

# Silicone Housing (Face) Seals

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A superior alternative to  
flat gaskets and other  
gasketing methods



 Apple Rubber

# Don't Risk it with Flat Gaskets.

The superior performance of a custom silicone housing seal will protect your design and minimize the risks that come from flat gaskets. Silicone housing seals custom designed by Apple Rubber outperform die-cut flat gaskets in an extensive variety of housing applications. Featuring a round cross-section and designed to your specifications, they ensure a leak-proof environment.

## The perfect match of durometer, shape and color.

Available in a durometer range of 20-80 Shore A, the silicone housing seal can be made with the hardness that best matches the requirements of plastic or metal housing applications. Apple Rubber can produce the most complex sealing shapes, as well as color match silicone materials in solid or translucent colors.

## Advanced manufacturing processes for cost-effective solutions.

Apple Rubber's LIM (liquid injection molding) systems provide consistent, high-quality and cost-effective housing seals virtually flash-free. We utilize the latest compression and transfer molding technologies to meet your requirements.

## Fast prototypes and design engineering assistance.

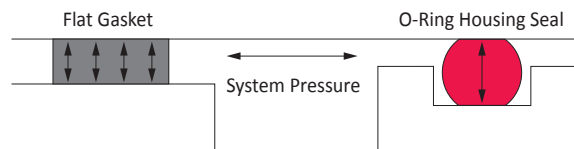
In-house tooling capabilities and an experienced design engineering staff allow Apple Rubber to deliver housing seal prototypes fast. Our engineers have expertise in polymer technology – with a particular emphasis on silicone – as well as plastics, metals and other materials to assist you in creating the right housing seal solution for your application.

## Seal it right, right from Apple.

Our housing seals are made in the USA and Apple Rubber sells direct, allowing for direct communication with a knowledgeable sales team and design engineers in one place. As a leading designer and manufacturer of seals and sealing devices, Apple Rubber has the capabilities to meet all your seal requirements. Call or visit [applerubber.com](http://applerubber.com) today for more information.

### Housing Seals vs. Flat Gaskets

Feature/Benefit	Housing Seal	Flat Gasket
Round o-ring cross section to seal better	Yes	No
Reusable after disassembly	Yes	No
Choice of colors	Yes	Limited
Complex shapes	Many	Limited
Design assistance	Yes	No
Buy direct - no middleman	Yes	Not likely
Low compression set	Yes	Not likely
Precision level tolerances	Yes	No

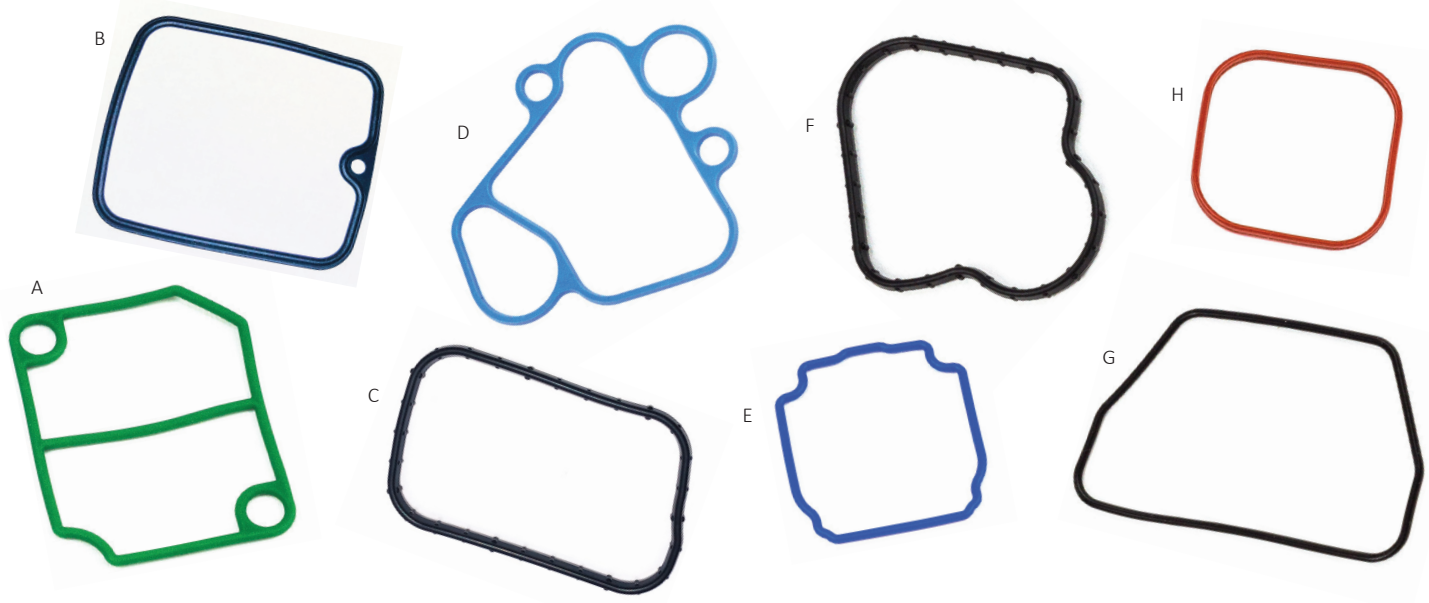


#### Flat Gasket

- » Die cut tolerances
- » Large surface contact area
- » High fastener loading required to achieve seal
- » Limited to two-dimensional geometry

#### O-Ring Housing Seal

- » Molded precision tolerances
- » Point load contact area
- » Lower compressive force required
- » Will better absorb variations in surface flatness



## A wide range of standard colors.

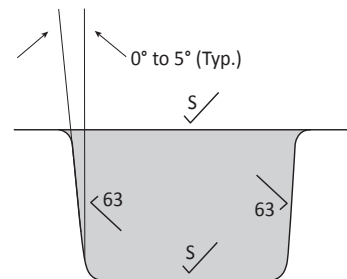
Silicone housing seals from Apple Rubber are available in a wide range of colors (solid or translucent) to match application requirements. These include:

	Violet 364		Red 346		Blue 283
	Green 102		Black 220		Orange 062
	Gray 122		White 056		Green 176
	Orange 059		Violet 369		Yellow 136
	Red 350		Violet 367		Red 371
	Yellow 126G		Red 354		Blue 291
	Blue 278		Blue 292		

- A. A housing seal for a pneumatic nail gun produced with liquid silicone rubber to exact specifications.
- B. Housing seal with screw clamping hole for control module housing.
- C. Housing seal with ribs to secure the seal to the lid component so when the lid is opened the seal does not become separated.
- D. The complex shape of a custom housing seal creates one piece serving two functions to protect electronics in aerospace applications.
- E. Weather seals for a digital readout offer low compression force, yet the best compression set resistance.
- F. This housing seal is designed with splines for support in an air flow regulator.
- G. This environmental seal protects automotive control modules and engine management units.
- H. A square shaped housing seal is made for a custom fit on an aircraft computer box.

## Gland Design for Housing (Face) Seals

O-Ring Cross Section	Gland Depth	Squeeze		Groove Width $\pm .005$	Groove Radius
		Inches	%		
.040	.027-.030	.007-.016	19-37	.060	.005-.008
.050	.034-.038	.009-.019	19-36	.075	.005-.008
.060	.042-.046	.011-.021	19-33	.090	.005-.008
.070	.049-.054	.013-.024	19-33	.105	.005-.015
.103	.075-.081	.019-.031	19-29	.146	.005-.020
.139	.100-.108	.027-.043	20-30	.195	.005-.030
.210	.155-.165	.040-.060	20-28	.280	.005-.050
.275	.205-.215	.054-.076	20-27	.350	.005-.060



### Gland Detail

- » Surface finish: S
  - 32 for liquids
  - 16 for vacuum and gases
- » Finishes are RMS values

## One Source for All Your Sealing Needs

Apple Rubber stocks AS568 and ISO 3601 standard sizes, most common metric sizes, plus a wide variety of non-standard o-ring sizes. Our materials meet mil-spec, medical and automotive specifications.

Apple Rubber offers expert custom molding for non-standard rubber products. With in-house tooling, we save more time and resources compared to offshore operations. We offer expertise at any level of production, from prototype to high volume tooling.

When you call Apple Rubber, you deal directly with the manufacturer. Our experienced staff provides complete and comprehensive service to help you get the correct product for your application.

## Full Line of Quality Apple Rubber Products

### Products:

O-Rings — standards, metrics, MicrOrings®, MacOrings®

LSR (Liquid Silicone Rubber)

Composite seals (rubber bonded to plastic or metal)

Custom-molded seals and shapes

Medical seals

Thermobonded seals

FilterSeal™

Military specs

Standard and exotic materials

### Services:

Design capabilities

Prototyping and production runs

Full quality-control laboratory

Class 10,000 (7) Cleanroom

ISO 9001 / AS 9100 Certifications

ITAR Registered



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