

# RM CoolClamp

## Electronically Cooled Universal Cassette Clamp

Instructions for Use

English

**Order No.: 14 0502 82101 - Revision E**

Always keep this manual with the instrument.

Read carefully before working with the instrument.





The information, numerical data, notes and value judgments contained in this manual represent the current state of scientific knowledge and state-of-the-art technology as we understand it following thorough investigation in this field.

We are under no obligation to update the present manual periodically and on an ongoing basis according to the latest technical developments, nor to provide our customers with additional copies, updates etc. of this manual.

To the extent permitted in accordance with the national legal system as applicable in each individual case, we shall not be held liable for erroneous statements, drawings, technical illustrations etc. contained in this manual. In particular, no liability whatsoever is accepted for any financial loss or consequential damage caused by or related to compliance with statements or other information in this manual.

Statements, drawings, illustrations and other information regarding the contents or technical details of the present Instructions for Use are not to be considered warranted characteristics of our products.

These are determined only by the contract provisions agreed between ourselves and our customers. Leica reserves the right to change technical specifications as well as manufacturing processes without prior notice. Only in this way is it possible to continuously improve the technology and manufacturing techniques used in our products.

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For the instrument serial number and year of manufacture, please refer to the nameplate on the back of the instrument.



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Assembly contracted to Leica Microsystems Ltd. Shanghai

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## 1. Important Information

### 1.1 Symbols used in the text and their meanings



Warning:  
If this danger is not avoided, then this may result in death or serious injury.



Tip:  
Gives you tips to simplify your workflow.

1

→ "Fig. 7 - 1"

Item numbers for numbering illustrations.  
Numbers in red refer to item numbers in illustrations.



Manufacturer



Order number



Serial number



Date of manufacture



Observe the Instructions for Use.



The CE marking is the manufacturer's declaration that the product meets the requirements of the applicable EC directives and regulations.



Symbol for labeling electrical and electronic equipment in accordance with Section 7 of the German Electrical and Electronic Equipment Act (ElektroG). ElektroG is the law on the bringing into circulation, return and environmentally compatible disposal of electrical and electronic equipment.

Country of Origin: China

The Country of Origin box defines the Country where the final character transformation of the product has been performed.



The UKCA (UK Conformity Assessed) marking is a new UK product marking that is used for goods being placed on the market in Great Britain (England, Wales and Scotland). It covers most goods which previously required the CE marking.

**UKRP** Leica Microsystems (UK) Limited  
Larch House, Woodlands Business Park, Milton Keynes,  
England, United Kingdom, MK14 6FG

The UK Responsible Person acts on behalf of the non-UK manufacturer to carry out specified tasks in relation to the manufacturer's obligations.



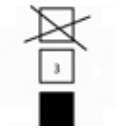
The CSA test mark means that a product has been tested and fulfills the applicable safety and/or performance standards, including the relevant standards defined or administered by the American National Standards Institute (ANSI), Underwriters Laboratories (UL), the Canadian Standards Association (CSA), the National Sanitation Foundation International (NSF) and others.



The package contents are fragile and must be handled with care.



The package must be kept in a dry environment.

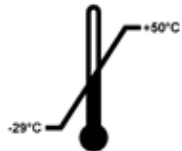


Maximum of 4 stacked layers



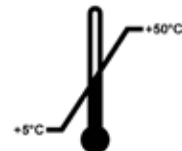
Indicates the correct upright position of the package.

Transport temperature range:



Indicates the temperature range permitted for transporting the package.  
Minimum -29 °C  
Maximum +50 °C

Storage temperature range:



Indicates the temperature range permitted for storing the package.  
Minimum +5 °C  
Maximum +50 °C



Indicates the humidity range permitted for storing and transporting the package.  
minimum 10 % r.H.  
maximum 85 % r.H



Indicates the item can be recycled where correct facilities exist.

## 1.2 Instrument type

All information provided in these Instructions for Use applies only to the instrument type indicated on the title page. A nameplate indicating the instrument serial number is attached at the back side of the instrument.

### 1.3 Intended use

The RM CoolClamp is an electric cooling specimen holder for the universal cassettes and the paraffin-embedded specimens in the cassettes. It is attached by the quick clamping system to the HistoCore rotary microtomes. Any other use is improper and therefore not permitted.

### 1.4 Qualification of personnel

- The RM CoolClamp must be operated by trained laboratory personnel only. The instrument is intended for professional use only.
- All laboratory personnel designated to operate this instrument must read these Instructions for Use carefully and must be familiar with all technical features of the instrument before attempting to operate it.

### 2. Safety

#### 2.1 General use

The RM CoolClamp complies with the current technical requirements. The manufacturer has placed the greatest value on user safety.

The following rules apply for the user:

- Rules for accident prevention.
- General rules for technical safety.
- The respective specific directives of the EU and other countries.

General use includes handling according to the instructions for Use.



#### Warning

- Operation of this unit is intended only for dry ambient conditions without precipitation of liquids.
- Defective instruments must not be used.
- It must be possible for the user to shut off the power supply to the instrument via the power supply unit instantly, if necessary.
- The following applies in general: When handling specimen head or knife / blade holder, always lock handwheel in place. Release locking mechanism only for sectioning and use safety guard.
- Failure to adjust the force balance may result in injury while working.
- The unit must not be operated in rooms with danger of explosion.
- The RM CoolClamp must be operated only in the installation orientation and position prescribed for it.
- It must be ensured that no liquids ingress into the unit.
- The instrument may be operated indoors only.
- The instrument shall be only operated with the supplied wall socket power supply type.



#### Tip

To keep the thermomechanical stress on the peltier as minimal as possible, the RM CoolClamp should be switched on only once per day and then remain in operation. The continuous working time should not be longer than 6 hours.



#### Tip

For current information about applicable standards, please refer to the CE Declaration of Conformity and UKCA Certificates on our Internet site:

<http://www.LeicaBiosystems.com>

#### 2.2 Technical modifications

- For safety reasons, no technical modifications to this instrument are permitted. Any change or modification that the manufacturer has not approved causes the warranty to be voided.
- Original parts are specially designed for the RM CoolClamp. Parts from other manufacturers have not been tested and therefore have not been approved and permitted by Leica Biosystems Nussloch GmbH.
- No liability shall be accepted for any use other than the intended use.



### 3. Technical Data

#### Electrical data for the RM CoolClamp

Operating voltage	7.5 V DC
Maximum input power	19 W

#### Electrical data for the power pack

<b>Nominal voltage</b>	100 to 240 V AC
Nominal current	0.4 to 0.7 A maximum
Nominal frequency	47 to 63 Hz
Maximum output power	20 W
Output operating voltage	7.5 V DC

#### Additional data for the RM CoolClamp

Operating temperature	+18 °C to +30 °C
Operating relative humidity	10% to 80% (non-condensing)
Transport temperature	-29 °C to +50 °C
Storage temperature	+5 °C to +50 °C
Transport and storage relative humidity	10% to 80% (non-condensing)
Transport and storage elevation	0 – 2000m
Temperature difference between operating temperature and tensioning clamp	20K±3K
LxWxH with power pack plug	Dimensions: 78.7mm x 113.1mm x 203.2mm
Weight without power pack but with plug	0.75 kg
Weight including power pack	0.9 kg
Overvoltage category to IEC 61010-1	II
Pollution degree to IEC 61010-1	2
Means of protection to IEC 61010-1	Class III
Degree of protection to IEC 60529	IP20
Heat emission	18.75 J/s
A-weighted noise level, measured at 1 m distance	<70 dBA
EMC class	Class B

## 4. Setting up the instrument

### 4.1 Standard delivery - packing list

Quantity	Part description	
1	RM CoolClamp	14 0502 46573
1	Power pack with EU, UK, UL, AU and CCC adapters	14 6000 05329
1	Cable holders for attaching to the microtome	14 6000 05334
1	Instructions for Use (printed English with language CD)	14 0502 82001



Fig. 1



#### Tip

The RM CoolClamp can be used only together with the quick clamping system on the HistoCore rotary microtomes.

### 4.2 General operating instructions

#### 4.2.1 Ventilation openings



#### Warning

- To prevent injury and damage, provision must be made for an unobstructed air supply; refer also to the cleaning instructions in the Instructions for Use (→ [P. 16 – 6. Cleaning and Maintenance](#)). The fan must not be blocked and the air outlet must not be obstructed. Please check before each use that the fan rotates freely. To prevent damage to the RM CoolClamp, the maximum permissible ambient temperature must not be exceeded; for additional information, refer to the Technical data (→ [P. 9 – 3. Technical Data](#)).



#### Tip

When operating the RM CoolClamp, condensation on the clamp occurs. This is a natural physical process.

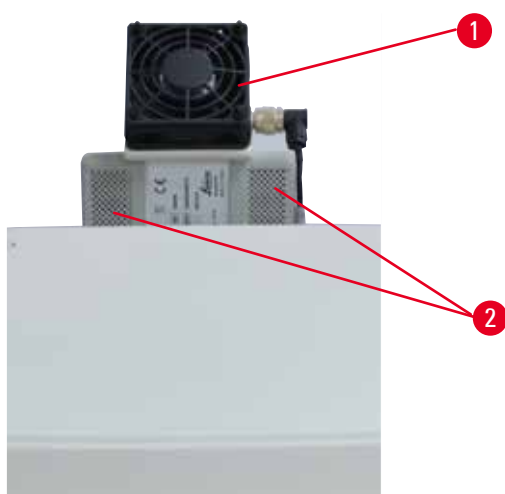


Fig. 2

- Ventilation openings, outlet (→ "Fig. 2-1")
- Ventilation openings, inlet (→ "Fig. 2-2")

#### 4.2.2 Position of the cable duct



##### Warning

- The cable of the RM CoolClamp must be routed to prevent possible severing of the cable when operating the microtome. For this purpose, attach the cable holder to the microtome and then insert the cable into the cable duct.

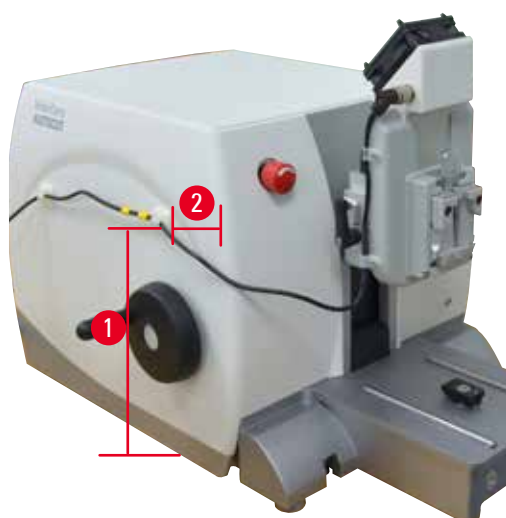


Fig. 3

Cable holder position:

- 20 cm high (→ "Fig. 3-1")
- 6 cm lateral (→ "Fig. 3-2")

#### 4.2.3 Potential pinching areas



##### Warning

- It is possible for fingers to become pinched in the specimen holder in the event of improper handling.



Fig. 4

Potential pinching areas (→ "Fig. 4-1")

#### 4.2.4 Power pack with EU, UK, UL, AU and CCC adapters



Fig. 5

Select the appropriate adapter for the power supply. If the provided plugs of the adapter do not fit to your local power supply, please use a converting plug to work with one plug of the adapter.

To insert or remove the corresponding adapter, the unlocking button (→ "Fig. 5-1") must be pressed.

## 5. Operation

### 5.1 Prerequisite for sectioning the specimens

- To use it with the HistoCore rotary microtomes, a vertical travel range of at least 70mm, and an adjustable force balance, are necessary.
- To use the non-directional specimen fixture or the directional specimen fixture (fine or only XY), bring the specimen fixture into the zero position.
- The embedded tissue samples to be sectioned must be precooled to -5 °C (+23 °F) using ice or a cooling plate prior to sectioning.
- After the RM CoolClamp's precooling phase of 30 min., the universal cassette can be inserted and the sections carried out.
- Permitted maximum sectioning speed: 155 sections/min..
- Trim at maximum 40µm and section at a thickness of 1-15 µm.



#### Warning

- Operating with larger thicknesses will lead to potential damage of the specimen block.

### 5.2 Operating concept



#### Warning

- Installation on a HistoCore rotary microtome, the following applies in general: Handling specimen head or knife / blade holder, always lock handwheel in place. Release locking mechanism only for sectioning and use safety guard; see Safety information (→ P. 8 – 2. Safety).

For a microtome that is already configured:

1. Remove knife / blade holder with base and specimen clamp.
2. Bring the specimen head into the rear end position (home position).
3. Lock the handwheel in place and, where appropriate, check whether the hand wheel lock has been activated.
4. We recommend working with the non-directional specimen holder fixture. If you will be working with the directional specimen fixture (XY or fine), it must be brought into the zero position.
5. Push the RM CoolClamp with adapter into the dovetail guide of the quick clamping system for specimen clamps and tighten it using a size 4 Allen key.
6. To carry out the force balancing, please observe the Instructions for Use of the respective microtome under the Operation chapter, Fine Adjustment of the Force Balance. The specimen head must not fall into the knife after being stopped/released.
7. Reinstall the knife / blade holder with base and select the desired clearance angle.
8. Attach the cable holder to the microtome; cable holders are included in the standard delivery of the RM CoolClamp.

### 5.3 Installing the RM CoolClamp to Rotary Microtomes with Quick Clamping System



#### Tip

The RM CoolClamp is attached the same way as changing the universal cassette clamp; for additional information, refer to the Instructions for Use of the respective rotary microtomes.

## 5 Operation

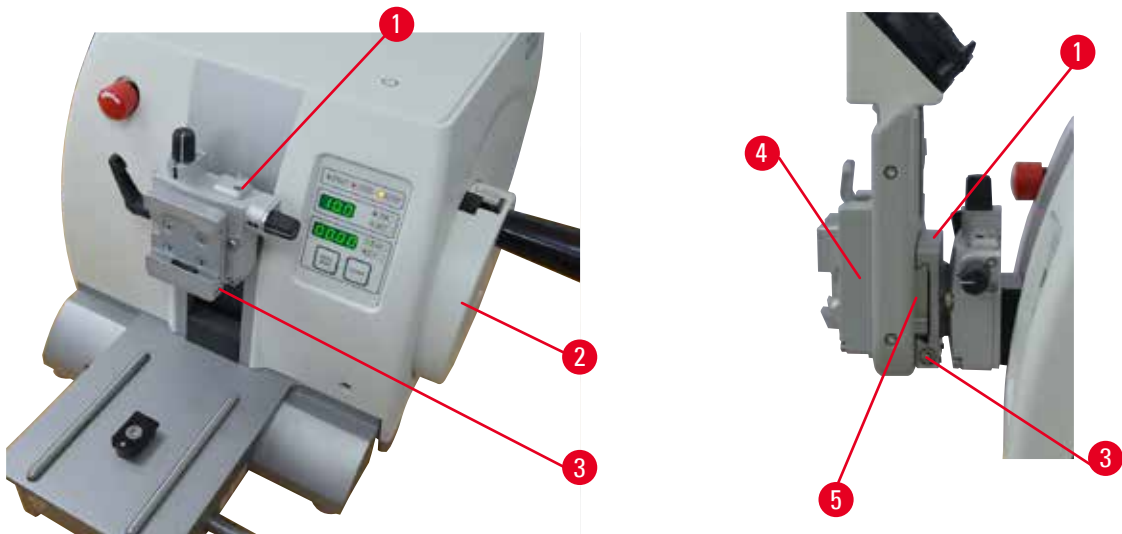


Fig. 6

There are two versions of the specimen holder fixture, one with and one without specimen orientation. The two versions can be interchanged.

The specimen orientation allows for simple position correction of the specimen surface when the specimen is clamped into place.

To do so, proceed as follows:

1. Move the specimen holder fixture (→ "Fig. 6-1") to the upper end position by turning the handwheel (→ "Fig. 6-2") and engage the handwheel lock.
2. To release the clamping system, turn the screw (→ "Fig. 6-3") counterclockwise using a size 4 Allen key.
3. Push the guide (→ "Fig. 6-5") of the RM CoolClamp (→ "Fig. 6-4") from the left into the specimen holder fixture (→ "Fig. 6-1") as far as it will go.
4. To clamp the specimen clamp, turn the screw (→ "Fig. 6-3") clockwise as far as it will go.

### 5.4 Fine Adjustment of the Force Balance



#### Tip

Installing the RM CoolClamp necessitates performance of a force balance; for additional information, refer to the Instructions for Use of the respective rotary microtomes.



Fig. 7

If another accessory of a different weight is mounted on the specimen head (→ "Fig. 7-1"), you must check whether it is necessary to readjust the force balance.

Checking the correct setting:

- Attach a new accessory and clamp a specimen.
- Set the specimen head to half the height of the vertical travel range by turning the handwheel (→ "Fig. 7") (9 o'clock position).

If the specimen head remains in this exact position, the setting is correct.

If the specimen head moves, i.e. it is raised or lowered, fine adjustment is necessary.



**Warning**

- Failure to adjust the force balance may result in injury while working; see the Safety information (→ P. 8 – 2. Safety).

The force balance is adjusted using the screw (→ "Fig. 7-2"), which can be accessed by removing the section waste tray on the bottom of the base plate of the microtome. Use the Allen key provided, size 5 (with handle!) for the adjustment.

- If the specimen head moves downwards, turn the screw (→ "Fig. 7-2") clockwise.
- If the specimen head moves upwards, turn the screw (→ "Fig. 7-2") counterclockwise.
- Continue this procedure until the specimen head no longer moves once released.

## 6. Cleaning and Maintenance

### 6.1 Cleaning

- Before beginning to clean the RM CoolClamp, make sure that the power pack has been unplugged and all surfaces have cooled down to below +50 °C (+122 °F).
- Clean the RM CoolClamp using paraffin remover only. Xylene and other solvents are not permitted. Wait to reactivate it until all the liquid has evaporated.
- Make sure that no liquid ingresses into the instrument (ventilation slots). Use only enough liquid as is absolutely necessary. The assembly group is not suited for cleaning by dipping into liquid.
- To guarantee that the RM CoolClamp functions flawlessly, make sure that the fan rotates and is not blocked. In addition, make sure that the ventilation openings are free before and during use. refer to ([→ P. 10 – 4.2.1 Ventilation openings](#)).
- No cleaning in the incubator is permitted.
- The RM CoolClamp must not be disassembled for cleaning.

### 6.2 Maintenance

RM CoolClamp is maintenance free.

#### 6.2.1 Malfunctions

- Report any malfunctions that occur to the person responsible for the instrument immediately.
- Make sure that the unit has been secured against misuse and abuse.
- Any safety-related parts that have been removed must be reattached and checked prior to instrument setup.

#### 6.2.2 Servicing the RM CoolClamp

The unit is not intended to be serviced. Servicing is accomplished by replacement. No repairs may be carried out by the user.

#### 6.2.3 Disposing of the unit

Dispose of the unit in accordance with the respective environmental directives of the respective country.

In the event of contamination, comply with the safety instructions.

The RM CoolClamp is RoHS-compliant.



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**7. Decontamination Confirmation**

Every product that is returned to Leica Biosystems or that requires on-site maintenance must be properly cleaned and decontaminated. You can find the dedicated template of the decontamination confirmation on our website [www.LeicaBiosystems.com](http://www.LeicaBiosystems.com) within the product menu. This template has to be used for gathering all required data.

When returning a product, a copy of the filled and signed confirmation has to be enclosed or passed on to the service technician. The responsibility for products that are sent back without this confirmation or with an incomplete confirmation lies with the sender. Returned goods that are considered to be a potential source of danger by the company will be sent back at the expense and risk of the sender.





www.LeicaBiosystems.com



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