



## ***Precision Lathe-Cut Seals from Archer***

***At Archer, we specialize in precision lathe-cut seals and gaskets in a wide range of materials, sizes, and colors. Lathe-cut seals offer cost effective and efficient sealing in a broad spectrum of applications across a wide array of industries.***

### **What Are Lathe-Cut Seals?**

Lathe-cut seals are precision-made flat seals that are ideal for a wide range of static sealing applications. They provide an efficient, low-cost alternative to O-rings and other molded seals. Lathe-cut seals can be made from most elastomeric materials.

### **Why Choose Lathe-Cut Seals?**

For many applications, lathe-cut seals offer significant advantages. Lathe-cut seal production is extremely efficient. There is little or no tooling cost, allowing for smaller minimum orders, the ability to easily make design changes and rapid prototyping, all with support from Archer's in-house engineering team.

### **When to Choose Lathe-Cut Seals**

For static seal applications, lathe cuts can provide several sealing advantages. The rectangular or square cross-section of a lathe-cut seal provides a larger sealing surface and increased resistance to

compression when compared to O-rings. Lathe cuts are also advantageous when beveled edge seals or tight tolerance gaskets are required. However, the lathe-cutting process may not be ideal when large outside diameter (OD) seals or small inside diameter (ID) seals are needed.

### **How Are Lathe Cut Seals Made?**

Step one in the production of a lathe-cut seal is extruding the elastomeric material to the precise inside diameter required. Next, the extruded tubes are cured on mandrels in an autoclave. Once the material is cured, the outside diameter of the tubes is ground to specification. Once the precise ID and OD are set, each tube is mounted on a high-speed lathe. Precision tools then cut the tubes to the proper width. This efficient and cost-effective process eliminates almost all material waste, resulting in greater yields at a lower cost.



## Applications

Lathe-cut seals are ideal for use in static sealing applications. They maintain their geometry even under continuous stress, enabling them to provide consistent performance across a long service life. Archer produces lathe-cut seals in a wide range of outer diameters, from 0.050" to 30", and thicknesses starting at 0.020". Most rubber compounds can be cut using the lathe method. However, very soft or very hard materials may not be suitable.

## Processes

The production processes involved in the manufacture of lathe-cut seals include:

- Extruding
- Wrapping
- Curing
- Grinding
- Cutting

## Size Range

- **Outside Diameters:** 0.050"–30"
- **Tolerances:** Commercial to Precision (per RMA standard)
- **Thicknesses:** From 0.020"

## Material Selection

A crucial step in specifying a lathe cut seal is selecting the elastomeric material. The material chosen must align with the demands of the application. Factors such as durometer (hardness), operating temperature, and chemical compatibility drive the material selection.



## Standard Lathe Cut Materials

### N70LC7066

- 70 Durometer NBR
- Sealing Grade, General Purpose
- Good Resistance to: Oil, Fuel, Propane Grease
- Heat Resistance to 225° F (constant); 250° F (intermittent)
- Applications: *Water Heaters, Meter Gaskets, Filters*

### N607026

- 60 Durometer NBR
- Sealing Grade, General Purpose
- Good Resistance to Oil, Fuel, Propane Grease
- Heat Resistance to 225° F (constant); 250° F (intermittent)
- Applications: *Couplings, Filters, Sprayers, Tanks*

### E70J1603

- 70 Durometer EPDM
- Sealing Grade, High Performance
- Good resistance to: Brake Fluid, Hot Water, Steam, Weather
- Heat Resistance to 300° F
- Applications: *Caliper Brake Seals, Capacitors, Water Heaters, Batteries*

### E70SC200518

- 70 Durometer EPDM
- Sealing Grade, General Purpose
- Good resistance to: Water, Weather, Cleaning Agents
- Heat Resistance to 275° F
- Applications: *Water, Coupling Gaskets, Weather, Drains, Batteries*

### F657088

- 65 Durometer FKM
- General Purpose
- Good Resistance to Fuel, Petroleum Products, Mineral Oil
- Applications: *Fuel System Components, Coupling Gaskets, Grease Fittings, Sprayers*

### C60SC181003

- 60 Durometer Neoprene
- Sealing Grade, General Purpose
- Good Resistance to Grease, Oil, Water
- Heat Resistance to 250° F
- Applications: *Coupling Gaskets, Pneumatics, Hydraulics*