

Engineered Solutions

November 2008 | Issue 17

New EZ-Lok™ & WEAR-Lok™ Retained Seals for Dovetail and Undercut Grooves

Parker's new patent-pending **EZ-Lok™** and **WEAR-Lok™** seals offer significant advantages over traditional seal shapes where improved retention or ease-of-assembly is desirable.

Problems

Dovetail or undercut grooves are typically used to provide retention of traditional seal shapes. These grooves retain by using an opening width narrower 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.

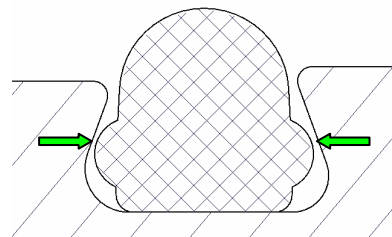
Another limitation of dovetail-type retention occurs where seal compression is cyclic, as when the seal gap is opened and closed during normal operation. Wear at the pinch location eventually widens the groove such that the seal is no longer retained. When this occurs, the grooved component must be reworked or removed from service.

Solution

Parker's patent-pending **EZ-Lok™** and **WEAR-Lok™** seals can be tailored to address

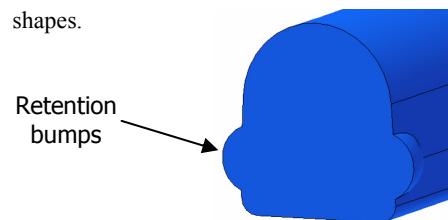
the difficulties associated with seal installation or poor seal retention.

For improved orientation and ease-of-assembly, an **EZ-Lok™** seal narrower than the minimum



EZ-Lok™ retained seal for ease-of-assembly

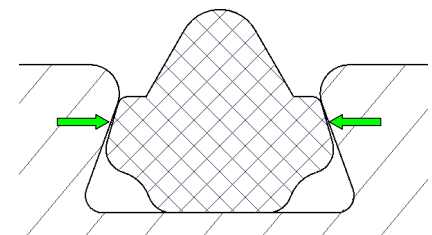
groove opening is specified. Intermittent features or "bumps" protruding from the sides of the seal extend below the groove undercut feature, but do not interfere with the groove once fully seated. These features retain the seal in the groove but do not affect proper seal orientation and avoid the stretching common with other seal shapes.



When ease-of-assembly is secondary to seal retention, the "bump" features are designed with 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.



WEAR-Lok™ seal for maximum retention

Applications

Use of this sealing technology is aimed primarily at improving the productivity of existing equipment. Whenever dovetail or other undercut grooves are used for retaining traditional seals, opportunities exist to reduce assembly errors and downtime, increase productivity and improve performance.

Parker's **Engineered Seals Division** can design a custom **EZ-Lok™** or **WEAR-Lok™** seal to meet the needs of your specific application.

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