

Dual Leadscrew 2KN/5KN tensile testing stage for XRD, Optical Microscopy & Synchrotron

- Maximum load 5KN
- XRD, Optical Microscopy & Synchrotron
- High take off angle
- Optional heating & cooling
- Optional liquid chambers
- Optional three and four point bending

The dual leadscrew stage has been designed to allow both transmitted and reflected illumination and can be fitted to an optical microscope, XRD system or Synchrotron beam line.

Supplied with feet the stage can stand vertically like a conventional tensile tester. With the feet removed adaptor plates can be fitted to allow mounting to a rotary table or to allow it sit flat on a bench or optical microscope stage.

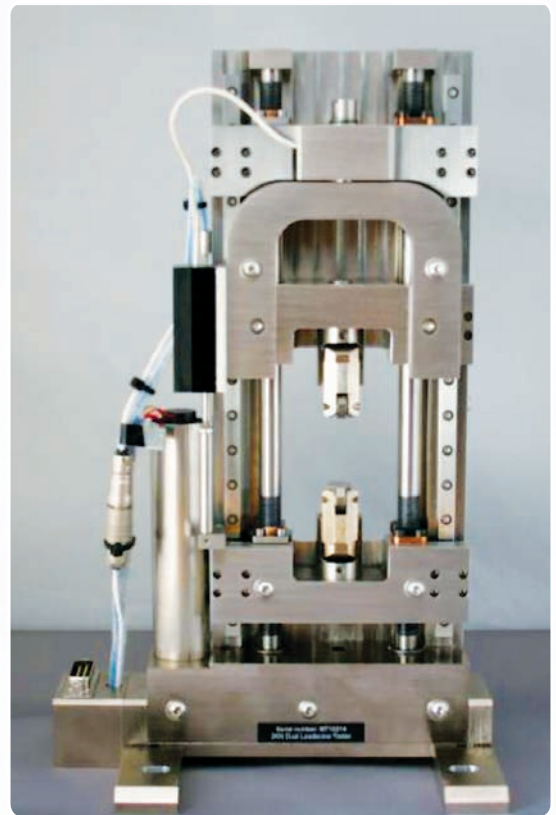
Versions with maximum loading to 2KN or 5KN are available, with optional user exchangeable loadcells of 200N, 500N, 3KN or 1KN.

Sample clamps are removable allowing easy customisation and the fitting of special clamps for different samples. We can supply fibre clamps, three and four point bending clamps and clamps to hold specifically shaped specimens.

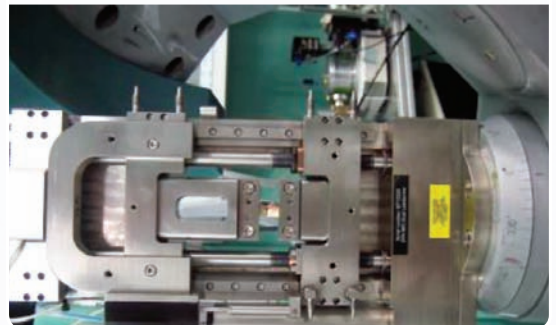
Systems can be supplied with chambers for in-situ gas and liquid experiments as well as temperature controllers and either heated or heated and cooled specimen clamps with a variable temperature range of -150°C to 550°C.

Jaw extension is measured using a capacitive extensometer with 300nm resolution, motor speed is regulated with optical rotary encoders fitted to the motor and force is monitored using an industry standard temperature compensated strain-gauge loadcell. Strain rates from 5µm per minute to 4mm per minute by selecting the appropriate exchangeable gearbox.

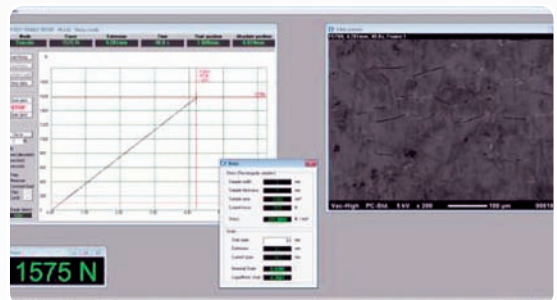
Control of the system is from the comprehensive Microtest tensile stage software running under Windows™ XP/7.0/8.0 through a USB2 interface to provide a graphical display of force against extension or time and an extensive array of additional control functions.



5KN dual leadscrew tensile stage



Mounted to XRD stage



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:

- 2KN or 5KN maximum load, dual leadscrew horizontal or vertically mounted tensile and compression testing stage
- Precision slides with symmetrical stainless steel leadscrews
- Flat, serrated clamps with dual dowel pins
- Exchangeable loadcell: accuracy +/-1% of full scale range (200N, 1KN, 2KN, 3KN, 5KN options)
- Load reading resolution 1000/1 (dynamic), 2000/1 (static)
- Standard speed range 33µm/min to 0.4mm/min (2KN), 20µm/min to 1.5mm/min (5KN) (slower & faster speeds available with optional gearboxes)
- Maximum travel (stroke) 20mm
- Extensometer with 300nm resolution
- Maximum sample size 50mm x 15mm x 10mm (L, B, H)
- Approximate dimensions 300mm x 140mm x 46mm
- Operating voltage 115/230V

Options:

3&4 point bending, liquid baths, gas chambers, fibre clamps, custom clamps, heating & cooling

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