



SPACE

M10 HOLD AND RELEASE MECHANISM ME0032

Pyroalliance designs a wide range of separation nuts, used for the in orbit deployment of antenna reflectors and solar generators on satellites or used for the separation of satellites of a constellation, assembled on a dispenser.

With a recorded rate of in-flight success of 100% over more than 10000 separation nuts delivered until today to its customers, Pyroalliance provides with such separation nuts extremely reliable solutions of Hold down and release.

More generally, Pyroalliance delivers complete pyrotechnic chains adapted to its customers' needs. They are designed and manufactured under Pyroalliance design authority.

SEPARATION NUT

Operating mode

The Hold and Release Mechanism is a pyro-mechanism which performs two functions: maintaining a pre-loaded assembly of two sets and releasing the assembly upon an electrical order. The energy required to achieve the release is provided by gas pressure (pyrotechnic gas generated by the initiator).

Benefits

- **Reliability**
High reliability of the product is granted by the implementation of redundant initiators and the systematic in-factory functional testing (100%) of the mechanical part by cold gas actuation (instead of pyrotechnic gas) and reseted after test.
- **Actuation time and synchronicity**
By nature, pyrotechnic actuators allow a very low actuation time and associated to a low standard deviation. Consequently high level of synchronicity is granted for several nuts activated simultaneously, as this is the case for holding satellites on dispensers.
- **Structural link satellite / launcher mastering**
Using a cup cone part, the HRM ME0032 provides a "ready to use" solution allowing a well mastering of linkage stiffness (traction and torsion).
The bolt tension is applied in factory by ultrasonic measurement monitoring process.

Applications

- Satellite release from dispenser

Typical performances and features

Operation time (Typical values):	Few ms
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Height without igniters:	95 mm
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Depth:	91 mm
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Bolt dimensions:	M10 x 1.5
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Weight without initiators with bolt catcher:	740g
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Weight without initiators and without bolt catcher:	490g
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Operating temperature:	-50°C to +50°C
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Operating bolt tension:	Up to 26.5kN
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Initiators:	2 NSI*
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*NASA Standard Initiators



Pyroalliance's equipment on board satellite Globalstar
- Arianespace

Classification Product

- Number UN: UN0173
- Storage class: 1.4S
- Not restricted by ITAR regulation

For more information

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