dimensions of the boards should not exceed the area of the apparatus to be isolated (Fig. 1).

We have found that the elimination of low frequency vibrations was the most essential; therefore, in some cases only handballs were utilized. In other cases, a combination of the two types of antivibration mountings were required.

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**Microwave Frequency Feedthrough for Vacuum Systems**

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There are myriad of microwave window designs, each for a particular application. This deals not with a window design but instead with the inexpensive reworking of standard components so as to yield a vacuum-tight rf feedthrough. Herein described is a device suitable for use up to X band, though the selection of RG-119/U somewhat restricts usage to the lower end of the microwave spectrum. Low loss over a broad band as well as low VSWR characterize this feedthrough assembly (see Fig. 1).

The coaxial line chosen is of the Teflon filled, rigid type. Any coaxial line of this type can be used, depending only upon the operating frequency band. The connectors selected for this feedthrough are type N; either male or female can be used. A blank insert for a vacuum flange is required to make the feedthrough assembly detachable. The only other component required is a small amount of type 304 stainless steel or grade A nickel.

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![Fig. 1. Cross sectional drawing of vibration-elimination mounting.](image)

![Fig. 2. Configuration for brazing.](image)

![Fig. 3. Feedthrough assembly.](image)

In order to make the device bakeable at higher temperatures a nickel sleeve should be used in place of the silver plated brass which is part of the standard rf connector package. This nickel sleeve could be hard brazed in position.

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