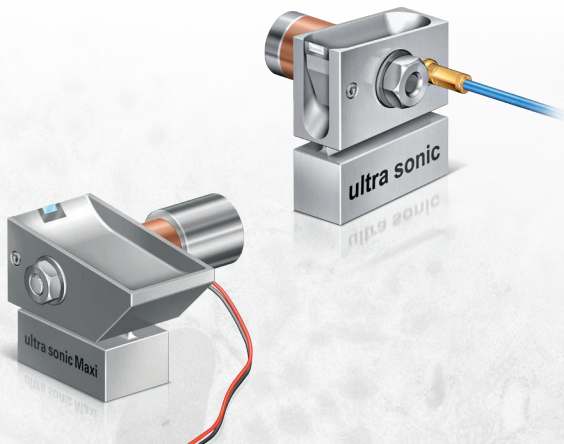


DiATOME

Diatome sonic Handling



DiATOME Ltd

Helmstrasse 1

CH-2560 Nidau, Switzerland

Phone +41 (0)32 332 91 13

diatome@diatome.ch

www.diatome.ch

Diatome sonic Handling

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Introduction

Dear customer,

our objective to produce sections without compression, has been achieved with the development of the ultra sonic diamond knife. The oscillating cutting process allows optimal structure preservation of the sample.

On the following pages you can find applications suitable for use with the ultra sonic knife.

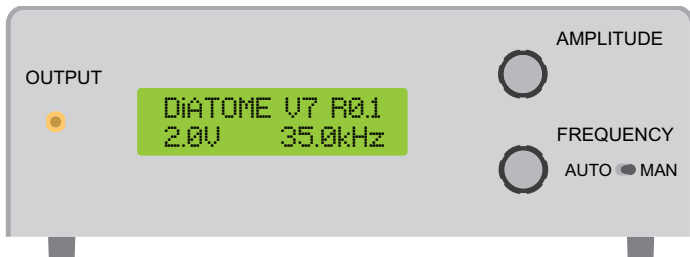
The general handling of diamond knives is described in our «Handling and Use» manual.

Do not hesitate to contact us should you need any assistance in the practical application of this knife.

Sincerely,
The Diatome Team

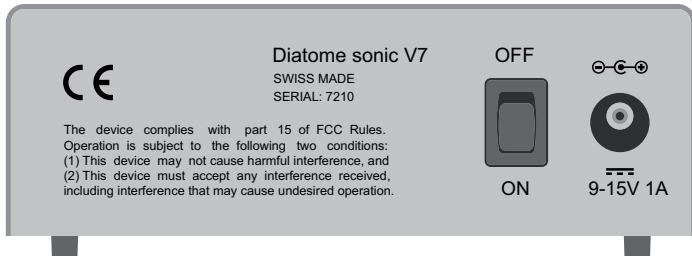
Control Unit

Frontside:



OUTPUT:	Connection with the knife (blue cable)
AMPLITUDE:	0–25.5 V
FREQUENCY:	Toggle switch MAN: Manual setting of frequency, range 15–35kHz Toggle switch AUTO: Automatic setting of the resonance frequency.

Backside:



ON/OFF Switch

Connection for the power supply adapter.

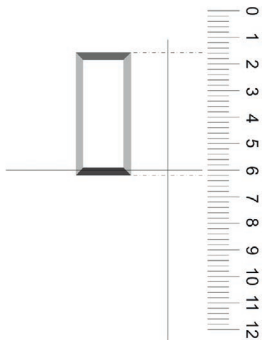
Handling

Sample preparation

- Trim the sample with a trim 45 or a trim 20 diamond blade. The sample width should be a maximum of 0.5 mm.

Measuring the sample height

With the use of an eyepiec graticule in one of the stereomicroscope oculars (graticule 10450336 for the Leica M80). Sample block (fixed in the sample holder), is mounted in the trimming plate. Measure the height with the graticule



Ultramicrotome Settings

- Set the clearance angle to 6° as shown on the guarantee card.
- Set the desired section thickness.
- Set the sectioning speed (0.4–0.6 mm/sec)
- Tighten all set screws.

Installing the knife

- Mount the knife in the knifestage of the ultramicrotome and tighten the set screw.
- Connect the control unit to the power supply.
- Connect the control unit OUTPUT and the knife with the blue cable.
- Switch on the control unit (switch ON the back side).
- Set the resonance frequency (Toggle switch on AUTO). After a few seconds the display will show «Peak locked».
- Adjust the amplitude to approx. 2V.

- Approach the sample with the knife (settings as shown in our diamond knife handling manual).
- Start sectioning as usual.

Measuring the section length

- Measure the section length with the graticule and compare it with the sample height.
- If sections are too short, increase the the amplitude (turn the button clockwise).
- If sections are too long, decrease the amplitude (turn the button counterclockwise).
- Too high an amplitude may lead to drifting of the sections.

Drifting of the sections

When working in resonance, the sections may drift slightly to the right or to the left. If this is the case, the following procedure helps: Switching from AUTO to MAN. Now increase or decrease the the frequency a few hundred Hertz, until the sections float straight on the water surface.

If sections drift to the right: decrease the frequency. If sections drift to the left: increase the frequency.

Specifications

Knife:	ultra sonic, ultra sonic Maxi
Knife angle:	35°
Cutting range:	20–100 nm
Cutting edge length:	3.0 mm
Order number:	DUS3530 (for ultra sonic) DUSM3530 (for ultra sonic Maxi)
Control unit	
Frequency range:	15–35kHz, or automatic setting of the resonance frequency
Amplitude:	variable (voltage 0–25.5V)
Mains voltage:	230 V, 110 V

