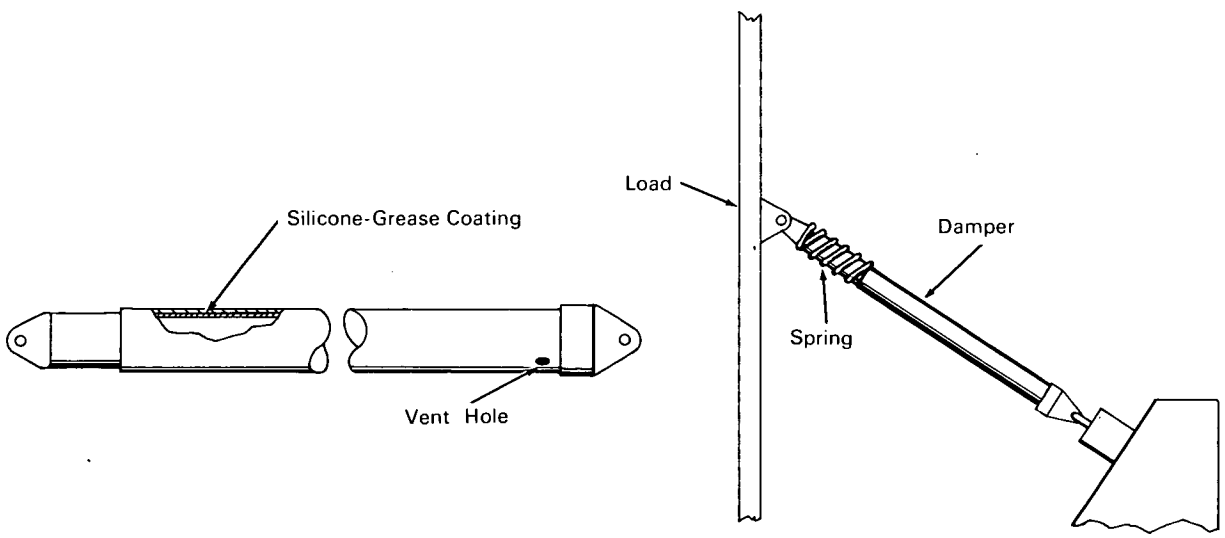
NASA TECH BRIEF

Lightweight Load Support Serves as Vibration Damper



The problem: Designing a tall compact support structure for omnidirectional antennas and solar panels. The structure must not interfere with a high-gain-antenna pattern and must be capable of damping mechanical vibrations in the supported load. Ordinary air-dashpot-damping cannot be used because the device must function in a vacuum environment.

The solution: A thin-walled tubular support strut employing the viscous drag of a silicone grease to effect damping and a coil spring to support the static loads imposed on the strut.

How it's done: The damping support consists of two thin-walled aluminum tubes, one of which can slide within the other under vibration loads. Silicone grease is used as the vibration-damping medium as it exhibits a much smaller variation in damping coefficient with temperature than ordinary hydrocarbon greases.

Note:

Inquiries concerning this innovation may be directed to:

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Reference: B65-10144

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

Source: W.E. Layman
JPL-661)
Category No. 05