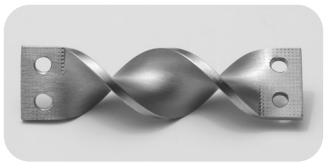
20kN IN-SITU TESTING

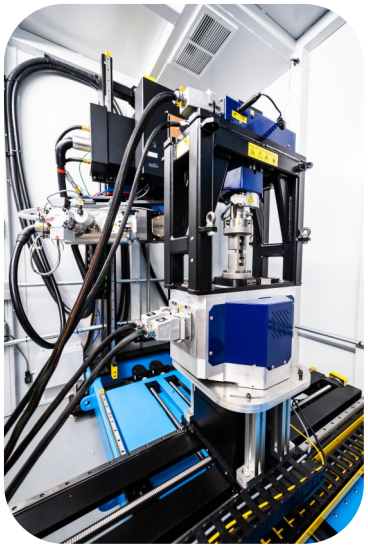
X-ray - Synchrotron - CT Imaging

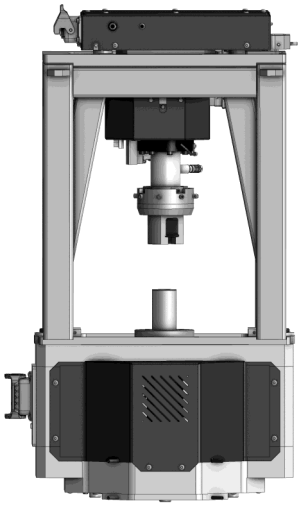
We are now able to offer an integrated tensile/compression/torsion testing solution for your µXCT and Synchrotron application. Using tensile testing with µXCT and Synchrotron provides a clear visual interpretation of how the properties of materials and composites change under different loading conditions.

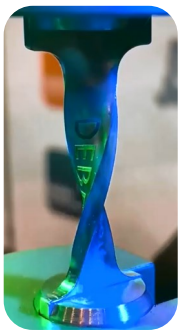
Design of this testing stage allows it to be used with larger high resolution micro CT systems and Synchrotrons with forces up to 20kN. System is controlled from custom software giving a wide range of control functions and a live display of load versus extension. Supplied with all required cabling and mounting adaptors for specific µXCT systems. Further details and pricing is available from your µXCT supplier or direct from Deben.

- **Tension 20kN**
- **Compression 20kN**
- **Torsion 100Nm**
- **Optional heating to 1,000°C**
- **Optional jaws**









Top and bottom jaws contain independent high resolution rotation mechanisms allowing synchronised sample rotation. Torque can be applied by rotating one jaw further than the opposite jaw up to 100Nm loading. Tensile or compression load can be applied at the same time as torsion and loads can be applied and held while the sample is being rotated. Sample rotation can be controlled in step or continuous mode from the associated imaging system or from the supplied control software. Many different materials may tested at loads from -20kN to +20kN, and torsion from -100Nm to +100Nm. An optional furnace may be fitted for sample heating to 1,000°C. Acquisition software is supplied for system control, real-time data display and recording of force/extension curves.

DEBEN UK LTD BRICKFIELDS BUSINESS PARK, OLD STOWMARKET ROAD, WOOLPIT, BURY ST. EDMUNDS, SUFFOLK, IP30 9QS UK
TEL +44 (0) 1359 244 870 **EMAIL** INFO@DEBEN.CO.UK **WEB** DEBEN.CO.UK
REGISTERED NUMBER 3208255 **REGISTERED OFFICE** CALVERTS BUILDINGS, 52C BOROUGH HIGH STREET, LONDON SE1 1XN

CT20kN General Specification

Modular tensile & compression & torsion testing system to be installed within a µXCT system or Synchrotron.

Tensile, compression and torsion jaws (can be customised to customer specifications)

Rigid design to allow very high accuracy testing in Room Based CT and Synchrotron

- Loadcell with maximum linear load (tension and compression): +/- 20kN
- Maximum torsion load: +/-100Nm
- Software control Win 10 64 bit

Operating modes

- Torsion testing
- Compression testing (with or without torsion)
- Tension testing (with or without torsion)

Rotation operating modes

- Continuous step rotation (for CT acquisition)
- Step resolution 0.001°
- 180°/s maximum; 20°/s recommended maximum
- Maximum rotations per test 1000

Jaw movement with load & displacement control

- Linear travel between jaws 50mm; minimum step size 100nm
- Synchronised jaw rotation speed up to 15 rpm; minimum step size 0.001°
- Removable jaws to allow for different specimens/applications
- One set of standard Deben Tensile/Compression/Torsion jaws supplied for standard dumbbell sample.
- Custom mounting adaptor included

Installation

- Stage controller and operation s/w included, 6U rack mounting kit included
- One set of 10m cables supplied
- Power requirements: 230V 50Hz 2400VA single phase
- Approx. weight 120kg; Lifting eyes on the frame to suit M10 eye bolts.
- No manual handling equipment included but will be required.