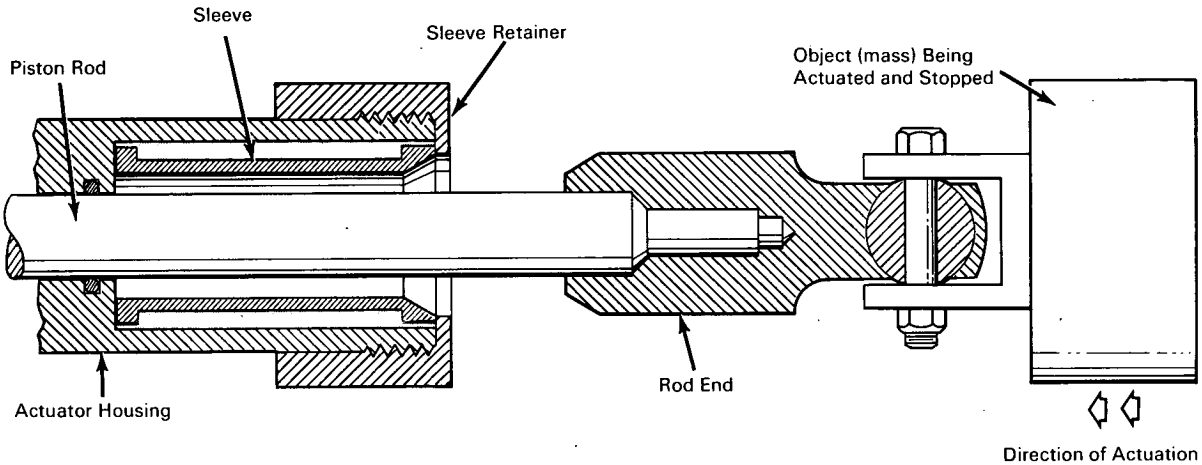
December 1967

Brief 67-10488

NASA TECH BRIEF

Combined Attenuator and Latch for Cartridge Powered Actuator



A combination attenuating and latching device has been designed to bring to a stop and latch in place a given mass which is to be moved a discrete distance to effect a desired condition. The particular application here is in a retraction actuator driven by a pyrotechnic thruster.

The actuator is required to move a mass (an electrical connector in this instance) approximately 5 inches in milliseconds, then bring it to a stop and latch it against further movement. To accomplish the stopping and latching, a thin-walled stainless steel sleeve is loosely fitted into the actuator housing, the purpose of the loose fit being to permit the sleeve to align itself with the piston rod end so that the enlarged portion of the rod end will enter at the end of the actuator stroke. This rod end makes an interference fit with the sleeve i.d. and the sleeve's thin wall will yield when the enlarged rod end enters. By controlling the sleeve dimensions, wall thickness, and material strength along with the rod end size and configuration, the attenuation and latching forces can be tailored to meet specific design requirements.

Note:

Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
Manned Spacecraft Center
Houston, Texas 77058
Reference: B67-10488

Patent status:

No patent action is contemplated by NASA.

Source: D. W. Murphy
of North American Aviation, Inc.
under contract to
Manned Spacecraft Center
(MSC-11242)

Category 05