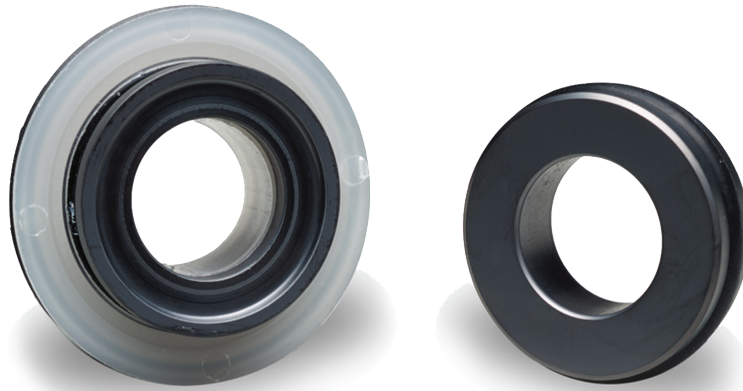


IMPENATRA®



WHAT'S DIFFERENT ABOUT THE IMPENATRA®?

- A proven, balanced design approach which eliminates hang up.
- Seal case is precision-molded of chemical-resistant thermoplastic.
- All metal surfaces, springs and shafts are isolated from fluid contact.
- Easily handles a wide range of chemical solutions including most acids, bases and inorganics.
- Every seal is individually inspected to ensure consistent quality and is readily available.

A unique, patented design in mechanical seals is available from Advance®. The Impenatra® seal is a radically new approach to solve many shaft sealing problems. When used with the Advance® line of pumps, it isolates all metallic parts from contact with the fluid.

Alternately, corrosive chemicals require seals made of exotic alloys. The high prices and long lead times are objectionable. The Impenatra® seal offers a solution to both problems.

WHAT THIS MEANS TO YOU.

- UNPRECEDENTED CORROSION RESISTANCE, protects from attack by contained fluid and from surrounding environment.
- Easy to install, field adjustment not required.
- Offers good versatility at an excellent price.
- Reliability, due to simplicity of design and quality components.

TECHNICAL DATA:

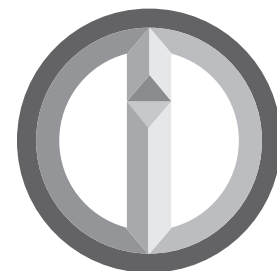
Seal Type - Stationary spring, reverse mount
Maximum Temperature - 194°F

MATERIALS OF CONSTRUCTION:

1. Seal case - injection molded polypropylene
2. Seal face - carbon graphite resin, binderless graphite or silicon carbide
3. Seal seat - high purity ceramic or silicon carbide
4. Elastomers - EPDM, Viton®, Kalrez® and Aflas®

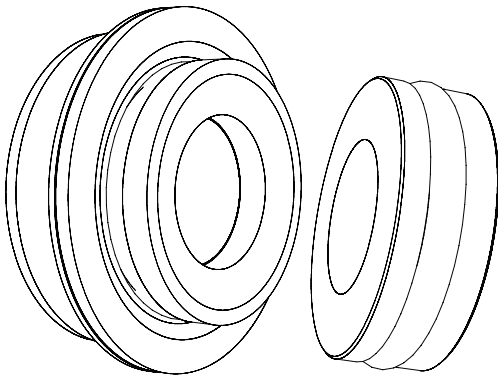
EXAMPLE CORROSION RESISTANCE:

- Deionized Water
- Ferrous Chloride 100%
- Hydrochloric Acid 37%
- Hypo Acid Fixing Baths
- Nitric Acid 10%
- Phosphoric Acid
- Photographic Developers
- Plating Solutions
- Sodium Hydroxide
- Sodium Hypochlorite
- Sulfonic Acid (aerated)
- And much more...



IMPENATRA®

Impenatra® II and Advance® are registered trademarks of MDM Incorporated. Viton® and Kalrez® are registered trademarks of Dupont. Noryl® is a registered trademark of SABIC. Aflas® is a registered trademark of Asahi Glass Co., Ltd.



The Impenatra® is a non-metallic, reverse-mount 5/8" mechanical seal. It has a wide range of seal faces and elastomers to provide a broad range of chemical compatibility. The following application guide is presented as an aid in selecting the appropriate Impenatra seal for your application. It is not to be considered complete, nor is it a guarantee of chemical compatibility or suitability.

The Impenatra® seal utilize the same polypropylene case and can be used in the Advance® 1000 and 3000 models as well as other pumps based on the NEMA 56J reverse-mount type seal. Please contact the factory for more information.

MDM P/N	Code	Materials	Uses
1000.0421	E9-V-C	Carbon Graphite Head, Viton® Trim, Ceramic Mating Ring, Polypropylene Case	For most acids and inorganics. HCl 20% to 80F (26.7C); 37% to 110F (43C); H2SO4 98% to 140F (60C); FeCl3 to 86F (30C)
1000.0422	E9-E-C	Carbon Graphite Head, EPDM Trim, Ceramic Mating Ring, Polypropylene Case	For dilute caustic (Sodium Hydroxide NaOH) applications, KOH, Formaldehyde CH2O, alcohols and DI water.
1000.0423	E9-V-SC	Carbon Graphite Head, Viton® Trim, Silicon Carbide Mating Ring, Polypropylene Case	For Hydrofluoric Acid HF. FeCl3 to 86F (30C)
1000.0424	E9-E-SC	Carbon Graphite Head, EPDM Trim, Silicon Carbon Mating Ring, Polypropylene Case	For caustic solutions of high concentration or elevated temperatures. NaOH 45-50% to 86F (30C)
1000.0441	E43-V-C	Graphite Head, Viton® Trim, Ceramic Mating Ring, Polypropylene Case	For bleach solutions up to 14% Sodium Hypochlorite NaOCl to 86F (30C)
1000.0442	E43-E-C	Graphite Head, EPDM Trim, Ceramic Mating Ring, Polypropylene Case	For bleach solutions where caustic will contact seal.
1000.0443	E43-V-SC	Graphite Head, EPDM Trim, Silicon Carbon Mating Ring, Polypropylene Case	For acidic solutions that will attack carbon graphite and ceramic.
1000.0444	E43-E-SC	Graphite Head, Viton® Trim, Silicon Carbide Mating Ring, Polypropylene Case	For basic solutions that will attack carbon graphite and ceramic.
1000.0451	ESC-V-SC	Silicon Carbide Head, Viton® Trim, Silicon Carbide Mating Ring, Polypropylene Case	For applications that would normally attack the carbon graphite or ceramic parts, such as concentrated bleach, abrasive solutions or acidic solutions with crystalline solids
1000.0452	ESC-E-SC	Silicon Carbide Head, EPDM Trim, Silicon Carbide Mating Ring, Polypropylene Case	For bleach solutions where caustic will contact seal.