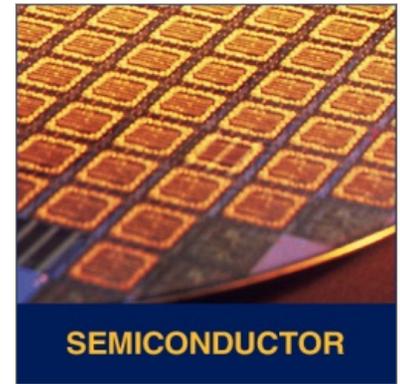


Parker EZ-Lok™ & WEAR-Lok™ Seals

Engineered Solutions
Issue 14



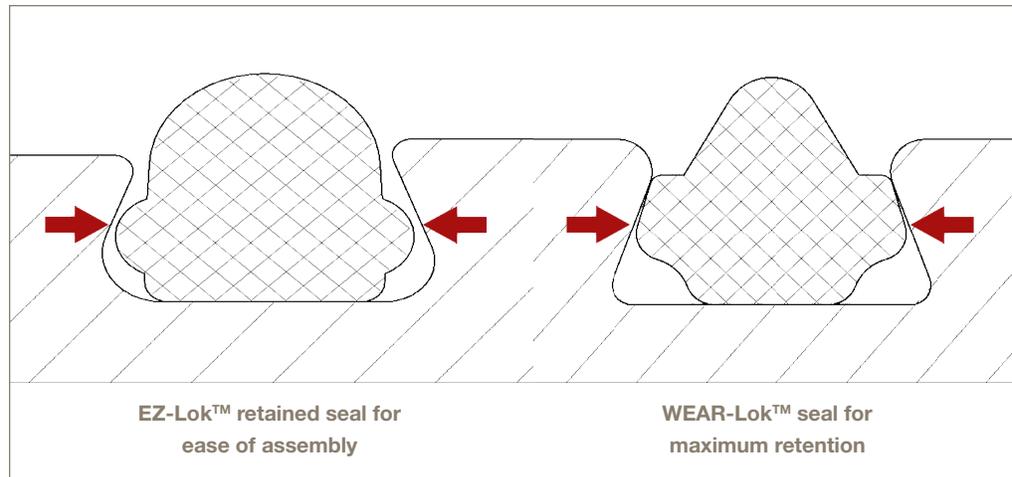
Problem:

Dovetail or undercut grooves are typically used to provide retention of traditional seal shapes. These grooves retain by using an opening width more narrow than the seal, essentially pinching the seal in 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 first 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 can occur in low-pressure and vacuum applications. Another limitation of dovetail-type retention occurs where seal compression is cyclic, as when the seal gap is opened and closed during normal operation. Wear at the pinch location eventually widens the groove such that the seal is no longer retained. When this occurs, the grooved component must be reworked or removed from service.

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Solution:

Parker Engineered Seals Division designed the patent-pending EZ-Lok™ and WEAR-Lok™ seals to address the difficulties associated with seal installation or poor seal retention. For improved orientation and ease of assembly, an EZ-Lok™ seal more narrow than the minimum groove opening is specified. 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 and avoid the stretching common with other seal shapes. When ease of assembly is secondary to seal retention, the “bump” features are designed to create more aggressive contact deeper in the groove. By positioning retention beads in this manner, the WEAR-Lok™ seal is reliably captured in a groove that has worn beyond service limits for traditional seal shapes. The WEAR-Lok™ seal can be customized to achieve the optimum balance between ease of assembly and retention for individual applications. Both the EZ-Lok™ and WEAR-Lok™ seals have been successfully tested and proven to be reliable alternatives to traditional seals in critical semiconductor processing applications.

Applications: The primary purpose of this sealing technology is aimed at improving the productivity of existing equipment. Whenever dovetail or other undercut grooves are used for retaining traditional seals, these alternatives can help to reduce assembly errors and downtime, increase productivity, and improve performance.

Contact Parker Engineered Seals Division and ask for a product engineer to review your application and see what opportunities are waiting to be discovered!



ENGINEERING YOUR SUCCESS.