments
- Equipment bases
- Secondary containment areas
- Sumps, trenches, and neutralization tanks

Technical Data	
Dry Temperature (Max)	93°C (200°F)
Wet Temperature (Max)	65°C (150°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	Greater than 35.1 – 3.4 (500) concrete failure
Compressive Strength (ASTM C579) - kg/cm² - MPa (psi)	1000 – 97.9 (14200)
Available Sizes	System Kit, Bulk Kit

- Low maintenance overlayment
- Provides long-term protection
- Avoids costly structural rebuild
- Reduces safety hazard caused by damaged concrete
- Easily applied to vertical surfaces/non-sagging

THIN FILM COMPOSITES FOR CONCRETE

ARC 797

Fast-Penetrating, Modified-Epoxy Primer/Sealer

797 is used as a primer for applications involving CS2 and CS4 as well as 791 and 988 which can also be used in a multi-coat application as a concrete sealer.

Product Characteristics

- Low mixed viscosity
- 100% solids; low VOC's; no free isocyanates
- Can be applied to damp concrete
- Promotes strong adhesion to concrete

Applications

As a primer:

- Primarily for ARC 791 and 988
- Secondarily for CS2 and CS4

As a sealer:

- Concrete tanks
- Secondary containment
- Water intakes and dams
- Sumps, drains and pits
- Process floor areas
- Pump bases
- Equipment bases

Technical Data	
Dry Temperature (Max)	93˚C (200˚F)
Wet Temperature (Max)	66˚C (150˚F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	35.1 – >3.4 (>500)
Available Sizes	16 l Kit

- Bonds to damp concrete
- Penetrates and seals concrete surface layer
- Provides a proper surface for application of other ARC epoxy-based coatings for concrete
- Apply by roller, brush, or airless spray

THIN FILM COMPOSITES FOR CONCRETE

ARC SL-E*

100% Solids, Low Viscosity Amido Amine Cured Epoxy, Ideal for Coating Floors and Aisles

SL-E has been formulated so it can be modified, by the addition of silica flour, for use as a self-leveling epoxy floor topping or, by broadcasting into a blended aggregate, as a slip-resistant surface. SL-E provides durable floor protection with high visibility and ease-of-maintenance and cleaning.

Product Characteristics

- Protects new and old concrete subject to mild chemical and/or physical damage
- Replaces tiles, outlasts paints and other concrete coatings
- Apply by roller, brush, or squeegee

Applications

- Process floor areas
- Traffic aisles
- Ramps
- Clean rooms
- Locker/shower room
- Laboratories

- Durable high performance coating
- 100% solids; no VOCs; no free isocyanates
- Can be applied to dry or damp concrete
- Surface modified mineral reinforcements
- Achieves strong adhesion to concrete

Technical Data	
Dry Temperature (Max)	93°C (200°F)
Wet Temperature (Max)	52°C (150°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	407.8 kg/cm² (40 MPa) 5,800 psi concrete failure
Available Sizes	11.3 l, 53 l

**Product is not available in EMEA*

ARC CS2

General Purpose, Thin Film, Novolac Blend, Epoxy Coating

Thin film, advanced composites that are formulated to protect concrete surfaces. CS2 is used for mild chemical attack and CS4 for harsh chemical attack.

Product Characteristics

- Protects new and old concrete surfaces/structures subject to mild chemical and/or physical damage
- Can be broadcast for slip resistant surface finish
- Apply by brush, roller, spray, or squeegee

Applications

- Concrete tanks
- Water intakes and dams
- Secondary containment
- Process floor areas
- Chemical plant floors
- Drainage troughs
- Equipment bases
- Chemical tanks
- Floor drains
- Cooling towers
- Sumps

- Provides long-term protection
- Avoids costly structural rebuild
- Reduces safety hazard caused by damaged concrete

Technical Data	
Dry Temperature (Max)	80°C (175°F)
Wet Temperature (Max)	52°C (125°F)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	35 – 3.4 (500)
Compressive Strength (ASTM C579) - kg/cm² - MPa (psi)	680 – 66.6 (9650)
Available Sizes	16 l

THIN FILM COMPOSITES FOR CONCRETE

ARC CS4

Highly Chemically Resistant, 100% Novolac Resin, Epoxy Coating

Thin film, advanced composites that are formulated to protect concrete surfaces. CS2 is used for mild chemical attack and CS4 for harsh chemical attack.

- Provides long-term protection
- Avoids costly structural rebuild
- Reduces safety hazard caused by damaged concrete

Product Characteristics

- Protects new and old concrete surfaces/ structures subject to harsh chemical and/ or physical damage
- Can be broadcast into for slip resistant surface finish
- Apply by brush, roller, spray, or squeegee

Applications

- Concrete tanks
- Equipment bases
- Process floor areas
- Chemical plant floors
- Drainage troughs
- Secondary containment
- Water intakes and dams
- Chemical tanks
- Cooling towers
- Floor drains
- Sumps

Technical Data	
Dry Temperature (Max)	80°C (175°F)
Wet Temperature (Max)	40°C (105°F)
Compressive Strength (ASTM C579) - kg/cm² - MPa (psi)	970 – 95.1 (13750)
Tensile Adhesion (ASTM D4541) - kg/cm² - MPa (psi)	>35.1 – 3.4 (500)
Available Sizes	5 l, 16 l

Product Case Study

Challenge

Issue

Severe corrosion to failing acid brick-lined concrete basin resulted in leaks and environmental fines.

Goal

Avoid future fines and return basin to chemical-resistant status.

Root Cause

Sulfuric and hydrochloric acids degrading mortar and grout lines.

Solution

Preparation

- Old acid brick was removed as well as damaged concrete
- Surfaces abrasive grit blasted and alkaline washed

Application

1. Cementitious mortar used to resurface damaged concrete
2. All surfaces coated with two coats of **ARC CS4** at 15 – 20 mil (375 – 500 µm)/coat

Results

Client Reported

- Repairs carried out over a two-week period
- Basin operated for 6+ years before repairs were required

Acid brick estimate	**$ 150,000**
ARC lining	**$ 47,000**
Savings	**$ 103,000**

$ = USD

Basin in petrochemical complex

Surface preparation

***ARC CS4** final application*

ARC INDUSTRIAL COATINGS ORDERING INFORMATION

ARC METAL COATING SYSTEMS

ARC 855
Abrasion Control Liquid

0.75 l (1.2 kg) 750 µm (30 mils); 0.98 m² (10.6 ft²)
Gray 084677
Black 084676

1.5 l (2.45 kg) 750 µm (30 mils); 2.0 m² (21.5 ft²)
Gray 085354
Black 085353

5 l (8.15 kg) 750 µm (30 mils); 6.67 m² (71.7 ft²)
Gray 085362
Black 085363

16 l (26.08 kg) 750 µm (30 mils); 21.3 m² (229.4 ft²)
Gray 085406
Black 085405

ARC 858
Abrasion Control Compound (P; T; C)*

0.75 l (1.2 kg); 750 µm (30 mils); 0.98 m² (10.6 ft²)
Gray 085733

940 ml (1.53 kg); 750 µm (30 mils); 1.3 m² (13.5 ft²)
Gray 0842921

250 g (QP); 750 µm (30 mils); 0.19 m² (2.15 ft²)
Gray 086194

1.5 l (2.45 kg); 750 µm (30 mils); 2.0 m² (21.53 ft²)
Gray 085357

5 l (8.15 kg); 750 µm (30 mils); 6.67 m² (71.76 ft²)
Gray 085364

16 l (26.08 kg); 750 µm (30 mils); 21.33 m² (229.63 ft²)
Gray 085404

ARC HT-S
Spark-Testable, High-Temperature, Sprayable, Erosion-Control Liquid (P; T; C)*

5 l (8.31kg); 750 µm (30 mils); 6.62 m² (73.76 ft²)
Blue 085373
Gray 085372

16 l (26.58 kg); 750 µm (30 mils); 21.33 m² (229.63 ft²)
Blue 082736
Gray 082743

ARC BX1
Coarse Grade, Sliding Wear Compound (P; T; C)*

1.5 l (3.66 kg); 6 mm; (240 mils); 0.25 m² (2.69 ft²)
Gray 085593

5 l (12.19 kg); 6 mm; (240 mils); 0.83 m² (8.97 ft²)
Gray 085596

12 x 20 kg; 6 mm (240 mils); 18 m² (180 ft²)
Gray 082685

20 kg; 6 mm (240 mils); 1.5 m² (15 ft²)
Gray 088931

ARC BX2
Fine Grade, Sliding Wear Compound (P; T; C)*

1.5 l (3.55 kg); 3 mm; (120 mils); 0.50 m² (5.38 ft²)
Gray 085435

5 l (11.83 kg); 3 mm; (120 mils); 1,67 m² (17.94 ft²)
Gray 085438

12 x 20 kg; 3 mm (120 mils); 36 m² (387.6 ft²)
Gray 082686

20 kg; 3 mm (120 mils); 3 m² (32.3 ft²)
Gray 088927

ARC I BX1
Impact- and Wear-Resistant Epoxy Composite (P; T; C)*

12 x 20 kg; 6 mm (240 mils); 18 m² (193.2 ft²)
Gray 081946

20 kg; 6 mm (240 mils); 1.5 m² (16.1 ft²)
Gray 081948

ARC I BX1 RC
Rapid-Curing, Trowel-Grade Coating for Coarse Particle Severe Sliding Wear with Impact (P; T; C)*

1.5 l (3.54 kg); 6 mm (240 mils); 0,25 m² (2.7 ft²)
Brown *(Not available in EMEA)* 085360

2.5 l (5.9 kg); 6 mm (240 mils); 0,42 m² (4.5 ft²)
Brown *(Not available in EMEA)* 085379

ARC S1 HB
Edge-Retentive High Build Coating(P;T;C)*

1125 ml (1.57 kg); 375 µm (15 mils); 3 m² (32.3 ft²)
Light Gray 085948

60 l (88 kg); 750 µm (30 mils); 80 m² (850 ft²)
Light Gray 088664

600 l (880 kg); 750 µm (30 mils); 800 m² (8500 ft²)
Light Gray 088665

ARC S1PW
General Purpose, Sprayable, Corrosion Protection Coating (P; T; C)*

1125 ml (1.78 kg); 375 µm (15 mils); 3 m² (32.3 ft²)
Blue 084784
White 084783

5 l (7.9 kg); 375 µm (15 mils); 13.33 m² (143.52 ft²)
Blue 085375
White 085376

16 l (25.27 kg); 375 µm (15 mils); 42.67 m² (459.26 ft²)
Blue 084094
White 084096

ARC S2
Ceramic-Reinforced, Sprayable, Erosion-Resistant Coating (P; T; C)*

1125 ml (1.71 kg); 375 µm (15 mils); 3 m² (32.3 ft²)
Gray 084496
Green 084495

1.5 l (2.28 kg); 375 µm (15 mils); 4 m² (43.06 ft²)
Gray 085386
Green 085387

5 l (7.60 kg); 375 µm (15 mils); 13.33 m² (143.52 ft²)
Gray 085377
Green 085378

16 l (24.33 kg); 375 µm (15 mils); 42.67 m² (459.26 ft²)
Gray 085407
Green 085408

ARC S3
FDA Compliant, Thin Film, Corrosion-Resistant Barrier Coating

940ml 375 µm (15 mil) 2.5 m² (27 ft²)
White 086284
Blue 086373

5 l 375 µm (15 mil) 13.33 m² (143.5 ft²)
White 086279
Blue 086355

16 l 375 µm (15 mil) 42.7 m² (459.3 ft²)
White 086282
Blue 086357

ARC S5
Corrosion Protection in High-Temperature Immersion (P; T; C)*

5 l (8.74 kg); 375 µm (15 mils); 13.33 m² (143.5 ft²)
Light Gray 085811
Med. Gray 085812

16 l (27.98 kg); 375 µm (15 mils); 42.7 m² (459.3 ft²)
Light Gray 085806
Med. Gray 085807

Technical data notes: 1) Coverage values are theoretical, based on no waste factor or surface profile effects. In practice, 10–20% extra product should be added for waste factor assuming brush, roller, or trowel application. 2) Waste factor for products applied by spray could vary significantly depending on spray equipment, substrate geometry, and environmental conditions. 3) All coverage values based on product temperature of 21˚C (70˚F).

ARC INDUSTRIAL COATINGS ORDERING INFORMATION

ARC METAL COATING SYSTEMS

ARC S4+
100% Solids, Mineral-Reinforced, Epoxy Novolac, Acid-Resistant Coating (P; T; C)*

1125 ml (1.41 kg); 375 µm (15 mils); 3 m^2 (32.3 ft^2)
- Gray 084497
- Red 084498

5 l (6.30 kg); 375 µm (15 mils); 13.33 m^2 (143.52 ft^2)
- Gray 085366
- Red 085365

16 l (20.14 kg); 375 µm (15 mils); 42.69 m^2 (459.26 ft^2)
- Gray 084177
- Red 084178

ARC SD4i
High-Temperature Ceramic-Reinforced Erosion-Resistant Coating (P; T; C)*

0.75 l (1.6 kg); 375 µm (15 mils); 2 m^2 (21.3 ft^2)
- Gray 085890
- Blue 085889

1125 ml (1.98 kg); 375 µm (15 mils); 3 m^2 (32.3 ft^2)
- Gray 084263
- Blue 084262

1.5 l (3.2 kg); 375 µm (15 mils); 4 m^2 (42.6 ft^2)
- Gray 085881
- Blue 085880

5 l (8.82 kg); 375 µm (15 mils); 13.33 m^2 (143.52 ft^2)
- Gray 085367
- Blue 085368

16 l (20.14 kg); 375 µm (15 mils); 42.69 m^2 (459.26 ft^2)
- Gray 084180
- Blue 084179

ARC BX5
Rapid-Curing, Trowel-Grade Coating for Fine-Particle Moderate Sliding Wear (P; T; C)*

0.75 l (1.64 kg); 3 mm (120 mils); 0.25 m^2 (2.69 ft^2)
- Gray 084672
- Red 085670

2.5 l (5.44 kg); 3 mm (120 mils); 0.83 m^2 (8.97 ft^2)
- Gray 085382
- Red 085673

ARC MX1
Trowel-Grade Coating for Coarse Particle Extreme Sliding Wear and Impact (P; T; C)*

6 kg; 6 mm (240 mils); 0.37 m^2 (4 ft^2)
- Blue 085324

20 kg; 6 mm (240 mils); 1.23 m^2 (13.2 ft^2)
- Blue 085325

ARC MX2
Trowel-Grade Coating for Fine Particle Severe Sliding Wear (P; T; C)*

2.5 l (6.08 kg); 3 mm (120 mils); 0.83 m^2 (8.97 ft^2)
- White 085374

16 l (38.9 kg); 3 mm (120 mils); 5.3 m^2 (57.4 ft^2)
- White 085402

MX FG
Trowel-Grade Coating for Fine Particle Severe Sliding Wear, FDA Compliant (P; T; C)*

1.5 l (3.7 kg); 3 mm (120 mils); 0.5 m^2 (5.4 ft^2)
- White 085928

5 l (12.4 kg); 3 mm (120 mils); 1.67 m^2 (18 ft^2)
- White 085928

16 l (39.7 kg); 3 mm (120 mils); 5.3 m^2 (57.4 ft^2)
- White 085934

ARC CONCRETE COATING SYSTEMS

ARC 791
100% Solids, Novolac Resin Blend, Trowel-Applied, Quartz-Reinforced Concrete, High-Build Concrete Coating (P; T; C)*

Bulk Kit; 6 mm (240 mils); 16.7 m^2 (180 ft^2)
- Gray 089537

System Kit; 6 mm (240 mils); 4.1 m^2 (44.13 ft^2)
- Gray 082195

ARC 797
Fast-Penetrating, Modified-Epoxy Primer/Sealer (P; T; C)*

16 l (17.9 kg), 25 mm (10 mils) 64 m^2 (689 ft^2)
- Amber 085409

ARC 988
Highly Chemically Resistant, 100% Solids, Pure Novolac Resin-Based, Trowel Applied, Quartz-Reinforced Concrete, High-Build Concrete Coating (P; T; C)*

Bulk Kit; 6 mm (240 mils); 16.7 m^2 (180 ft^2)
- Gray 089539
- Red 089540

System Kit; 6 mm (240 mils); 4.1 m^2 (44.13 ft^2)
- Gray 082197
- Red 090452

ARC SL-E
100% Solids, Low Viscosity Amido Amine Cured Epoxy, for Coating Floors and Aisles

11.3 l; 500 µm (20 mils); 22.6 m^2 (121.6 ft^2)
- Light Gray *(Not available in EMEA)* 086369
- Dark Gray *(Not available in EMEA)* 086379
- Yellow *(Not available in EMEA)* 086383
- Red *(Not available in EMEA)* 086387

53 l; 500 µm (20 mils); 106.00 m^2 (1141 ft^2)
- Light Gray 086366
- Dark Gray 086377
- Yellow 086381
- Red 086385

ARC CS2
General Purpose, Thin Film, Novolac Blend, Epoxy Coating (P; T; C)*

16 l (20.73 kg); 500 µm (20 mils); 32 m^2 (344.45 ft^2)
- Gray 084186

ARC CS4
Highly Chemically Resistant, 100% Novolac Resin, Epoxy Coating (P; T; C)*

5 l (6.12 kg); 500 µm (20 mils); N/A
- Red 085369

16 l (19.54 kg); 500 µm (20 mils); 32 m^2 (344.45 ft^2)
- Red 084187

ARC EG-1 / EG-1 FC
Fast-Setting Grout Resurfacer to Repair/Patch Concrete Surfaces (P; T; C)*

EG-1 Patch Kit; 18.5 kg; 12 mm (472 mils); 0.75 m^2 (8.10 ft^2)
- Gray 085797
- Red 085982

EG-1 System Kit; 18 x 55.8 kg; 12 mm (472 mils); 40.0 m^2 (436.0 ft^2)
- Gray 085861

EG-1 FC Patch Kit; 18.5 kg; 12 mm (472 mils); 0.75 m^2 (8.10 ft^2)
- Gray *(Not available in EMEA)* 086295

Technical data notes: 1) Coverage values are theoretical, based on no waste factor or surface profile effects. In practice, 10–20% extra product should be added for waste factor assuming brush, roller, or trowel application. 2) Waste factor for products applied by spray could vary significantly depending on spray equipment, substrate geometry, and environmental conditions. 3) All coverage values based on product temperature of 21˚C (70˚F).

Order numbers apply to US manufactured product.

** P: Pack Size; T: Thickness; C: Coverage; WFT: Wet Film Thickness*

MECHANICAL SEALS ORDERING INFORMATION

KEY TO SEAL MATERIALS

Component	Materials	EN12756	Description
Faces	CB	B	Carbon Graphite, Resin Impregnated
	SSC	Q_1	Silicon Carbide, Sintered Pressureless
	RSC	Q_2	Silicon Carbide, Reaction Bonded
	TC	U_2	Tungsten Carbide, Ni-Binder
	CR	V	Aluminum Oxide, 99.5%
Metals	316	G	CrNiMo Steel (1.4401)
	Alloy-20	M_3	20 Cb3 (2.4660)
	Ti	T_2	Titanium (3.7035)
	HC	M_5	Hastelloy® C-276 (2.4819)
	HB	M_1	Hastelloy B2 (2.4617)
	Monel®	M_4	Monel® Alloy K500 (2.4375)
	Duplex	G1	Duplex Steel (1.4462)
	Super Duplex	G4	Duplex Steel (1.4410)
Elastomers	FKM	V	Fluorocarbon
	EPDM	E	Ethylene Propylene
	FEPM	X	Tetrafluoroethylene-Propylene
	FFKM	K_1	ChemLast™ 550

Monel® is a registered trademark of Special Metals Corporation.

QUICK ORDER REFERENCE EXAMPLE

MODEL – **SIZE** – **FACES** – **ELASTOMERS** – **METALS**

- MODEL: 170, 442, 442C, 4400, S10, S20, 1810, 2810, 1510
- SIZE: Shaft Diameter Inch/mm
- FACES: CB/CR, CB/SSC, CB/RSC, CB/TC, TC/TC, TC/SSC, SSC/RSC, SSC/SSC, CB/SSC – CB/SSC, TC/SSC – CB/SSC, SSC/SSC – CB/SSC, CB/TC – CB/TC, TC/TC – CB/TC, TC/TC – TC/TC, SSC/SSC – SSC/SSC, TC/SSC – TC/SSC
- ELASTOMERS: FKM, EPDM, FEPM, FFKM
- METALS: 316, A20, TI, HC, HB, MONEL, DUPLEX, SUPER DUPLEX

PACKING AND GASKETS ORDERING INFORMATION

370

Size		Packaged ± 10%		Item Number
mm	Inch	kg	lbs	
3.2	1/8	0.908	2	037060
4.7	3/16	0.908	2	037062
6.0	–	0.908	2	037063
6.4	1/4	0.908	2	037064
		2.270	5	037073
8.0	5/16	0.908	2	037065
		2.270	5	037074
9.5	3/8	0.908	2	037066
		2.270	5	037075
		4.540	10	037081
10.0	–	0.908	2	037067
		2.270	5	037076
11.0	7/16	0.908	2	037068
		2.270	5	037077
12.0	–	2.270	5	037078
12.5	1/2	0.908	2	037070
		2.270	5	037079
		4.540	10	037083
14.0	9/16	2.270	5	037080
16.0	5/8	4.540	10	037085
17.5	11/16	4.540	10	037086
19.0	3/4	4.540	10	037087
22.0	7/8	4.540	10	037089
25.5	1	4.540	10	037094
38.0	1–1/2	4.540	10	037022

377

Size		Packaged ± 10%		Item Number
mm	Inch	kg	lbs	
9.52	0.375	2.27	5	419768
9.52	0.375	4.54	10	419769
10	0.394	2.27	5	419753
10	0.394	4.54	10	419754
11.1	0.437	2.27	5	419755
11.1	0.437	4.54	10	419756
12*	0.472	2.27	5	419757
12*	0.472	4.54	10	419758
12.7	0.500	2.27	5	419759
12.7	0.500	4.54	10	419760
14.3*	0.562	4.54	10	419761
16	0.625	4.54	10	419762
17.5*	0.688	4.54	10	419763
19	0.750	4.54	10	419764
20	0.787	4.54	10	419765
20.6*	0.812	4.54	10	423018
22.2	0.875	4.54	10	419766
23.8*	0.937	4.54	10	423019
25*	1.000	4.54	10	419767
–	3.000	3" Sales Sample Available – Item Number 419344		

457

Thickness		Dimensions		Item Number
mm	Inch	M	Inch	
0.4	1/64	1.52 x 1.52	60 x 60	003851
0.8	1/32	1.52 x 1.52	60 x 60	003852
1.6	1/16	1.52 x 1.52	60 x 60	003853
2.4	3/32	1.52 x 1.52	60 x 60	003854
3.2	1/8	1.52 x 1.52	60 x 60	003855

459

Thickness		Dimensions		Item Number
mm	Inch	M	Inch	
0.8	1/32	1.00 x 1.00	39.4 x 39.4	005038
0.5	–	1.00 x 1.00	39.4 x 39.4	005042
1.0	–	1.00 x 1.00	39.4 x 39.4	005043
1.6	1/16	1.00 x 1.00	39.4 x 39.4	005039
2.0	–	1.00 x 1.00	39.4 x 39.4	005044
3.2	1/8	1.00 x 1.00	39.4 x 39.4	005040
2.4	3/32	1.00 x 1.00	39.4 x 39.4	005050

477-1

Size		Packaged ± 10%		Item Number
mm	Inch	kg	lbs	
3.2	1/8	0.908	2	004752
4.7	3/16	0.908	2	004754
6.0	–	0.908	2	004756
6.4	1/4	0.908	2	004730
		2.270	5	004731
8.0	5/16	0.908	2	004733
		2.270	5	004734
9.5	3/8	0.908	2	004722
		2.270	5	004723
		4.540	10	004724
10.0	–	0.908	2	004758
		2.270	5	004759
11.0	7/16	0.908	2	004736
		2.270	5	004737
12.0	–	0.908	2	004782
		2.270	5	004791
12.7	1/2	0.908	2	004726
		2.270	5	004727
		4.540	10	004728
14.0	9/16	2.270	5	004739
		4.540	10	004740
16.0	5/8	4.540	10	004742
17.5	11/16	4.540	10	004744
19.0	3/4	4.540	10	004700
20.5	13/16	4.540	10	004793
22.0	7/8	4.540	10	004746
24.0	15/16	4.540	10	004796
25.5	1	4.540	10	004748

** Consult Customer Care Team (CCT) on availability and minimum order required for certain cross-sectional sizes that are Made To Order (MTO.)*

Order numbers apply to US manufactured product.

PACKING AND GASKETS ORDERING INFORMATION

1600

Size		Packaged ± 10%		Item Number
mm	Inch	kg	lbs	
3.2	1/8	0.908	2	035002
4.0	–	0.908	2	035004
4.7	3/16	0.908	2	035006
6.0	–	0.908	2	035008
6.4	1/4	0.908	2	035010
		2.270	5	035011
8.0	5/16	0.908	2	035013
		2.270	5	035014
9.5	3/8	0.908	2	035016
		2.270	5	035017
		4.540	10	035018
10.0	–	0.908	2	035020
		2.270	5	035021
11.0	7/16	0.908	2	035023
		2.270	5	035024
12.0	–	2.270	5	035026
12.7	1/2	0.908	2	035028
		2.270	5	035029
		4.540	10	035030
14.0	9/16	2.270	5	035032
		4.540	10	035033
16.0	5/8	4.540	10	035035
17.5	11/16	4.540	10	035037
19.0	3/4	4.540	10	035039
22.0	7/8	4.540	10	035041
25.4	1	4.540	10	034943

1601

Size		Packaged ± 10%		Item Number
mm	Inch	kg	lbs	
3.2	1/8	0.908	2	034902
4.0	–	0.908	2	034904
4.7	3/16	0.908	2	034906
6.0	–	0.908	2	034908
6.4	1/4	0.908	2	034910
		2.270	5	034911
8.0	5/16	0.908	2	034913
		2.270	5	034914
9.5	3/8	0.908	2	034916
		2.270	5	034917
		4.540	10	034918
10.0	–	0.908	2	034920
		2.270	5	034921
11.0	7/16	0.908	2	034923
		2.270	5	034924
12.0	–	2.270	5	034926
12.7	1/2	0.908	2	034928
		2.270	5	034929
		4.540	10	034930
14.0	9/16	2.270	5	034932
		4.540	10	034933
16.0	5/8	4.540	10	034935
17.5	11/16	4.540	10	034937
19.0	3/4	4.540	10	034939
22.0	7/8	4.540	10	034941
25.4	1	4.540	10	034943

1622

Cross Section Size		Average Stem Diameter		Average No. of Valves (per box)	Item Number
mm	Inch	mm	Inch		
	1/8		0.500	83	054700
	3/16		0.625	59	054701
6.0		25		31	054702
6.4	1/4		0.875	73	054703
8.0	5/16		1.250	39	054705
9.5	3/8		1.625	22	054707
10.0		40		24	054711
11.0	7/16		2.000	14	054713
12.0		70		9	054715
12.7	1/2		2.750	8	054716
14.0	9/16		3.250	6	054719
16.0	5/8		4.000	4	054721
17.5	11/16		5.000	3	054722
19.0	3/4	These sizes are available on request.			
20.0					
22.0	7/8				
25.4	1				

Order numbers apply to US manufactured product.

PACKING AND GASKETS ORDERING INFORMATION

1724

Size		Packaged ± 10%		Item Number
mm	Inch	kg	lbs	
3.2	1/8	0.908	2	003260
4.0	–	0.908	2	003261
4.7	3/16	0.908	2	003262
6.0	–	0.908	2	003263
6.4	1/4	0.908	2	003264
		2.270	5	003273
8.0	5/16	0.908	2	003265
		2.270	5	003274
9.5	3/8	0.908	2	003266
		2.270	5	003275
		4.540	10	003281
10.0	–	0.908	2	003267
		2.270	5	003276
11.0	7/16	0.908	2	003268
		2.270	5	003277
12.0	–	0.908	2	003269
		2.270	5	003278
12.7	1/2	0.908	2	003270
		2.270	5	003279
		4.540	10	003283
14.0	9/16	2.270	5	003280
		4.540	10	003284
16.0	5/8	4.540	10	003285
17.5	11/16	4.540	10	003286
19.0	3/4	4.540	10	003287
20.5	13/16	4.540	10	003288
22.0	7/8	4.540	10	003289
24.0	15/16	4.540	10	003293
25.4	1	4.540	10	003294

1725A

Size		Packaged ± 10%		Item Number
mm	Inch	kg	lbs	
6.4	1/4	0.908	2	041020
		2.270	5	041027
8.0	5/16	0.908	2	041029
		2.270	5	041030
9.5	3/8	0.908	2	041031
		2.270	5	041033
10.0	–	0.908	2	041038
		2.270	5	041044
11.0	7/16	2.270	5	041046
12.0	–	2.270	5	041048
12.7	1/2	0.908	2	041049
		2.270	5	041050
		4.540	10	041051
14.0	9/16	2.270	5	041052
16.0	5/8	4.540	10	041053
19.0	3/4	4.540	10	041074
20.5	13/16	4.540	10	041075
22.0	7/8	4.540	10	041076
25.4	1	4.540	10	041078

1730

Size		Packaged ± 10%		Item Number
mm	Inch	kg	lbs	
6.0	–	0.908	2	000637
6.4	1/4	0.908	2	000638
		2.270	5	000691
8.0	5/16	0.908	2	000692
		2.270	5	000693
9.5	3/8	2.270	5	000694
		4.540	10	000695
10.0	–	0.908	2	000696
		2.270	5	000697
11.0	7/16	2.270	5	000698
12.0	–	0.908	2	000702
		2.270	5	000703
12.7	1/2	2.270	5	000704
		4.540	10	000705
14.0	9/16	2.270	5	000706
		4.540	10	000932
16.0	5/8	4.540	10	000933
17.5	11/16	4.540	10	000934
19.0	3/4	4.540	10	000935
20.5	13/16	4.540	10	001182
22.0	7/8	4.540	10	001183
25.4	1	4.540	10	001184

Order numbers apply to US manufactured product.

PACKING AND GASKETS ORDERING INFORMATION

1730-SC

Size		Packaged ± 5%		Item Number
mm	Inch	kg	lbs	
9.5	3/8	2.270	5	003437
		4.540	10	003576
10.0	–	0.908	2	003577
		2.270	5	003601
11.0	7/16	2.270	5	003659
12.0	–	0.908	2	003660
		2.270	5	003661
12.5	1/2	2.270	5	003897
		4.540	10	003983
14.0	9/16	2.270	5	003984
		4.540	10	003985
16.0	5/8	4.540	10	003986
17.5	11/16	4.540	10	004059
19.0	3/4	4.540	10	004255
20.5	13/16	4.540	10	004256
22.0	7/8	4.540	10	004272
25.5	1	4.540	10	004276

1760

Size		Packaged ± 10%		Item Number
mm	Inch	kg	lbs	
3.2	1/8	0.908	2	008360
4.7	3/16	0.908	2	008362
6.0	–	0.908	2	008363
6.4	1/4	0.908	2	008364
		2.270	5	008373
8.0	5/16	0.908	2	008365
		2.270	5	008374
9.5	3/8	0.908	2	008366
		2.270	5	008375
		4.540	10	008381
10.0	–	0.908	2	008367
		2.270	5	008376
11.0	7/16	0.908	2	008368
		2.270	5	008377
12.0	–	0.908	2	008369
		2.270	5	008378
12.7	1/2	0.908	2	008370
		2.270	5	008379
		4.540	10	008383
14.0	9/16	2.270	5	008380
16.0	5/8	4.540	10	008385
17.5	11/16	4.540	10	008386
19.0	3/4	4.540	10	008387
20.5	13/16	4.540	10	008388
22.0	7/8	4.540	10	008389
25.4	1	4.540	10	008394

1830-SSP

Size		Packaged ± 10%		Item Number
mm	Inch	kg	lbs	
8.0	5/16	These sizes are available on request.		
9.5	3/8	0.908	2	052605
		2.270	5	052606
		4.540	10	052607
10.0	–	0.908	2	052608
		2.270	5	052609
11.0	7/16	0.908	2	052610
		2.270	5	052611
12.0	–	0.908	2	052612
		2.270	5	052613
12.5	1/2	0.908	2	052614
		2.270	5	052615
		4.540	10	052616
14.0	9/16	2.270	5	052617
		4.540	10	052618
16.0	5/8	4.540	10	052619
17.5	11/16	4.540	10	052620
19.0	3/4	4.540	10	052621
20.0	–	4.540	10	052622
20.5	13/16	These sizes are available on request.		
22.0	7/8	4.540	10	052624
24.0	15/16	4.540	10	052625
25.5	1	4.540	10	052626

CMS 2000

Description	Item Number
White CMS 2000 Cartridge	001048
White CMS 2000 Injectable 13.2 liter	001047
White CMS 2000 Injectable 3.8 liter	001046
CMS 2000-FP, 1 gallon pail	127533
CMS 2000-FP, 1 quart pail	127532

PACKING AND GASKETS ORDERING INFORMATION

DualPac® 2211

Size		Packaged ± 10%		Item Number
mm	Inch	kg	lbs	
8.0	5/16	0.908	2	394368
9.5	3/8	0.908	2	382074
		2.270	5	382075
		4.540	10	382076
10.0	–	0.908	2	382077
		2.270	5	382078
11.1	7/16	0.908	2	382079
		2.270	5	382080
12.0	–	0.908	2	382081
		2.270	5	382082
12.7	1/2	0.908	2	382083
		2.270	5	382084
		4.540	10	382085
14.0	–	4.540	10	382092
14.3	9/16	2.270	5	382086
		4.540	10	382087
15.9	5/8	4.540	10	382088
17.5	11/16	4.540	10	382089
19.0	3/4	4.540	10	382090
20.0	–	4.540	10	382091
20.6	13/16	4.540	10	382073
22.2	7/8	4.540	10	382093
24	15/16	4.540	10	382094
25.4	1	4.540	10	382095

DualPac® 2212

Size		Package		Item Number
mm	Inch	kg	lbs	
6.4	1/4	0.908	2	404539
8.0	5/16	0.908	2	404540
9.5	3/8	0.908	2	395279
		2.270	5	395280
		4.540	10	395281
10.0	–	0.908	2	395282
		4.540	5	395283
11.1	7/16	0.908	2	395284
		2.270	5	395285
12.0	–	0.908	2	395286
		2.270	5	395287
12.7	1/2	0.908	2	395288
		2.270	5	395289
		4.540	10	395290
14.0	–	4.540	10	395291
14.3	9/16	2.270	5	395292
		4.540	10	395293
16	5/8	4.540	10	395295
17.5	11/16	4.540	10	395296
19.0	3/4	4.540	10	395297
20.0	–	4.540	10	395298
20.6	13/16	4.540	10	395299
22.2	7/8	4.540	10	395300
24	15/16	4.540	10	395301
25.4	1	4.540	10	395303

ECS-T

Thickness		Dimensions		Item Number
mm	Inch	M	Inch	
0.8	1/32	1.19 x 1.19	47 x 47	058109
1.5	–	1.5 x 1.5	59 x 59	058115
1.6	1/16	1.5 x 1.5	59 x 59	058108
2.0	–	1.5 x 1.5	59 x 59	058116
2.4	3/32	1.5 x 1.5	59 x 59	058112
3.2	1/8	1.5 x 1.5	59 x 59	058111
FDA Sheets				
0.8	1/32	1.19 x 1.19	47 x 47	058132
1.5	–	1.5 x 1.5	59 x 59	058136
1.6	1/16	1.5 x 1.5	59 x 59	058131
2.0	–	1.5 x 1.5	59 x 59	058137
2.4	3/32	1.5 x 1.5	59 x 59	058134
3.2	1/8	1.5 x 1.5	59 x 59	058133

Order numbers apply to US manufactured product.

PACKING AND GASKETS ORDERING INFORMATION

			5800E	5800
ID Inch	OD Inch	Cross Section	Item Number	Item Number
0.312	0.750	0.219	005456	009179
0.375	0.750	0.187	005454	009104
0.375	0.875	0.250	005445	009107
0.437	0.812	0.187	005461	008227
0.437	1.125	0.344	005493	008310
0.437	0.687	0.500	005540	–
0.500	0.875	0.187	005453	009113
0.500	1.000	0.250	005446	009116
0.511	1.062	0.275	005541	008312
0.562	1.000	0.218	005528	053157
0.625	1.000	0.187	005452	009119
0.625	1.125	0.250	005463	009149
0.629	1.023	0.197	005534	008293
0.750	1.125	0.187	005529	052847
0.750	1.250	0.250	005455	009122
0.750	1.375	0.312	005447	009125
0.750	1.500	0.375	005544	052848
0.787	1.496	0.354	005543	010409
0.875	1.250	0.187	005449	008271
0.875	1.375	0.250	005471	009152
0.875	1.500	0.312	005472	008300
0.905	1.417	0.256	005542	052924
0.937	2.312	0.687	005555	052850
1.000	1.375	0.187	005521	044749
1.000	1.500	0.250	005482	009128
1.000	1.625	0.312	005444	009131
1.000	1.750	0.375	005484	008237
1.125	1.625	0.250	005450	009134
1.125	1.750	0.312	005547	009137
1.125	1.875	0.375	005549	052968
1.125	2.312	0.594	005554	052906
1.125	2.375	0.625	005557	052925
1.125	2.500	0.687	005559	044753
1.181	1.772	0.296	005548	052898
1.181	1.811	0.315	005526	052844
1.250	1.625	0.187	005545	009188
1.250	1.750	0.250	005520	009158
1.250	1.912	0.331	005532	052913
1.250	2.000	0.375	005457	009143
1.250	2.250	0.500	005553	052926
1.250	2.625	0.687	005561	008247
1.255	1.925	0.335	005550	052927
1.260	1.732	0.236	005546	044754
1.375	2.000	0.312	005551	009155
1.375	2.125	0.375	005552	009164
1.375	2.375	0.500	005556	052851
1.500	2.000	0.250	005496	009182
1.500	2.125	0.312	005486	008250

			5800E (cont.)	5800 (cont.)
ID Inch	OD Inch	Cross Section	Item Number	Item Number
1.500	2.250	0.375	005488	009146
1.500	2.281	0.390	005497	052928
1.625	2.375	0.375	005536	009700
1.625	2.625	0.500	005560	052929
1.750	2.250	0.250	005538	010663
1.750	2.500	0.375	005558	010408
1.750	2.750	0.500	005522	044752
1.875	2.500	0.312	005523	044756
1.875	2.625	0.375	005535	044748
2.000	2.500	0.250	005451	009176
2.000	3.000	0.500	005562	044746
2.035	3.060	0.513	005563	052893
2.125	3.125	0.500	005595	052930
2.125	3.155	0.515	005596	052909
2.250	3.250	0.500	006059	052879
2.500	3.000	0.250	005530	008314
2.500	3.250	0.375	005597	052846
2.500	3.530	0.515	006130	052915
2.500	3.560	0.500	006144	052932
3.000	4.000	0.500	006145	052933
3.000	4.125	0.562	006135	008301

Additional sizes available, please consult with a Chesterton Application Engineer.

GraphMax™				
Size		Packaged ± 5%		Item Number
mm	Inch	kg	lbs	
9.5	3/8	0.908	2	150004
		2.270	5	150005
		3.175	7	150006
10.0	–	0.908	2	150007
		2.270	5	150008
11.0	7/16	0.908	2	150009
		2.270	5	150010
12.0	–	0.908	2	150011
		2.270	5	150012
12.7	1/2	0.908	2	150013
		2.270	5	038740
		3.175	7	038741
14.0	9/16	2.270	5	038738
		3.175	7	038744
16.0	5/8	3.175	7	038742
17.5	11/16	3.175	7	150019
19.0	3/4	3.175	7	038743
20.0	–	3.175	7	150021
20.5	13/16	3.175	7	150022
22.2	7/8	3.175	7	150023
24.0	15/16	3.175	7	150024
25.4	1	3.175	7	150025

PACKING AND GASKETS ORDERING INFORMATION

SuperSet™ Product Item to fit Ahlstrom® APP

Bearing Unit	ID x OD x Cross Section mm	Number of Rings	Packing Type	Item Number
1	40 x 60 x 10.0	2	1400R	210204
			1730	210201
			1760	210202
			370	210203
			477-1T	210205
			DualPac® 2211	389777
2	50 x 70 x 10.0	2	1400R	210210
			1730	210206
			1760	210207
			370	210209
			477-1T	210211
			DualPac® 2211	389778
3	60 x 85 x 12.5	2	1400R	210215
			1730	210212
			1760	210213
			370	210214
			477-1T	210216
			DualPac® 2211	389779
4	70 x 95 x 12.5	2	1400R	210221
			1730	210217
			1760	210218
			370	210219
			477-1T	210222
			DualPac® 2211	389780
5	90 x 122 x 16.0	2	1400R	210227
			1730	210223
			1760	210225
			370	210226
			477-1T	210228
			DualPac® 2211	389781
6	100 x 132 x 16.0	2	1400R	210233
			1730	210229
			1760	210231
			370	210232
			477-1T	210234
			DualPac® 2211	389782

Ahlstrom® is a registered trademark of Ahlstrom-Munksjö Oyj Public Limited Co.

SuperSet™ Product Item to fit Ahlstrom® APT

Bearing Unit	ID x OD x Cross Section Inch	Number of Rings	Packing Type	Item Number
1	1.625 x 2.375 x 0.375	2	1400R	210239
			1730	210236
			1760	210237
			370	210238
			477-1T	210241
			DualPac® 2211	389783
2	2.000 x 2.750 x 0.375	2	1400R	210245
			1730	210242
			1760	210243
			370	210244
			477-1T	210246
			DualPac® 2211	389784
3	2.375 x 3.375 x 0.500	2	1400R	210250
			1730	210247
			1760	210248
			370	210249
			477-1T	210251
			DualPac® 2211	389785
4	2.750 x 3.750 x 0.500	2	1400R	210255
			1730	210252
			1760	210253
			370	210254
			477-1T	210257
			DualPac® 2211	389786
5	3.500 x 4.750 x 0.625	2	1400R	210262
			1730	210258
			1760	210259
			370	210261
			477-1T	210263
			DualPac® 2211	389787
6	3.937 x 5.197 x 0.625	2	1400R	210267
			1730	210264
			1760	210265
			370	210266
			477-1T	210268
			DualPac® 2211	389788

Order numbers apply to US manufactured product.

PACKING AND GASKETS ORDERING INFORMATION

SuperSet™ Product Item to fit Goulds®

Pump Model	ID x OD x Cross Section Inch	Number of Rings	Packing Type	Item Number
3175 L	4.750 x 5.750 x 0.500	3	1400R	210033
			1730	210030
			1760	210031
			370	210032
			477-1T	210034
			DualPac® 2211	389789
3175 M	3.750 x 4.750 x 0.500	3	1400R	210028
			1730	210025
			1760	210026
			370	210027
			477-1T	210029
			DualPac® 2211	389790
3175 S	3.000 x 4.000 x 0.500	3	1400R	210023
			1730	210020
			1760	210021
			370	210022
			477-1T	210024
			DualPac® 2211	389791
3196 LT	2.125 x 2.875 x 0.375	3	1400R	210013
			1730	210010
			1760	210011
			370	210012
			477-1T	210014
			DualPac® 2211	389792
3196 MT	1.750 x 2.50 x 0.375	3	1400R	210008
			1730	210005
			1760	210006
			370	210007
			477-1T	210009
			DualPac® 2211	389793
3196 ST	1.375 x 2.00 x 0.3125	3	1400R	210003
			1730	210000
			1760	210001
			370	210002
			477-1T	210004
			DualPac® 2211	389794
3196 XLT	2.500 x 3.375 x 0.4375	3	1400R	210018
			1730	210015
			1760	210016
			370	210017
			477-1T	210019
			DualPac® 2211	389795

Goulds® is a registered trademark of ITT industries.

SuperSet™ Product Item to fit Warman®

Pump Model	ID x OD x Cross Section Inch	Number of Rings	Packing Type	Item Number
B Frame	1.785 x 2.435 x 0.3125	3	1730	210738
			1830-SSP	212036
			412-W	212055
			DualPac® 2211	389796
C Frame	2.312 x 3.064 x 0.375	3	1730	210739
			1830-SSP	212040
			412-W	212038
			GraphMax™	212039
			DualPac® 2211	389797
D Frame	3.250 x 4.250 x 0.500	3	1730	210741
			1830-SSP	212044
			412-W	212042
			GraphMax™	212043
			DualPac® 2211	389798
E Frame	4.000 x 5.250 x 0.625	3	1730	210742
			1830-SSP	212048
			412-W	212046
			GraphMax™	212047
			DualPac® 2211	389799
F Frame	5.125 x 6.625 x 0.750	3	1730	210744
			1830-SSP	212052
			412-W	212050
			GraphMax™	212051
			DualPac® 2211	389800

Warman® is a registered trademark of Weir Minerals.

INDUSTRIAL LUBRICANTS AND MRO PRODUCTS ORDERING INFORMATION

274 Industrial Degreaser
20 l 081006
208 l 081013
Aerosol 350 g - ECSU 081676

276 Electronic Component Cleaner
20 l 081623
208 l 081624
Aerosol 250 g - ECSU 081622

279 PCS: Precision Cleaning Solvent *(Not available in EMEA)*
Aerosol 250 g - ECSU 083434

292 Precision Degreasing Solvent *(Not available in EMEA)*
Aerosol 250 g - ECSU 080529

294 Critical Surface Degreaser
Aerosol 379 g ECSU 080783

296 Electro Contact Cleaner *(Not available in EMEA)*
Aerosol 250 g - ECSU 088650

390 Cutting Oil
Aerosol 370 g - ECSU 080102

601 Chain Drive Pin and Bushing Lubricant
3.8 l (1 gal) 081904
20 l 081910
208 l 081907
Aerosol 350 g - ECSU 081902

610 Plus Synthetic Lubricating Fluid
3.8 l (1 gal) 084296
20 l 084297
208 l 084295

610 HT Synthetic Lubricating Fluid
3.8 l (1 gal) 083765
20 l 080418
208 l 080419

610 MT Plus Synthetic Lubricating Fluid
20 l 082852
208 l 082853

615 HTG #1 High-Temperature Grease
400 g 086935
18 kg 086936
55 kg 086007
180 kg 080725

615 HTG #2 High-Temperature Grease
400 g 080042
18 kg 080043
55 kg 080045
180 kg 080728

615 HTG #2 - 460 High-Temperature Grease
400 g 084204
18 kg 084205
180 kg 084190

625 CXF
400 g 080707
18 kg 080705
55 kg 080706

630 SXCF Grease
400 g 082713
18 kg 082711
55 kg 082714
Aerosol 285 g - ECSU 088687

630 SXCF 220 #1 Grease *(Not available in EMEA)*
400 g 085768
18 kg 085769
55 kg 085770
180 kg 085771

635 SXC Grease
400 g 088556
18 kg 088557
55 kg 088558
180 kg 088559

652 Pneumatic Lubricant and Conditioner
475 ml 086888
20 l 086000
208 l 083018

690 FG (Food-Grade Lubricant)
3.8 l (1 gal) 082703
20 l 082710
208 l 082705
Aerosol 350 g - ECSU 082706

715 Spraflex®
20 l 081709
208 l 081707
Aerosol 350 g - ECSU 081702

715 Spraflex® Gold
3.8 l (1 gal) 081896
20 l 081897
208 l 081898
Aerosol 300 g - ECSU 082015

723 Sprasolvo™
Aerosol 350 g - ECSU 081308

723 FG Sprasolvo™
Aerosol 350 g - ECSU 083770

Order numbers apply to US manufactured product.

INDUSTRIAL LUBRICANTS AND MRO PRODUCTS ORDERING INFORMATION

725 Nickel Anti-Seize Compound
250 g Brush Top 081266
500 g Brush Top 082359
20 l (24 kg) 082349
Aerosol 350 g - ECSU 082351

730 Spragrip® Belt Dressing
Aerosol 320 g - ECSU 080308

740 Heavy-Duty Rust Guard
3.8 l (1 gal) 087705
20 l 087704
208 l 087707
Aerosol 300 g - ECSU 087702

752 Cold Galvanizing Compound
2.7 kg 082603
Aerosol 350 g 082601

763 Rust Transformer™
3.8 l (1 gal) 089417
20 l 089418
208 l 089419

772 Premium Nickel Anti-Seize Compound
500 g Brush Top 082381

775 Moisture Shield
20 l 082110
208 l 082107
Aerosol 350 g - EXSU 082102

783 ACR Corrosion-Resistant Anti-Seize
250 g Brush Top 082805
500 g Brush Top 088653
20 l (24 kg) 088654

785 Parting Lubricant
200 g 086907
250 g Brush Top 082016
500 g Brush Top 080747
20 l (24 kg) 080748
Aerosol 350 g - ECSU 081664

785 FG Parting Lubricant
250 g Brush Top 088506
500 g Brush Top 080788

800 GoldEnd® Tape
6.4 mm x 13.72 m (1/4 x 540") 000805
12.7 mm x 4.57 m (1/2 x 180") 000801
12.7 mm x 13.72 m (1/2 x 540") 000802
12.7 mm x 32.92 m (1/2 x 1 296") 000803
19.1 mm x 13.72 m (3/4 x 540") 000804
25.4 mm x 13.72 m (1 x 540") 000806

803 Industrial and Marine Solvent II
3.8 l (1 gal) 086774
20 l 090379
208 l 090388
1000 l 086768

KPC 820
20 l 082260
208 l 082264
1000 l 083555

KPC 820N
20 l *(Not available in EMEA)* 088584
208 l *(Not available in EMEA)* 088585
1000 l *(Not available in EMEA)* 088586

860 Moldable Polymer Gasketing Kit
Kit: 2 Aerosol and 2 Cartridges 086310

900 GoldEnd® Paste
20 l 000936
200 g 000908
500 g Brush Top 000909

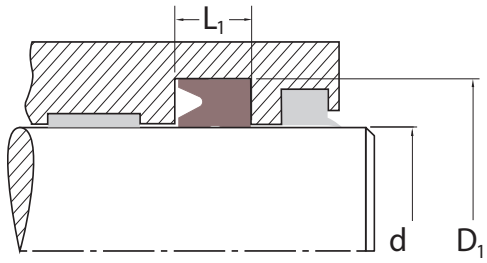
Lubri-Cup™ EM Series
Lubri-Cup EM 250cc Main 084307
Lubri-Cup EM 500cc Main *(Not available in EMEA)* 084510
Lubri-Cup EM-X 250cc Main *(Not available in EMEA)* 084308
Lubri-Cup EM-S 250cc Main *(Not available in EMEA)* (Relay Box Included Price) 084309
Lubri-Cup EM-SP 250cc for DC Power (Power Supply Included Price) 084311
Lubri-Cup EM-VS 60*/120*//240cc 085840
**(Not available in EMEA)*

Lubri-Cup™ OL 500 Oiler
Battery Operated 084319
with AC Power Supply 084457
with DC Power Supply 084464

Lubri-Cup™ VG
250cc with 615#1 HTG Grease *(Not available in EMEA)* 084304
250cc with 615#2 HTG Grease *(Not available in EMEA)* 084305
250cc with 615#2-460 HTG Grease *(Not available in EMEA)* 085783
250cc with 630 SXCF Grease *(Not available in EMEA)* 084306
250cc with 633 SXCM Grease *(Not available in EMEA)* 084404
250cc with 635 SXC Grease *(Not available in EMEA)* 084383

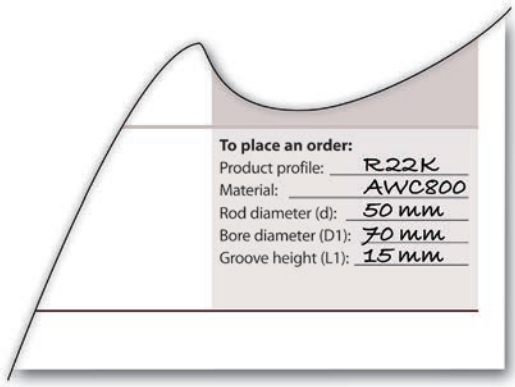
Lubri-Cup™ VG Mini
120cc with 630 SXCF Grease 084473
120cc with 615#2 HTG Grease 084477
120cc with 635 SXC Grease *(Not available in EMEA)* 084492

POLYMER SEALS ORDERING INFORMATION



Example:

Product Profile	*R22K*
Material (AWC designation)	*AWC800*
Rod diameter (d)	*50 mm*
Bore diameter (D_1)	*70 mm*
Groove height (L_1)	*15 mm*



PRODUCT APPROVALS AND CERTIFICATIONS

Mechanical Seals

Application	Certifications/Approvals	Product
ATEX	ATEX Cat 1 (Group 2)	442, 2810
Drinking Water	ACS Approved	442, 150
Drinking Water	NSF-61	442C, 442, 1810, S10, 1510
Food Contact	FDA - 21 CFR	442, 442C, S10, S20, 155, 255, 1810, 2810
Fugitive Emission Control	TA Luft/VDI 2440	4400

Compression Packing

Application	Certifications/Approvals	Product
Fugitive Emission Control	API-589 (Fire Safe) - API-607 (Fire Safe)	1600
Fugitive Emission Control	API-622 - API-607 (Fire Safe) - TA Luft/VDI 2440 -ISO 15848-1*	1622
Fugitive Emission Control	API-589 (Fire Safe)	5800
Fugitive Emission Control	TA Luft/VDI 2440	1600/477-1 LL
Fugitive Emission Control	TA Luft/VDI 2440	1724/477-1 LL
Fugitive Emission Control	TA Luft/VDI 2440	1724 Low E
Fugitive Emission Control	API-589 (Fire Safe)	5300GTPG/ 1600
Fugitive Emission Control	API-589 (Fire Safe)	5800E
Fugitive Emission Control	API-589 (Fire Safe)	5800T
Military	MIL P-24790(SH)	1760
Nuclear	Nuclear 10CFR pt21	1601
Nuclear	Nuclear 10CFR pt21	5800
Oxygen Compatible	BAM Oxygen	1730
Oxygen Compatible	BAM Oxygen	1830
Oxygen Compatible	BAM Oxygen	1724-OX

*Valve Test Standard

Note: The above certifications and compliance are available on request.

PRODUCT APPROVALS AND CERTIFICATIONS

Flange Gaskets

Application	Certifications/Approvals	Product
Food Contact	EC1935 - 2004 - FDA 21 CFR	ECS-T
Fugitive Emission Control	TA Luft/VDI 2440	ECS-T
Fugitive Emission Control	TA Luft/VDI 2440	Steel Trap™
Marine	ABS Approval Shipping	ECS-T

Polymer Seals

Application	Certifications/Approvals	Material
Drinking Water	EC 1935/2004	AWC405
Food Contact	EC1935 - 2004 - FDA 21	AWC510
Food Contact	FDA 21 CFR	AWC520
Food Contact	FDA 21 CFR	AWC600 FDA POLYESTER TPE
Food Contact	FDA 21 CFR	AWC610
Food Contact	EC1935 - 2004 - FDA 21 CFR	AWC615
Food Contact	FDA 21 CFR	AWC650
Food Contact	FDA 21 CFR, EC 1350/2004	AWC664 OIL FILLED OFF WHITE NYLON
Food Contact	FDA 21 CFR	AWC703
Food Contact	FDA 21 CFR	AWC716 WHITE FKM
Food Contact	FDA 21 CFR, EU 1935/2004	AWC737 80A Blue NBR
Food Contact	FDA 21 CFR, EC 1935/2004	AWC741
Food Contact	FDA 21 CFR	AWC753
Food Contact	EC1935 - 2004 - FDA 21 CFR	AWC754
Food Contact	FDA 21 CFR	AWC762 WHITE SILICON
Food Contact	FDA 21 CFR	AWC830
Food Contact	FDA 21 CFR, 3A Sanitary, EC 1935/2004, EU 1935/2004, EU 10/2011	AWC839 Blue 95A Urethane

ARC

Application Area	Approvals	Product
Drinking Water - Joining and Sealing Material	NSF Standard 61 - US Potable Water (Hot Water)	ARC 5ES
Drinking Water - Protective (Barrier) Materials	NSF Standard 61 - US Potable water (Tanks, Pipes, Valves, Pumps and Fittings)	ARC S1PW
Metal Repair and Hull Smoothing Types I and II	Mil Spec Approval - MIL-PRF-24176 (QPL-24176)	ARC 10
Metal Repair and Hull Smoothing Types I and II	Mil Spec Approval - MIL-PRF-24176 (QPL-24176)	ARC 858
Drinking Water	WRAS Approval Cold Water (UK Potable Water)	ARC S2
Drinking Water	Global Migration Test for Water Approval (Iren Test Lab)	ARC S2
Drinking Water	Global Migration Test for Water Approval (Iren Test Lab)	ARC CS2
Food Contact	Tested to Regulation (EC) No. 1935/2004	ARC 791
Food Contact	Tested to Regulation (EC) No. 1935/2004	ARC S1PW
Food Contact	Tested to 21 CFR 175.300	MX FG

Note: The above certifications and compliance are available on request.

PRODUCT APPROVALS AND CERTIFICATIONS

Industrial Lubricants and MRO Products

Product	NSF	FDA	Military/Federal Specification	Other
274 Industrial Degreaser	C1, K1, K2 133955 C1, K1, K2 133949 (aerosol)	178.3530	–	–
276 Electronic Component Cleaner	K2 133974 (bulk) K2 133973 (aerosol)	172.882 172.884 178.3530 178.3650		
279 PCS	K2 134012	–	–	
294 CSD	C1, K1, K3 143867			
296 Electro Contact Cleaner	K2 134002	–	–	–
390 Cutting Oil	H2, U2 134014 H2, U2 134947 (aerosol)	–	–	–
601 Chain Drive Pin and Bushing Lubricant	H2 133927 (aerosol) H2 133979 (bulk)	–	–	– CFIA
610 Plus Synthetic Lubricating Fluid	H2 153827 (bulk)	–	–	–
615 HTG #1	H2 133941	–	–	–
615 HTG #2	H2 133940	–	–	–
630 SXCF	H1 158844 (bulk) H1 142462 (aerosol)	178.3570	–	–
630 SXCF 220 #1	H1 157331	178.3570	–	–
650 AML	H1	178.3570		
652 Pneumatic Lubricant and Conditioner	H2 133944	–	–	–
690 FG Lubricant	H1 133933 (aerosol) H1 133969 (bulk)	178.3620	–	– CFIA
715 Spraflex® Standard and Gold	H2 133938 H2 133934 (aerosol) H2 133930 (Gold) H2 133931 (Gold aerosol)	–	–	–
720 CCG	H1	178.3570		
723 Sprasolvo™	H2 133939	–	–	–
723 FG Sprasolvo™	H1 132237	178.3570		
725 Nickel Anti-Seize Compound	H2 133959	–	MIL-A-907	CFIA
730 Spragrip®	P1 133947	–	–	–
740 Heavy-Duty Rust Guard	–	–	MIL-C-16173D Grade 1 & 4	–
752 Cold Galvanizing Compound	–	–	MIL-P-46105 MIL-P-26915 MIL-P-21035	–
772 Premium Nickel Anti-Seize Compound	–	–	MIL-A-907F	GE TIL 1117-3R1 GE D50YP12 GE NEDC-31735P
785 Parting Lubricant (Bulk)	H2 133960	–		–
785 FG Parting Lubricant (Bulk)	H1 132237	178.3570		–

For the most current listings and full descriptions of the category codes please visit NSF.org/usda/psnclistings.asp

PRODUCT APPROVALS AND CERTIFICATIONS

Industrial Lubricants and MRO Products

Product	NSF	FDA	Military/Federal Specification	Other
800 GoldEnd® Tape	H1, S2 134016	177.1615 177.1550	MIL-T-27730A	UL® Listed, UL Listed to Canadian safety standards Oxygen tested per ISO 10297 and ISO 11114-3, Oxygen certified BAM Ref. No. 11.1/46 513 Certified Food-Grade 1935-2004
803 Industrial and Marine Solvent II	A1 133966	–	–	–
860 Moldable Polymer Gasketing	P1 134017 (aerosol) P1 134018 (curing)	175.300 177.2600	–	– CFIA
900 GoldEnd® Paste	H2, S2 133957	–	–	UL® Listed, CFIA
Lubri-Cup™ VG Mini				IP68, UL® Listed, ATEX
Lubri-Cup™ VG				IP68, UL® Listed, ATEX
Lubri-Cup™ EM-X				IP54, UL® Listed
Lubri-Cup™ EM-XPL				Intertek Listed

For the most current listings and full descriptions of the category codes please visit NSF.org/usda/psnclistings.asp

NOTES

NOTES

All statements in this catalog pertaining to pressure, chemical compatibility, temperature, and service ratings are based on general service experience. Because of the wide variety of applications of our products, the broad range of products available, and the wide range of equipment conditions encountered, together with the unpredictable human factors involved in the installation of these products by the ultimate user, you should not follow recommendations shown without specific prior service experience or consultation with an authorized Chesterton representative.

Specific data on materials, construction methods, installation, and troubleshooting procedures are subject to change without notice.

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