



# Advancap™

## O-Ring Energized Seals



Advancap™ Piston



Advancap™ Rod

### Improved System Performance

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, with an elastomeric energizer, and is available in configurations for zero, one, or two back up ring glands per AS4716. Custom configurations are also available.

The Advancap™ can replace low-friction, o-ring swivel seals that leak, nibble, and/or exhibit excessive friction.

### Features and Benefits

- Avalon® cap interfaces with the dynamic surface resulting in lower friction and elimination of spiral failure, which leads to better system performance
- Specially designed Avalon® cap cradles o-ring, protecting it from extrusion when under pressure
- Designed for AS4716 gland and uses standard o-rings, resulting in overall cost savings

### Applications

- Flight controls (e.g., ailerons, spoilers, airbrakes)
- Utility and positioning actuators in landing gear systems



## Advancap™ Configurations

### Rod/Gland Diameter Change

O-Ring Dash No.	006 Through 028	104 Through 149	210 Through 247	325 Through 349	425 Through 460
"E" Dia.	+0.010 in.	+0.010 in.	+0.018 in.	+0.018 in.	+0.025 in.

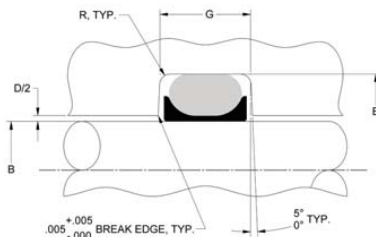
### Piston/Gland Diameter Change

O-Ring Dash No.	006 Through 028	104 Through 149	210 Through 247	325 Through 349	425 Through 460
"F" Dia.	-0.010 in.	-0.010 in.	-0.018 in.	-0.018 in.	-0.025 in.

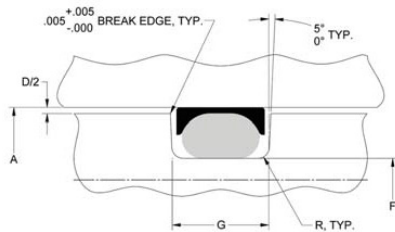
Note: Gland radii, finishes, concentricity and groove wall angle to conform to MIL-G-5514/AS4716. See Capabilities section for more information.

### Gland Dimensions

#### Rod



#### Piston



Note: Refer to the dimensional tables for more information.

## Squeeze Considerations

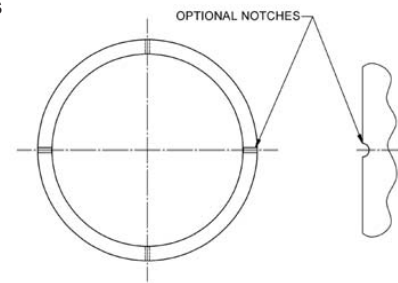
The addition of any cap to an o-ring gland will increase o-ring squeeze and gland occupancy. This may result in excessive friction, unsatisfactory service life, or installation difficulty. By modifying the gland diameter, as shown in the table above, these problems can be alleviated without reducing o-ring squeeze below the minimum per AS4716.

## Advancap™ Options

### Notches — Blow By Protection

Both piston and rod type Advancaps™ can be supplied with notches for blow by protection, in accordance with SAE AIR 1243.

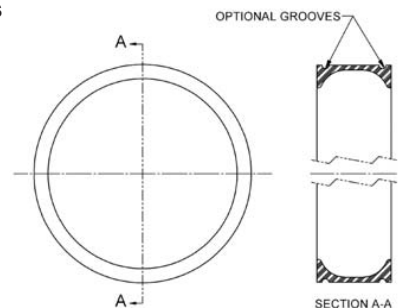
#### Notches



## Circumferential Grooves

Circumferential grooves can be added to Advancap™ seals to provide better dynamic sealing. The grooves will retain lubricant that enhances start up performance by releasing lubricant to the sliding surfaces as the surface moves.

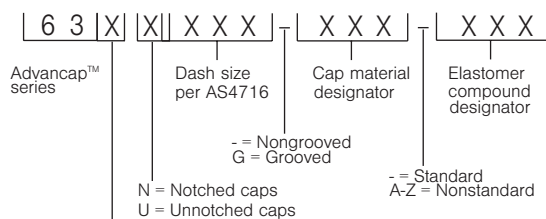
#### Grooves





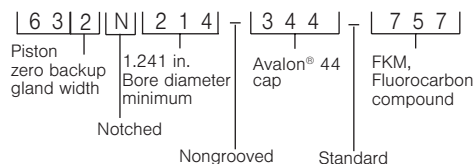
## Advancap™ Part Numbering System

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 your local Greene Tweed representative for specific recommendations to suit higher performance requirements.

## Material Designator Tables

Code	Elastomer Compound
160	NBR, Nitrile
161	NBR, Nitrile
165	NBR, Nitrile
193	NBR, Nitrile
409	FMVQ, Fluorosilicone
410	FMVQ, Fluorosilicone
735	FKM, Fluorocarbon
757	FKM, Fluorocarbon
772	FKM, Fluorocarbon
952	EPM, Ethylene Propylene
954	EPDM, Ethylene Propylene
963	EPDM, Ethylene Propylene
964	NBR, Nitrile

Code	Cap Material
301	Avalon® 01
043	Avalon® 07
019	Avalon® 09
344	Avalon® 44
069	Avalon® 50
357	Avalon® 57
379	Avalon® 69
389	Avalon® 89

See Greene Tweed Surface Finish guidelines.

## Greene Tweed

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