

Application Success Stories

Application:

Jet Engine Manufacturer

Problem:

Customer was experiencing problems with o-ring tears and/or sagging during and after installation. The seal also needs to be able to perform in extremely low temperatures.

Parker Solution:

Parker recommended FVMQ compounds LM158-60, LM159-70 and LM160-80.

These fluorosilicones offer exceptional thermal stability in low temperatures, as well as excellent chemical resistance. They also offer good short-term rebound resilience to improve the customers problems of sagging and tearing seals during installation.

Outcome:

Compound LM159-70 was exactly what customer was looking for. The material made installation more effective as well as decreasing the amount of torn rings during assembly. Additionally, LM159-70 provided certification to AMS-R-25988 type 1, class 1 gr 70, which was a requirement for the seal in this particular application.

Featured Compounds: LM158-60, LM159-70 & LM160-80

The thermal stability of fluorosilicones accommodate all automotive fuel applications and almost all aerospace applications. The elastomers are used for their outstanding low temperature properties, having a functional temperature ranging from -100F to +350F (-73C to +177C). Because fluorosilicone o-ring elastomers have unmatched low temperature performance and good hydrocarbon compatibility, they have become the standard seal material in numerous applications.

In addition to the already mentioned properties, fluorosilicone rubber has excellent chemical resistance to petroleum-based oils, greases, and fuels. Another reason why the elastomer has become such a standard for various applications. In the automotive market, fluorosilicones are the seal material of choice for handling gasoline, E85, diesel fuel, biodiesel, and ULSD at extremely low temperatures. In the aerospace industry, fluorosilicones are used for handling jet fuel on commercial, military, and all general types of aviation aircrafts. The materials are also being used in sealing fire-resistant synthetic hydrocarbon hydraulic fluids in static applications, especially those used at low temperatures.

LM158-60, LM159-70, and LM160-80 are three of Parker's newest fluorosilicones with the above properties. Parker's fluorosilicones, LM158-60, LM159-70, and LM160-80, show dramatic improvements in good short-term rebound resilience, which is not historically offered by fluorosilicones in the past. The improved rebound resistance of the new fluorosilicones will decrease the incidence of torn/stretched O-rings during installation, as well as make automated assembly more feasible.

For more information on this or any of Parker's 200+ rubber compounds, please contact a Territory Sales Manager or Applications Engineer.