Endoscopy Development Company

Instructions for Installing TFE-O-SIL O-Rings

Any surface in direct contact with the O-Ring should be smooth and free from sharp edges, burrs and deep scratches. A 20 micro-inch finish is recommended.

If it is difficult to install the O-Ring over a shaft, it may be "stretched" by first immersing the O-Ring in boiling water for a few minutes. This softens and enlarges the O-Ring. After installation, it may be necessary to apply heat to the O-Ring once again so it will shrink back to a tight fit when cooled.

Do not bend the O-Ring too sharply as the Teflon will tend to kink under strain, however, if it does become kinked, it will not affect the operation in most applications.

Sealing with Teflon encapsulated O-Rings is sometimes a little different than sealing with rubber O-Rings. A rubber O-Ring will readily flow into imperfections of sealing surfaces. Teflon, being harder, takes time to flow into imperfections. The O-Ring may leak on initial start-up. To correct this situation if it occurs after installing the O-Ring, allow it to rest in place under load for a few hours or overnight. This allows the Teflon to cold flow and fill voids for proper sealing on start-up. Another method is to install a pre-heated O-Ring, and allow to cool under load. The heated O-Ring is softer and flows quicker into imperfections.

CAUTION

Within normal use temperatures, Teflon is attacked by so few chemicals that it is easier to describe the exceptions rather than list the chemicals with which Teflon is compatible. Teflon should **not** be used with the following:

1. Alkali metals such as elemental sodium, potassium, lithium, etc.
   These alkali metals remove fluorine from the polymer molecule.

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2. Extremely potent oxidizers, fluorine (F_2) and related compounds (e.g., chlorine trifluoride, CIF_3). These can be handled by Teflon, but only with great care, as fluorine is absorbed into the resins, and the mixture becomes sensitive to a source of ignition such as impact.
3. 80% NaOH or KOH, metal hydrides such as borances (e.g., $B2H_6$), aluminum chloride, ammonia (NH_3), certain amines (R-NH2) and imines (R-NH) and 70% nitric acid at temperatures near the suggested service limit.

Design and engineering assistance is available from TFE-O-SIL at no charge. However, any selection or application suggestions offered by TFE-O-SIL, are only to assist the customer…and in ALL CASES, determination of fitness for purpose or use is solely the customer's responsibility.

Hints for Inserting Coupling Gasket

Teflon encapsulated coupling gaskets are more rigid than plain elastomeric gaskets due to the Teflon encapsulation and are therefore a little more difficult to insert. After installing just a few, you will be an expert.

Insert gasket perpendicular to opening with OD of gaskets 90° from the locking arm holes to prevent damage to Teflon. Tip gasket and insert lower part of gasket into grove directly under 1 locking arm hole. Cover the other locking arm hole with a thin flat object such as a 6" stainless steel pocket rule and work balance of gasket, starting from the part already in the grove, past the covered locking arm hole and into the groove.

Teflon encapsulated coupling gaskets are far superior to other gasket materials when used in corrosive applications.