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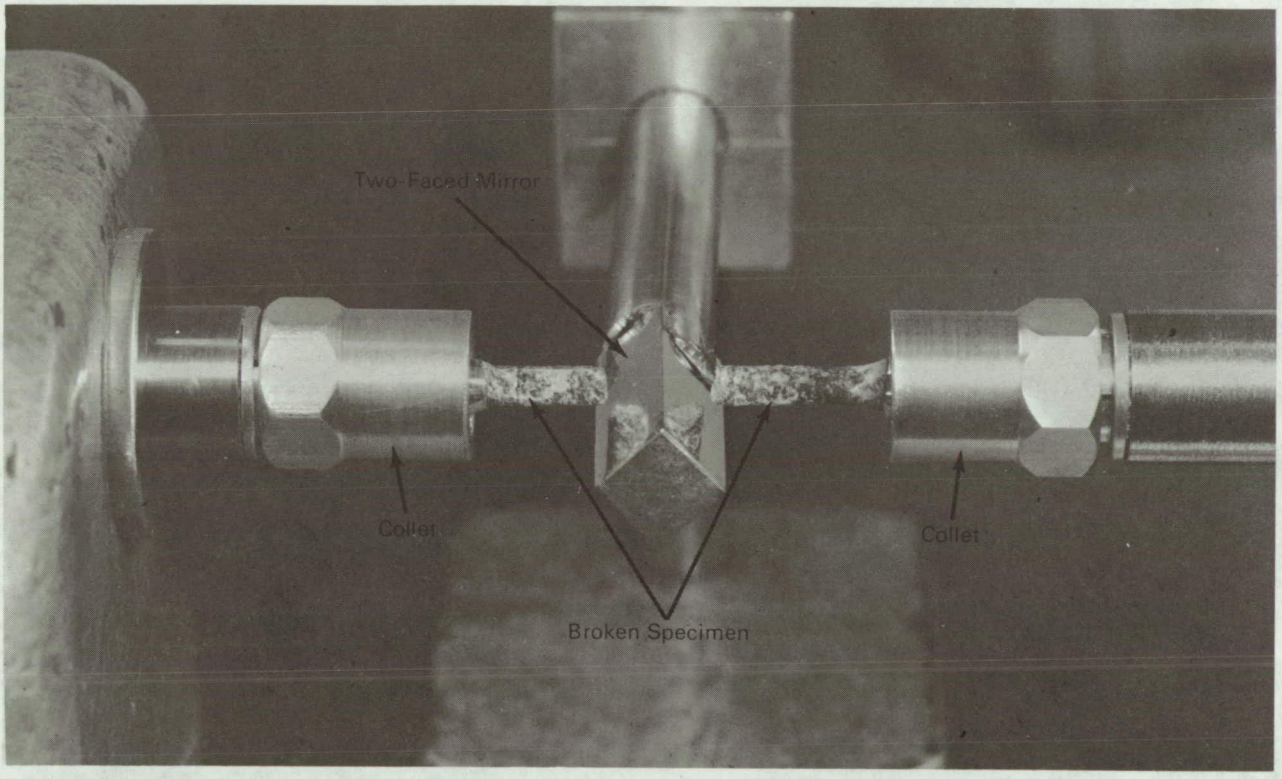
NASA TECH BRIEF

Accurate Reassembly of Small Broken Test Specimens



A small broken specimen can be reassembled without relative rotation of the faces of the fracture. The cemented fracture can then be sectioned metallographically, for example. One such technique was designed for reassembly of a 0.125-in.-diam specimen broken during stress-corrosion tests.

The unbroken ends of the two portions of the specimen are held in two directly opposed collets (see fig.). The 90° angle of a two-faced mirror is placed between and below the opposed broken ends. The mirror is made from a length of squared steel, two adjacent faces of which are polished before being coated with vapor deposited chromium.

With the aid of the mirror observed through a magnifier the two faces of the fracture are perfectly aligned before the collets are locked against rotation. The mirror is then lowered clear of the specimen; the two faces are brought close together and cemented with epoxy resin.

(continued overleaf)

Note:

Requests for further information may be directed to:

Technology Utilization Officer
Code A&TS-TU
Marshall Space Flight Center
Huntsville, Alabama 35812
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Patent status:

No patent action is contemplated by NASA.

Source: H. E. Pellett and A. R. Pardoe of North American Rockwell Corp. under contract to Marshall Space Flight Center (MFS-16730)