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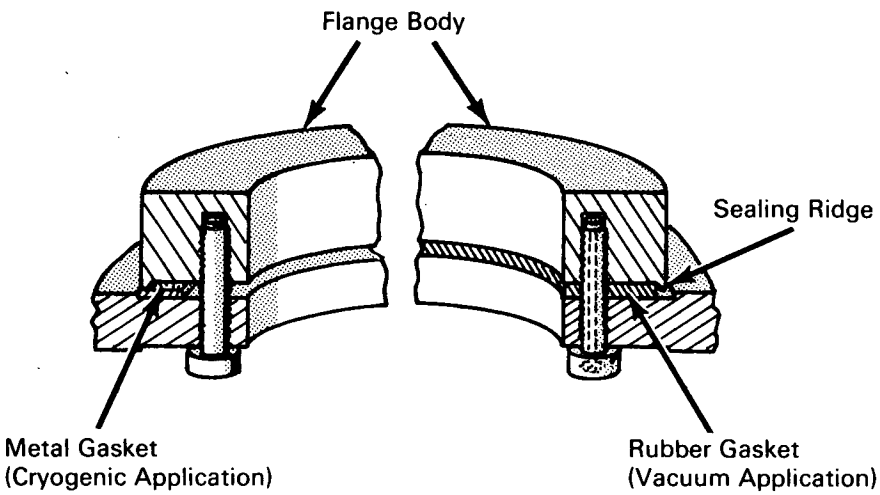
NASA TECH BRIEF

Feed-Thru Flange Is Useful in Vacuum Applications to Cryogenic Temperatures



The problem:

High vacuum test chambers, being double-walled, require sealing flanges with differing qualities for inner and outer walls since quite appreciable temperature/vacuum differentials exist between the two. Installation problems would be simplified and expense reduced if the same basic sealing flange could be used for both feed-thrus.

The solution:

A flange that can be used without modification of its structure for vacuum applications at both cryogenic and higher than cryogenic temperatures.

How it's done:

The flange body is made with a sharp, raised ridge near its perimeter. In an application at a partial vacuum and temperature above cryogenic, a rubber, O-ring-type gasket is used and the raised ridge acts to entrap the gasket and thus form the seal. In a high vacuum/cryogenic temperature application, a flat, soft metal gasket is used and the sharp ridge bites into the soft metal to form the seal as the capscrews are taken up.

Notes:

1. Should the metal sealing ridge of the flange be damaged in use, the flange can still be used for partial vacuum, noncryogenic applications in conjunction with an appropriate rubber seal.
2. Inquiries concerning this innovation may be directed to:

   Technology Utilization Officer
   Jet Propulsion Laboratory
   4800 Oak Grove Drive
   Pasadena, California 91103
   Reference: B66-10615

Patent status:

No patent action is contemplated by NASA.

Source: Stephen P. Yager
(JPL-846)

Category 02