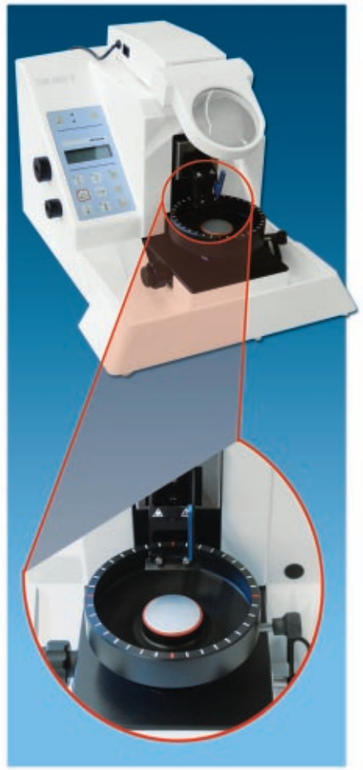
Technical data/accessories



Technical data HM 650 V

- Micrometer mechanism and vibration system of the blade in an enclosed, ergonomically designed housing.
- Vertical and horizontal guidance of the vibration system on backlash and maintainance-free cross roller bearings.
- Solidly integrated operating panel with indication for: frequency, amplitude, mode of operation, fine and trim section thicknesses, cutting speed, section sum, section counter, and remaining travel to the front end position.
- The selected section thickness (trim and fine section thicknesses), frequency, amplitude, cutting speed, retraction value, resolution of fine and trim section thicknesses are stored as operational settings and can be called again.
- Frequency of the blade vibration can be adjusted from 30 – 100 Hz.
- Amplitude can be adjusted linear from 0,1 – 1,2 mm in 0,1 µm-increments.
- Fine and trim section thickness from 0 – 1500 µm.
- Cutting stroke 45 mm.
- Total vertical range 25 mm depending on chucks and orientation.
- Vertical approach speed, towards the specimen, can be selected in three different speed settings.
- Vertical distortion of the blade from 1 - 5 µm for each combination of frequency and amplitude.
- 3 modes of operation: semi manual, single and continuous stroke.
- Clearance angle adjustment with angle scaling.
- Removable buffer tray with cooling blocks for cooling the buffer solution.
- Specimen retraction during return travel can be selected from 0 up to 1000 µm.
- Electro-mechanical feed movement.
- Motorized cutting movement from 0 – 5 mm/s continuously.
- Cutting zone adjustable from 1 – 45 mm.
- Memory function for rapid approach of the blade towards the first cutting position.
- Home function of the blade for changing the specimen.
- Electronically controlled motor drive for the cutting movement.
- Specimen orientation 8° universally.
- Buffer tray with chuck that can be rotated 360°.
- Fitting for all standard blades.
- Spacious tray for tools with integrated arm rest can be removed.
- Large field magnifier and cold light source (optional).
- Wide: 380 mm
- Deep: 520 mm
- High: 280 mm
  Weight: 38,0 kg

Knife carrier

Different blades and knives can be inserted by changing one part of the blade carrier only, e.g. sapphire knife, injector blades or razor blades.

Buffer trays and chucks

The orienting buffer tray is available as two different versions.Standard buffer tray VN for chucks B (small specimens), F (flat) and K (concave). The buffer tray PE is made of polyethylen for special applications. The optimal temperature of the buffer solution is kept constant via a cooling element.

Large field magnifier and illumination

The illuminated large field magnifier has a magnification of 2,5x. It can be adjusted to the specimen in an optimal way and can be swivelled to the side. Furthermore, it can be combined with a cold light source including dual fiber light.

Special specimen clamping

Most different materials can be clamped in the chuck IA by using screws. Different tissue from botany as well as industrial material can be sectioned this way.

Vibration Microtome HM 650 V

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Rev. 07 03

Smooth operation
Excellent results

MICROM HM 650 V – The innovation for sectioning fresh tissue

MICROM International GmbH has designed this innovative bench unit with vibrating blade for sectioning fresh tissue, such as spinal cord and brain, as well as for sectioning fixed tissue.

In the scientific disciplines of the electrophysiology, neurophysiology, neuropathology and related sciences, excellent sectioning results are achieved with the HM 650 V by means of the harmoniously vibrating blade.
Due to this gentle sectioning, the HM 650 V sets new standards in this discipline.

In the botanic histology and in the industrial material research, this concept allows completely new analysis possibilities.

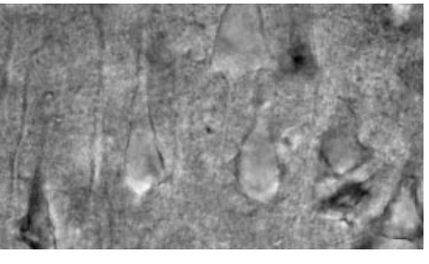
Patented vibrating system

Its patented vibrating system, which is completely resistant to wear, reduces artefacts by minimizing the friction on the cells due to the vibrating blade.

The distortion of the vibrating blade in z-axis is stabilized via a harmonious vibration.

Ideal frequency/amplitude-combinations

The values of the amplitude and frequency are set independently of each other and can thus be adapted optimally to the specimen, as all possible frequency/amplitude-combinations can immediately be used while sectioning and are controlled by a digital Piezo sensor.
Easy selection of the desired frequency, amplitude and section thicknesses via turning knob and indication of the values on the display.



Easy operation

The arrangement of the operating elements allows for an efficient, fast working with the HM 650 V.
Two section thicknesses depending on your requirements can be programmed between 1 and 1500 µm.Reproducibility of the section thicknesses is always guaranteed via a precision stepping motor.
To facilitate the changing of the buffer tray, the chucks and the cooling element, the blade carrier is automatically moved into its "home" position.
The automatic approach of the blade towards the specimen is facilitated via a programmable memory function.

Fast sections

Together with the adjustable cutting window, even for the smallest specimens, the fast return travel (5 mm/sec) is designed to achieve a high sectioning sequence within a minimum of time.

The maximum, horizontal cutting window with 50 mm is sufficient enough, even for large specimens.

The cutting window can be programmed freely and thus adjusted to the current specimen size in a fast way.

The cutting speed can continuously be selected between 0 – 50 mm/sec. in 0,1 mm/sec.-increments.

Efficient cooling

The cooling of the buffer solution and the specimen is guaranteed via special cooling elements.

*Accessories not included.

The cooling element has an insertion for a thermometer. This way, the temperature of the buffer solution can easily be controlled.

Optimized specimen orientation

The buffer tray including chuck can freely be rotated by 330°.
In addition, the chucks can be rotated by 360° within the buffer tray VN.

The buffer tray including chuck can be oriented in x/y-axis by 8° in each direction.

The buffer tray is fastened via an eccentric clamping. This way, the buffer tray can be changed rapidly and the specimen can be oriented over the buffer tray without touching the buffer solution or the chuck.

Operator defined settings

Up to 10 stored, operator defined working settings can be called up individually and used again for sectioning.

Each operator has the possibility to store his individual basic settings and use them.

Of course, the 10 storage locations can be used to store the sectioning settings for different tissues or specimens.

One working setting includes the desired frequency, amplitude, two section thicknesses and the retraction as well as further basic settings. The tested working setting can be stored as a whole.

In submenus the graduation of the section thickness setting can be selected. The graduation can be selected individually between 1 and 1500 µm.

To protect the specimen during the return ravel, a retraction can be selected from 0 to 1000 µm.

Three different speed settings are available for the vertical approach of the blade towards the specimen, depending on the various needs.

Info on the display

The number of section, the sum of sections, the remaining vertical sectioning travel and the cutting mode (continuous sectioning, single cut or semimanual sectioning) can be shown on the display.

Moreover, the two adjustable section thicknesses, the current frequency, the current amplitude and the cutting speed are shown on the display.

Software:

Four different languages are available for the software: German, English, French and Spanish.