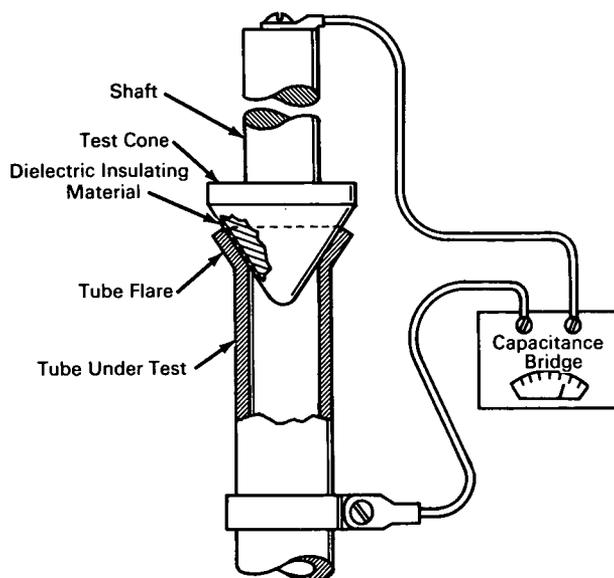


NASA TECH BRIEF



NASA Tech Briefs are issued to summarize specific innovations derived from the U.S. space program, to encourage their commercial application. Copies are available to the public at 15 cents each from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

Gage Tests Tube Flares Quickly and Accurately



The problem:

To develop a device that will be capable of determining the accuracy of a tube flare efficiently and economically. Previous methods of tube flare inspection were performed with instruments that required considerable time and had to be supplemented with visual inspections. While imperfections in tube flares are not critical in many areas, they are subject to failures in pneumatic and hydraulic systems under high pressure. Such failures often are costly because the flared tubes may be installed in inaccessible locations.

The solution:

A flared tube gage with a test cone that is precisely made with a tapering surface to complement the tube

flare that is to be tested. The surface of the test cone is coated with a thin, uniform layer of dielectric insulating material.

How it's done:

The flared tube gage consists of a test cone, shaft, and capacitance bridge meter. The meter is connected to the test cone shaft and to the tube being tested. To test the tube flare, the test cone is placed in the tube flare in mating position and remains there by its own weight. Imperfections in the flare, or an improper flush fit of the test cone and the inside flare surface will produce a meter reading that will give an instant check on whether the tube flare imperfection is within permissible tolerances.

(continued overleaf)

Notes:

1. This device should improve the speed, efficiency, and accuracy of tube flare inspections. The simplicity of operation may permit 100 percent inspection of tube flares.
2. The device is portable and can be used in shop or field. The test cone can be reshaped and used to test the internal surfaces of various geometric shapes.

3. Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Kennedy Space Center
Kennedy Space Center, Florida 32899
Reference: B66-10537

Patent status:

This invention is owned by NASA, and a patent application has been filed. Royalty-free, nonexclusive licenses for its commercial use will be granted by NASA. Inquiries concerning license rights should be made to NASA, Code GP, Washington, D.C. 20546.

Source: Francis D. Griffin
(KSC-66-19)