



TECHNOLOGY DESCRIPTION

The Nano Release Nut Aluminum is a Shape Memory Alloy (SMA)-based release actuator which secures sensitive equipment during launch and safely releases it on orbit. It is one of the smallest, yet powerful HDRM (Hold-Down and Release Mechanism) solutions on the market. Moreover, it is easily resettable, easy-to-use, and readily available as a COTS part (Commercial off-the-shelf). The highly reliable products are ideal for use in application with harsh environmental conditions, for example for emergency release in search and rescue actions, in environments with low temperatures (e.g. quantum computers), or high radiation.



INNOVATIVE ASPECTS

Key features of the release nut include:

- Small size (cubic shape) to have more space for the payload
- Materials: aluminium-titanium
- Body size (L x W x H): 25 x 25 x 25 mm or 17 x 17 x 17 mm
- Operating temperature range: -65°C to +75°C
- Adaptable interfaces, adjusting to the customer's application
- Resettable >100 times, so that customers can conduct extensive testing
- Redundancy



TECHNOLOGY READINESS (in space application)

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COUNTRY OF ORIGIN

Germany

LATEST UPDATE

06/2024

TAGS #actuator #miniature #shape memory #resettable #COTS #harsh environ.

APPLICATION AREAS

Aviation Energy Health Construction & Civil Engineering Chemical Engineering & Biotechnology Mechanical Engineering Space technologies

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