



DUPONT™ KALREZ® CUSTOM PARTS

**RELIABLE, LONG-TERM SEALING IN EXTREME CHEMICAL,
PLASMA, AND THERMAL ENVIRONMENTS**



The miracles of science™

Find A Better Fit With Custom Kalrez® Parts

DuPont™ Kalrez® custom perfluoroelastomer parts can be made with unusual geometries to match unique sealing applications. Kalrez® custom parts combine high heat, plasma, and chemical resistance with unique, one-of-a-kind fit for superior sealing possibilities. Kalrez® is available in a variety of shapes and standard geometries, including large and small parts.

Engineered for optimum Performance

Kalrez® custom parts are available in a variety of compounds depending on the thermal, chemical and plasma resistance required. Parts can be designed and molded to meet your specific needs. In addition to production volume parts, Kalrez® custom parts are also available as machined and molded prototypes.



Kalrez® parts include:

- O-rings
- Rod Stock
- Valve seats
- Diaphragms
- Gaskets
- Packer seals
- T-seals
- Column fittings
- Kalrez® Valve Stem Packing (KVSP™)
- Door seals
- Composites (bonded or over molded parts)
- Parts custom designed for you

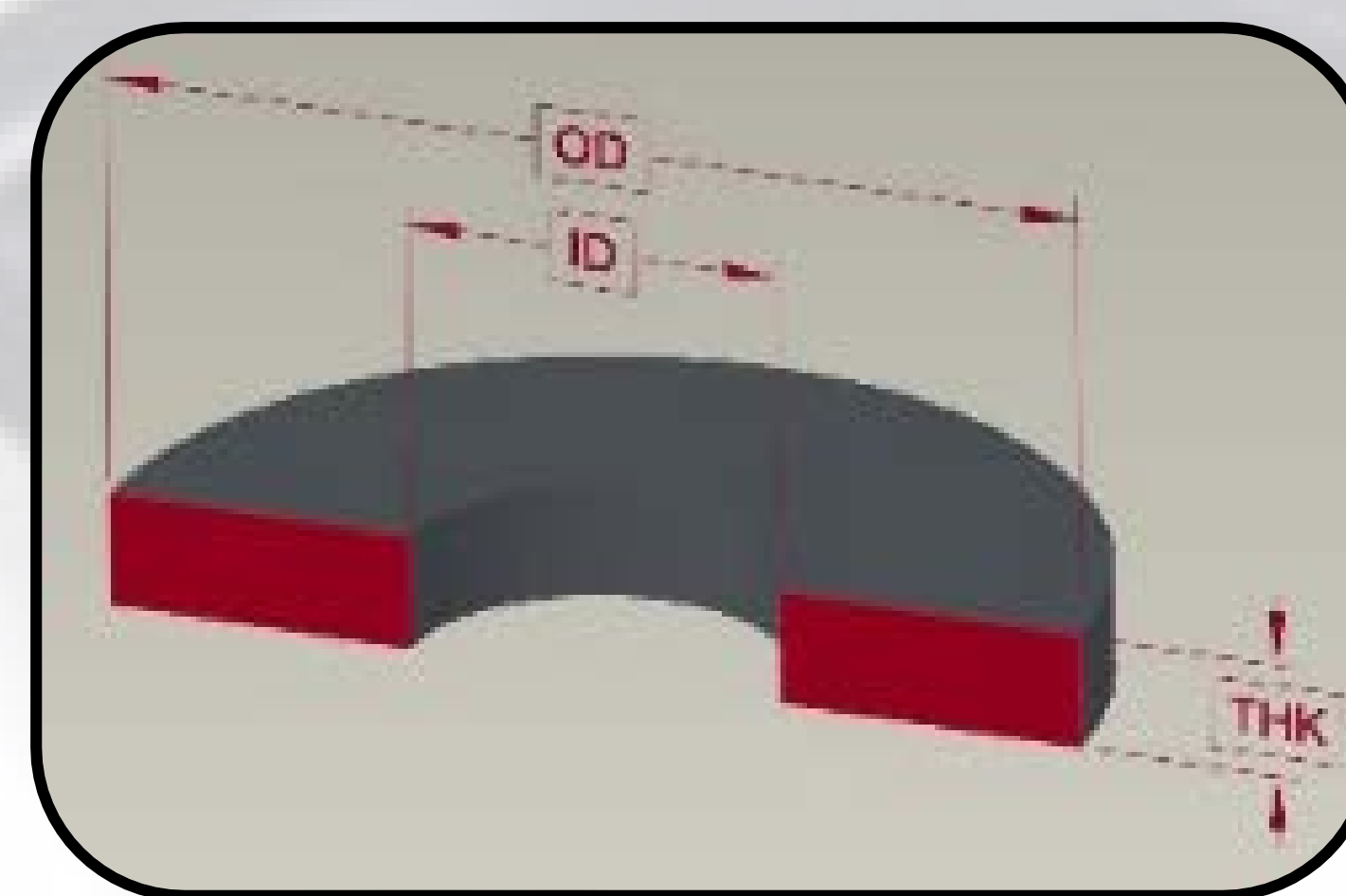
Rod Stock



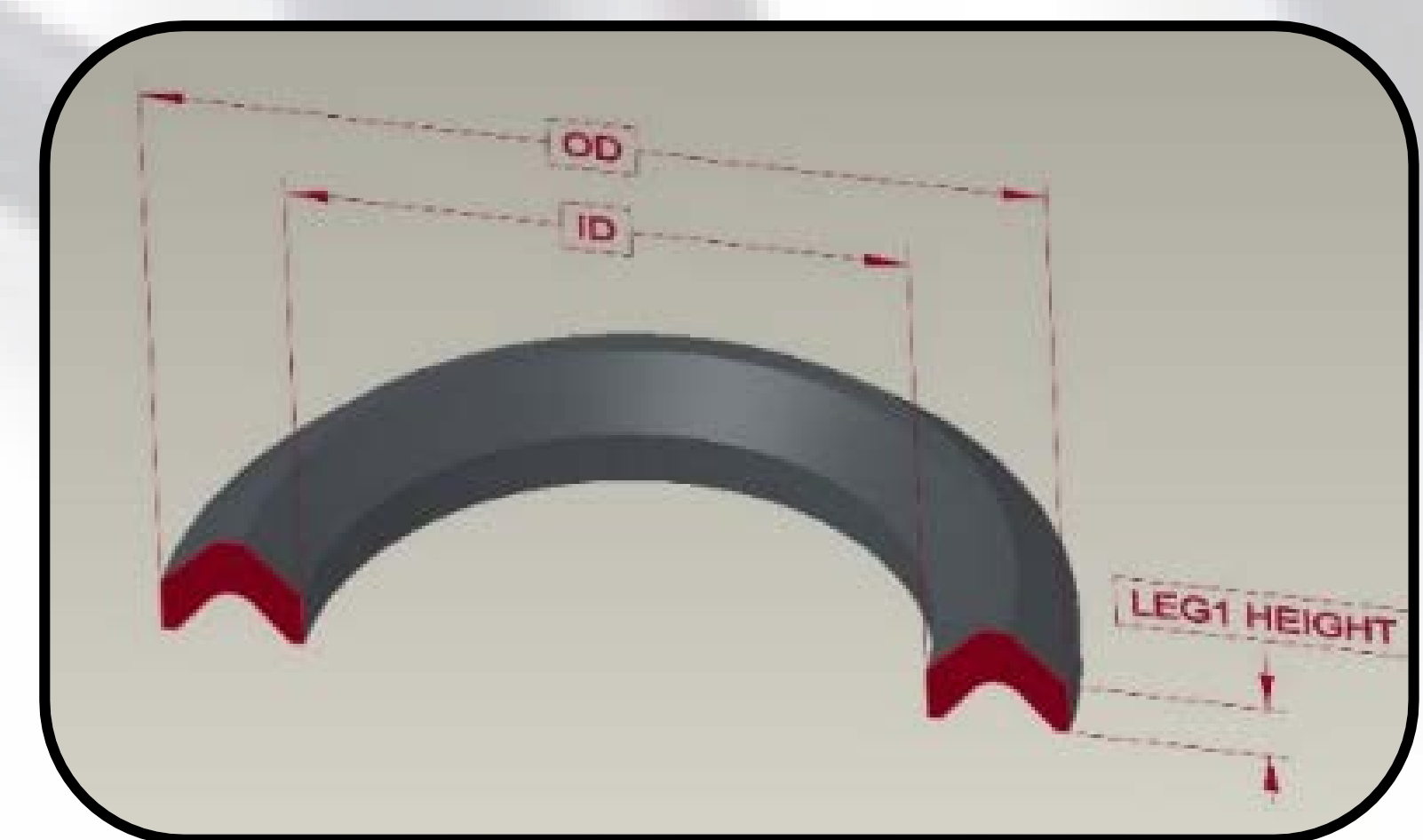
Valve Seats



Washers/Gaskets



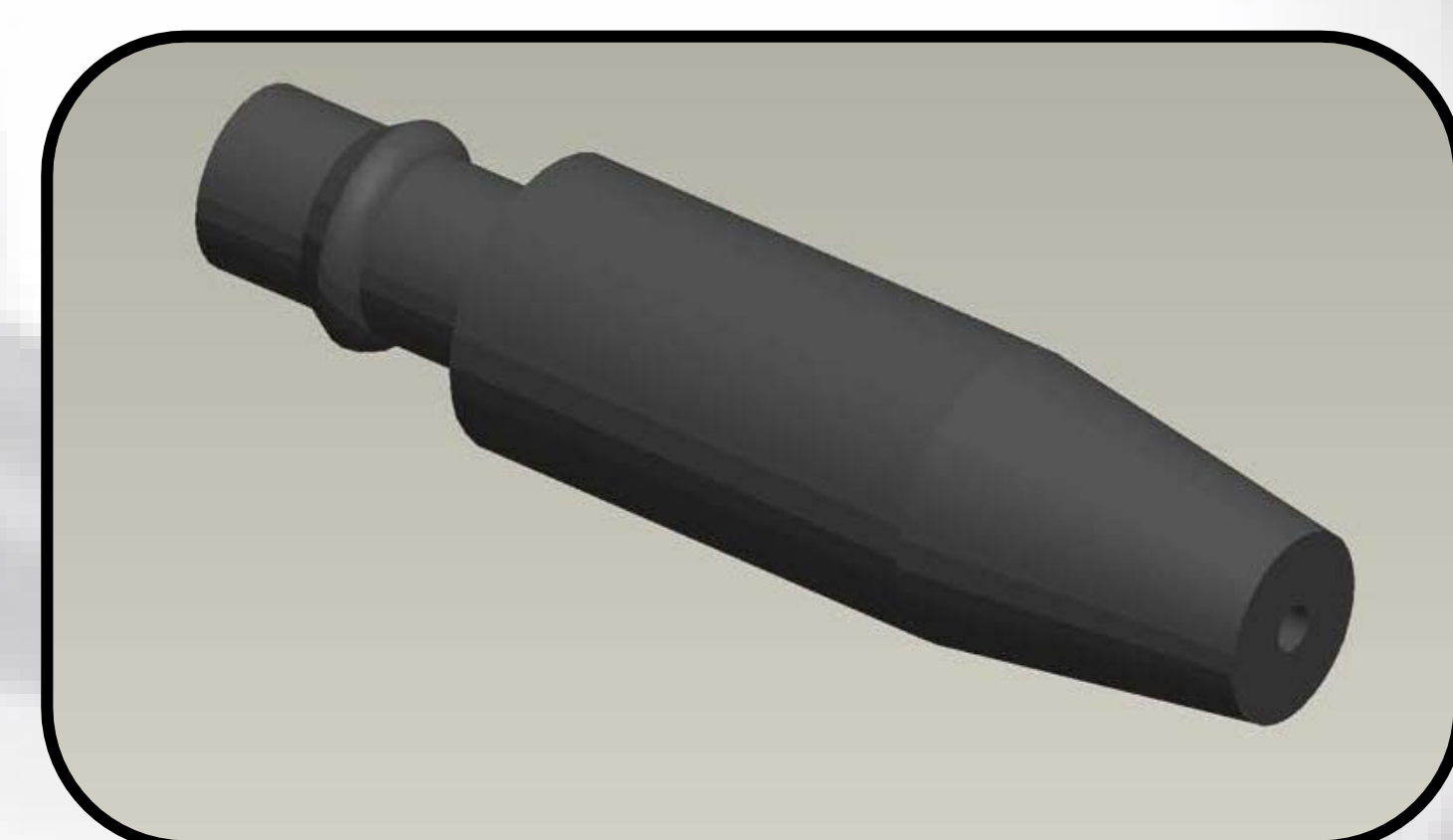
Chevron Seals



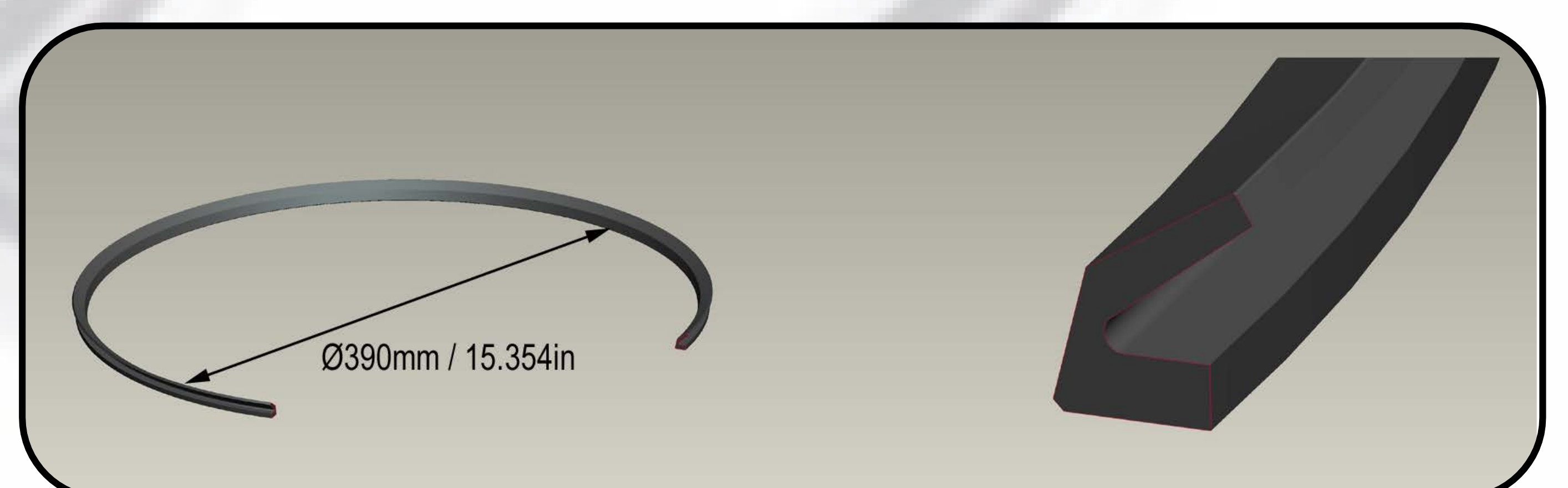
KVSP™ Kalrez® Valve stem packing a combination of chemically resistant Kalrez® and Vespel®



Boots



Lip Seals

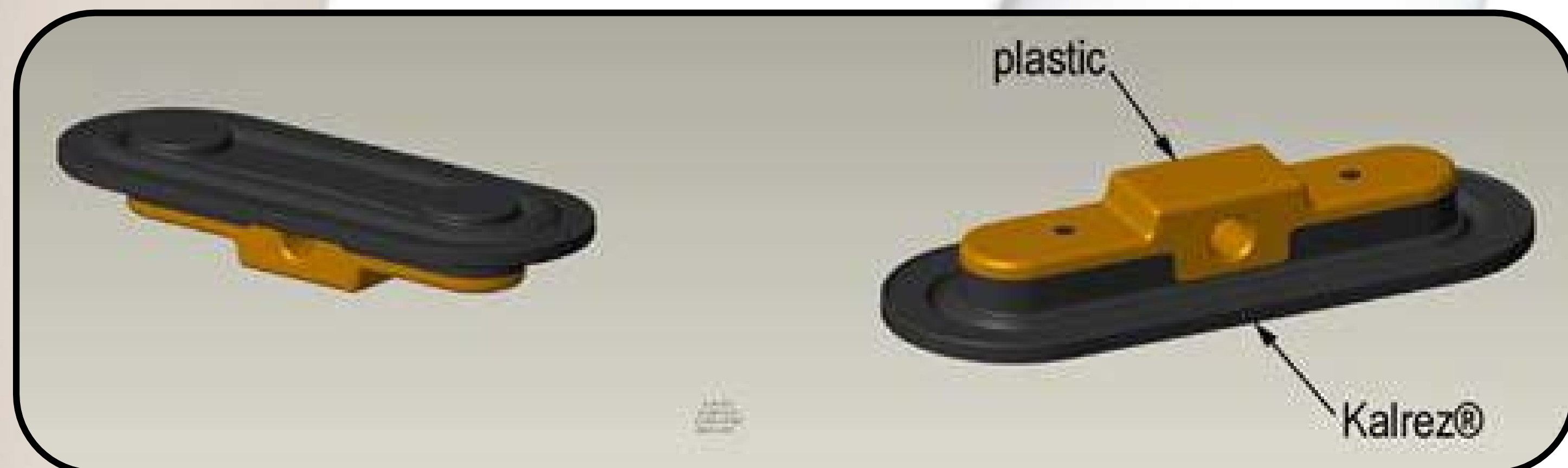


Kalrez® Composite Seals for Standard and Complex Geometries

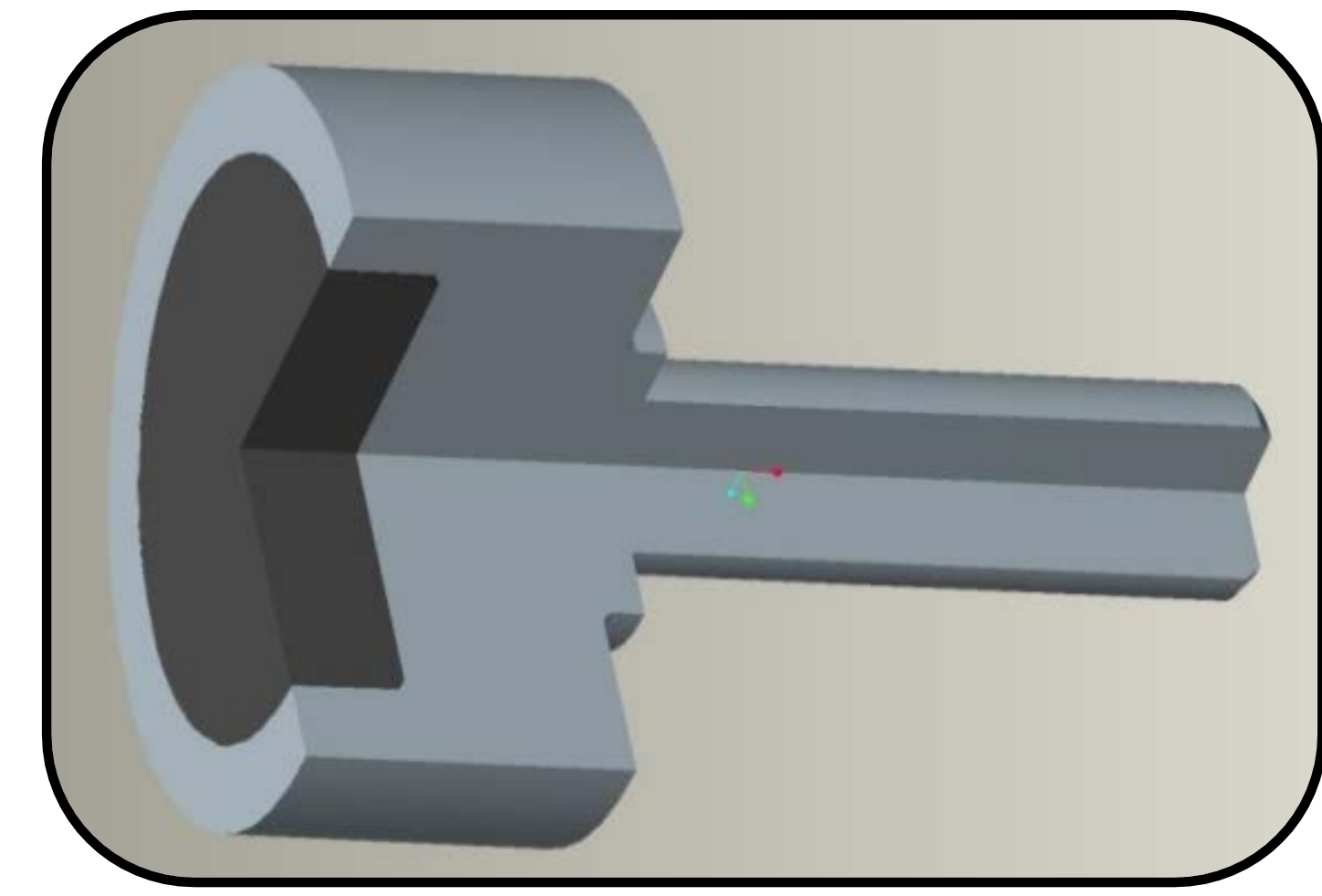
Kalrez® composite seals are available in a variety of compounds depending on the thermal, chemical and plasma resistance required.

Kalrez® composite seal applications include; micro valves, micro-pumps, downhole oil and gas, semiconductor chip process equipment, ink jet printers, beverage dispensers, car wash pumps, paint spray, chemical plants and more.

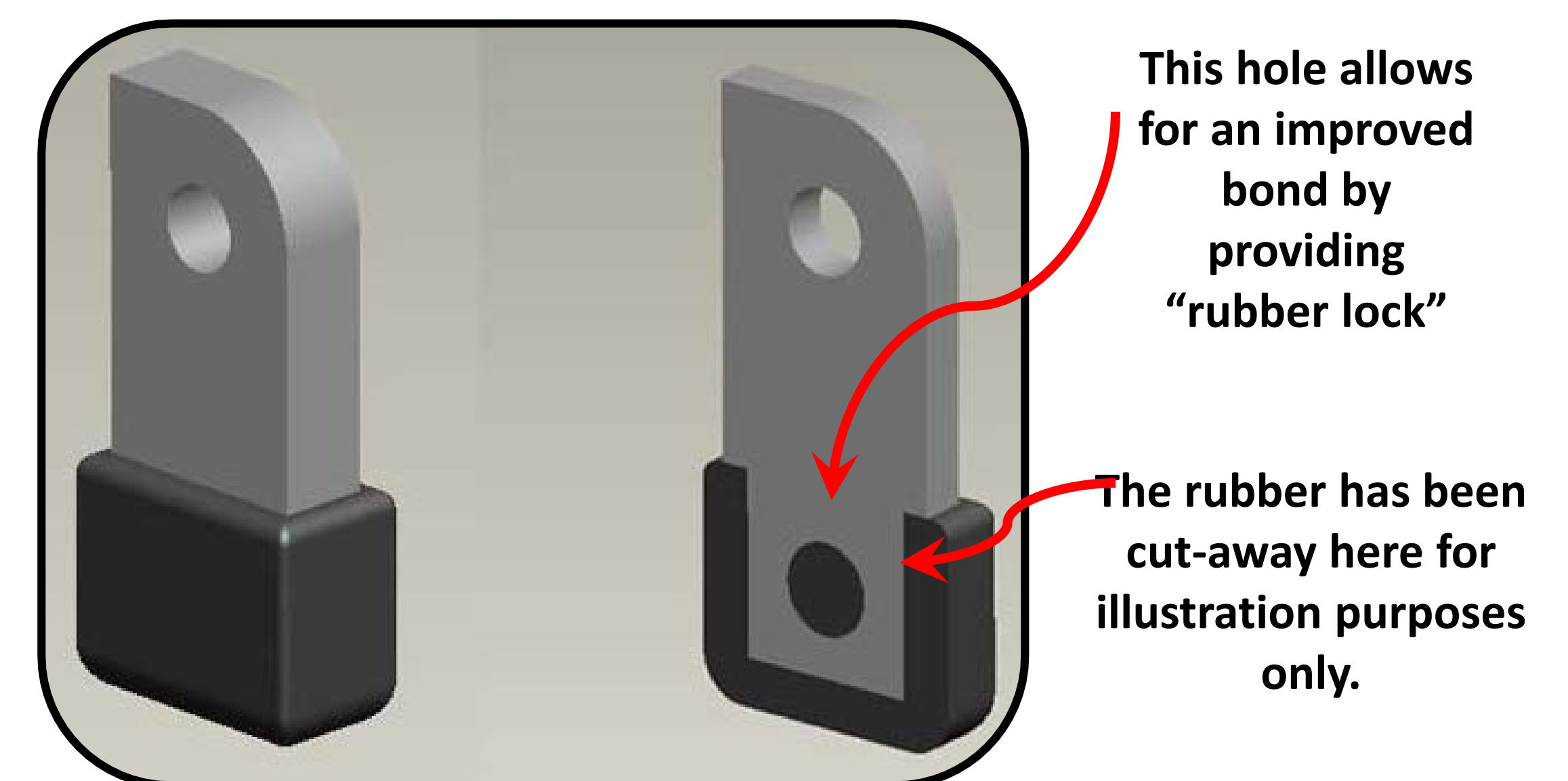
Kalrez® bonded to Plastic



Kalrez® molded/metal bonded poppet



Kalrez® bonded to Stainless Steel



Kalrez® Bonded Door Seals

Kalrez® bonded door seals are designed for easy installation and low particle generation. They combine a custom seal design and proprietary adhesion technology along with the excellent plasma resistance of Kalrez® perfluoroelastomer seal materials developed for semiconductor applications. The seal is held in a “fixed” position versus conventional O-rings, thereby eliminating “rolling/twisting” and abrasion during door actuation. In addition, the seal design has been optimized using finite element analysis (FEA) to minimize high concentrations of localized stresses. As a result, both particle generation and sealing performance are significantly improved versus conventional O-rings.



Less Replacement Time versus O-ring Seals During Preventive Maintenance

- Quick and easy assembly/disassembly to mounting bracket
- Reduces installation problems commonly experienced with O-ring seals
- Eliminates need to clean the seal gland during preventive maintenance
- Barcode on packaging plus bonded door seal part number and Kalrez® product number engraved on back of commercially available bonded door seals maintains traceability and identification plus provides assurance that it is a Kalrez® perfluoroelastomer part (FFKM).



Kalrez® Slabs and Sheets

Kalrez® slabs and sheets are available in a variety of standard sizes and thicknesses. Other sizes are available upon request. A wide variety of compounds are available, providing many options to use Kalrez® as a flexible sealing solution.

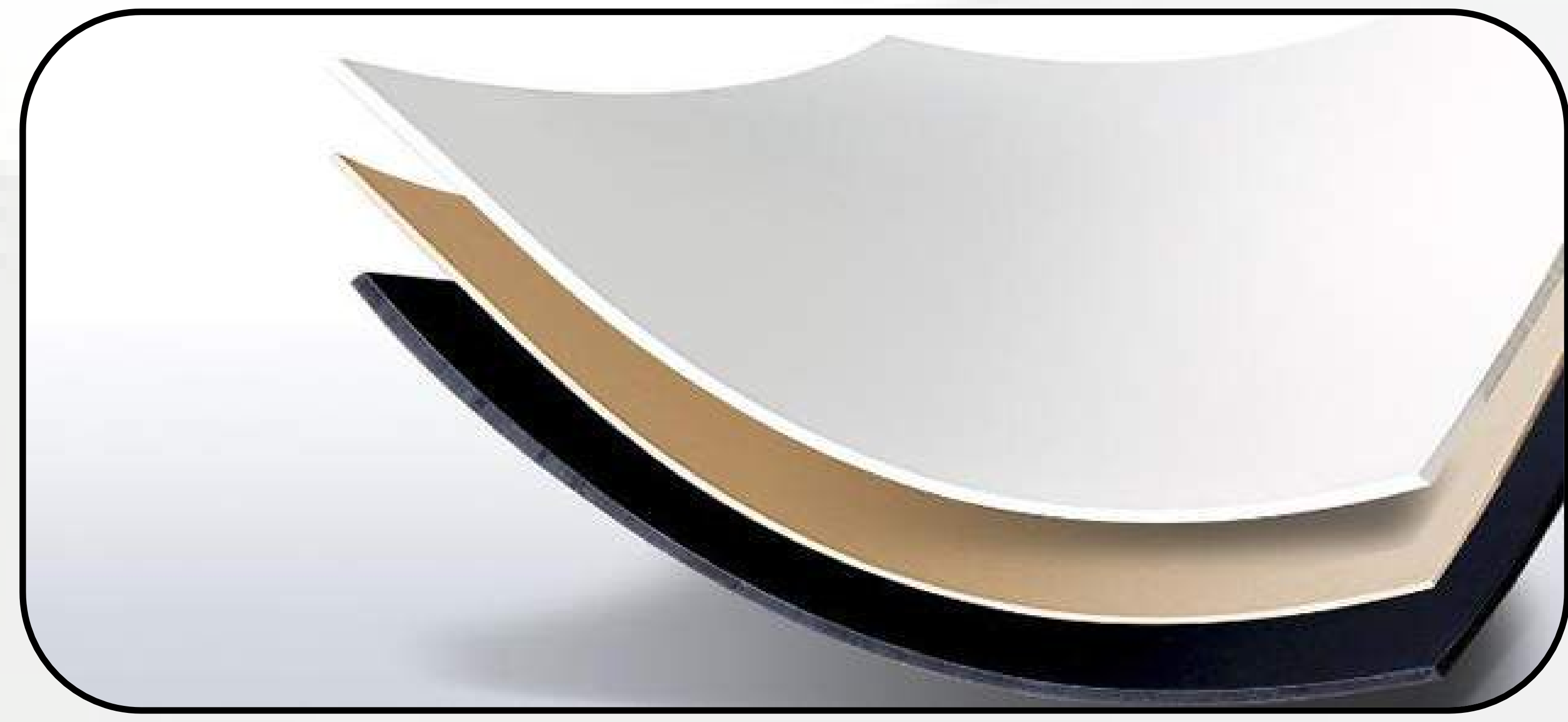
Kalrez® slabs and sheets are often used to produce simple two dimensional shapes such as disks, washers, flat gaskets, etc.

Standard Sizes Available:

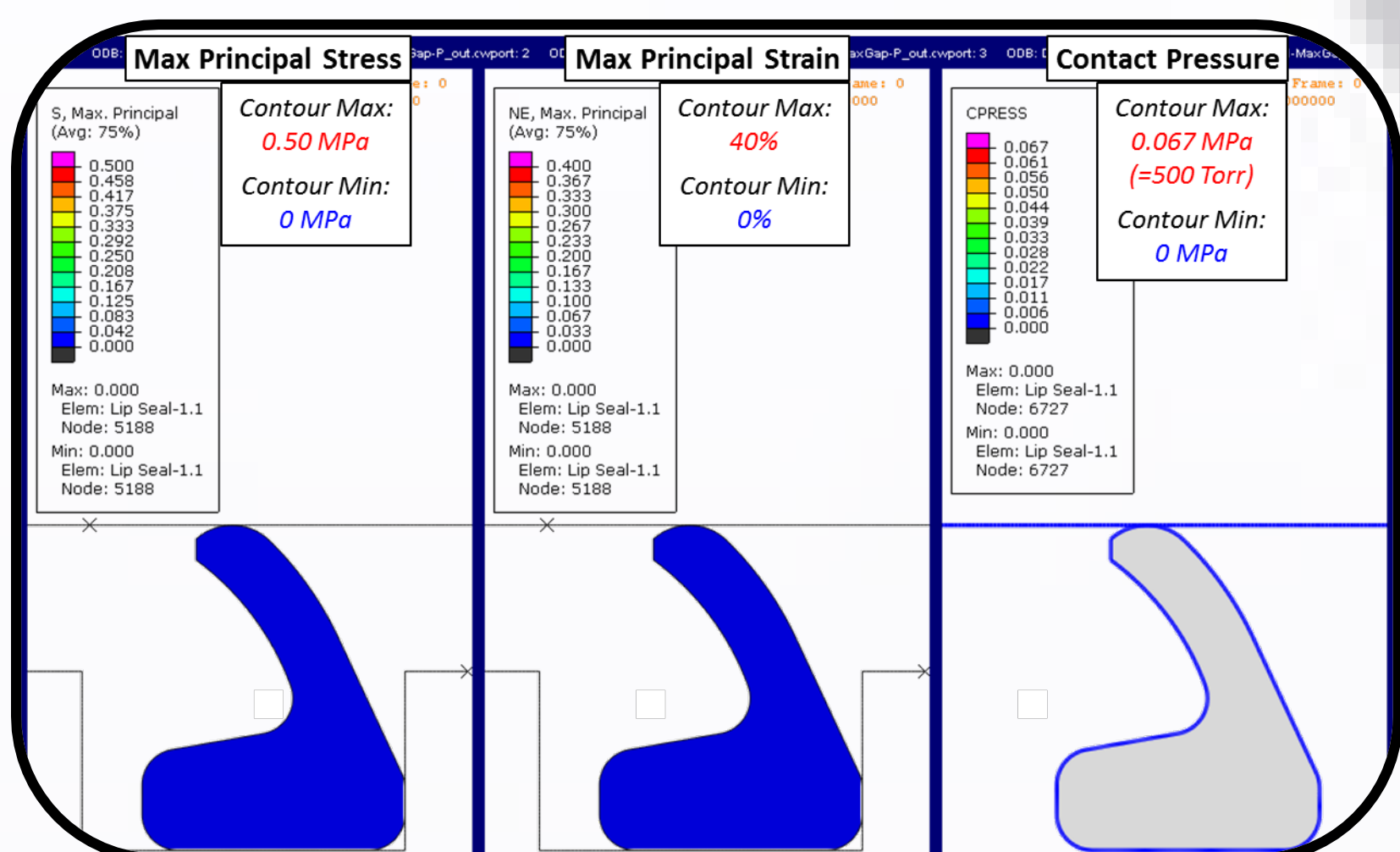
76.2 x 76.2 mm [3x3 in], 152.4 x 152.4 mm [6x6 in], 152.4 x 304.8 mm [6x12 in], & 304.8 x 304.8 mm [12x12 in]

Thicknesses Available:

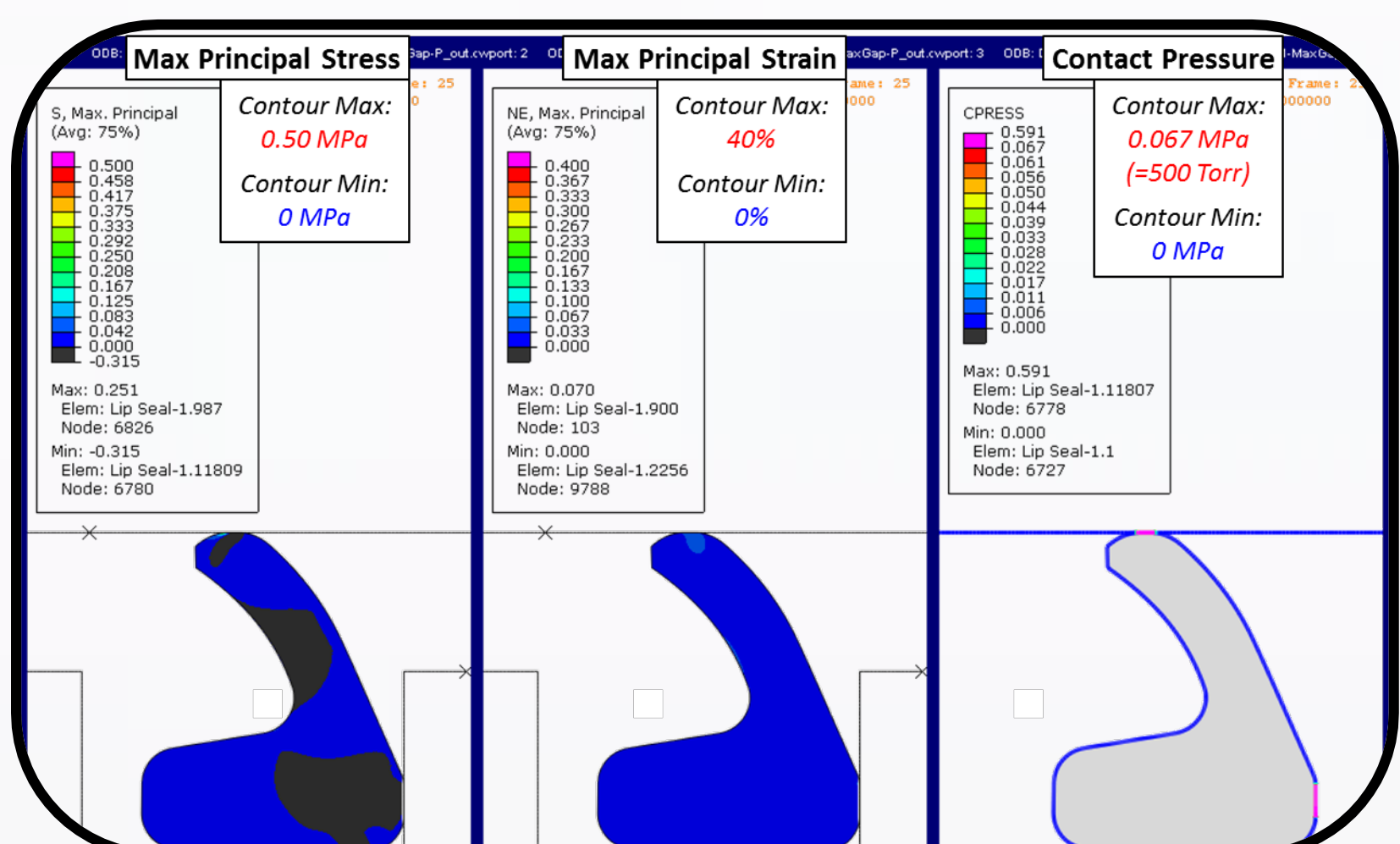
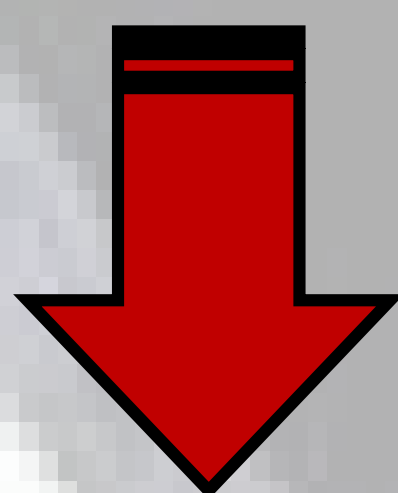
0.51 mm [0.020 in], 0.76 mm [0.030 in], 1.02 mm [0.040 in], 1.27 mm [0.050 in], 1.52 mm [0.06 in], 1.78 mm [0.070 in], 2.03 mm [0.080 in], 2.29 mm [0.090 in], 2.79 mm [0.110 in], 3.18 mm [0.125 in]



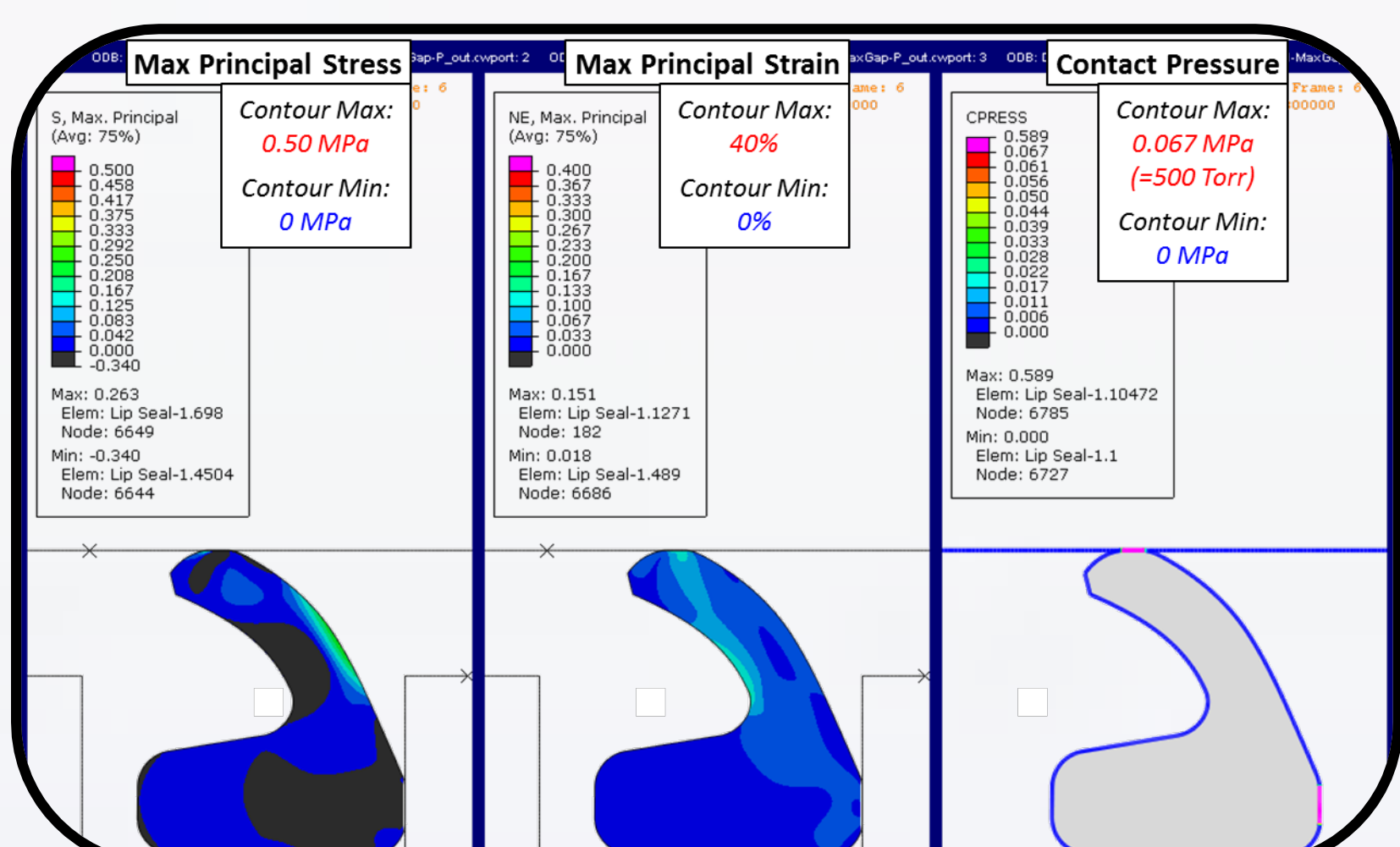
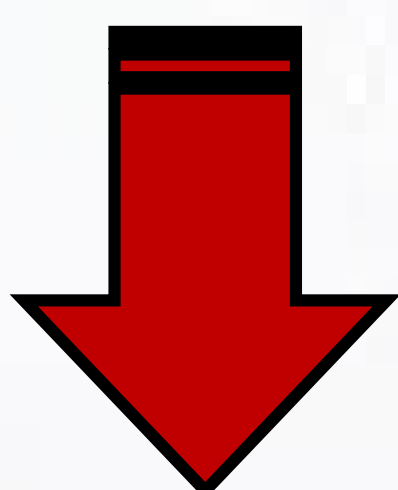
Expert Support, Including Finite Element Analysis



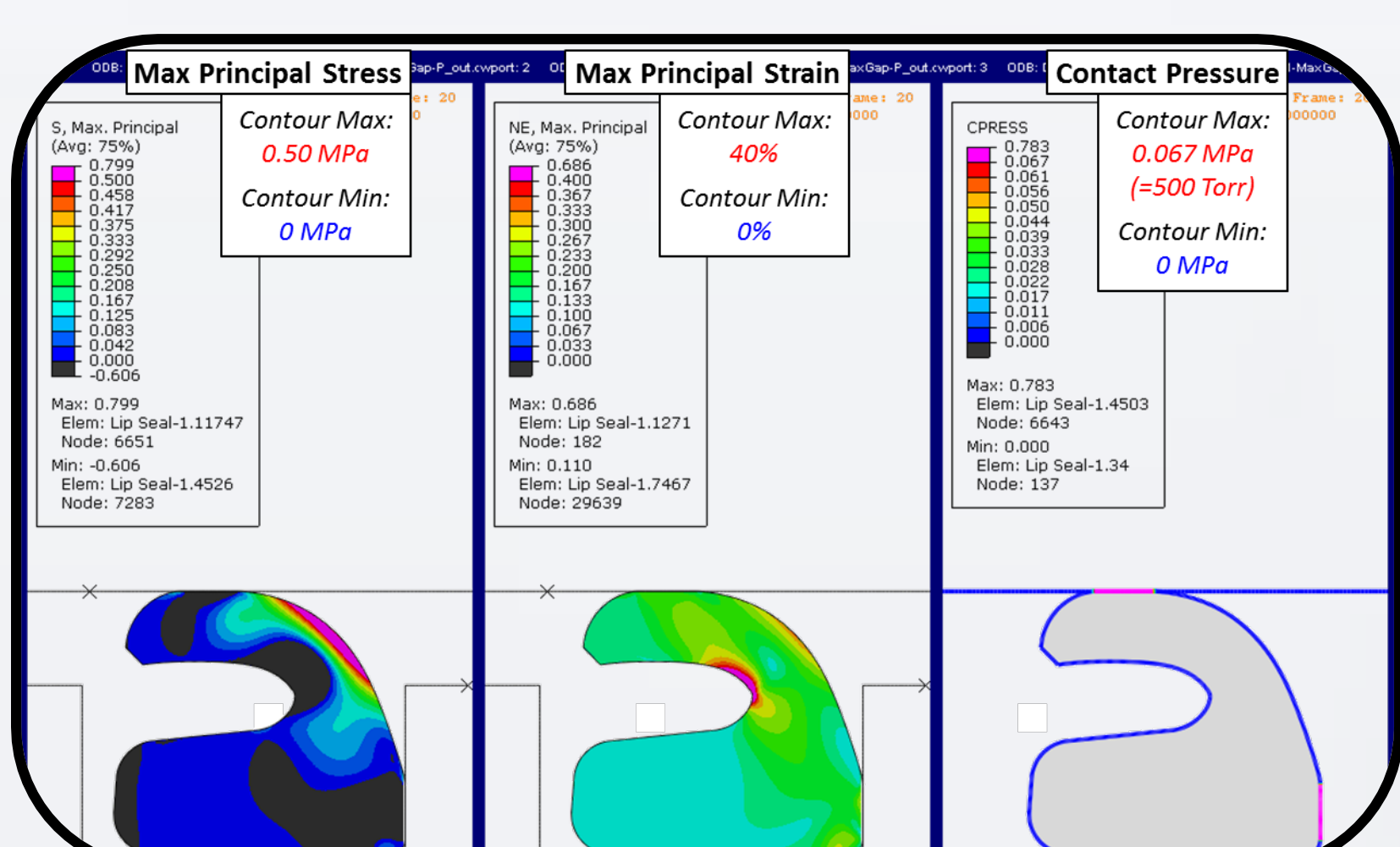
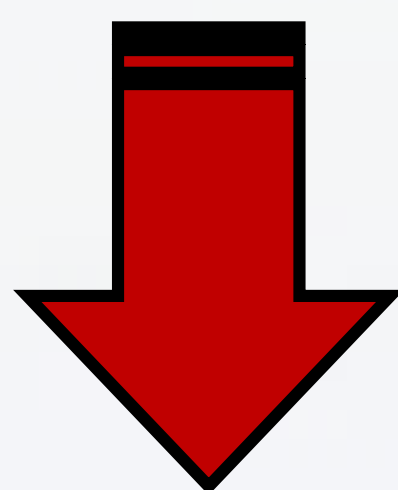
Initial State at Room Temperature



Installed State, at 23°C



Operating State with 50 Torr Outer Pressure at 50°C



Operating State with 50 Torr Outer Pressure at 180°C

Advanced Finite Element Analysis (FEA) capabilities are available to help design new seal shapes, optimize compound selection and groove geometry, and model performance of parts in service. Use of FEA can shorten development times and produce innovative solutions for long-term sealing performance.

Our Centers of Excellence (COE) give customers the advantage and collaboration through application and testing expertise within our global network.

Final Part with validated design after FEA



Specialty Kalrez® Products for Complex Shapes

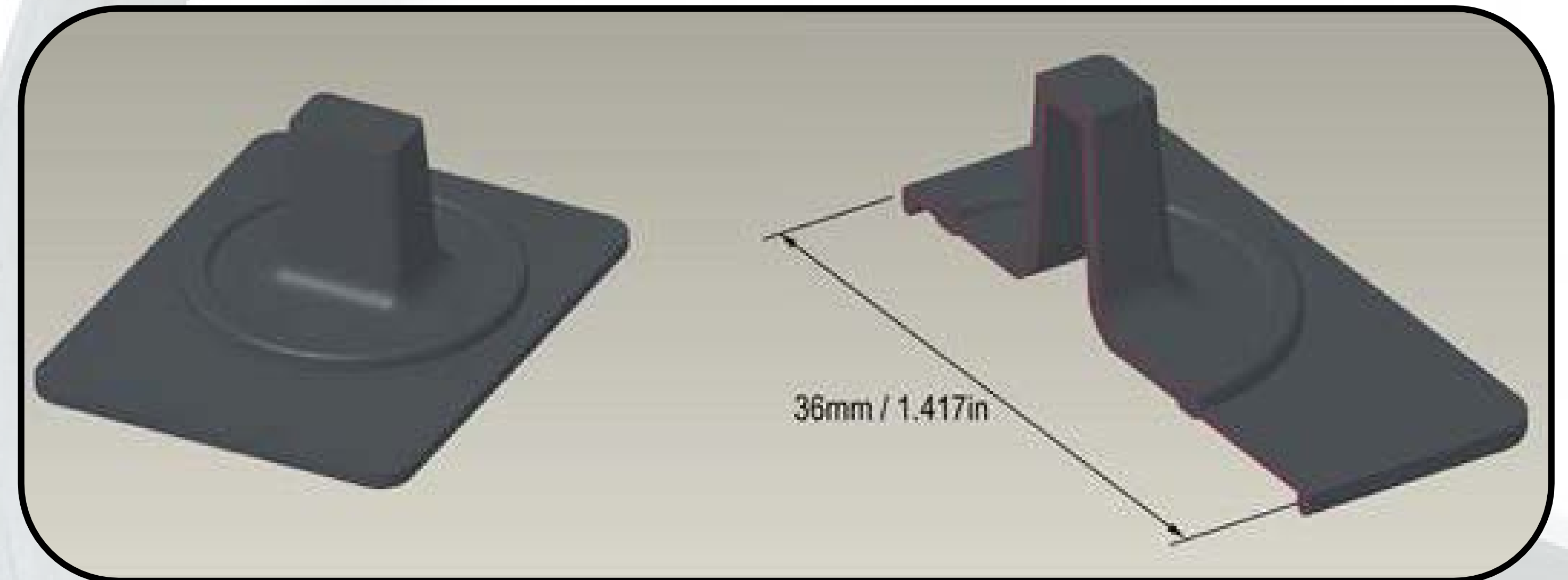
Kalrez® 6190

Kalrez® 6190 is a product designed for the most complex custom parts and high volume applications where outstanding thermal stability is required. This material offers very good overall chemical resistance and can be used in application up to 300 °C. Kalrez® 6190 parts can be designed to fit in complex new equipment or can be a performance upgrade in existing industrial applications.

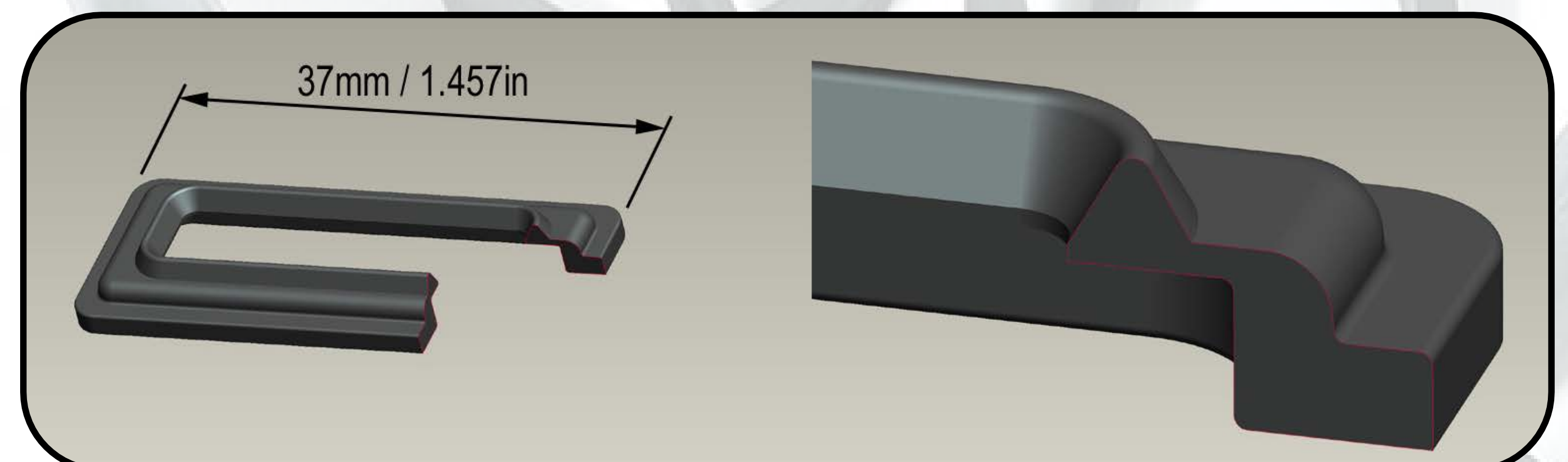
Diaphragm



Diaphragms for Solenoid Valve



Industrial Ink jet Head Cap



Kalrez® CP222

Kalrez® CP222 is a product tailored for high volume applications and custom shapes. It has opened the design space for perfluoroelastomers and can be manufactured in a variety of geometries. It continues the Kalrez® tradition of providing high value in use perfluoroelastomer parts with outstanding chemical resistance to extend mean time between repair (MTBR). A maximum service temperature of 225°C (437°F) is suggested.

In addition to unique shapes, Kalrez® CP222 can be manufactured into calendered or reinforced sheet for various applications.



Kalrez® CP222 expands the possibilities for custom perfluoroelastomer parts by offering parts with unique profiles.

Note: contact a Kalrez® application engineer to assess performance fit in your specific application.

Kalrez® LS390 Sanitary Seals

Kalrez® LS390 perfluoroelastomer parts are a grey product for use as sanitary seals in food handling, beverage, and pharmaceutical applications where FDA, USP <87> and <88> Class VI compliance are required. In addition, Kalrez® LS390 parts also meet Japan Pharmacopeia, edition 16. Kalrez® LS390 has been designed to address these issues by offering High hardness properties, low stiction, temperature resistance up to 220°C (428°F) and excellent chemical resistance to process chemicals, WFI (water for injection), as well as SIP and/or CIP processes. Because of its unique grey color, LS390 parts are easy to identify for proper material selection and application. Please contact your Kalrez® perfluoroelastomer parts Representative for available standard sizes and pricing information.

**DuPont™
Kalrez®
LS390**


Perfluoroelastomer parts
as sanitary seals in food
handling, beverage,
and pharmaceutical applications



Benefits of Kalrez® Custom Seals

- Meets the rigors of AS9100 aerospace standard quality certification; DuPont is a certified designer and manufacturer of seals and sealing devices per AS9100. (Manufacturing facility in Newark, DE)
- Proprietary technology for bonding compounds to a variety of materials, including aluminum, plastic, stainless steel, metal alloys, PEEK, brass, etc. Improves performance, and reduces cost by integrating the seal and substrate into one part.
- Overall, Kalrez® custom seals improve meantime repair, longer life and lower operating costs.





KALREZ® CUSTOM PARTS



The miracles of science™

NETWORK OF RELIABLE DISTRIBUTORS

Kalrez® parts are readily available through an extensive network of worldwide authorized distributors. Our authorized distributors can give you the technical assistance needed to help solve your sealing problem. Contact DuPont™ Authorized Distributors for standard or custom O-rings, valve seats, diaphragms, gasket fittings or custom shapes. Look for the DuPont™ Kalrez® Authorized Distributor Logo.

AUTHORIZED DISTRIBUTOR

DuPont™ Kalrez® 
PERFLUOROELASTOMER PARTS

"Ask for the Seal You Can Trust"

KALREZ® CUSTOM PARTS



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(06/17) Reference number KZE-A40053-00-A0617



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