



Hinges Micro:

MICROSAT SIZED HINGES FOR RELIABLE DEPLOY OPERATIONS



SUMMARY

The Micro Hinges are mechanically simple, minimalistic and very solid, CNC machined, sturdy and thick with very few failure points. They are mechanically actuated by loaded torsion springs calibrated to each individual array, attached with screws to the panel, lubricated with solid (powdered) graphene and coated in corona dope for any non-conductive surface. The mechanical movement range is also hard-in-design specific to the particular hinge by stops incorporated into the geometry of the assembly. Each individual hinge can also, optionally, be configured as conductive to carry current from panel to panel.

FEATURES

- Hard-stop custom deploy angle specified before manufacturing
- All components are CNC machined with micron-precision
- Corona dope coating for electrical isolation if required
- Powered graphene lubrication for internal mechanisms
- Optional cable-less single-channel electrical conductivity per hinge
- Torque adjustment and tuning system for a case by case basis
- Mechanically minimalistic, single 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):** 63 to 65 grams
- **Max torque:** 248Nmm to 478 Nmm
- **Dimensions (LxWxH):**
 - **Deployed (90 degrees):** 64.00mm x 58.38mm x 41.53mm
 - **Deployed (180 degrees):** 64.00mm x 58.38mm x 17.50mm
 - **Stowed (0 degrees):** 64.00mm x 58.38mm x 19.00mm
 - **Interface Dimensions:** 20mm x 50mm
 - **Nominal Thickness:** 5mm
- **Axis Diameter:** 7.50mm



- **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
- Spring, Axis, Screws: Stainless Steel 304
- Lubrication: Powdered graphene coating
- Electrical Isolation (if required): Corona Dope

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

- **4 to 6 weeks**







