



# Leica EMFCS

Low Temperature

Sectioning System

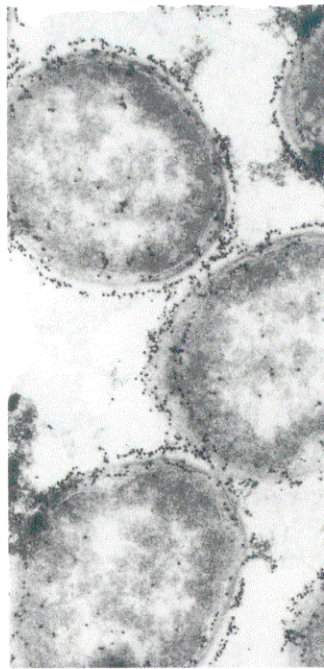
*Leica*

# Leica EM FCS

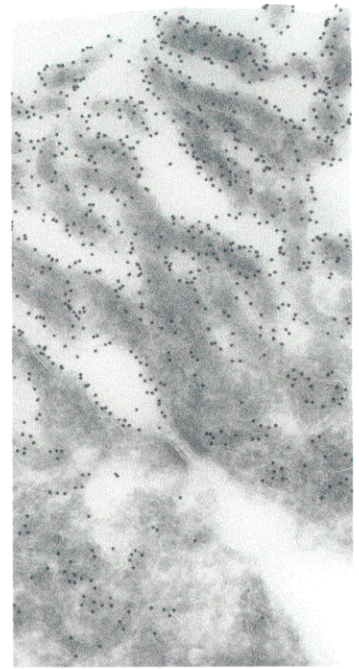
Low Temperature Sectioning System for Sectioning of Biological and Technical Material

The Leica EM FCS incorporates many new features and user benefits including:

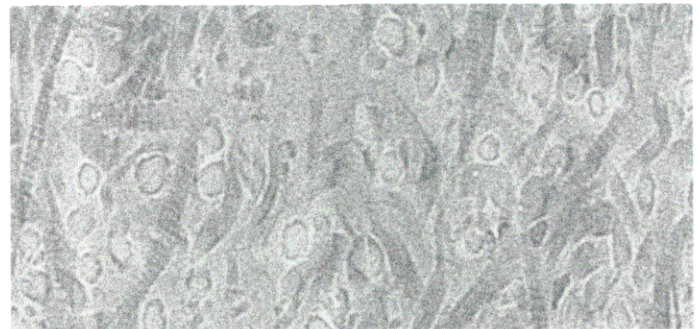
- sectioning down to  $-185^{\circ}\text{C}$
- unique contact-free through-the-wall specimen arm system for chatter free cryosections
- open top design with no disturbing ice-condensation inside or outside during or after work
- attaches to the Ultracut UCT, Ultracut R and Ultracut S and is ready for sectioning at low temperature within a few minutes
- memory for 3x3 settings of knife, specimen and gas temperature
- continuous turbulence-free – no-pressure LN2 filling system with a very low LN2 consumption
- unique shell-mounted sectioning chamber with armrest for comfortable manipulation of sections
- accurate control of specimen, knife and the most important chamber gas temperature
- backlight illumination for accurate glass – and safe diamond knife approach
- alignment of knife with self-locking drives from outside the chamber.



*Aeromonas salmonicida*; immunogold labelled cryosection



Localisation of megalin in an ultrathin cryosection of rat kidney. Immunogold labelling is present in the brushborder and endocytotic vesicles of a proximal tubular cell.



Cryosection of high pressure frozen mature bovine articular cartilage tissue



Light shaded AFM image of a cryomicrotomed surface of ultrahigh molecular weight polyethylene. The arrows indicate zones with lamellae splitting.

## Performance Features

The Ultracut UCT/ULtracut R/FCS cryo-ultramicrotome system is engineered for fast and easy conversion from sectioning at ambient temperature to cryosectioning and vice versa.

The cooling chamber is mounted on the shell of the Ultracut UCT, UCR and UCS and is thereby isolated from the feed and drive mechanism of the ultramicrotome.

An automatic RC Rapid Cooling mode, cools the chamber within a few minutes to even the lowest working temperature of  $-185^{\circ}\text{C}$ .

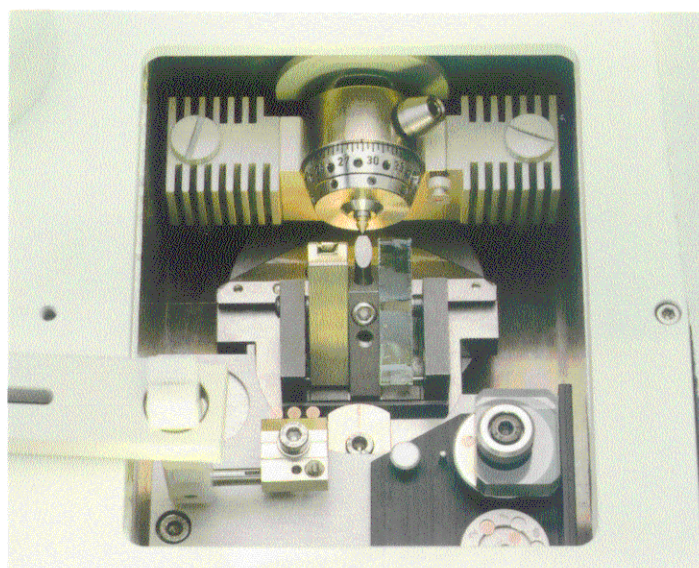
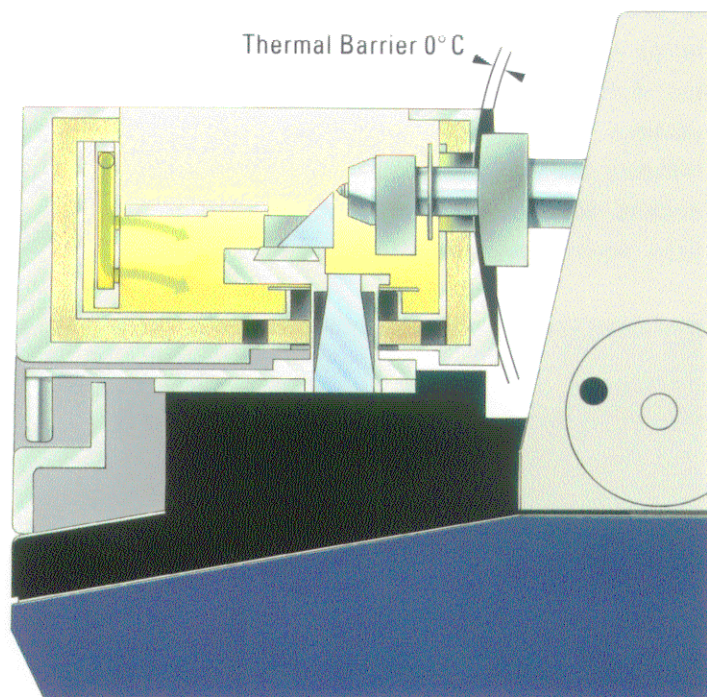
The knife holder holds a trimming tool and 2 knives up to 10 mm thickness. It allows independent adjustment of the clearance angle from  $0^{\circ}$  to  $9^{\circ}$ . Knife alignment is simple, the self-locking controls are outside the chamber.

Accurate and safe alignment of glass and particularly diamond knives is assured by the exclusive backlight.

The contact-free straight through the wall specimen arm with "dynamic thermal barrier" gives the instrument a hitherto unattainable stability for chatter free cryo-sectioning. The new pressure-free automatic filling system ensures operator safety and extremely low LN<sub>2</sub> consumption.

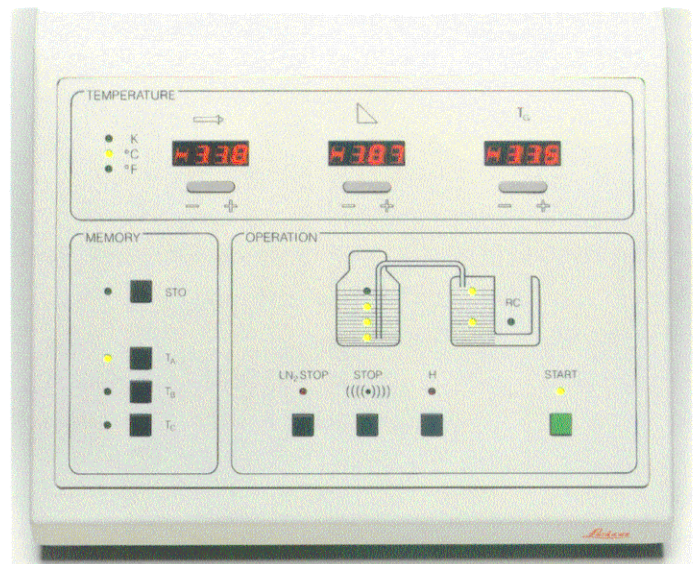
### Cryotools

A set of cryotools provides great assistance in handling specimen and frozen hydrated sections. These accessories include a grid loading station, cryo-grid holder, section-press and flattening tool as well as a transfer container and the well proven Cryo-Mesacut.



## Control Unit

The control panel is designed with clear and functionally segregated controls. It allows the operator to fully concentrate on the preparation of sections without concern for the function of the instrument. This simplicity of operation is carried a step further by the possibility to change between 3 freely programmable temperature settings by simply pushing a button. A feature most useful when preparing sections for immunocytochemistry where trimming and semithin sectioning is usually done at  $-80^{\circ}\text{C}$ , while cutting of ultrathin sections requires temperatures below  $-100^{\circ}\text{C}$ .



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