Parker EZ-Lok™ Seals

Retrofitting Dovetail and Undercut Grooves

Easily Installed Seals

Parker EZ-Lok Seal's new to world design provides improved installation into both straight-wall and dovetail grooves.

Downtime is lost revenue, and with the incorporation of the EZ-Lok Seal, downtime can be significantly reduced compared to the time taken to install traditional seals. Rework can also be reduced, as the seal cannot be installed incorrectly or inadvertently "rolled" during installation.

Intermittent features or "bumps" protruding from the sides of the seal extend below the groove undercut feature, but do not interfere with the groove once fully seated. These features retain the seal in the groove but do not affect proper seal orientation.

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Product Features:

- Self retaining
- Improved stability
- Positive assembly
- Readily replace traditional Seals of standard size
- Molded for custom groove path

Benefits:

- Increased throughput
- Reduced downtime
- Reduced scrap
- Elimination of leaks Due to faulty install
- Longer seal life

Parker

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Groove Challenges

Dovetail and undercut grooves are typically designed to provide retention of traditional seal shapes. Specifically, grooves are designed with a narrower opening width in order to "pinch" the seal into position. While effective at retaining a seal, this method requires more assembly care and effort to prevent elongation or twisting of the seal.

When a seal is elongated during assembly, it must be removed and reinstalled. Reinstallation may be complicated by permanent stretch introduced during the initial installation. Ultimately, the seal may have to be replaced to achieve adequate performance.

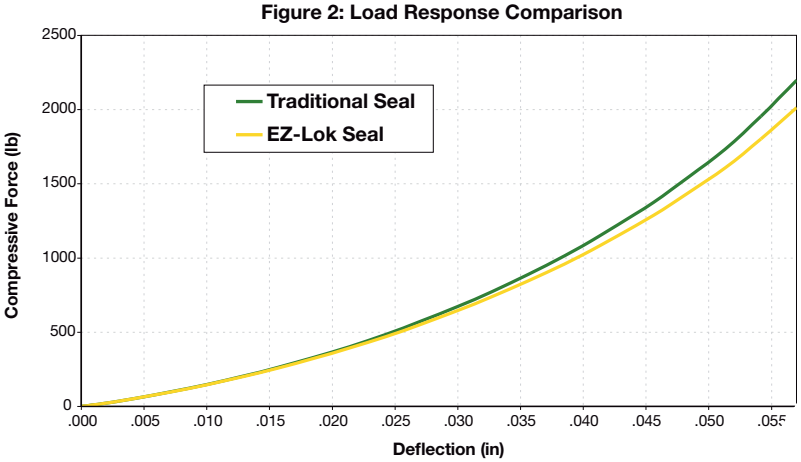
Twisted seal orientation can adversely affect performance, particularly if the twist causes the parting line seam to cross the sealing interface. When this occurs, low level leakage may occur in low pressure and vacuum applications.

More Than Just Manufacturing

The Engineered Seals Division is a leader in the design and manufacture of high performance sealing solutions. Offering a wide selection of molded shapes and composite seals made from standard elastomers to high purity perfluoroelastomers (FFKM) which are ideal for quick, easy and precise installation.

We partner with semiconductor customers to increase production efficiency through improving tool service life and uptime. At Parker, we develop and manufacture engineered sealing solutions for all applications including aggressive plasma chemistries, high temperature thermal processes, high pressures and ultra high vacuum.

Figure 2: Load Response Comparison

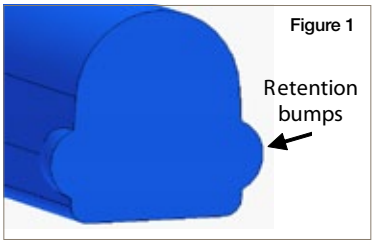


Case Study

Problem:

Target seal installation on a PVD tool was taking excessive time due to rolling, pinching and stretching. This caused the seal to be reinstalled several times during routine maintenance cycles creating excessive down-time, costing a major FAB equipment engineer both time and money.

The seal could also be twisted or pinched during install causing a wet clean intervention upon start-up, taking as long as four to six hours, a significant and noticeable reduction of both uptime and throughput.



Solution:

Parker engineers combined customer input on site evaluation, computer aided modeling, and decades of seal design expertise to resolve these issues.

The Engineered Seals Division designed and developed the patent pending EZ-Lok Seal. The EZ-Lok Seal's unique geometry makes it simple to assemble (see Figure 1). It is also engineered to match the load response of the traditional seal for proper target positioning and gap alignment (see Figure 2). The EZ-Lok Seal solution has dramatically decreased total cost of ownership by increasing uptime to significantly improve total throughput.

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