

# PGE FLANGE ISOLATION KIT

Superior low pressure sealing and flange isolation

The Pikotek PGE is a low pressure service isolation kit designed for electrical flange isolation and/or general sealing applications. This system is suitable for use in raised-face and flat-face flanges in ANSI class 150 and 300 service (class 600 available depending on flange style, no RTJ). In addition to providing electrical isolation, the kit is excellent for isolating flanges made of dissimilar metals or where prevention of flange face corrosion is desired.



The PGE is available in both full-face (Type E) and ring style (Type F) configurations. Depending upon the sealing element selected, the PGE is rated for most all hydrocarbon and water service applications.

The unique design of the GPT PGE system incorporates patented overlapping and offsetting seal grooves. The purpose of this design is to break each layer of laminate within the gasket itself thereby creating a barrier through which fluid and/or gas cannot migrate. The sealing element can be any elastomeric material as well as more sophisticated Spring-Energized PTFE lip seals. As a result of this advanced seal design, maintenance-free flange isolation and flange face corrosion mitigation are achieved economically.

## SEAL RETAINER

The PGE seal retainer is constructed from NEMA grade G-10 glass-reinforced epoxy (GRE). This material has excellent performance characteristics with very high compressive strength, high flexural strength, high dielectric strength and low fluid absorption. PGE seals made from grade G-10 material are rated for service up to 300°F (150°C). For higher temperature service, grade G-11 is an acceptable alternative material, which is rated for 392°F (200°C) continuous service.

Two overlapping and offsetting seal grooves are machined into the high strength retainer in order to break the potential leak/weep path that is inherent in all glass laminate materials. The breaking of the leak/weep path is unique to the PGE and truly distinguishes it from all other electrical isolating flange systems.

## PGE PRIMARY FEATURES AND BENEFITS INCLUDE

- » High-Reliability, low pressure sealing system
- » Provides excellent electrical isolation for cathodic protection systems
- » Mitigates galvanic corrosion in dissimilar metal flanges
- » Choice of spring-energized teflon or o-ring pressure activated seals
- » Protects against flange face corrosion and flow-induced erosion
- » Available in ring (type F) style or full face (type E) style

## SEALING ELEMENTS

The sealing elements provide an impervious barrier through which no contained media or other substance can penetrate. Consequently, the composite retainer backing material behind the seal remains uncontaminated and thus permanently holds the seal in place in a static, fully-encapsulated manner. GPT offers three standard sealing elements for use with the PGE. For custom applications, other sealing elements such as Kalrez or EPDM may be specified. The three standard seals are:

### PTFE

Recommended for all environments. Helical wound spring provides radial load. Encapsulation in the seal groove eliminates creep or cold flow. This sealing system truly distinguishes GPT systems from all other flange sealing systems. PTFE is the most reliable sealing element available.

### Viton (FKM)

General purpose oilfield elastomer. Excellent resistance to aliphatic hydrocarbons and glycols. Good resistance to aromatic hydrocarbons. Not recommended for: Systems with amine inhibitors and in piping systems containing significant partial pressures of H<sub>2</sub>S, polar gases (i.e. CO<sub>2</sub>) or where radical pressure drops commonly occur.

### Nitrile

General purpose elastomer. Excellent for use in water systems or with some aliphatic hydrocarbons, silicone base fluids and glycol based systems. Not recommended for: Systems containing H<sub>2</sub>S, aromatic hydrocarbons, phosphate esters or halogenated hydrocarbons; piping systems subjected to radical pressure drops or piping systems containing significant partial pressures of polar gases (i.e. CO<sub>2</sub>).

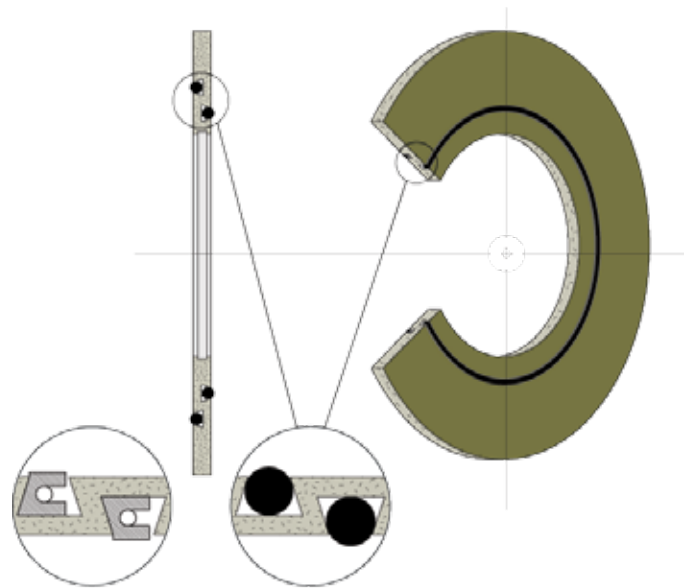
Other Elastomers Available ie:  
EPDM, Kalrez™ and Silicon

## ISOLATION KITS

In order to electrically isolate the two flange faces, isolating sleeves and washers are required. To protect your investment in flange isolation, GPT only provides full length sleeves and double washer sets (i.e. one isolating washer for each end of the bolt). All isolating washers are made of GRE that has high compressive strength. Two metal washers are also provided for each sleeve. GPT offers isolating sleeves made from GRE, Nomex and Mylar. The metal washers are either zinc plated 1050 carbon steel or stainless steel. Other custom materials are available on request. The new improved HCS Washers are also available on the PGE kits.

## ADVANTAGES AND BENEFITS

- » Pressure-activated seals provide high confidence sealing
- » High-strength laminate material resists failure due to excess compression (over tightening bolts)
- » Reinforced laminate retainer material provides excellent isolation for cathodic protection systems
- » Isolating kits always include high-strength double washers and full-length sleeves for maximum assurance against shorting
- » Gasket is sized to bore, which protects flange faces from media-induced corrosion and flow-induced erosion
- » Mitigates galvanic corrosion in dissimilar metal flanges
- » Spring energized Teflon seal provides radial load and encapsulation in the seal groove, which eliminates cold flow. This seal truly distinguishes the PGE from all of the other sealing systems
- » Also available with a variety of elastomeric seals
- » Easy installation, make up and removal
- » Slips easily into place
- » Sealing system results in low required bolt loads. Less make up force is required resulting in less flange and bolt stress
- » Gasket is self-centering, quick to install; no special tools required
- » Maintenance free, corrosion-resistant design



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