Ultrasonic Cutter
Model 601

The Ultrasonic Cutter quickly cuts simple holes, unique shapes or TEM discs from hard or brittle materials ranging from <1mm to 10mm in size and from <40μm to 5mm in thickness.

Cutting Process
The proven and most effective method employed for rapid cutting of brittle materials is mechanically coupling a piezo crystal to a shaped tubular cutting tool. A variable frequency driver delivers the ultimate in cutting performance regardless of cutting tool size or shape.

The manually tuned frequency driver optimizes cutting speed while minimizing mechanical and thermally induced damage. Tuning offers efficiency, reliability and flexibility.

A spring-loaded platform applies a constant force to advance the table upward parallel to the cutting tool. The sample table is magnetically held in position preventing lateral movement relative to the cutting tool, reducing edge chipping and sample damage.

Stereo Microscope
The included stereo microscope and X-Y positioning table enables precise centering of a site specific area.

Material and Applications
Quickly cut simple holes, unique shapes or TEM discs from hard, brittle materials such as semiconductors, ceramics and geological materials. Materials ranging in thickness from <40μm to 5mm are quickly and easily cut using a piezo-electric crystal driving a tubular cutting tool in a fine grain, boron carbide slurry.

A broad selection of round or rectangular cutting tools is available for standard TEM applications as well as those applications requiring special shapes or forms.

The Specimen Mounting Hot Plate is recommended as a safe and reliable means of applying the low melting point wax required to securely attach specimen materials being cut.

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>Manually tuned frequency driver to optimize cutting speed</td>
<td>Minimize mechanical and thermal damage.</td>
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<tr>
<td>Spring-loaded platform applies constant force couples with magnetically held table to prevent lateral movement</td>
<td>Reducing edge chipping and sample damage.</td>
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<tr>
<td>Integrated stereo microscope and X-Y table</td>
<td>Enables precise centering of a site specific area.</td>
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<tr>
<td>Broad selection of shapes and size cutting tools</td>
<td>Flexibility</td>
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</tbody>
</table>
**601 Ultrasonic Cutter**

### Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Dimensions</td>
<td>Tool: 39cm H x 11.5cm W x 22.6cm D</td>
</tr>
<tr>
<td></td>
<td>Box: 66cm x 33cm x 30.5cm</td>
</tr>
<tr>
<td></td>
<td>Clearances: ~30cm all sides</td>
</tr>
<tr>
<td>Weight</td>
<td>14 pounds</td>
</tr>
<tr>
<td>Shipping weight</td>
<td>30 pounds</td>
</tr>
<tr>
<td>Power requirements</td>
<td>100-240VAC, 0.8amp</td>
</tr>
<tr>
<td>Stereo microscope</td>
<td>60x</td>
</tr>
<tr>
<td>Warranty</td>
<td>1 year</td>
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</tbody>
</table>

### Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>601</td>
<td>Ultrasonic Cutter. Basic configuration includes:</td>
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<tr>
<td></td>
<td>• Stereo Microscope with viewing lamp and X-Y positioning table</td>
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<tr>
<td></td>
<td>• Slurry retaining ring</td>
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<tr>
<td></td>
<td>• 3mm cutting tool</td>
</tr>
<tr>
<td></td>
<td>• 8ml of (320) cutting grit</td>
</tr>
<tr>
<td></td>
<td>• Wax rods (x5)</td>
</tr>
<tr>
<td>601.07000</td>
<td>TEM Cross Sectioning Kit</td>
</tr>
<tr>
<td>623.40001</td>
<td>Specimen mounting hot plate (120V)</td>
</tr>
<tr>
<td>623.40002</td>
<td>Specimen mounting hot plate (240V)</td>
</tr>
<tr>
<td>601.03031</td>
<td>Circular cutting tool 3.0mm disc diameter</td>
</tr>
<tr>
<td>601.03033</td>
<td>Circular cutting tool 2.3mm disc diameter</td>
</tr>
<tr>
<td>601.07010</td>
<td>Rectangular cutting tool 4.0 mm x 5 mm</td>
</tr>
<tr>
<td>601.07150</td>
<td>Rectangular cutting tool 2.0mm x 3.0mm</td>
</tr>
</tbody>
</table>

Please consult with your sales representative for details and ordering information regarding spares and consumables.

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Note: Specifications are subject to change.

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Please contact Gatan for information on our complete line of TEM specimen preparation instruments, including:

- **Precision Ion Polishing System (PIPS™)**: A user-friendly precision ion polisher designed to produce high quality, TEM specimens with minimal effort.
- **Low Energy Option**: PIPS™ upgrade kit allowing operation at low energy, down to 100eV.
- **Centar Frontier**: The Centar Frontier is an all-inclusive polishing system, complete with an automated, computer controlled, in-situ microscope and patented image processing system (SEM/ TEM/STEM/SIMS/SCM/PEM).
- **MetEtch**: Quality samples are produced in a controlled environment with reproducible results. The Met-Etch tool offers a non-selective, universal etching technique for structures made of dissimilar materials and composites.
- **Disc Punch**: Rapidly cut TEM discs from ductile and soft materials, while maintaining specimen quality. The high-resolution ion beam based sputter coating system produces thin, amorphous, and oxide-free coatings in a controlled environment for analysis in a field-emission SEM or TEM.
- **Disc Grinder**: A user-friendly precision ion polisher designed to produce high quality, TEM specimens with minimal effort.
- **Dimple Grinder**: Produces an exceptionally smooth thin area only a few microns in thickness, while minimizing distortion. Precision positioning and accurate electronic thickness control provide a wide thin area every time.
- **Ultrasonic Cutter**: Quickly cut simple holes, unique shapes or TEM discs from hard or brittle material ranging in size from <1mm to 10mm and in thickness from <40μm to 5mm.

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Gatan Inc. Corporate Office/ Western USA Sales
5794 W. Las Positas Blvd. Pleasanton, CA 94588 USA
tel +1.925.463.0200 fax +1.925.463.0204
info@gatan.com

Gatan UK
25 Nuffield Way Abingdon Oxon OX14 1RL United Kingdom
tel +44.0.1235.540160 fax +44.0.1235.540169
ukinfo@gatan.com

Gatan GmbH
Ingolstädterstr. 12 D-80807 München Germany
tel +49 89 358084-0 fax +49 89 358084-77
mfelsmann@gatan.com

Gatan France
3bis, Chemin du Haut Breuil 78113 Grandchamp France
tel +33.1.34944407 GSM +33.6.80135139
fax +33.1.34871668
monville@gatan.com

Gatan Singapore
10 Eunos Rd. 8 #12-06 Singapore 408600
tel +65.6408.6230 fax. +65.6293.3307
wchuang@gatan.com

Gatan Singapore
3F Sakurai bldg. 2-8-19
Fukagawa, Koto-ku Tokyo 125-0033 Japan
tel +81.3.5639.2772 fax: +81.3.5639.2763
rabara@gatan.com

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