

NASA TECH BRIEF



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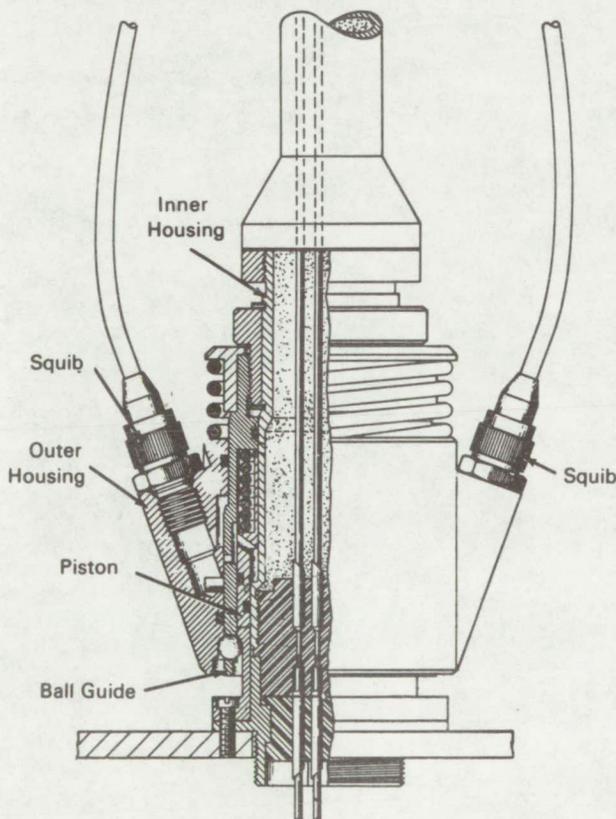
Umbilical Disconnect Actuator

The innovation described in this Tech Brief is a novel method for protecting sensitive equipment when squibs are fired.

The device illustrated in the figure is capable of disconnect by either squib (explosive device), or manually should a non-firing condition exist. A combination of explosive discharge and spring stored ener-

gies provides positive operation of the disconnect actuator for separating connected umbilical cables. Contamination of sensitive equipment when the squibs are fired is prevented by the use of O-rings which retain the debris of squib discharge within the device.

As shown in the figure, a pair of squibs are attached to the actuator outer housing. The main parts of the device are the outer housing, concentric ball guide, inner housing and a concentric piston. Either squib is capable of producing enough power to release and actuate the disconnect device, but two squibs are used to provide redundancy.



Umbilical Disconnect Actuator

Notes:

1. The information contained in this Tech Brief should be of interest to personnel working with explosive disconnect devices.
2. Requests for further information may be directed to:

Technology Utilization Officer
 NASA Pasadena Office
 4800 Oak Grove Drive
 Pasadena, California 91103
 Reference: B70-10170

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

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