



Lock Hinges Micro:

MICROSAT SIZED LOCK HINGES FOR RELIABLE AND REARMABLE ANGULAR LOCKING



SUMMARY

The Lock Hinges Micro are mechanically simple, minimalistic and very solid, CNC machined, sturdy and thick with very few failure points. They are mechanically actuated by loaded compression springs that push a locking tab in place, denying movement to the hinge unless manually pulled. Using only tweezers or pins, the locking mechanism can be reset an unlimited number of times by pulling the locking tab. The mechanical movement range is also hard-in-design specific to the hinge by mechanical modules incorporated into the geometry of the assembly, meaning the locking angle can be configured as required. These hinges are not designed to bear a significant load and must work in conjunction with sturdier hinges. They also do not impart torque on any parts and are essentially free moving until locked.

FEATURES

- Hard-stop custom deploy angle specified before manufacturing
- All components are CNC machined with micron-precision
- Manually resettable as many times as needed
- Non-load bearing angular locking mechanism to maintain position
- Mechanically minimalistic, spring operated
- Sturdy, thick and over-engineered design
- Custom configurable choice of mechanical mating and screws
- Designed for MicroSat applications, missions and requirements.
- Manufactured according to NASA and ESA space standards and materials.
- Repetitive functional and performance tests provided with documentation.

PERFORMANCE AND PRODUCT PROPERTIES

- **Weight (depends on configuration):** 45 to 50 grams (depends on the angle specified)
- **Max angular deviation:** +/- 1 deg
- **Dimensions (LxWxH):**
 - **Deployed (180 degrees):** 30.00mm x 64.00mm x 17.50mm
 - **Stowed (0 degrees):** 30.00mm x 40.00mm x 19.00mm
 - **Interface Dimensions:** 20.00mm x 30.00mm
 - **Nominal Thickness:** 5mm
- **Axis Diameter:** 4.00mm
- **Interface Flatness:** +/- 0.01mm
- **Operating Temperature:** -100C to +150C



MATERIALS

- Only TML and CVCM < 1% materials used, NASA and ESA approved.
- Hinge Material (options):
 - BeCu CNS 17200 Y1/2
 - Aluminum 6061
 - Aluminum 7075
 - Titanium Grade 5
- Springs, Axis, Screws: Stainless Steel 304

TESTING

All antennas are provided with tests reports regarding:

- Thermal Bake out (10E-5 mbar @ 50C for 72 hours)
- Full vibration test for Falcon 9, Electron, Soyuz, Dnepr and Long March 2D

Test	QT	AT
Functional	✓	✓
Vibration		✓
Thermal Cycling		✓
Thermal Vacuum		✓
Repeatability (100 times)	✓	✓

AVAILABILITY AND LEAD TIME

- 8 to 10 weeks



