



A

FUSE-WIRE TECHNOLOGY Glenair non-pyrotechnic hold-down and release mechanism technology is based on a fusible wire-actuated separation nut design, increasingly popular for its reliability and low-shock release action. Fuse wire-actuated nut technology has the added benefit of being partially reusable and refurbishable post-deployment.

LEGACY HDRM DEVICES A broad range of hold down release mechanism technologies have been historically used to deploy satellites and appendages (solar arrays, antenna reflectors, radiators, instruments, doors, sensors, booms, and so on) in space. Most of these technologies relied on non-reusable (explosive/pyrotechnic) designs that suffered from a broad range of deficiencies, including susceptibility to electromagnetic interference, problematic synchronization of release with mission requirements, high-shock release action, and significantly, the inability to reuse or refurbish the device during test. Glenair HDRMs solve every one of these problems.

HDRM FUNCTIONALITY The Glenair family of HDRMs, pin pullers and pin pushers are non-pyrotechnic release mechanisms with the ability to carry defined tensile preloads until fuse wire release is initiated with an electrical current applied to the actuation circuit, at which time the restraint wire—wrapped under tension—unwinds, initiating actuation and releasing the associated preload. Any potential energy release during actuation is fully countered by the measured delivery system.

KEY COMPONENTS All three key components of Glenair HDRMs (preloading assembly, release actuator, and load-carrying structure) may be packaged according to specific customer requirements including connectorization in place of wire leads. Electrical initiation current level is also configurable, with no amperage upper limit. Packaging options include cylindrical or rectangular housings, lightweight materials, unique shapes and profiles, non-standard mounting dimensions and more.

PERFORMANCE Glenair HDRMs, pin pullers and pushers are immune to all forms of EMI or ESD, and capable of easily sustaining significant defined preloads—with release deployment times comparable to conventional explosive actuators. Near-simultaneous release of multiple HDRMs is ± 7 msec with 3.5A supplied as a nominal current (within the same temperature range). Improved simultaneity is achieved with the application of higher-current initiation.

FLIGHT HERITAGE Glenair HDRMs have achieved flight heritage and are now marketed by the company with TRLs of 9. Consult the factory for test reports and TRL qualification levels for specific devices.

**SCALABLE DESIGNS:
FROM CUBESATS TO
20,000 POUND PAYLOADS**

- Fuse-wire based technology
- Redundant or non-redundant actuation circuit
- Space-rated and screened materials
- Configurable electrical initiation with no (amperage) upper limit



Catalog and custom solutions available, including redundant- and non-redundant HDRMs, power draw resistor-equipped units, and connectorized solutions with space-grade micro miniature Series 806 Mil-Aero connectors.

DEPLOYMENT APPLICATIONS



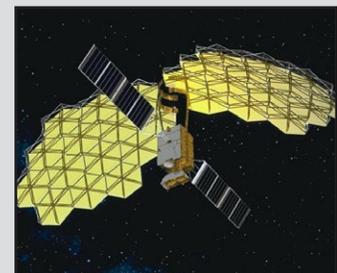
Solar Arrays



Booms and Masts



Antennas



Reflectors