

Microtest 200N tensile stage

- Loadcells from 2N to 200N
- SEM, AFM, XRD, Optical Microscopy
- Optional Peltier heating & cooling
- Optional Petri-dish liquid immersion
- Optional three and four point bending
- Optional Piezo control

Standard 200N stage

The 200N tensile stage uses standard miniature loadcells in the range 2N to 200N. Samples are mounted horizontally, clamped to a pair of jaws and supported on stainless steel sliding bearings. A dual threaded leadscrew drives the jaws symmetrically in opposite directions, keeping the sample centered in the field of view. The 200N module is ideally suited for use with an SEM, optical microscope or AFM and will easily fit on most stages. Custom versions are available with heating/cooling, extended specimen length and stage travel.

200N stage with Peltier heating & cooling

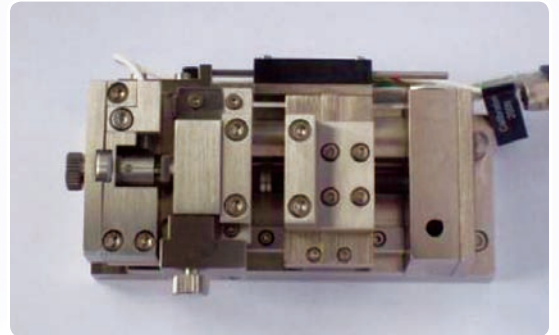
The heating and cooling version of the 200N stage has been designed to provide temperature control from -20°C to +160°C. A temperature controlled pad is located directly under the specimen and temperature is set using a small peltier element. System control and water cooling is from the Deben Coolstage control system which has a self contained water chiller and allows accurate temperature control with either keypad or PC control.

200N stage with Petri dish

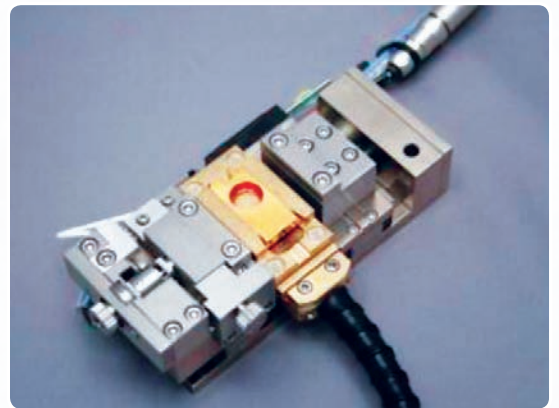
A version of the 200N stage is available to test specimens while submerged in a liquid (as shown on the right). Specimens are pre-prepared and mounted to the jaws away from the stage and then moved across on a special transfer jig. As an option a peltier temperature controller can be fitted to set the liquid temperature between 10°C and 50°C. Observation of the specimen would normally be by optical microscope fitted with a submersible lens.

200N MEMS stage with Piezo control

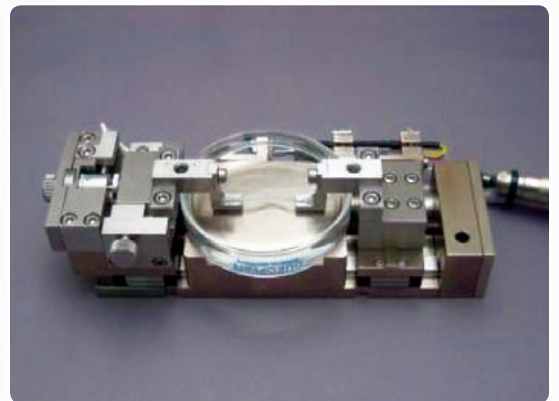
The piezo version of the 200N stage has an additional piezo motor fitted which allows very fine movement with step sizes as small as a few nm. Designed primarily for manipulating miniature MEMS devices in the SEM this stage can be used for various applications and can be customised for specific specimens.



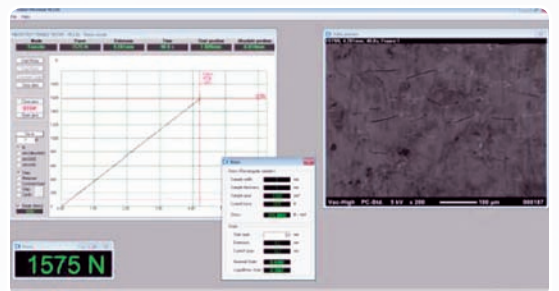
Standard 200N tensile stage



200N stage with Peltier heating & cooling platform



200N stage with Petri-dish



Software description

Microtest software has been developed to control the Deben range of Microtest tensile stages, it is not currently available to control other manufacturers testing equipment.

The software is graphical in nature and allows easy control of all necessary parameters. The large plot window gives a real-time display of force against extension or time, sample time can be set between 100mS and 5 seconds per sample. The software runs under Windows™ XP/7.0/8.0 communication between the module and PC is via USB.

As an option we offer integrated video capture which allows simultaneous video and data capture with the data (force & extension) stamped on the images. Video is saved as an AVI and can be compressed using any codec installed on the computer. When recalling the plot window the data plot tracks the video so you can see exactly what the sample looked like at any time during the test.

Software specifications

- MICROTEST Windows™ software is the same for all modules and provides comprehensive control functions
- Current Software version is 32Bit for Windows™ XP and 32/64bit for Windows™ 7.0/8.0
- Minimum computer specification: dual core Pentium with 2Gb RAM, Windows™ XP 32bit Professional or Windows™ 7.0/8.0 32/64bit Professional or Ultimate versions, one free USB2 port and display resolution of at least 1024 x 768 at 256 colours
- Real-time display of force, extension and time, live graphical display of stress/strain curve
- Cursors for accurate measurement of force, extension and time directly from curve
- Save data to file in comma separated variable format
- Save sample details with data
- Maximum horizontal sample points 256,000, sample times, 100mS, 200mS, 500mS, 1S, 5S.
- Graphical indication on plot to show where motor was started, paused or stopped
- Automatic scaling of horizontal and vertical axes
- Threshold for stopping test at pre-defined load or extension
- Cyclic testing, constant load testing
- Scale horizontal axis in mm, time or sample points
- Setup menus for selecting motor speed and sample-time
- Optional image acquisition for sequential image capture

Stage specifications

- 200N tensile stage in optional configurations to accept heating/cooling, liquid baths or Piezo actuators
- Dimensions: 110mm x 58mm x 33mm (LxBxH approximate) (standard stage)
- Distance between jaws 10-20mm or 25-35mm (standard stage) (travel 10mm), optional 20mm travel
- Tensile and compression testing stage
- Exchangeable loadcell, accuracy readout +/-1%
- Dynamic resolution 0.1%, static resolution 0.05% of full scale range,
- Standard speed range using 1119:1 gearbox: 0.1mm/min to 1.5mm/min
- Linear scale for accurate position readout, resolution 300nm, linearity 0.1% of full travel
- Microtest software USB2 control of module with comprehensive control software

Options:

3&4 point bending, Petri-dish liquid baths, Peltier heating & cooling, compression cage clamps, fibre clamps

Deben UK Ltd.

Brickfields Business Park,
Woolpit, Bury St. Edmunds,
Suffolk, IP30 9QS UK.

t: +44 (0)1359 244870

f: +44 (0)1359 244 879

e: web@deben.co.uk

w: www.deben.co.uk

Available from: