

## PRODUCT PORTFOLIO CATALOG

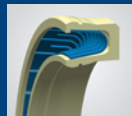
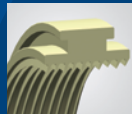
Seals and Bearings



BEGIN

# Table of Contents

This document has been made interactive to allow you easy access to the information in which you are most interested. Click on a section in the list below to jump to that page.

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**Note:** Not all cross section, diameter, compound, geometry combinations can be manufactured successfully.

# Materials

## ELASTOMERS

**NBR** — or nitrile rubber (also commonly referred to as buna-N rubber or perbunan), is a synthetic rubber copolymer of acrylonitrile (ACN) and butadiene. NBR seals with a medium ACN content (approximately 30-45%) are the most commonly used because of their balanced attributes (i.e, flexibility in low-temperature applications and better resistance to hydrocarbon oils).

**HNBR** — or hydrogenated nitrile butadiene rubber, has a higher temperature rating than standard NBR, and also exhibits high tensile strength and great resistance to oil and chemicals.

**EPM or EP** — Ethylene propylene rubber is a form of non-polar synthetic rubber. EPDM consists of an additional monomer, diene, and can be cured using peroxide- or sulfur-based chemistries. EPM and EPDM seals only differ slightly in performance. Both present outstanding resistance to phosphate ester fluids, along with excellent ozone resistance.

**AU | EU | PU** — Polyurethane rubber is most commonly formed by reacting a polyol with di- or poly-isocyanate. Polyurethane seals have high-wear, high-abrasion resistance, as well as great permeation resistance.

**FEPM | Fluoraz®** — FEPM is the ASTM designation for a range of alternating copolymers of tetrafluoroethylene (TFE) and propylene. FEPM offers great heat and excellent chemical resistance against acids and bases such as methanol, amines, ammonia, urea, hydrochloric acid, and steam at temperatures up to 450°F (232°C).

**FVMQ** — Fluorosilicone is the common shorthand for fluorovinylmethyl silicone. Fluorosilicone elastomers perform well in a wide range of temperatures, from as low as -73°C (-100°F), and as high as 177°C (350°F). Because of limited tear strength and abrasion resistance, however, they are generally only used in static applications.

**FKM | Fusion®** — fluoroelastomer. FKM (commonly referred to as FKM rubber) has impressive heat resistance, allowing FKM seals to withstand temperatures greater than 200°C (392°F). FKMs also exhibit extraordinary levels of resistance to high pressures, chemicals, and other fluids (including several fuels).

**FFKM | Chemraz®** — perfluoroelastomer, contains higher amounts of fluorine than standard FKM, and features higher temperature ratings, up to approximately 325°C (617°F). FFKM also has improved chemical resistance, with nearly universal chemical compatibility. This combination of high-performance capabilities makes FFKM seals the premium choice for the most challenging applications.

## ENGINEERED PLASTICS

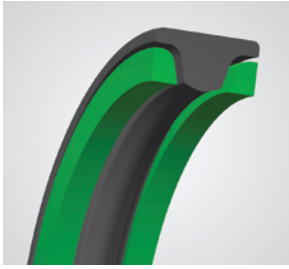
**PEEK | PEK | PEKK | Arlon®** Polyaryletherketone: semi-crystalline engineering polymers, with outstanding high-temperature performance, harsh chemical resistance, good toughness, and excellent mechanical strength and dimensional stability.

**PTFE | Avalon®** Polytetrafluoroethylene is a fluoropolymer engineering thermoplastic that has exceptional friction/wear properties in addition to outstanding chemical resistance and electrical insulation performance.

**Note:** Characteristic metrics are provided as generally accepted industry ranges. Actual ranges may vary, depending on specific Greene, Tweed & Co. material, such as additives, formulations, curatives used, etc. Contact us for more information about our unique materials and selection assistance.

## ACT® Ring

G-T RINGS



STATIC

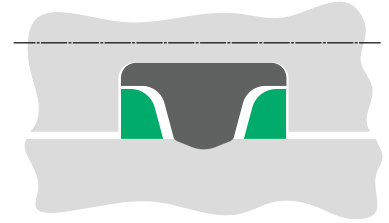
DYNAMIC

Greene Tweed has taken the concept behind our renowned AGT seal, optimized the design of the elastomer and anti-extrusion rings, and developed an Advanced Concept T-ring (ACT).

The ACT ring is designed with converging sides in order to promote lubrication for reduced friction and wear, with an apex for force concentration under low-pressure conditions to optimize sealing. [Click to learn more.](#)

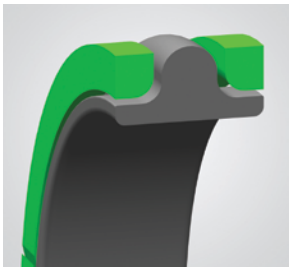
MATERIALS	APPLICATIONS	MARKETS
Arlon	● Piston	● Aero & Defense
Avalon	● Rod	● Energy
Elastomers	● Face	● Semiconductor
Metal	● Reciprocating	● Industrial
Other	● Oscillating	● Life Sciences
	● Rotary	

OD MIN (in)	OD MAX (in)
0.24	16.05
CX MIN (in)	CX MAX (in)
0.06	0.28



## AGT® Ring

G-T RINGS



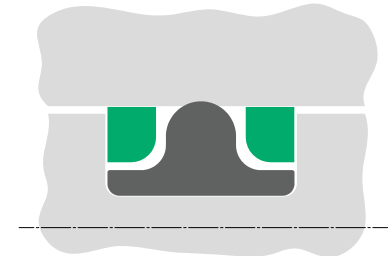
STATIC

DYNAMIC

A double-acting rod or piston seal that provides the quality and reliability the Aerospace industry requires. The AGT ring offers an outstanding combination of easy installation, low leakage and long service life for exceptional performance in many static and dynamic sealing applications. The seal design helps to resist roll and spiral failure. [Click to learn more.](#)

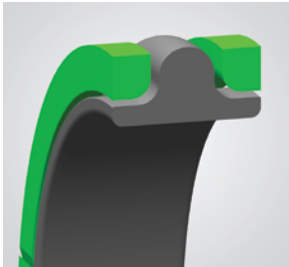
MATERIALS	APPLICATIONS	MARKETS
Arlon	● Piston	● Aero & Defense
Avalon	● Rod	● Energy
Elastomers	● Face	● Semiconductor
Metal	● Reciprocating	● Industrial
Other	● Oscillating	● Life Sciences
	● Rotary	

OD MIN (in)	OD MAX (in)
0.18	32
CX MIN (in)	CX MAX (in)
0.06	0.50



## GT® Ring

G-T RINGS



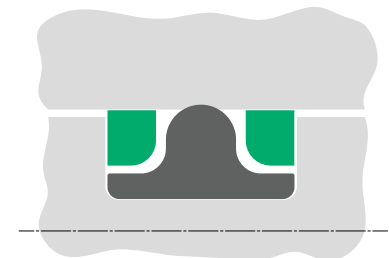
STATIC

DYNAMIC

A double-acting rod or piston seal with an outstanding combination of easy installation, low leakage and long service life for exceptional performance in many static and dynamic sealing applications. The G-T ring offers better extrusion resistance and eliminates spiral failure when compared to an O-ring and Back-up ring assembly. [Click to learn more.](#)

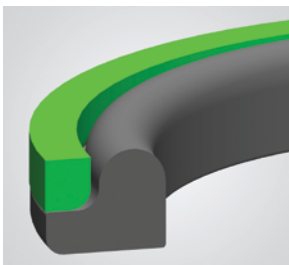
MATERIALS	APPLICATIONS	MARKETS
Arlon	● Piston	● Aero & Defense
Avalon	● Rod	● Energy
Elastomers	● Face	● Semiconductor
Metal	● Reciprocating	● Industrial
Other	● Oscillating	● Life Sciences
	● Rotary	

OD MIN (in)	OD MAX (in)
0.18	32
CX MIN (in)	CX MAX (in)
0.06	0.50



## Static Face™ Seal

G-T RINGS



STATIC

DYNAMIC

Static Face Seals are designed to eliminate sealing problems in face-mounted assemblies where large clearances can occur and/or pressures up to 10,000 psi (690 bar) are encountered. Engineered as a “drop-in” replacement for O-ring seal glands, the Static Face Seal consists of an L-shaped elastomeric sealing element with a hydromechanically energized mating back-up ring. [Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	● Piston	● Aero & Defense
Avalon	● Rod	● Energy
Elastomers	● Face	● Semiconductor
Metal	● Reciprocating	● Industrial
Other	● Oscillating	● Life Sciences
	● Rotary	

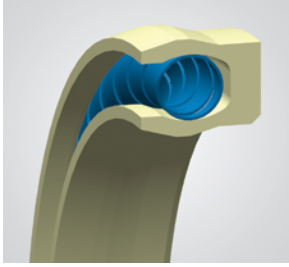
OD MIN (in)	OD MAX (in)
0.25	32
CX MIN (in)	CX MAX (in)
0.07	0.21





## Coil Spring MSE® Seal

METAL SPRING ENERGIZED



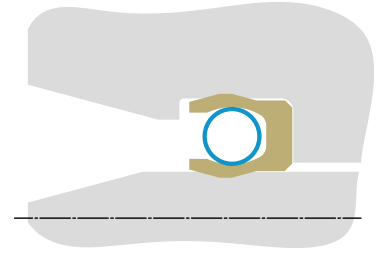
**STATIC** •

**DYNAMIC** •

Coil Spring MSE seals consist of a PTFE seal jacket energized by a high-loading coil spring and are intended for temperatures from -270°F to 550°F (-168°C to 288°C). These seals are mainly designed for static applications but will also work under dynamic conditions with surface speeds up to 100 ft/min. [Click to learn more.](#)

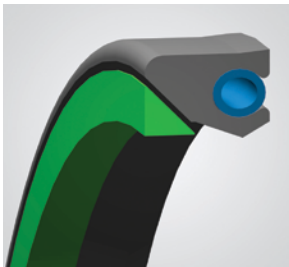
MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	• Aero & Defense •
Avalon	• Rod	• Energy •
Elastomers	Face	• Semiconductor •
Metal	• Reciprocating	• Industrial •
Other	Oscillating	• Life Sciences •
	Rotary	

OD MAX (in)
35
CX MAX (in)
0.50



## CSA Seal

METAL SPRING ENERGIZED



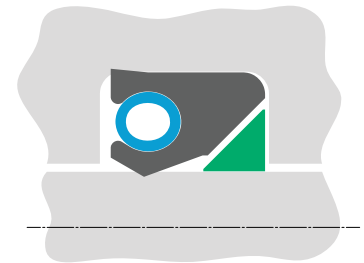
**STATIC** •

**DYNAMIC** •

The CSA seal consists of an elastomer jacket, for outstanding sealing, energized by a coil spring. The coil spring overcomes sealing problems caused by high application ovality, excessive side forces, or high temperature compression set. [Click to learn more.](#)

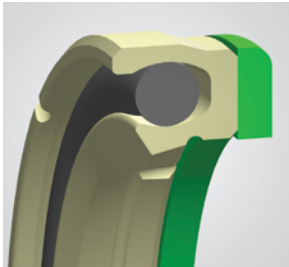
MATERIALS	APPLICATIONS	MARKETS
Arlon	• Piston	• Aero & Defense •
Avalon	• Rod	• Energy •
Elastomers	• Face	• Semiconductor •
Metal	• Reciprocating	• Industrial •
Other	Oscillating	• Life Sciences •
	Rotary	

OD MIN (in)	OD MAX (in)
3.5	15
CX MIN (in)	CX MAX (in)
0.14	0.30



## ESE Seal

METAL SPRING ENERGIZED



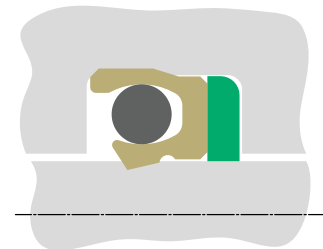
**STATIC** •

**DYNAMIC** •

A unidirectional, “self-venting” seal design consisting of a PTFE jacket and an elastomer O-ring energizer. The seal design and energizer allow installation into “closed-groove” configurations for most sizes. The seal can also be complemented with a high modulus backup ring for higher pressures or larger sealing gaps. Along with the “self-venting” capability, the ESE design offers low operating friction along a wide operational temperature range. [Click to learn more.](#)

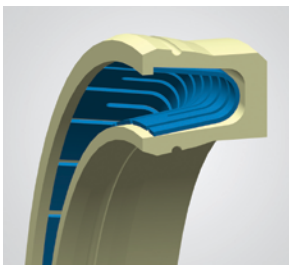
MATERIALS	APPLICATIONS	MARKETS
Arlon	• Piston	• Aero & Defense •
Avalon	• Rod	• Energy •
Elastomers	• Face	• Semiconductor •
Metal	Reciprocating	• Industrial •
Other	Oscillating	• Life Sciences •
	Rotary	

OD MIN (in)	OD MAX (in)
0.18	35
CX MIN (in)	CX MAX (in)
0.06	0.38



## Finger Spring MSE Seal

METAL SPRING ENERGIZED



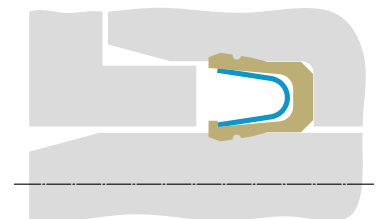
**STATIC** •

**DYNAMIC** •

The MSE seal's superior designed dual-lip body offers improved sealing performance in virtually unlimited media service and the widest temperature range. Finger Seal MSE seals use a cantilever-type stainless steel spring to act as an energizer during low pressure situations. The spring compensates for seal wear in dynamic applications as well as overcoming the nonresilient nature of PTFE materials. [Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	• Aero & Defense •
Avalon	• Rod	• Energy •
Elastomers	Face	• Semiconductor •
Metal	• Reciprocating	• Industrial •
Other	Oscillating	• Life Sciences •
	Rotary	

OD MAX (in)
35
CX MAX (in)
0.50



## 2145 Scraper

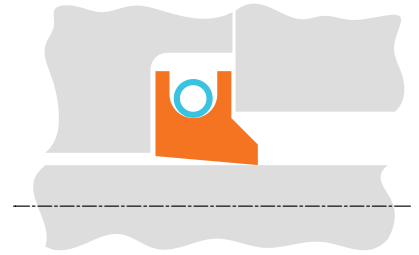
SCRAPERS



A metal garter-spring energized scraper with a scarf-cut PTFE ring. These designs can be a direct replacement for M28776 scrapers. Wide temperature performance envelope. Excellent wear resistance resulting in extended service life. [Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	Aero & Defense
Avalon	Rod	Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	Industrial
Other	Oscillating	Life Sciences
	Rotary	

OD MAX (in)
35
CX MAX (in)
0.50



STATIC

DYNAMIC

## 2280 Scraper

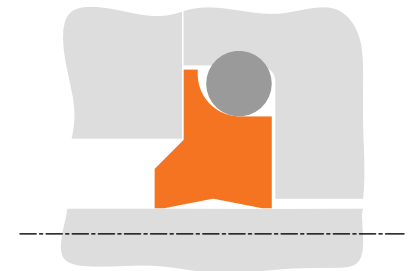
SCRAPERS



A bidirectional, dual lip scraper design utilizing an O-ring energizer with increased gland stability. These designs fit the same grooves as the BACS34A (Boeing) scraper. Maximum exclusion capabilities for elimination of contamination ingress. [Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	Aero & Defense
Avalon	Rod	Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	Industrial
Other	Oscillating	Life Sciences
	Rotary	

OD MIN (in)
0.18
OD MAX (in)
35
CX MAX (in)
0.50



STATIC

DYNAMIC

## 2285/2286 Scraper

SCRAPERS



These "self-venting" O-ring energized scrapers are designed to provide maximum exclusion capabilities and increased gland stability when used in Type I or Type II gland configurations of SAE AS4088 and AS4052. [Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	Aero & Defense
Avalon	Rod	Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	Industrial
Other	Oscillating	Life Sciences
	Rotary	

OD MIN (in)
0.18
OD MAX (in)
35
CX MAX (in)
0.50

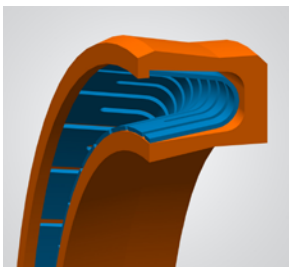


STATIC

DYNAMIC

## MSE® Scraper

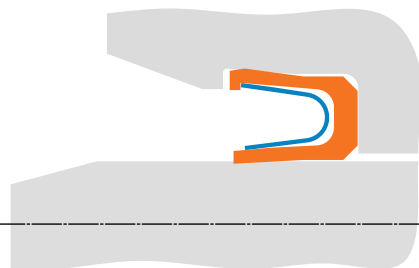
SCRAPERS



The scraper lip design is best suited for non-lubricated applications where abrasive media are present and where space is limited. The scraper lip keeps abrasive media from getting between the seal and the hardware, thus decreasing abrasion. Available in rod and piston designs. [Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	Aero & Defense
Avalon	Rod	Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	Industrial
Other	Oscillating	Life Sciences
	Rotary	

OD MAX (in)
35
CX MAX (in)
0.50

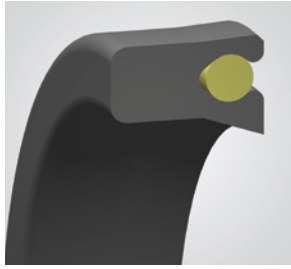


STATIC

DYNAMIC

## RSA Scraper

SCRAPERS



STATIC

DYNAMIC

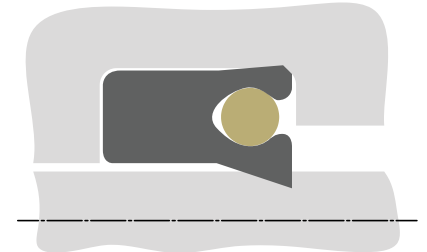
The RSA (Rubber Spring Actuated) scraper provides superior contaminant exclusion in the most rugged service conditions. A compression-activated device, the RSA scraper uses a low compression set rubber O-ring “spring” to maintain the constant radial compression that results in continual contact with both the rod and gland diameter—even in extreme cold, under high linear speeds and during heavy side loading. The RSA scraper’s unique radial design virtually eliminates rod wear and prevents rolling or twisting while retaining sufficient upstream fluid to assure lubrication of the primary seal, resulting in extended service life.

Additionally, the RSA scraper can be wave cut for ease of installation for nonstandard applications.

[Click to learn more.](#)

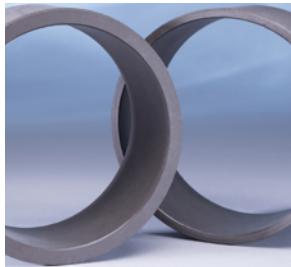
MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	Aero & Defense
Avalon	Rod	Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	Industrial
Other	Oscillating	Life Sciences
	Rotary	

OD MIN (in)	OD MAX (in)
0.60	16
CX MIN (in)	CX MAX (in)
0.11	0.40



## AR® Bearing/Bushing/Wear Ring

BEARINGS/BACK-UP RINGS



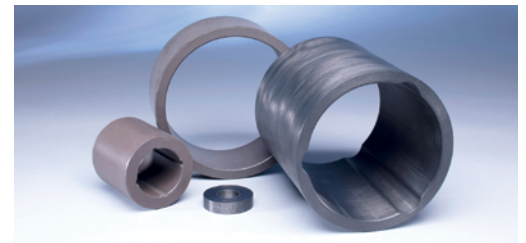
STATIC

DYNAMIC

The AR materials consists of compression molded PEEK and PTFE-based materials specially formulated for prolonged life while operating in abrasive-containing fluids. AR materials are primarily used in centrifugal pumps and offer the best-in-class abrasive resistance for bearings, bushings, and wear rings.

[Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	Aero & Defense
Avalon	Rod	Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	Industrial
Other	Oscillating	Life Sciences
	Rotary	



## Back-up Ring

BEARINGS/BACK-UP RINGS



STATIC

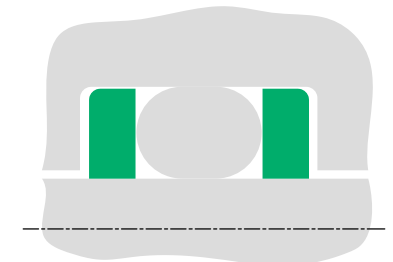
DYNAMIC

Greene Tweed's back-up ring series has been specifically designed for use in different gland configurations as anti-extrusion devices in conjunction with O-rings, packings or other elastomeric seal types. A variety of high-performance materials can be provided and specifically targeted to meet the customer's application requirements. Back-up rings are available either solid or scarf-cut (split) for ease of installation.

[Click to learn more.](#)

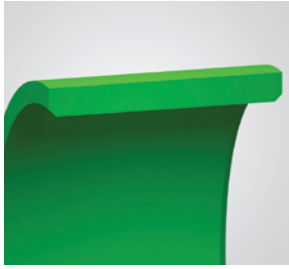
MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	Aero & Defense
Avalon	Rod	Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	Industrial
Other	Oscillating	Life Sciences
	Rotary	

OD MIN (in)	OD MAX (in)
0.08	35
CX MIN (in)	CX MAX (in)
0.05	0.50



## Bearing

BEARINGS/BACK-UP RINGS



STATIC

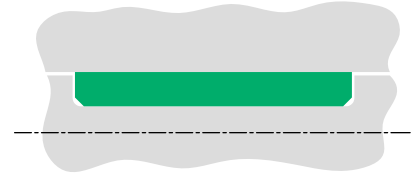
DYNAMIC

Greene Tweed has developed a unique range of thermoplastic bearing materials that provide excellent tribological properties. Our bearings are machined to ensure ease of assembly, protect against particle contaminants, and provide cost-effective bearing solutions.

[Click to learn more.](#)

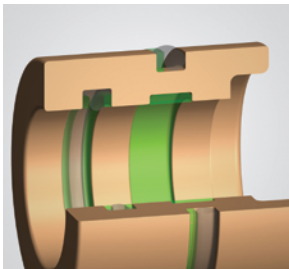
MATERIALS	APPLICATIONS	MARKETS
Arlon	● Piston	● Aero & Defense
Avalon	● Rod	● Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	● Industrial
Other	● Oscillating	● Life Sciences
	Rotary	

OD MAX (in)
35
CX MAX (in)
0.50



## Seal Carrier

BEARINGS/BACK-UP RINGS



STATIC

DYNAMIC

The Greene, Tweed Seal Carrier offers a unique blend of light weight and corrosion resistance to provide an alternative to standard metal seal and bearing carriers. Additionally, the seal carrier can incorporate a wear surface, eliminating the need for an additional wear component in the assembly.

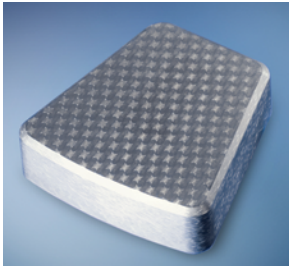
MATERIALS	APPLICATIONS	MARKETS
Arlon	● Piston	● Aero & Defense
Avalon	● Rod	● Energy
Elastomers	Face	Semiconductor
Metal	● Reciprocating	● Industrial
Other	Oscillating	● Life Sciences
	Rotary	

OD MAX (in)
35
CX MAX (in)
0.50



## Thrust Pad/Thrust Ring

BEARINGS/BACK-UP RINGS



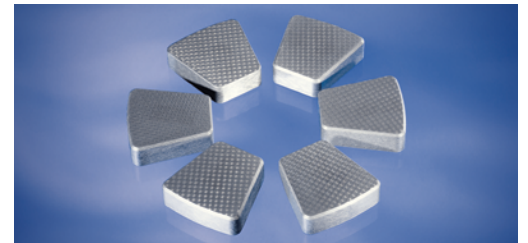
STATIC

DYNAMIC

Greene Tweed's WR<sup>®</sup> 575 carbon fiber thermoplastic composite is ideal for wear/thrust pads or rings for hydrodynamic bearings. Used in high-speed machinery such as pumps, compressors, and turbines, WR 575 provides high stability for axial load and an ideal replacement for metal, carbon, ceramic, and bronze pads.

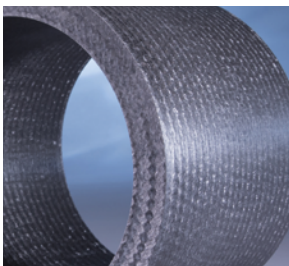
[Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	● Piston	● Aero & Defense
Avalon	● Rod	● Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	● Industrial
Other	Oscillating	● Life Sciences
	Rotary	



## WR<sup>®</sup> Bearing/Bushing/Wear Ring

BEARINGS/BACK-UP RINGS



STATIC

DYNAMIC

The WR family of materials consists of compression molded and fiber placed composites and thermoplastics. These materials are carbon fiber reinforced PEEK and PFA-based for superior performance when compared to metallic or other polymeric materials. WR materials are primarily used in centrifugal pumps and offer the best-in-class wear and chemical resistance for wear rings, bearings, and bushings.

[Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	● Piston	● Aero & Defense
Avalon	● Rod	● Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	● Industrial
Other	● Oscillating	● Life Sciences
	Rotary	





## Large Diameter O-ring

O-RINGS



STATIC

DYNAMIC

Large equipment can sometimes require elastomeric seals that exceed the size limitations of conventional compression molding presses. Our patented Extensis® spliced and vulcanized process or our continuously vulcanized horseshoe molding process offer unique solutions for various application needs. Greene Tweed has molded o-rings as large as 98 inches (2,489 mm) but there is no maximum diameter limit.

[Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	● Aero & Defense
Avalon	Rod	● Energy
Elastomers	● Face	● Semiconductor
Metal	Reciprocating	● Industrial
Other	Oscillating	● Life Sciences
	Rotary	

OD MIN (in)
28
CX MAX (in)
0.315



## O-ring

O-RINGS



STATIC

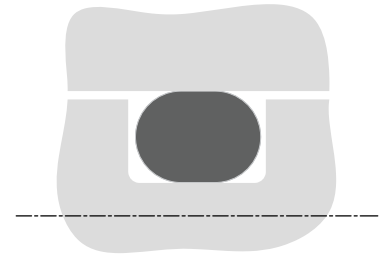
DYNAMIC

O-rings are one of the oldest and most widely used styles of seal geometries. This uncomplicated design provides a suitable, cost-effective solution to a variety of sealing applications. O-rings can be used either as a seal itself or as the energizing element in a variety of PTFE, cap-type seals.

[Click to learn more.](#)

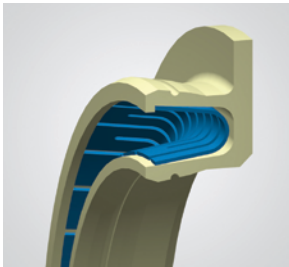
MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	● Aero & Defense
Avalon	● Rod	● Energy
Elastomers	● Face	● Semiconductor
Metal	Reciprocating	● Industrial
Other	Oscillating	● Life Sciences
	Rotary	

OD MIN (in)	OD MAX (in)
0.18	43
CX MIN (in)	CX MAX (in)
0.06	0.38



## Flanged MSE® Seal

ROTARY SEALS



STATIC

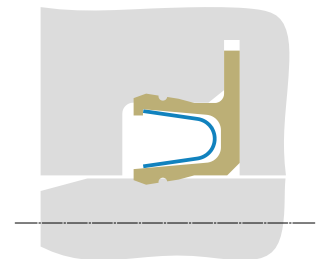
DYNAMIC

The dual-lip body offers improved sealing performance in virtually unlimited media service and the widest temperature range. Finger spring MSE seals use a cantilever-type stainless steel spring to act as an energizer during low pressure situations. The flanged series dual lip seal is intended for use in rotary applications. The flange helps prevent seal rotation, a major cause in rotary seal failure. Designed for maximum surface speed of 250 ft/min (1.27 m/s) and 4000 psi (276 bar).

[Click to learn more.](#)

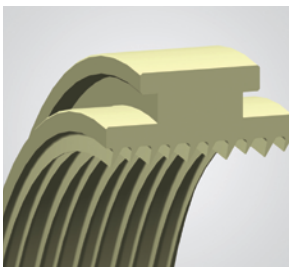
MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	● Aero & Defense
Avalon	● Rod	● Energy
Elastomers	● Face	● Semiconductor
Metal	● Reciprocating	● Industrial
Other	Oscillating	● Life Sciences
	Rotary	●

OD MAX (in)
35
CX MAX (in)
0.50



## Labyrinth Seal

ROTARY SEALS



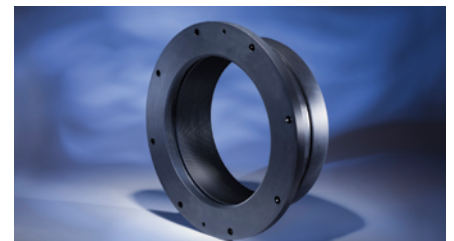
STATIC

DYNAMIC

Greene Tweed's Arlon® 4020 labyrinth seals deliver superior performance by combining custom-engineered tooth designs and high-performance thermoplastic materials. Arlon 4020's excellent tribological properties reduce friction and wear during contact, eliminating gall to extend seal life. The material's enhanced corrosion and erosion resistance make it ideally suited to severe sealing applications. The superior thermal expansion of Arlon 4020 allows for tight clearances at operating temperatures increasing efficiency and reliability for longer run times.

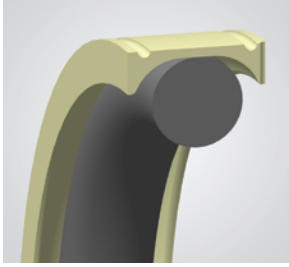
[Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	● Piston	● Aero & Defense
Avalon	Rod	● Energy
Elastomers	Face	● Semiconductor
Metal	Reciprocating	● Industrial
Other	Oscillating	● Life Sciences
	Rotary	●



## Advancap™

SEAL ASSEMBLIES

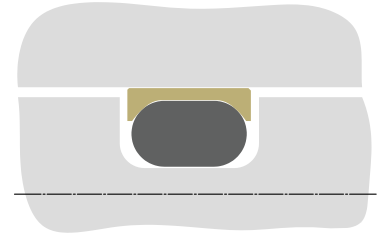

**STATIC**
**DYNAMIC**

The Advancap™ rod and piston seals are designed to provide a cost-effective cap seal solution that prevents extrusion and eliminates O-ring spiral failure in dynamic applications. Each seal combines a cap made from Avalon®, our PTFE material, and an elastomeric O-ring energizer.

[Click to learn more.](#)

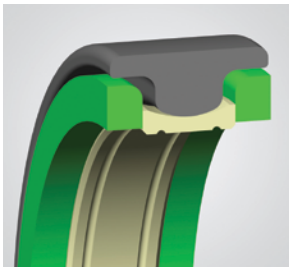
MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	• Aero & Defense
Avalon	• Rod	• Energy
Elastomers	• Face	Semiconductor
Metal	Reciprocating	• Industrial
Other	Oscillating	• Life Sciences
	Rotary	

OD MIN (in)
0.18
OD MAX (in)
35
CX MAX (in)
0.50



## CGT™ Ring

SEAL ASSEMBLIES

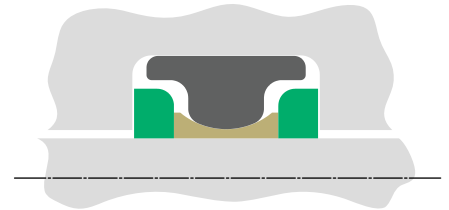

**STATIC**
**DYNAMIC**

The CGT™ is a bi-directional cap seal. The cap-to-elastomer interface creates a large contact area for uniform load distribution over the entire circumferential length of the cap thus enhancing seal performance. A critical part of the seal's outstanding performance is the division of the sealing and anti-extrusion components. Because the functionality of the components is separated, material selection can be targeted specifically for particular application requirements (e.g., modulus, shear strength and friction), allowing for the optimal sealing solution to be achieved.

[Click to learn more.](#)

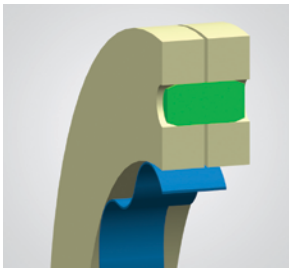
MATERIALS	APPLICATIONS	MARKETS
Arlon	• Piston	• Aero & Defense
Avalon	• Rod	• Energy
Elastomers	• Face	Semiconductor
Metal	Reciprocating	• Industrial
Other	Oscillating	• Life Sciences
	Rotary	

OD MIN (in)	OD MAX (in)
0.18	32
CX MIN (in)	CX MAX (in)
0.06	0.50



## Dual Piston Ring

SEAL ASSEMBLIES

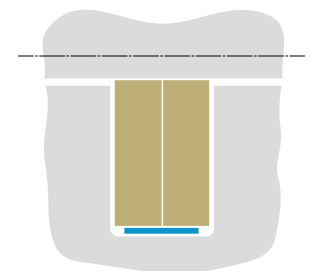

**STATIC**
**DYNAMIC**

Greene Tweed's 3356 Dual Piston Rings series is intended for hydraulic service in piston applications where very low friction is desired and some controlled leakage can be tolerated. Piston rings are step cut for ease during installation. The step cuts are 180° apart and secured in place by an engineered thermoplastic anti-rotation pin. The pin eliminates the need for a specially designed wave spring, reducing the chance of installation challenges and stress cracking of the spring.

Greene Tweed's 3356 Dual Piston Ring series is designed to be used in bores in accordance with MIL-G-5514 and AS4716 specifications.

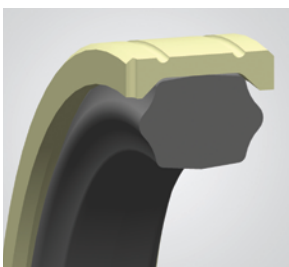
MATERIALS	APPLICATIONS	MARKETS
Arlon	• Piston	• Aero & Defense
Avalon	• Rod	• Energy
Elastomers	Face	Semiconductor
Metal	• Reciprocating	• Industrial
Other	Oscillating	• Life Sciences
	Rotary	

OD MAX (in)
35
CX MAX (in)
0.50



## Ener-Cap® II/Ener-Cap® II HP

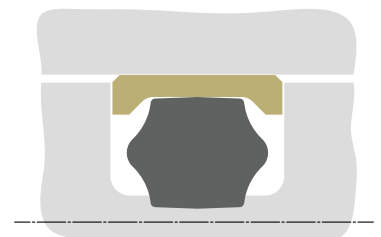
SEAL ASSEMBLIES


**STATIC**
**DYNAMIC**

A self-actuating and pressure-activated hydraulic seal that optimizes cap seal performance. The cap seal design results in low breakout and running friction and minimal leakage over an extended service life, making this seal design ideal for dynamic service. The PTFE-type sealing element and advanced-design elastomeric energizer provide optimum radial squeeze and evenly distributed radial loading. The addition of circumferential cap grooves will improve the lubrication and reduce outboard leakage. [Click to learn more.](#)

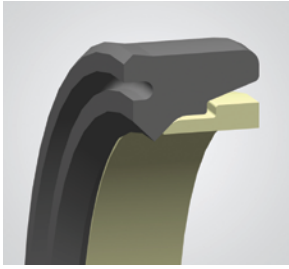
MATERIALS	APPLICATIONS	MARKETS
Arlon	• Piston	• Aero & Defense
Avalon	• Rod	• Energy
Elastomers	• Face	Semiconductor
Metal	Reciprocating	• Industrial
Other	Oscillating	• Life Sciences
	Rotary	

OD MIN (in)	OD MAX (in)
0.22	43
CX MIN (in)	CX MAX (in)
0.05	0.28



## Enerlip®

SEAL ASSEMBLIES



STATIC

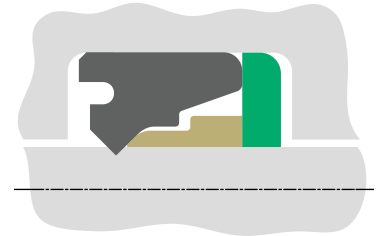
DYNAMIC

High-performance, low leakage, pressure-variable seal developed to combine low breakaway friction with ease of installation. The unidirectional seal consists of a specially shaped elastomeric energizer with a mating PTFE-type heel bearing. At low pressure the Enerlip functions as a partially capped, single-acting elastomer lip seal. As pressure increases, the elastomeric element is forced up the ramp of the PTFE element, reducing the elastomeric footprint length to provide lower friction and wear. At high pressure the Enerlip acts as an activated PTFE seal.

[Click to learn more.](#)

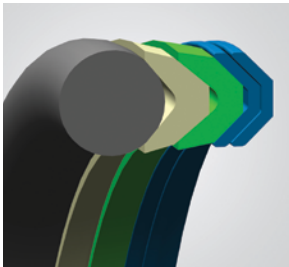
MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	• Aero & Defense •
Avalon	• Rod	• Energy •
Elastomers	• Face	• Semiconductor •
Metal	Reciprocating	• Industrial •
Other	Oscillating	• Life Sciences •
	Rotary	

OD MIN (in)	OD MAX (in)
0.24	16
CX MIN (in)	CX MAX (in)
0.07	0.28



## FPH Seal™

SEAL ASSEMBLIES



STATIC

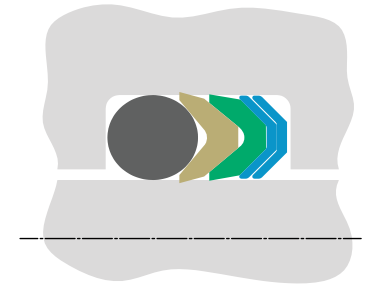
DYNAMIC

Greene Tweed's Fireproof Hydraulic Seal (FPH Seal) provides excellent high- and low-hydraulic pressure sealing in static applications for fireproof-rated equipment (1093°C/2000°F minimum average for 15 minutes).

[Click to learn more.](#)

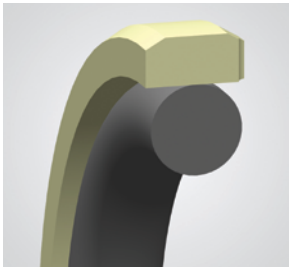
MATERIALS	APPLICATIONS	MARKETS
Arlon	• Piston	• Aero & Defense •
Avalon	• Rod	• Energy •
Elastomers	• Face	• Semiconductor •
Metal	• Reciprocating	• Industrial •
Other	Oscillating	• Life Sciences •
	Rotary	

OD MIN (in)
0.18
OD MAX (in)
35
CX MAX (in)
0.50



## Glidetec™

SEAL ASSEMBLIES



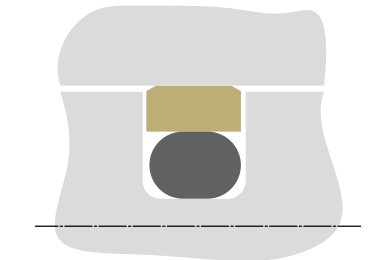
STATIC

DYNAMIC

O-ring energized PTFE cap seal offers simplicity and low cost. The Glidetec seal offers bidirectional sealing, low friction and easy installation in compact single-piece glands. [Click to learn more.](#)

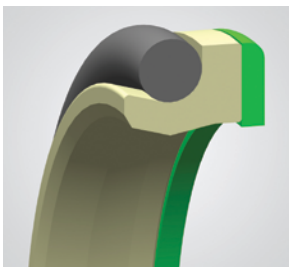
MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	• Aero & Defense •
Avalon	• Rod	• Energy •
Elastomers	• Face	• Semiconductor •
Metal	Reciprocating	• Industrial •
Other	Oscillating	• Life Sciences •
	Rotary	

OD MIN (in)
0.18
OD MAX (in)
35
CX MAX (in)
0.50



## L-Cap™ Seal

SEAL ASSEMBLIES



STATIC

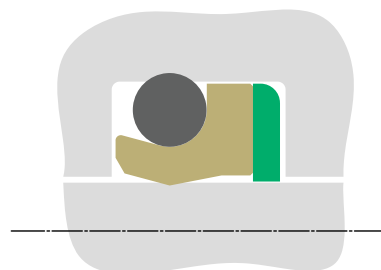
DYNAMIC

The L-Cap provides superior performance in either single or tandem rod seal applications. Its unidirectional, "pressure relief" design makes it easily installable into "closed-groove" configurations for most sizes while offering low operating friction and superior leakage control along a wide operational temperature range.

[Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	• Piston	• Aero & Defense •
Avalon	• Rod	• Energy •
Elastomers	• Face	• Semiconductor •
Metal	Reciprocating	• Industrial •
Other	Oscillating	• Life Sciences •
	Rotary	

OD MIN (in)
0.18
OD MAX (in)
35
CX MAX (in)
0.50



## RSA Seal®

SEAL ASSEMBLIES



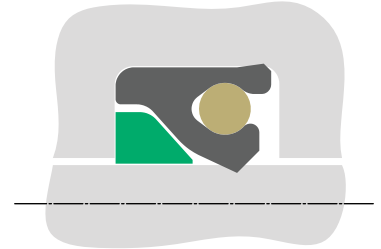
STATIC

DYNAMIC

Greene Tweed's RSA Seal (Rubber Spring Actuated) offers low compression set, high tear resistance, modulus and abrasion resistance, and long life in rugged operating conditions. The RSA seal with full heel bearing is a compact, pressure-compensating U-type seal made from a proprietary high-molecular weight elastomer formulated for low-temperature performance. It incorporates an O-ring energizer to apply uniform radial loading on the seal's back-beveled lip. The Avalon® heel bearing serves as a low friction, high-shear strength stabilizer to maintain exact lip-point interference between the seal and sealing surface. [Click to learn more.](#)

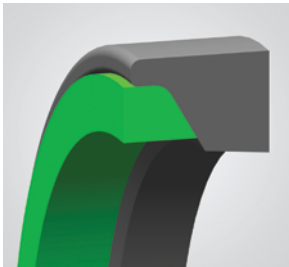
MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	Aero & Defense
Avalon	Rod	Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	Industrial
Other	Oscillating	Life Sciences
	Rotary	

OD MIN (in)	OD MAX (in)
0.60	16
CX MIN (in)	CX MAX (in)
0.11	0.40



## RSR™ Seal

SEAL ASSEMBLIES



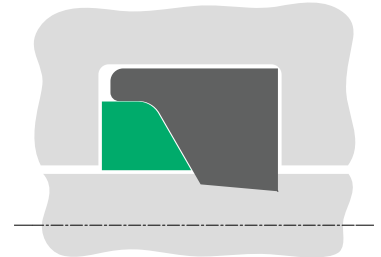
STATIC

DYNAMIC

The RSR seal features a specially engineered elastomer profile that provides exceptional "dry rod" sealing under dynamic conditions. The RSR's endless, trapezoidal wedge-shaped back-up ring has an exceptionally wide shear section to ensure excellent resistance to extrusion. In addition, the back-up ring's shape generates a force vector under pressure, thereby eliminating the extrusion gap. [Click to learn more.](#)

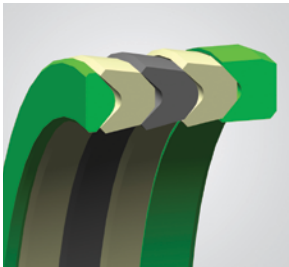
MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	Aero & Defense
Avalon	Rod	Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	Industrial
Other	Oscillating	Life Sciences
	Rotary	

OD MIN (in)	OD MAX (in)
0.37	32
CX MIN (in)	CX MAX (in)
0.07	0.50



## Seal Stack

SEAL ASSEMBLIES



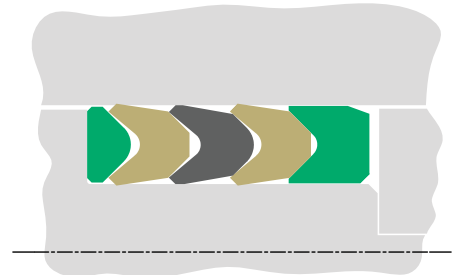
STATIC

DYNAMIC

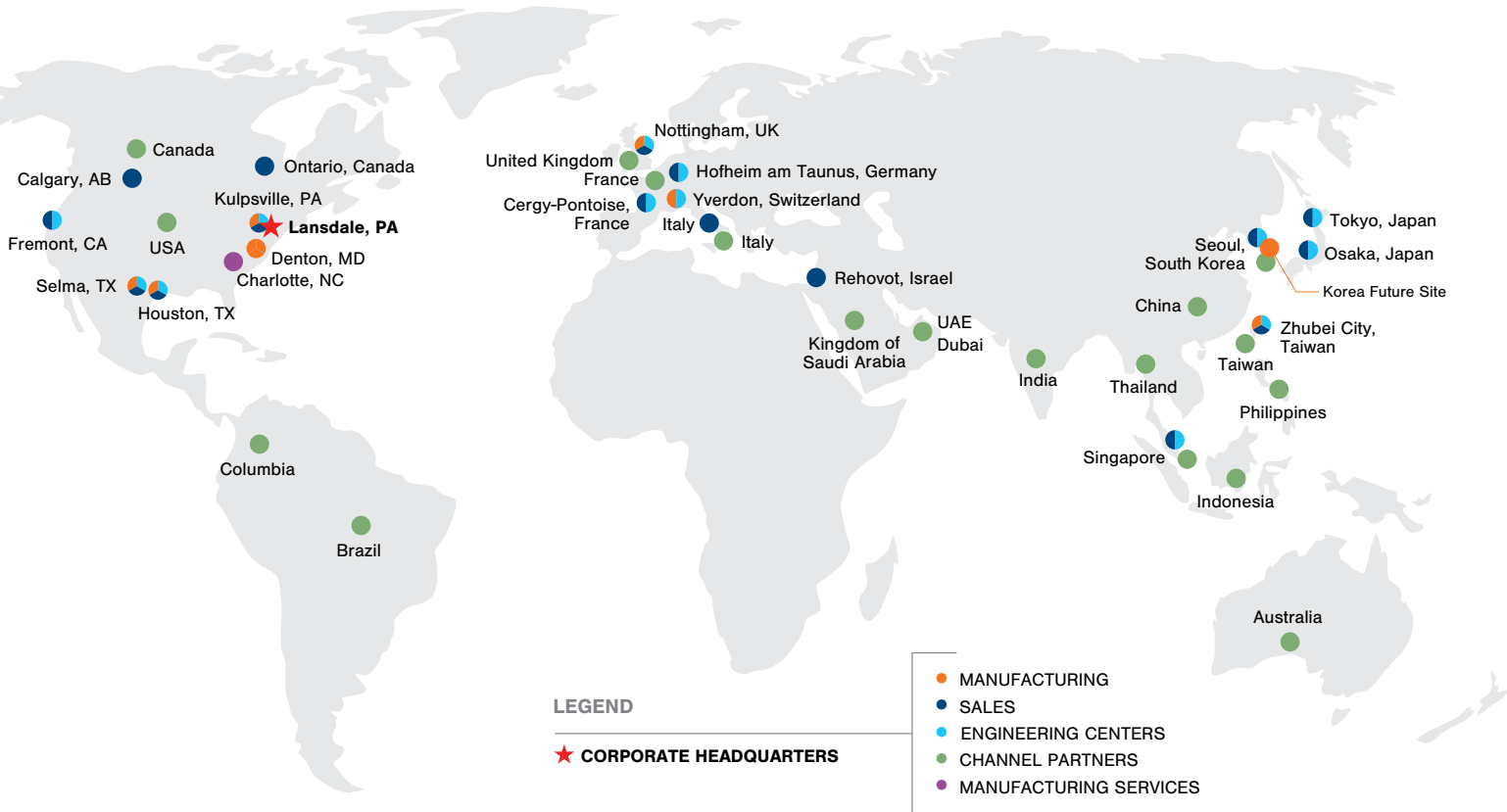
Seal stacks are a custom-designed sealing solution for complex applications, with multiple redundant sealing elements including v-rings, adapters, load rings, and MSE®s. Greene Tweed's extensive portfolio of elastomeric and thermoplastic materials enables us to balance requirements for wear resistance, low friction, extrusion resistance, and other challenges to design a customized sealing solution. [Click to learn more.](#)

MATERIALS	APPLICATIONS	MARKETS
Arlon	Piston	Aero & Defense
Avalon	Rod	Energy
Elastomers	Face	Semiconductor
Metal	Reciprocating	Industrial
Other	Oscillating	Life Sciences
	Rotary	

OD MAX (in)
20
CX MAX (in)
0.50







**USA - Lansdale, PA**  
**Corporate Headquarters**  
 1684 South Broad Street,  
 PO Box 1307  
 Lansdale, PA 19446  
 Tel: + 1.215.256.9521  
 Fax: +1.215.256.0189  
 Toll-free: 1.800.220.4733

**USA - Kulpville, PA**  
 2075 Detwiler Road,  
 P.O. Box 305  
 Kulpville, PA 19443  
 Tel: +1.215.256.9521

**USA - Houston, TX**  
 1930 Rankin Road  
 Houston, TX 77073 USA  
 Tel: +1.281.765.4500  
 Fax: +1.281.821.2696  
 Toll-free: 1.800.927.3301

**USA - Selma, TX**  
 9365 Corporate Dr.  
 Selma, TX. 78154 USA  
 Tel: +1.210.651.4572  
 Fax: 1.210.651.4907  
 Toll-free: 1.800.288.0618

**USA - Fremont, CA**  
 47987 Fremont Boulevard  
 Fremont, CA 94538 USA  
 Tel: +1.408.492.1155  
 Toll-free: 1.800.716.5316

**USA - Charlotte, NC**  
 201 S. Tryon Street  
 Suite 950  
 Charlotte, NC 28202 USA  
 Tel: +1.980.474.3220

**United Kingdom - Nottingham**  
 Ruddington Fields  
 Ruddington  
 Nottingham, England,  
 United Kingdom  
 NG11 6JS  
 Tel: +44 (0) 115.9315.777  
 Fax: +44 (0) 115.9315.888

**Switzerland**  
 Z.I. Le Bey 16  
 1400 Yverdon-les-Bains, Switzerland  
 Tel: +41 (0) 24.447.35.70  
 Fax: +41 (0) 24.447.35.71

**France**  
 19 rue des Beaux Soleils  
 CS 50409 Osny  
 95527 Cergy - Pontoise,  
 Cedex, France  
 Tel : + 33 (0) 1.30.73.54 .44  
 Fax : + 33 (0) 1.30.73.45 .75

**Germany**  
 Nordring 12  
 65719 Hofheim am Taunus,  
 Germany  
 Tel : + 49 (0) 6192.929950  
 Fax : + 49 (0) 6192.900316

**Israel**  
 27 Eli Horovitz Street  
 Rehovot 7608803, Israel  
 Tel: +972 (3) 951.4000  
 Fax: +972 (3) 952.4000

**Korea**  
 #619, Gyeonggi R&DB Center,  
 105 Gwanggyo-ro Yeongtong-gu,  
 Suwon-si  
 Gyeonggi-do 16229,  
 Republic of Korea  
 Tel. : +82 (0) 31.280.7600  
 Fax. : +82 (0) 31.629.7600

**Japan**  
 12F PMO Tamachi  
 5-31-17 Shiba, Minato-ku  
 Tokyo, 108-0014, Japan  
 Tel: +81 (0) 3.3454.3501  
 Fax: +81 (0) 3.3454.1040  
 4-10-12, Imazu-kita,  
 Tsurumi-ku  
 Osaka, 538-0041 Japan  
 Tel: +81 (0) 6.6962.2270  
 Fax: +81 (0) 6.6962.2271

**Singapore**  
 54 Serangoon  
 North Avenue 4 #06-01  
 Singapore 555854  
 Tel: (+65) 6555 4828  
 Fax: (+65) 6555 5393

**Taiwan**  
 4F & 5F, No.1, Alley 17,  
 Lane 62, Zhonghe Street  
 Zhubei City, Hsinchu County  
 30267, Taiwan (Republic  
 of China)  
 Tel: +886.3.656.8585  
 Fax: +886.3.656.0365



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