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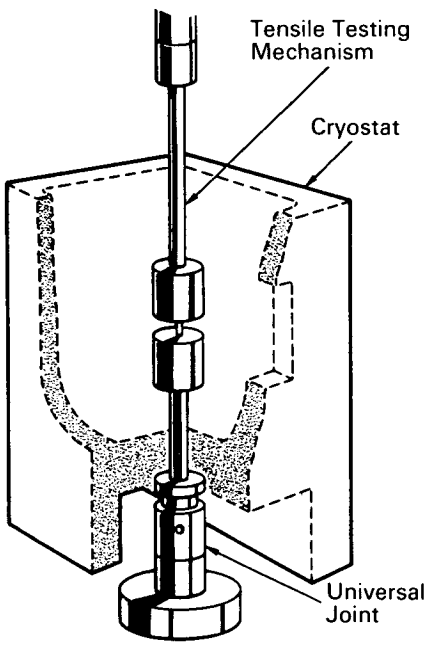
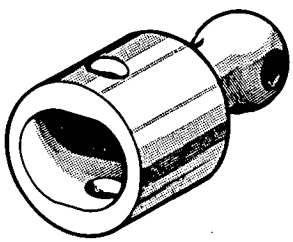
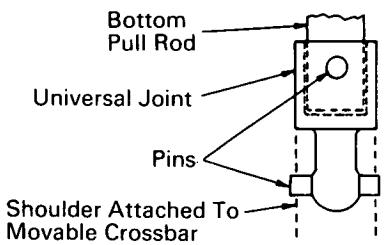
Self-Aligning Rod Prevents Eccentric Loading of Tensile Specimens







The problem:

To devise a method for testing tensile specimens in liquid nitrogen (LN_2) without subjecting the cryostat to tilting during assembly of the specimen in the LN_2-filled cryostat.

The solution:

A universal joint with a semielliptical head and socket that reduces misalignment and permits only limited side travel.

How it's done:

The semielliptical head of the universal joint is seated in the shoulder attached to the bottom movable cross bar, and moves about a pin-loaded joint. The universal joint socket also has a semielliptical contour but with the flats at right angles to the flats of the head. The socket receives the bottom pull rod and also moves about a pin-loaded joint, which is at right angles to the pin through the head. With this design, misalignment effects are reduced while the cryostat (which is attached to the bottom pull rod) remains relatively rigid, preventing spillage of LN_2 and facilitating assembly of the specimen.

Note:

Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
AEC-NASA Space Nuclear Propulsion Office
U.S. Atomic Energy Commission
Washington, D.C. 20545
Reference: B67-10594

(continued overleaf)

Patent status:

No patent action is contemplated by AEC or NASA.

Source: E. F. Vandergrift
of Westinghouse Astronuclear Laboratory
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