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Aries Rotary Automatic Microtome

Data Sheet



Version 1.1

Histo-Line Laboratories s.r.l.

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Manufacturer: Histo-Line Laboratories s.r.l

In vitro diagnostic -medical device

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1.Features



1.1 Information and specified use

The Aries microtome is an automatic rotary microtome particularly suitable for cutting kerosene sections, for normal use in histology, but also for finer cuts used in research. The microtome if necessary can also be used in manual and/or semiautomatic modes.

The microtome is covered with a special solvent-resistant plastic body with no edges, thus minimizing the risk of danger to operators. It can be used for fully automatic or manual sectioning.

Digitization of information: Gemini is equipped with a 5-inch touch screen that simplifies operation for the operator, changing all parameters with a touch. It has an elegant and simple operating interface that is easy to learn and understand.

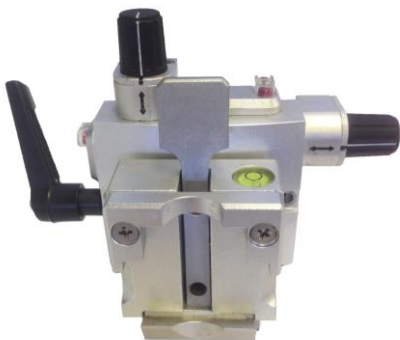
1.2 Safety and operator comfort

The flywheel is equipped with ergonomic handle for ease of cutting.

The upper space of the microtome is equipped **with a large area of work surface**, covered with a sheath slide that allows the operator to support the accessories needed for cutting (the package of disposable blades, the brush collect slice, etc.)

The flywheel, which has low friction for good cutting comfort, is equipped with an easily operable dual rotation flywheel lock system through which the sample arm can be stopped in any position. LIBRA is equipped with **two mechanical safety stops**:

- placed on the insertion cutting flywheel.
- the other placed under the toggle flywheel.



The steel clamp is equipped with a device to "clamp" for quick change of the sample and sample holder fixed tilt.

The clamp is suitable for all types of **standard biocassettes**, and is interchangeable by the operator with the clamp to the biocassettes ring (optional).

The clamp allows easy and precise orientation of specimens with the help of two red **"indicator lights,"** which if clearly visible indicate that the orientation plane is in the absolute zero position.

On the right side of the clamp is a "bubble" for precise orientation on the three axes of the sample.



Replacing the standard specimen holder clamp is possible through an Allen wrench (included) to use the clamp for super mega cassettes, with a convenient quick coupling.

1.3 Reliability and precision of the cut



The "**dual profile**" blade holder, suitable for **any type of low- or high-profile disposable blades**, is equipped with the swing-action finger guard. Through the spring-loaded pin, it is possible to extract or insert the blade **without touching it**.

The blade holder **has three-position** (left, right, center) side-shifting capability to use the entire blade wire without removing the blade. This clearance range corresponds to the length of a standard biocassette so that the entire blade of the microtome can be used without loosening its lock.

The **internal microprocessor** electronically controls the stepper motor so that the cutting and roughing thickness are extremely accurate.

Automatic sample feed is under high-precision electronic control. Through the knobs on the **external control panel**, the thickness and the two speeds of fast and slow feed can be set.

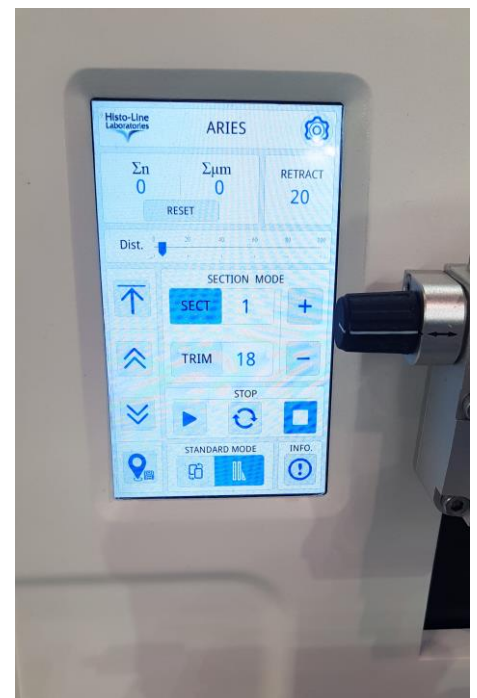
The microtome has the completely **silent sample retraction system suitable** for preserving the life of the blade and the sample, the latter during the return movement is moved to the upper initial position away from the blade. Automatic sample retraction can be excluded by the operator.

Quick and silent return of the sample to the starting position in the roughing (Trimming) stage.

High-precision cutting is suitable for any type of section included in kerosene, resin, routine and laboratory research tasks between 0.5 μm and 100 μm by **stepper motors** and backlash-free, low-maintenance roller bearings.

The Aries microtome has the ability to adjust cutting and roughing thicknesses through the display located on the right side of the microtome or on the external control panel.

The microtome is also designed for extremely fine cutting runs in increments of 0.25 μm to 1 μm .



Four cutting modes can be set: automatic, manual, continuous, single section.

The Aries microtome has a **Touch Screen control display** integrated into the instrument for clear display of information. With this system, it is possible to manage all the functions of the microtome using only the display, which placed on the left side of the operator, gives the indication of the most important working parameters, including:

- cutting thickness
- roughing thickness
- switching of "cutting/roughing" operating modes
- partial and total section counting
- single cut mode
- continuous cutting mode

Both control panels are easy to operate even when wearing protective gloves and can be easily cleaned.

The structure of the microtome is extremely stable, and it is equipped with a powerful motor even for performing particularly hard cuts.

Possibility of using either regrindable blades (by changing the blade holder, an optional accessory) or any type of disposable blades available on the market.

Equipped with an **antistatic tray** for collecting waste sections surrounding the front working area, including the part below the blade holder, which is large, ergonomic for the operator and removable from the tool for easy cleaning.

It is held by two magnets placed in front of the base of the microtome



1.4 Speed and operator safety

The Aries and Gemini microtomes allow samples to be stored in their sectioning/roughing position and recalled when needed by a sample storage and recognition system. This innovative system can increase operator productivity by automating and therefore reducing the time required to approach each sample to the blade.

To allow rapid exchange of samples (blocks), the instrument is equipped with a "**Memory**" function in which rapid return to the reference cutting position is allowed.

The Memory position allows a custom return position of the holder to be set simply by pressing the button, to rough out samples faster.

The operator can set **two programmable memory positions** by simultaneously pressing two keys located on the display, this allows fast sample repositioning.

To increase safety in the laboratory, the ARIES microtome is equipped with an automatic **electronic brake** that

minimizes the risk of possible injuries and cuts during operation. This feature automatically holds the specimen in the upper position when the motorized sectioning is finished, thus preventing the handwheel from accidentally rotating after finishing sectioning.

Provided **foot pedal connected** with the microtome, **wirelessly**, for starting and stopping cutting



2. Technical specifications

2.1 Electrical connections

Certification: CE, IVD
Power supply: 220/230V~ 50/60Hz
Maximum power consumption: 100W
Fuses: F1A 250V
Safety Class: I

2.2 Section thickness and feed rate

For the "**Cut**" setting, the adjustment range is 0.25-100 µm.

The settable values and cutting increments are:

- - 0.25 to 2.5 µm in increments of 0.25 µm
- - 2.5 to 5 µm with increments of 0.5 µm
- - 5.0 to 10 µm with increments of 1.0 µm
- - 10 to 30 µm in increments of 2.0 µm
- - 30 to 60 µm in increments of 5.0 µm
- - 60 to 100 µm in increments of 10.0 µm

For the "**Trimming**" setting, the adjustment range is 1-600 µm.

The values that can be set and the roughing increments are:

- - 1.0 to 10 µm in increments of 1.0 µm
- - 10 to 20 µm with increments of 2.0 µm
- - 20 to 50 µm in increments of 5.0 µm
- - 50 to 150 µm in increments of 10.0 µm
- - 150 to 600 µm in increments of 50.0 µm

Retraction specifications:

- - In manual mode: 5 to 100 µm in increments of 5 µm
- - In automatic mode: speed-dependent, can be deactivated

2.3 Control features and functions

Specimen feed: 30±1 mm, step motor feed

Vertical stroke: 72 mm (suitable for macro sections)

Operating cutting modes: 4 automatic, manual, continuous, single section.

Max. sample size per standard clamp (W x H x D): 55 X 50 X 30 mm

Max. sample block size per clamp for Supermega cassette (H x W x D): 68 x 48 x 15 mm

Sample orientation: both X and Y axes: 0 to +/- 8°, with zero point.

Z axis: 90° rotation.

Electric rapid feed: 300 $\mu\text{m/s}$ and 800 $\mu\text{m/s}$

Cutting speed: 0.5 to 420 mm/s \pm 10%.

Blade holder displacement adjustment: Forward / Backward: \pm 65 mm

Left / Right: \pm 40 mm

2.4 Dimensions and weight

Width: 475 mm

Depth (including tray): 580 mm

Depth (excluding tray): 510 mm

Height: 340 mm

Weight: 40 kg

2.5 Instrument equipment

1 collection tray sections

1 holder blades

1 clamp for standard samples

Manual instructions

Code: ARM3750