

# F68 A & N ULRIC™ Flange System

## A & N ULRIC Flange System



A & N has been a major supplier of vacuum components to the industry since 1965. As a manufacturer and user of Conflat® flanges, ASA flanges, and ISO flanges over this extended period of time, they have become acutely aware of the strengths and weaknesses of each of these systems.

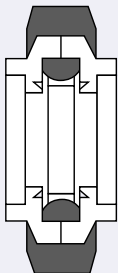
Several years ago they set about to create a flanging system that would embody the best of each of these systems and, ideally, to extend their capabilities. After extensive development, prototypes were sent to various facilities throughout the United States for intensive and rigorous testing.

ULRIC flanges accommodate either metal or elastomer sealing rings, are sexless and are infinitely rotatable. These flanges (as seen in the illustration) have protruding metal lips which serve several purposes. This lip protects the sealing surface of the flange and also precisely regulates the sealing compression of the elastomer seal. When these lips butt (metal to metal), the "O" ring

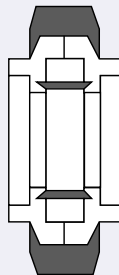
is properly torqued and completely confined by metal on all sides. This condition creates a dynamic sealing action not only on the sides of the "O" ring but on the O.D. as well. The result of this dynamic seal is that the flange is capable of holding both high-vacuum and high pressure sealing.

The metal sealing groove is protected in two ways. The protruding lips prevent contact with flat surfaces when components are being moved, stored or assembled. In addition, the groove is recessed into the metal for additional protection, not exposed as in the case of external knife edge type flanges which are exceedingly susceptible to damage. The metal seals are manufactured from 304 stainless steel and aluminum. The seal itself facilitates ease of alignment during the assembly process. An interference fit between the angle of the metal sealing ring and the angle of the flange sealing groove produces a vacuum tight seal from the same sealing ring depending upon the amount of torque utilized by the assembler when tightening the flanges.

Because the copper seals are softer than stainless steel, they preserve the integrity of the metal sealing groove, allowing multiple usage of the flange. We do, however, recommend frequent replacement of the seal. Stainless steel seals are recommended for use in highly corrosive applications. We also recommend this seal for cryogenic applications.



ULRIC™ Flanges With Elastomer Seal



ULRIC™ Flanges With Metal Seal

The quick clamp style flanges facilitate ease of assembly and are designed so that standard ISO clamps can be utilized for elastomer seals. The stronger A & N clamp with stainless trim is suggested for use with the metal sealing ring. Where high heat or exceptional durability is required, the all stainless clamp should be utilized. This unique all 304 stainless steel flange sealing system also enables ULRIC to be used in many non-vacuum applications. Very positive preliminary feedback from the chemical, cryogenic and pharmaceutical industries shows promising uses in these areas as well.

## Features

- Flanges accommodate either metal or elastomer seals
- Unique design protects both elastomer and metal sealing surfaces.
- Quick clamp style flanges available to accommodate up to 2" tubing.
- Flanges are sexless and infinitely rotatable.

### Elastomer Seal

- Guaranteed leak tight to  $1 \times 10^{-9}$  std.cc/sec.
- Guaranteed leak tight in pressures up to 300 psi with elastomer seals. Note: No over-pressure rings are needed with elastomer seals as in ISO systems.
- Standard ISO-KF clamps can be used to seal the elastomer design only.

- Elastomer seal design eliminates virtual leak problems, and a coating of vacuum grease is not needed for guaranteed leak tight sealing.

### Metal Seal

- Guaranteed leak tight in high temperature, ultra high vacuum applications to  $10^{-13}$  torr. For the first time, and alternative to the Conflat flange is available along with the ease of assembly and disassembly offered by the ISO-KF system.
- Guaranteed leak tight on pressures up to 300 psi with metal seal.
- Metal seal (stainless) can also be used for cryogenic sealing applications.