



Release Nuts

Easy-to-use Launch Locks and Latches for any form factor and performance level.

APPLICATIONS

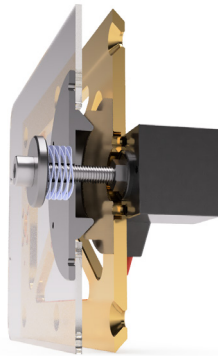
Dcubed Release Nuts are a family of Shape Memory Alloy (SMA) based release actuators designed to secure sensitive equipment during launch and safely release it on orbit. Release Nuts effectively constrain tensile axial loads and represent one of the smallest, most powerful Hold Down and Release Mechanism (HDRM) solutions available. Easily resettable, they support repeated use across numerous test campaigns, ensuring reliable actuation when it matters most.

CONSTRUCTION

Dcubed Release Nuts come readily available in three form factors: the Nano Release Nut (nD3RN), the Micro Release Nut (uD3RN), and the Nano Smart Pack (nD3SP). Release nuts are made of hard anodized Aluminum 7075-T7351 with Titanium Grade 5 nuts.

KEY FEATURES

- TRL 9
- Over 100 reset cycles
- Redundant wiring/SMA
- Actuation current:
2 A DC (nD3RN & nD3SP),
4.0 A DC (uD3RN)
- Reset tool included for
nD3RN and nD3SP
- Ultra-low shock



Dcubed Release Nut in a sample HDRM application with a Cup-Cone interface under axial preload.

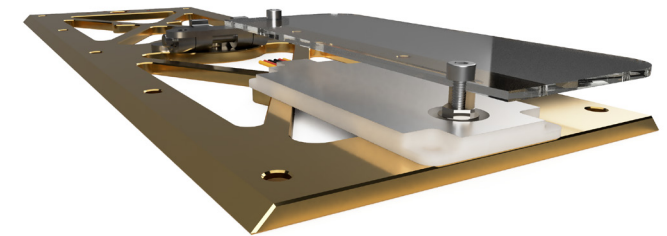
DCUBED ADVANTAGES



Dcubed Release Nut Family

DCUBED RELEASE NUT TECHNICAL SPECIFICATIONS

Product	Nano Release Nut nD3RN	Micro Release Nut uD3RN	Nano Smart Pack nD3SP
Body Size (LxWxH)	17x17x17 mm	25x25x25 mm	74x35x4.2 mm
Mass	12 grams	38 grams	27 grams
Nut Dimensions	Ø 7 x 13 mm	Ø 10 x 21 mm	Ø 11.9 x 5 mm
Operating Temp	-40° C to +75° C	-65° C to +75° C	-65° C to +75° C
Max Preload (axial tension)	380 N	4 kN	200 N



Externally mounted Smart Pack locking a rotating hinge mechanism.

"Redwire's collaboration with Dcubed has led to faster development cycles for us and our customers. Since their release actuators are resettable and testable hundreds of times, we can keep extras on hand for new projects. Dcubed's products are incredibly user friendly!"

Cody Griffie, USA
Principal Engineer, Redwire