

Housing Seals

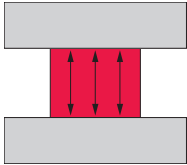
The superior performance
of a custom molded
enclosure seal



The Superior Performance of a Custom Molded Housing Seal.

- » Outperforms die-cut flat gaskets in various housing applications
- » Features round cross-section and custom design to specifications
- » Ensures a leak-proof environment
- » Industry-leading tolerances as tight as $\pm 0.003''$ (depending on application)

Flat



Flat Gaskets: A Reliable Foundation

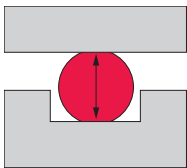
Ideal for:

- » Simple sealing applications with uniform surfaces
- » Applications with limited space constraints
- » Retrofit solutions for existing designs

Key Features:

- » Simple design configurations
- » Tighter tolerance than die-cut gaskets
- » Wide range of material options
- » Enhanced material properties to calendered sheet stock

Round Cross-Section



Round Cross-Section Gaskets: For Enhanced Performance

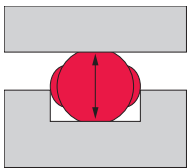
Ideal for:

- » Applications requiring superior sealing force
- » Environments with temperature fluctuations
- » Designs demanding consistent compression
- » Situations requiring lower fastener loads

Key Features:

- » Optimized contact mechanics with point load or narrow band contact area
- » Lower fastener torque requirements due to efficient load distribution
- » Superior ability to absorb component tolerances
- » Reusable after disassembly

Press-in-Place



Press-In-Place Housing Seals: The Superior Solution

Ideal for:

- » Complex housing configurations
- » Assembly-friendly designs
- » Applications requiring secure seal positioning
- » Environments with vibration or movement

Key Features:

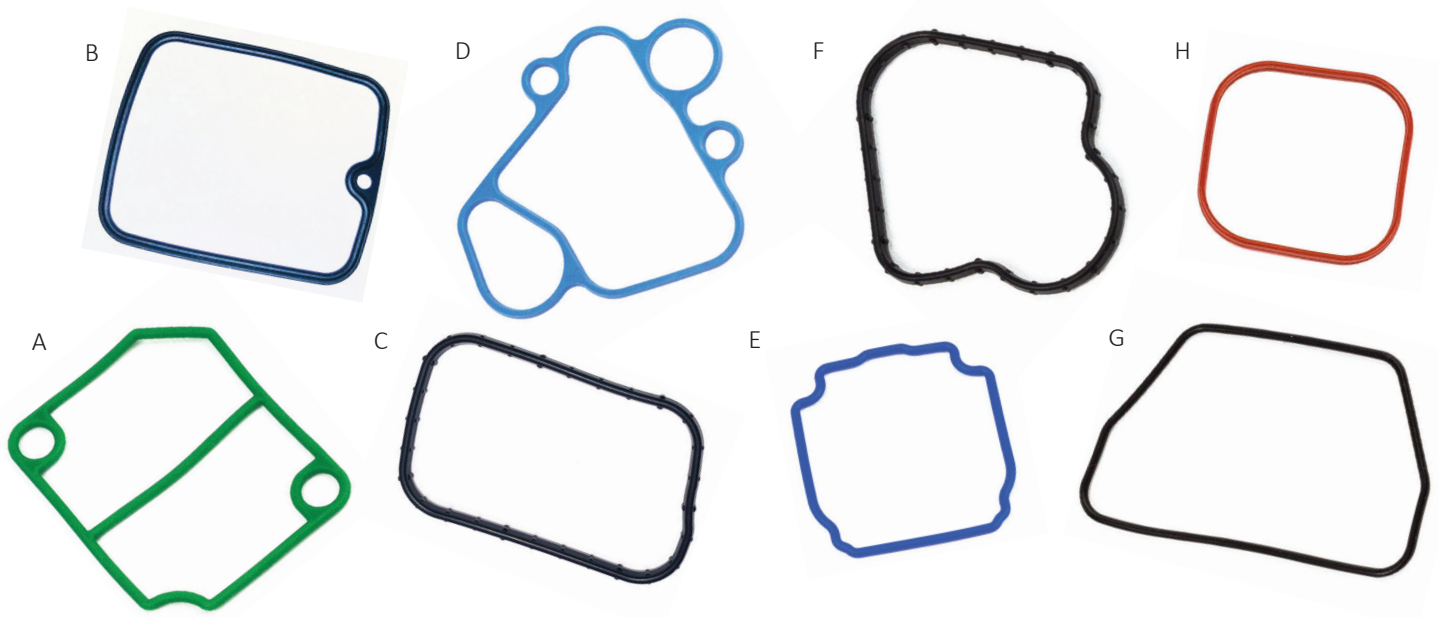
- » Ribbed design prevents seal displacement
- » Simplified assembly process
- » Ensures consistent positioning during installation
- » Eliminates risk of seal dislocation during operation
- » Custom-engineered to fit irregular housing configurations

The perfect match of durometer, material and shape.

- » Available in durometer range of 20–80 Shore A
- » Standard durometer ranges from 40–80 Shore A
- » Low durometer options:
 - Silicone (20 Shore A)
 - EPDM/NBR (40 Shore A)
 - FKM (55 Shore A)
- » Hardness can be matched to requirements of plastic or metal housing applications
- » Full range of elastomers including NBR, EPDM, FKM, Silicone, and specialty compounds
- » Custom color matching available in both opaque and translucent variants

Advanced Material Options:

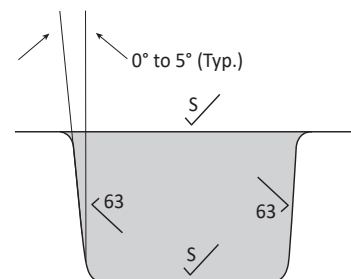
- » Specialty Formulations:
 - UL listed compounds (JMLU2, UL 157 tested) for gasoline, natural gas, LP-gas, UL50
 - UV stabilized materials for outdoor applications
 - Antifungal compounds that resist fungal growth
 - Medical-grade materials (FDA USP Class VI and ISO 10993 tested)



- 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. Press-In-Place housing gasket to secure the seal to the lid component so when the lid is opened the seal does not become separated.
- D. The complex shape Fluorosilicone custom housing seal to protect electronics in aerospace applications.
- E. Weather seals for a digital readout offer low compression force, yet the best compression set resistance.
- F. Press-In-Place FKM gasket for automotive exhaust application.
- G. This environmental seal protects automotive control modules for engine management units.
- H. A square shaped housing seal is made for a custom fit on a UL50E electrical enclosure.

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

Advanced manufacturing processes for reliable solutions.

We pride ourselves on our expertise in advanced molding systems that deliver consistent, high-quality, and cost-effective housing seals for every application. Our manufacturing excellence incorporates multiple molding technologies including compression, transfer, and injection processes, allowing us to select the optimal method for your specific requirements. These diverse capabilities ensure that your housing seals are produced for superior precision, consistency, and performance perfectly tailored to your application needs.

Liquid Silicone Rubber (LSR) Processing:

Our LSR processing utilizes advanced two-component, platinum-catalyzed silicone systems that deliver exceptional results. This technology achieves near-zero flash production with exceptional dimensional consistency, allowing us to mold intricate features and undercuts with precision. The rapid cure kinetics of our LSR process makes it ideal for both low and high-volume production needs, ensuring that we can meet your requirements efficiently while maintaining the superior quality and consistency you expect from Apple Rubber.

Why choose Apple Rubber?

At Apple Rubber, our comprehensive engineering support is powered by our experienced design team and in-house tooling capabilities, ensuring we deliver rapid prototypes and expert guidance throughout your project. Our specialists add value at every stage—from optimizing seal designs for manufacturing efficiency to selecting appropriate elastomers based on your specific requirements. We provide technical expertise including precise groove design verification, squeeze calculations, and thorough quality engineering processes such as IQ/OQ/PQ and First Article protocols. Our partnership approach combines our material science knowledge with practical manufacturing experience to deliver housing seal solutions perfectly tailored to your application needs.

Proudly made in the USA at our manufacturing facility in Lancaster, NY.



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to order call 1-800-828-7745
or visit applerubber.com.

Rubber Injection Molding:

We employ automated injection processes that ensure consistency across production runs while significantly reducing labor costs and material waste. Our system delivers repeatable cycles that maintain the quality standards for every component produced. With higher automation throughout our manufacturing process, we achieve lower defect rates and more precise outcomes.

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