

TEM Products

Spark Erosion Unit Mk3

A unit specifically designed for laboratory use, it operates on a work bench or desk top from a conventional 13amp power supply. All metallic samples may be drilled, trepanned, wire sliced or slotted. The Mk 3 includes **many new features** regarding sample adjustment, power, access and safety. The Spark Erosion Machine has X-Y micrometer positioning for the electrodes and servo control of the machining process. It is supplied as a "ready to use" system comprising water deioniser, dielectric pump, small sample mounting system, collet for 3mm tubular electrodes, pin chuck for small diameter rod, a set of 'G' clamps and a tubular electrode for trepanning 3mm discs. Accessories for wire cutting, thin sheet and foils and a microspark generator.

Further information on request

M534 Spark erosion unit Mk 2, 230v 50Hz

Dimple Grinder

The Gatan model 656 will reduce with minimal damage the central region of a typical 100µm thick 3mm Ø specimen blank to <3µm in times ranging from 20 mins for silicon to 100 mins for sapphire. This is sufficiently thin for examination in intermediate voltage TEMs. The system enables accurate dimpling to be performed without prior knowledge of the specimen thickness and resulting in an exceptionally smooth surface. This reduces the possibility of surface irregularities developing in the brief final thinning operation and increases the yield of electron transparent material.

GXXX Dimple grinder 230v 50 Hz

High Speed Slitting Saw

A low cost, compact saw capable of being used in a radioactive cell environment and can eliminate the laborious and time consuming cutting processes involving the use of hand tools. The unit can section small rod (2.3 - 3.0mm) to produce disc samples and can handle rod or tubing up to 15mm diameter. The standard unit is supplied with inexpensive carborundum slitting wheels that are suitable for a wide range of materials but high speed slitting wheels are available in a range of diameters and types for special applications.

The saw is powered by a mains driven motor of conventional type giving long life and durability with a thyristor speed control unit allowing speeds between 1000 and 3000 rpm.

M521 High speed slitting saw 230v 50Hz

M521/W Replacement carborundum blades

Diamond Slitting Saw

A versatile self-contained unit designed for cutting a wide range of materials with minimum deformation. The as-cut surface is smooth and requires little additional preparation for microscopic examination. The saw operates at low speed using a precision diamond wafering blade with 'immersion' lubrication. For safety, all low voltage circuitry is employed for switching and motor speed control which is continuously variable. The saw is supplied complete with clamp, arbor, diamond blade and weights.

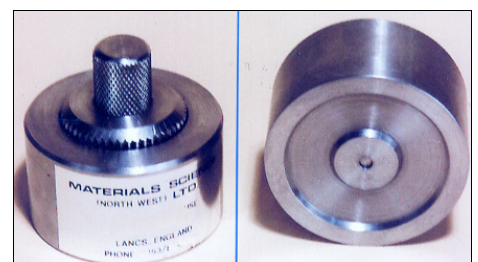
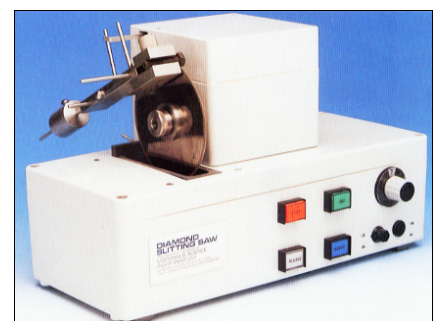
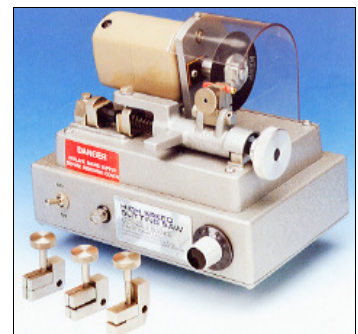
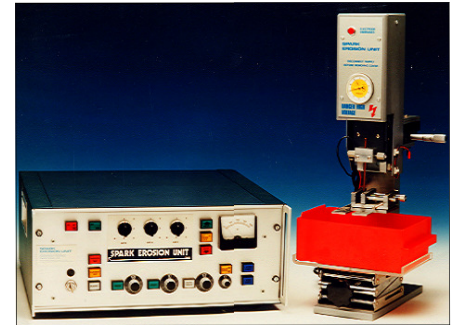
M528 Diamond slitting saw 230v 50Hz

M528/W Replacement diamond blade

Graduated Grinding Jig

An easily used adjustable jig for accurate pre-grinding of TEM specimen discs to a predetermined thickness. Thinning time may be considerably reduced by initial grinding down of thick specimens to the order of 0.005"-0.010" (0.125-0.25mm). A graduated grinding jig can thus save valuable time and produce more accurate results. The Graduated Grinding Jig is made of stainless steel and has click stop graduations of 0.001" on the advance screw. Thus the thickness of a specimen can be reduced in calibrated steps of 0.001in (0.025mm).

M506 Graduated grinding jig for 3mm specimens



Metalthin Mk 3

A twin jet electropolishing unit for producing high quality thin foils. It is robust, compact easy, safe and economical to use.

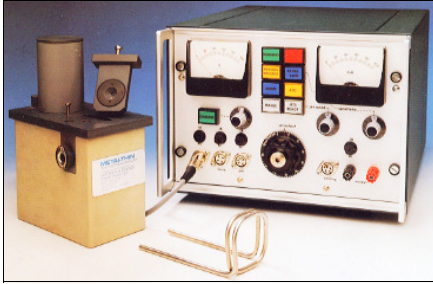
The Mk 3 version incorporates the accumulated experience of many years of use in Nuclear, University and Industrial Research Centres.

It comprises three separate modules:

- Thinning cell
- Unipump/Dewar
- Power supply unit

The minimum volume of electrolyte required to fill the jetting chamber and sustain twin jetting is 100ml but normal operation requires 200ml. There is an internal stainless steel cooling coil with an increased surface area for more efficient cooling. Typically perforation takes between one and five minutes before perforation is detected when the alarm (if set) and a change in state of the indicator lights. Thinning current is automatically interrupted and jetting stopped so that the operator may remove the sample for washing.

M501 Metalthin Mk 3 230V 50Hz

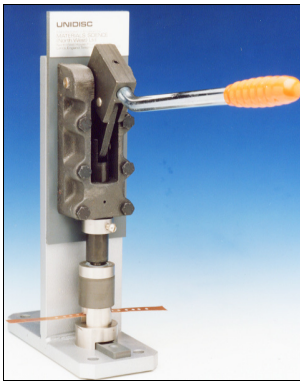


Unidisc Mk 2 - precision specimen disc cutter

A precision specimen disc press, simple to operate and produces flat disc TEM specimens from metallic strip samples with negligible deformation. Disc can be made from hard or soft metals. A microhardness survey of a 0.2mm (0.008") thick annealed copper disc showed no statistically significant variation in hardness between the centre and the region adjacent to the edge of the disc.

The punch pierces the tightly held sheet and ejects the resulting disc into the collection tray. Discs can be made from strip up to 12mm (0.47") wide and 0.1-1.0mm (0.004-0.04") thick.

M508 Unidisc for 3mm diameter samples



Precision Shear

Laboratory hand operated sheet metal shear suitable for bench mounting. Produces accurate strips for production of discs with the Unidisc but can equally be used to cut small sections from rubber, plastics, fibreglass etc.

Dimensions:

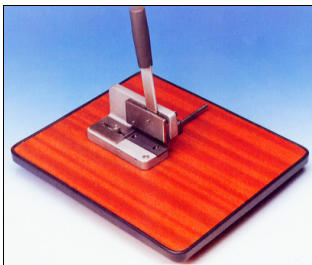
Overall size 15cm x 15cm x 28cm high (6" x 6" x 11")

Weight 3.2Kg (7lb)

Maximum cut 6cm (2 1/4")

Cutting capacity 1mm (0.040") mild steel

M514 Precision shear



Precision Disc Grinder

Mechanically thins TEM samples prior to ion beam milling of electro-polishing. It produces *parallel* sided discs down to 50µm, displays specimen thickness in microns or thousands of an inch and accepts specimens up to 9mm diameter.

G104 Precision disc grinder



Ultrasonic Disc Cutter

Produces perfect sample discs from brittle samples such as ceramic and semiconductor materials. The Ultrasonic Disc Cutter cuts from wafers as thin as 50µm yet is powerful enough to cut 5mm long cylinders from bulk samples in a few minutes.

Features:

- produces perfect TEM discs from brittle materials
- cuts cylinders up to 5mm long from bulk samples
- cuts small holes, slots, depressions and other special shapes
- X-Y microscopes available for accurate specimen positioning
- compact bench top design

U050 Ultrasonic disc cutter

U050/M Microscope position table

