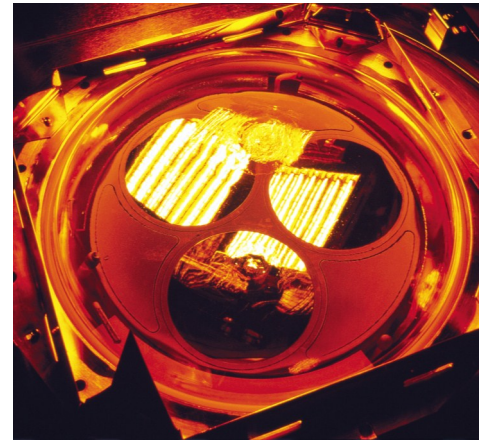


Evolve™

Sealing Technology

for Semiconductor Manufacturing



Shielded-Sealing System Delivers Breakthrough Performance

Parker's patented Evolve sealing technology equips users with unparalleled plasma resistance and phenomenal seal cleanliness for static and quasi-dynamic sealing applications in place of standard o-rings. Using an engineered PTFE shield as a plasma barrier, the elastomeric vacuum seal delivers breakthrough performance within microelectronics fabrication equipment by extending seal uptime 2X-10X with dramatic reduction in leakage and seal contamination due to plasma attack.

Evolve sealing technology utilizes a uniquely engineered design to allow simple installation into all types of seal grooves and empowers end users with the freedom to design PM cycles to maintain mechanical component fatiguing, not seal failure.

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Features & Benefits:

- **Unparalleled plasma resistance**
- utilizes PTFE shield continually energized by engineered elastomer to reduce plasma attack
- **Phenomenal cleanliness**
- inert PTFE barrier prevents contamination by the seal polymer
- **Simplified assembly into dovetail grooves**
- uses friction-fit rubber nubs to seat seal into groove without seal twisting
- **Dramatically reduced cost of ownership**
- MTBF increased due to breakthrough plasma resistance

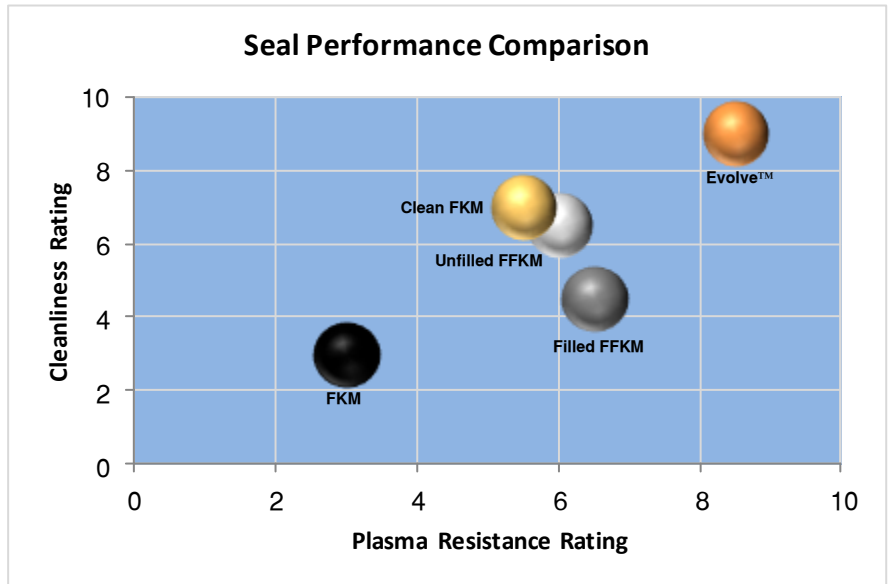
ENGINEERING YOUR SUCCESS.

Unparalleled Plasma Resistance with Phenomenal Cleanliness

Parker's patented Evolve sealing technology utilizes an engineered PTFE shield that is continually energized and supported by an integrated elastomeric vacuum seal. The resultant performance is a sealing system that delivers unparalleled plasma resistance with phenomenal cleanliness.

Laboratory plasma testing as well as end user results have demonstrated a reduction in Evolve vacuum seal erosion due to ionic and radical plasma attack up to 91%. By integrating an inert PTFE shield, whose engineered shape not only maximizes plasma-shielding contact width within a seal groove but also delivers three unique levels of supplementary spring-force, the patented Evolve sealing system provides extraordinary enhancement in plasma resistance more robustly than any other seal technology in the world has ever done.

A positive byproduct of the dramatic reduction in plasma attack is the virtual increase in seal cleanliness provided by Evolve. Shielding of the elastomeric vacuum seal prevents its polymeric breakdown, which can allow its metallic and elemental constituents to pervade into the process chamber and vacuum system to increase particle contamination. The PTFE shield additionally forms a physical barrier that reduces elastomeric particle migration to the process stream, further preventing contamination within the tool. Laboratory wafer surface scans have observed Evolve particle counts to be up to 97% fewer than FFKM o-rings, making Evolve the cleanest seal technology currently in existence.



Simplified Assembly into Dovetail Grooves

Evolve sealing technology not only delivers unparalleled performance, it is designed for practical and everyday usage to fit within dovetail, half-dovetail, and rectangular grooves. Using optimally placed friction fit nubs, Evolve easily interference-fits to the sidewalls of a groove to provide simplified assembly, devoid of twisting or spiraling complications that are common with large diameter rubber seals and o-rings. The engineered vacuum sealing element has an optimized sealing cross-section to provide low-load installation, making installation effortless and repeatable.

