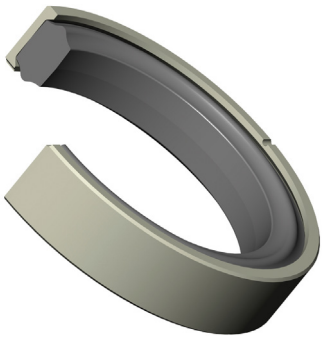
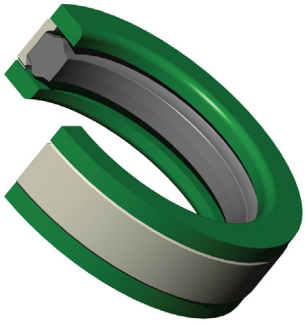
GREENE TWEED
Ener-Cap® II and Ener-Cap® II HP

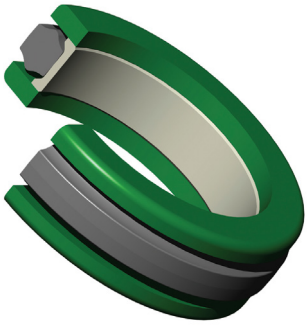


Ener-Cap® II Piston

Ener-Cap® II Rod



Ener-Cap® II HP
Double-Acting Piston



Ener-Cap® II HP

Self-Actuating, Pressure-Activated

The Greene Tweed Ener-Cap® II is a self-actuating, pressure-activated hydraulic seal that optimizes cap seal performance within standard Aerospace seal glands.

The Ener-Cap® II HP includes one or two anti-extrusion rings to provide higher pressure capabilities by preventing extrusion of the PTFE sealing element. 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.

High-Performance Bidirectional Seal

The PTFE-type sealing element and advanced-design elastomeric energizer provide optimum radial squeeze and evenly distributed radial loading. This design gives a high degree of seal stability and extended service life.

Our Avalon® materials offer exceptional performance. A custom-molded energizer ensures correct squeeze levels are maintained. The addition of circumferential cap grooves will improve the lubrication and reduce outboard leakage.

Operating temperatures can range from -80°F to 450°F (-62°C to 232°C) with pressures to 4,000 psi (276 bar), dependent upon the selected materials and hardware clearances. The Ener-Cap® II HP extends the working pressures significantly and operates successfully above 8,000 psi (550 bar).

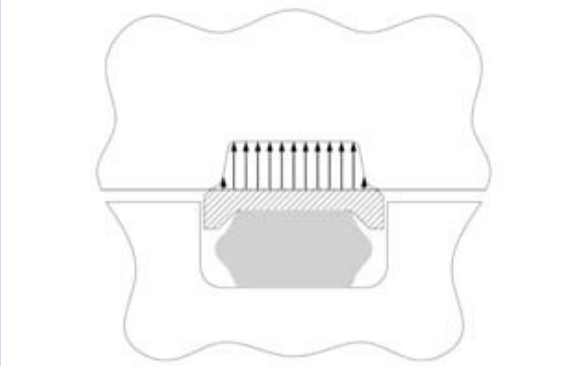
Features and Benefits

- Capable of sealing pressures up to 4,000 psi (276 bar) without backups, easing installation of other multi-component seals
- Specially designed elastomeric energizer supports even sealing force distribution promoting better sealing performance
- Low break out and running friction
- Long life and low friction of the Avalon® material extend service life
- Retrofits existing gland to MIL-G-5514/AS4716 standards

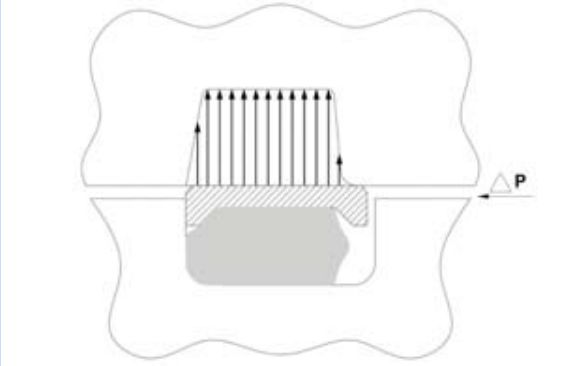
Applications

- Primary and secondary flight controls
- Linear utility actuators
- Accumulators/reservoirs
- Landing gear actuation systems

Ener-Cap® II Under Pressure



Ener-Cap® II Pressurized

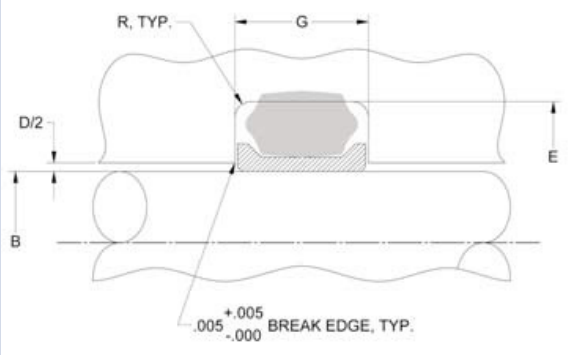


Ener-Cap® II Configurations

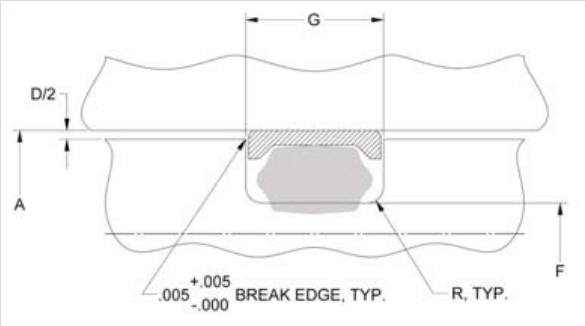
The Ener-Cap® II is available for rod or piston applications in standard zero backup, one backup or two backup width glands in accordance with MIL-G-5514/AS4716.

Gland Dimensions

Rod

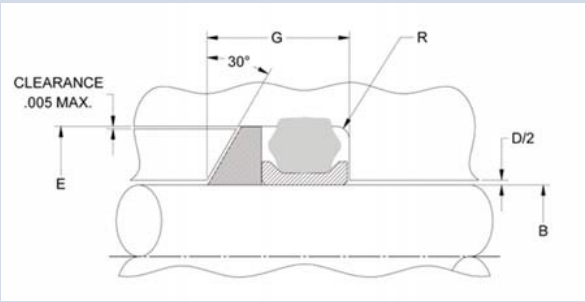


Piston



Note: Refer to the dimensional tables for more information.

Ener-Cap® II with Wedge Adapter



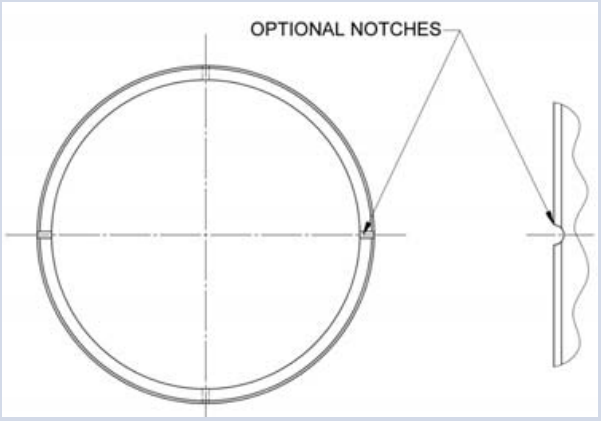
Note: Custom configurations are available to suit BACS11AA.

Ener-Cap® II Options

Notches — Blow By Protection

Both piston and rod type 52 series Ener-Caps® can be supplied with notches for blow by protection, in accordance with SAE AIR 1243.

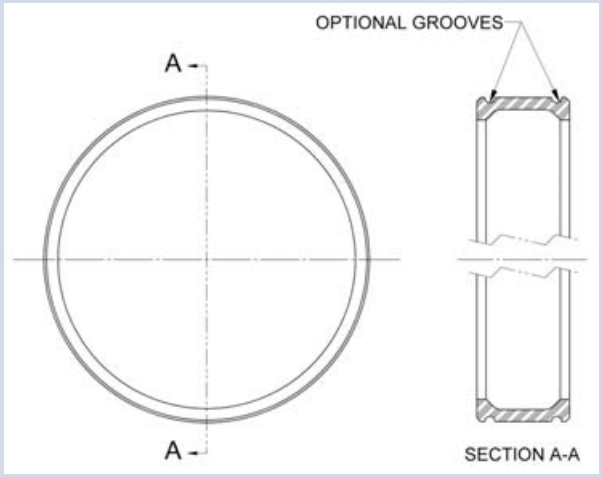
Notches



Circumferential Grooves

Circumferential grooves can be added to the 52 series piston and rod Ener-Caps® to provide for better dynamic sealing (except for the smaller -0XX sizes). The grooves will retain lubricant that enhances startup performance by releasing the lubricant to the sliding surfaces as the surface moves.

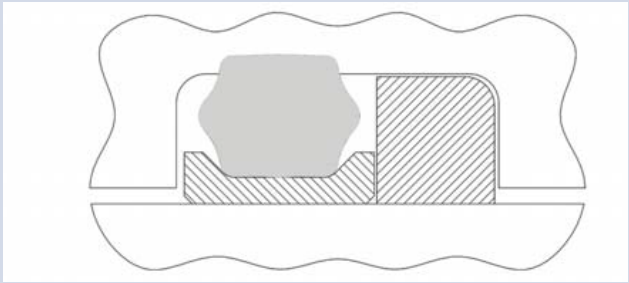
Grooves



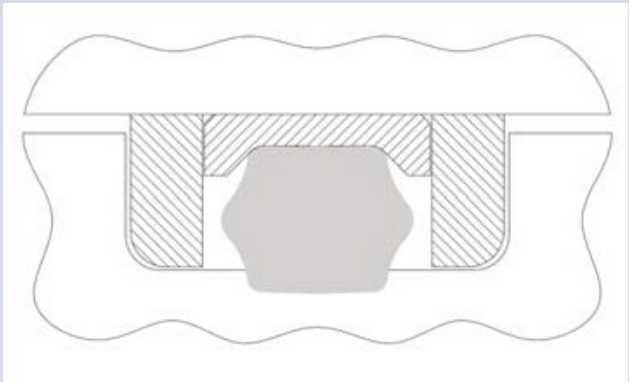
Ener-Cap® II HP Options

Greene Tweed has designed the 5279 series of Ener-Cap® II HP to combine the long-life, low-friction properties of the Ener-Cap® II with the high shear strength backup capabilities of a backup ring. This allows the seal to be used at pressures in excess of 4000 psi (276 bar). The Ener-Cap® II HP is available for rod and piston applications in standard one backup and two backup glands only.

Ener-Cap® II HP

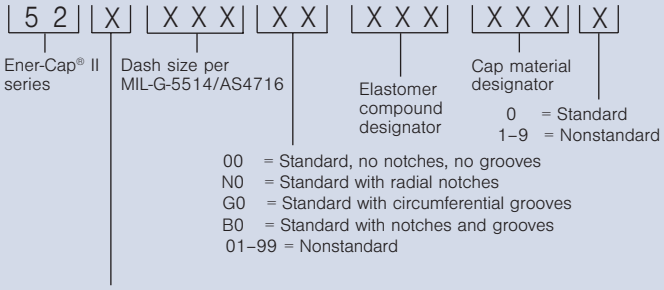


Ener-Cap® II HP Bidirectional



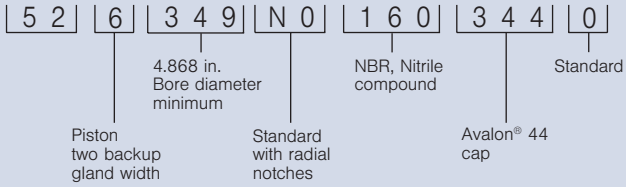
Ener-Cap® Part Numbering System

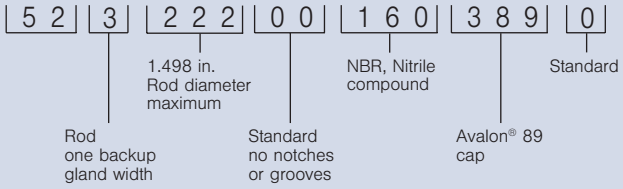
The part numbering system requires the use of the material designator tables found in the next column. For nonstandard designs, contact Greene Tweed engineering.



Rod	Piston	Gland Width
1	2	Zero backup gland width
3	4	One backup gland width
5	6	Two backup gland width

Part Numbering Examples





Contact KLINGER for specific recommendations to suit higher performance requirements.

Ener-Cap® 59 Series

The original Ener-Cap® design, 59 series, has been replaced by 52 series Ener-Cap® II for all new applications.

Material Designator Tables

Code	Elastomer Compound
160	NBR, Nitrile
161	NBR, Nitrile
409	FVMQ, Fluorosilicone
731	FKM, Fluorocarbon
772	FKM, Fluorocarbon
952	EPM, Ethylene Propylene
954	EPDM, Ethylene Propylene
964	NBR, Nitrile

Code	Cap Material
043	Avalon® 07
019	Avalon® 09
344	Avalon® 44
069	Avalon® 50
357	Avalon® 57
389	Avalon® 89

See Greene Tweed Surface Finish guidelines.

10/21-GT DS-US-AS-002

KLINGER
trusted. worldwide.

KLINGER Limited

AUSTRALIA
Western Australia - Head Office
38 McDowell Street
Welshpool WA 6106

Queensland
Unit 3, 5-7 Roseanna Street
Gladstone QLD 4680

Tel: 1300 798 279
(calls within Australia)

Tel: +61 8 92511688
(calls outside Australia)

NEW ZEALAND
Tel: +64 272 735 045

SINGAPORE
105 Cecil Street #07-01, The Octagon
Singapore 069534
Tel: +65 6827 9045

KLINGER Thailand
501/2 Moo 2, Tambol Mabyangporn
Amphur Ruak Daeng
Rayong 21140 Thailand
Tel: +66 3306 0154