

# ORD Problem Solved!

## Application Success Story

### Application:

Chamber lid seal.

### Situation:

A Fab manager needed to reduce operating costs to prevent the closure of a facility. The customer was having extremely high costs associated with the replacement FFKM O-rings used on a chamber lid application.

### Critical Business Issue/Problem:

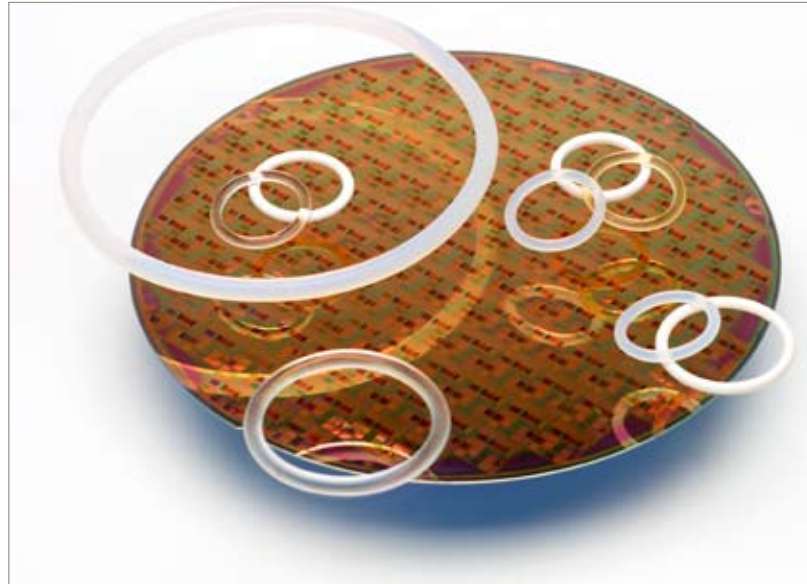
The operating costs associated with replacement O-rings escalated as equipment utilization increased. Due to premature seal failure, O-rings were one of the most expensive replacement items in the application. A competitor material was being used and lasted approximately 30 days in the harshest processes. The competitor's O-ring showed severe compression set. The customer asked Parker for a material recommendation and asked engineers to review the application for further suggestions.

### Parker Solution:

Samples of FF350-75 were provided to the customer for testing. After further inspection of the customer's application, Parker's engineers also found the dovetail groove was undersized and not to design specification. This caused extreme stress on the O-rings. Engineers ran FEA and designed a custom cross section O-ring with proper squeeze and gland fill for the customer's application.

### Outcome:

Parker's FF350-75 met the customer's expectations and the new dimensional O-ring resolved the customer's issues. Parker's FF350-75 material and design change provided the customer with more than three times the O-ring service life previously received on the competitor O-ring.



## Perfluoroelastomer (FFKM) Properties

Perfluoroelastomers (FFKM) currently offer the highest operating temperature ranges, the most comprehensive chemical compatibilities, and the lowest off-gassing and extractable levels of any rubber material. Parker's proprietary formulations deliver an extreme performance spectrum that make them ideal for use in critical applications like semiconductor chip manufacturing, jet engines and chemical processing equipment.

Parker's FF350-75, featured in this month's application success story, is a white, high purity material with outstanding compression set resistance and mechanical properties. This rubber elastomer has excellent continuous high temperature stability and a broad chemical resistance for both wet and dry processes.



To find out if this FFKM material is right for your application, call our Applications Engineers or Business Development Engineers at 859-269-2351.