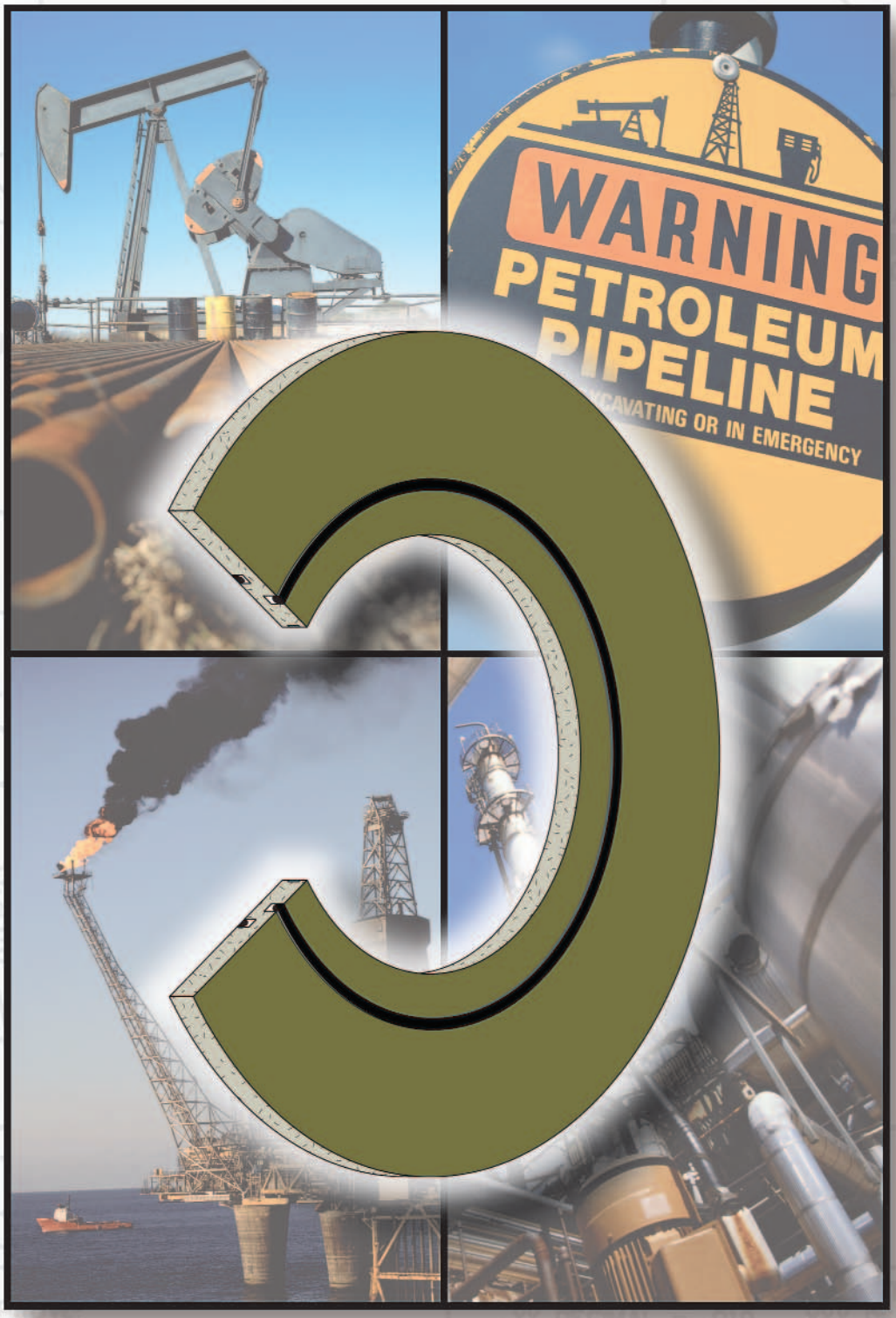
pikotek®

PGE Flange Gasket

Superior Low Pressure Sealing and Flange Isolation



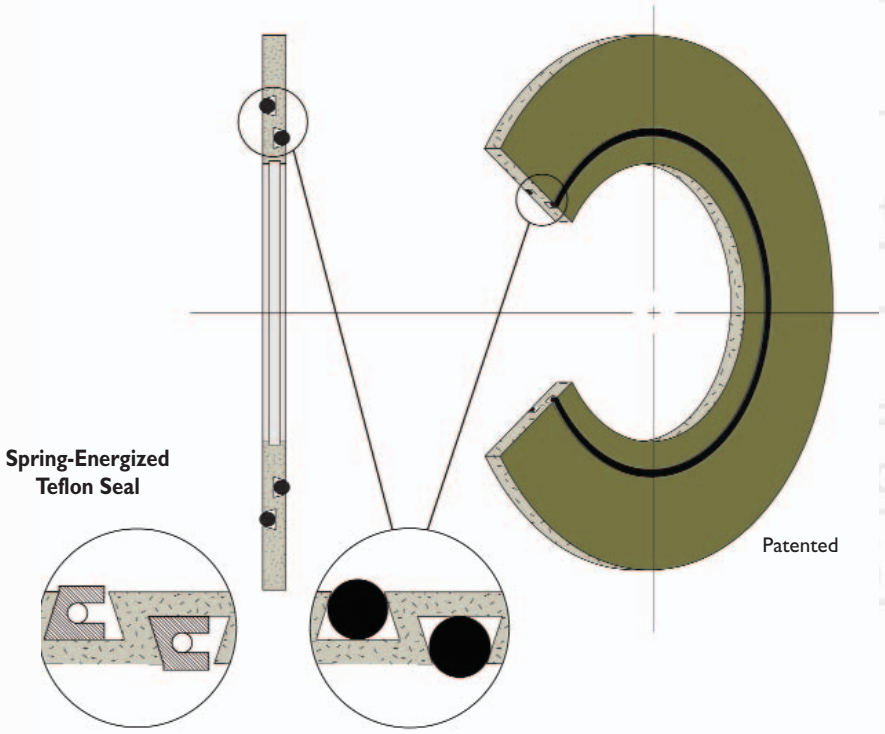
www.pikotek.com

pikotek PGE Flange Gasket

The ***Pikotek*** PGE is a low pressure service gasket designed for electrical flange isolation and/or general sealing applications. This gasket is suitable for use in raised-face and flat-face flanges in ANSI class 150 and 300 service (or equivalent). In addition to providing electrical insulation, the gasket is excellent for isolating flanges made of dissimilar metals or where prevention of flange face corrosion is desired.

The PGE was designed to give operators an alternative to the failure prone phenolic-based insulating gaskets. Based on its construction, the PGE will provide a superior, long lasting solution when compared to phenolic-based designs. 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 ***Pikotek*** PGE gasket 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 Teflon lip seals. As a result of this advanced gasket design, maintenance-free flange isolation and flange face corrosion mitigation are achieved economically.



PGE Primary Features and Benefits Include:

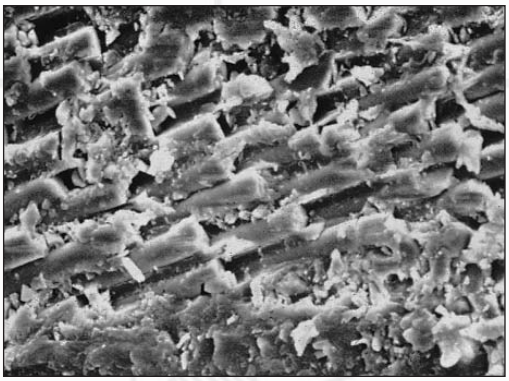
- High-reliability, low pressure sealing system
- Provides excellent electrical insulation for cathodic protection systems
- Overlapping seals eliminate potential leak/weep path in the laminate material
- Mitigates galvanic corrosion in dissimilar metal flanges
- Choice of spring-energized Teflon or 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

pikotek®

PGE Flange Gasket

GASKET/SEAL RETAINER

The PGE gasket/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 gaskets made from grade G-10 material are rated for service up to 300 degrees F (150 C). For higher temperature service, grade G-11 is an acceptable alternative material, which is rated for 350 degrees F (177 C) continuous service.



SEM photo of standard glass-reinforced epoxy magnified at 550 times

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 insulating flange gaskets.

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.

Pikotek 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:

Teflon (spring-energized)

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 ***Pikotek*** gaskets from all other flange sealing systems. Teflon is the most reliable sealing element available.

Viton

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_2S, polar gases (i.e. CO_2) 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_2S, 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_2).

INSULATION KITS

In order to electrically insulate the two flange faces, insulating sleeves and washers are required. To protect your investment in flange isolation, ***Pikotek*** only provides full length sleeves and double washer sets (i.e. one insulating washer for each end of the bolt). All insulating washers are made of GRE and have a compressive strength of 60,000 psi. Two metal washers are also provided for each sleeve.

Pikotek offers insulating sleeves made from GRE and Mylar. The metal washers are either zinc plated 1050 carbon steel or stainless steel. Other custom materials are available on request.

PGE Flange Gasket
Advantages and Benefits

- Superior sealing solution for low-pressure (ANSI class 150 and 300) service
- Pressure-activated seals provide high confidence sealing
- High-strength laminate material resists failure due to excess compression (i.e. over tightening bolts)
- Overlapping seal grooves eliminate potential leak/weep path in laminate material and provide stronger structural integrity versus "opposing seal" designs
- Reinforced laminate retainer material provides excellent insulation for cathodic protection systems
- Insulating Kits always include high-strength double washers and full-length sleeves for maximum assurance against shorting
- Gasket is sized to the bore, which protects flange faces from media-induced corrosion and flow-induced erosion
- Mitigates galvanic corrosion in dissimilar metal flanges
- Developed from proven ***Pikotek*** sealing technology
- 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 other sealing systems
- Also available with a variety of elastomeric seals
- Easy installation, make up and removal
    - The PGE easily slips 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-aligning and self-centering, quick to install; no special tools are required
- Maintenance-free, corrosion-resistant design

Represented By:

Garlock
SEALING TECHNOLOGIES