NASA TECH BRIEF

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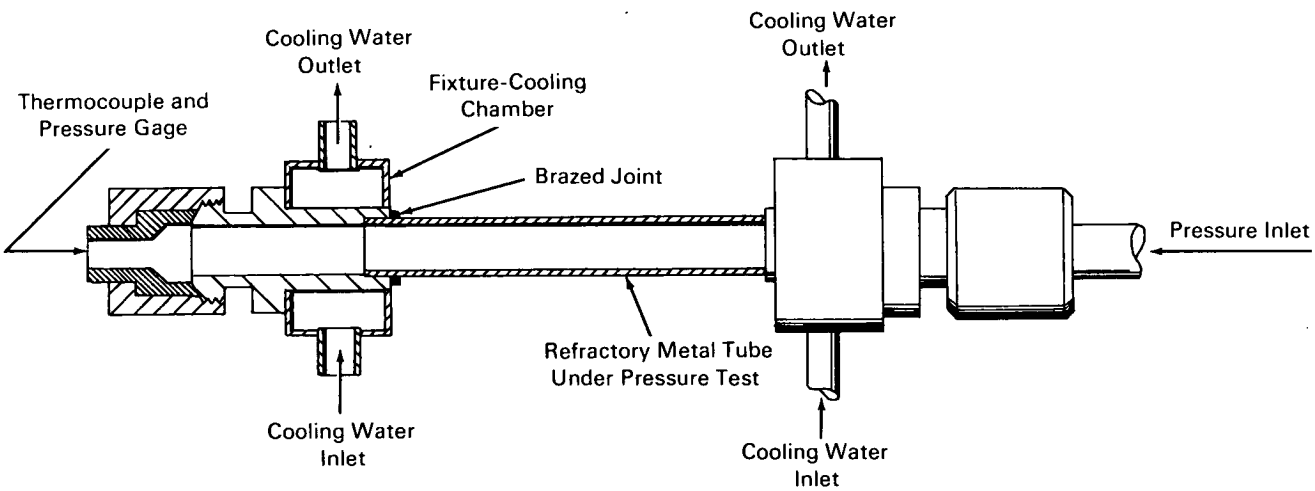
Apparatus Facilitates Pressure-Testing of Metal Tubing



The problem: Burst-testing of refractory metal tubing at pressures of up to 3000 psig and temperatures ranging from room temperature to above 5000°F.

The solution: An apparatus in which tubular specimens are firmly gripped and which provides for application of test pressures and temperatures.

How it's done: The apparatus consists of two water-cooled fixtures into which the two ends of the tubular specimen to be tested are brazed. Thermocouples and a pressure gage are fitted to one end of the apparatus, and pressure (from a nitrogen bottle) is supplied to the specimen through the other end of the apparatus. For tests at elevated temperatures, the tubing is heated by rf induction coils. In carrying out a test, the tubing is brought to the desired temperature and the pressure is increased at a predetermined rate until failure occurs.

Notes:

1. This apparatus can also be used for testing refractory metal tubing for porosity, flaws, and fatigue-stress rupture.
2. Inquiries concerning this innovation may be directed to:

   Technology Utilization Officer
   Lewis Research Center
   21000 Brookpark Road
   Cleveland, Ohio, 44135
   Reference: B65-10131

Patent status: NASA encourages commercial use of this innovation. No patent action is contemplated.

Source: C. A. Gyorgak
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