UHP Gate Valve Door™

Application Bulletin

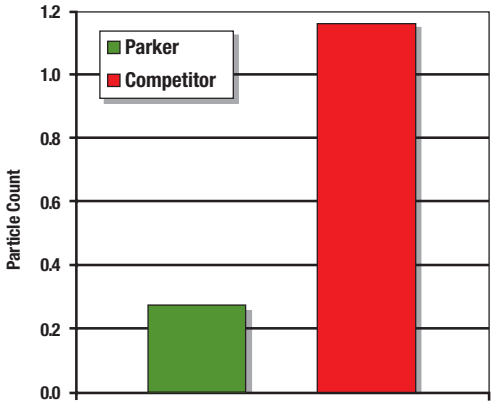
No. 5115B1-USA

Ultra-High Purity (UHP) Bonded Door For Original Equipment and Aftermarket Replacement

Gate valve doors used in semiconductor manufacturing operations must be replaced frequently due to particle generation caused by mechanical wear, chemical attack and thermal cycling. Parker's UHP Gate Valve Door is designed to provide OEMs and chip fabricators with an original and/or replacement door option that reduces process contamination and increases wafer yield.

Advanced Bonding Technology

Parker employs advanced bonding technology in the manufacture of the UHP Gate Valve Door. The superior stability of the bond between door and sealing element provides improved abrasion resistance and seal integrity, resulting in extremely low particle generation and dramatically increased seal service life.



Parker's UHP Gate Valve Door bonding technology and advanced perfluoroelastomer materials reduce potential for contamination by up to 4X in a typical CVD process.

Clean — From Production to Installation

To guard against contamination and ensure product quality, the UHP Gate Valve Door is processed and packaged in an ultra-high purity manufacturing cell. All work in this cell is closely monitored through a batch-traceable statistical process control program.

Features and Benefits

- Abrasion-resistant seal material reduces mechanical wear
- Advanced bonding technology dramatically reduces particle generation (up to 4X reduction)
- Ultra-high purity processing and packaging eliminates contamination
- Superior chemical and temperature resistance results in increased seal life

Parofluor™ Series Materials

UHP Gate Valve Doors can be manufactured with a wide variety of fluorocarbon materials, as well as Parker's Parofluor Series Advanced Perfluorinated Elastomers. Parofluor materials offer a choice of performance levels for every application. Their broad chemical resistance, high temperature resistance (up to 320°C/608°F for Parofluor ULTRA™ compounds) and ultra-high purity can help reduce downtime, increase productivity and improve safety.

The Mark of Quality

Parker engraves its trademark "P," a widely recognized symbol of quality and purity, into each UHP Gate Valve Door. This symbol lets chip fabricators know that they're installing a *sealing system* engineered by Parker to provide exceptional performance in critical semiconductor processing environments.

Parker Hannifin Corporation
Composite Sealing Systems Division
7664 Panasonic Way
San Diego, CA 92154
Phone: (619) 661-7000 FAX: (619) 671-3202

www.parofluor.com

UHP Gate Valve Door, continued ...

Parker's Composite Sealing Systems (CSS) Division supports the semiconductor manufacturing industry with a wide range of engineered sealing products and systems, including:

- UHP Slit Valve Doors
- Chamber Lid Seals
- View Port Seals
- Thrust Plates/Contact Rings
- Flange Seals
- Resilient Metal Seals
- Metal Shapes

CSS bonding technology can also be applied to high-performance thermoplastics commonly used in chemical mechanical planarization (CMP), copper deposition and other processes.

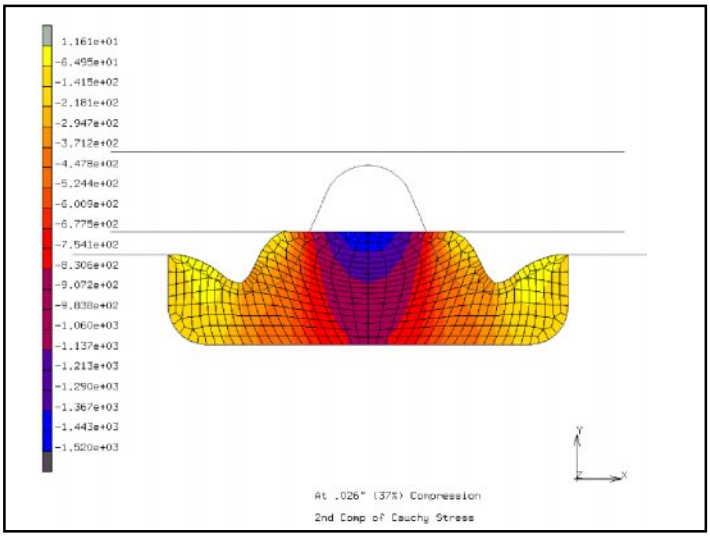
Parker is constantly developing new engineered sealing solutions for the semiconductor processing industry.

Resilient Metal Seals

When chemical resistance, temperature and/or other requirements exceed the capabilities of elastomeric materials, resilient metal seals offer an excellent alternative. These products are available in a variety of shapes and cross-sections to meet a broad range of sealing needs.

More Than Manufacturing

Parker Hannifin's Composite Sealing Systems Division is a leading supplier of bonded sealing products to the semiconductor manufacturing industry. In addition to its innovative line of sealing products, CSS has also developed a range of customer support tools, including a dedicated product/applications engineering staff, finite element analysis (FEA)-assisted design, and Total inPHorm, a seal design and material selection software package.



In addition to its quality products for semiconductor sealing, Parker offers finite element analysis (FEA)-assisted engineering and other time-saving tools.

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