



O P E R A T I N G
M A N U A L

slee *solutions
for
pathology*

M I C R O T O M E
CUT 5062

SEMI-AUTOMATIC
ROTARY MICROTOME

DESIGN &
MANUFACTURING
MADE IN GERMANY



Dear Customer,

thank you very much for your confidence in SLEE products!

Before you start operating the device, please read the operating instructions carefully to familiarize yourself with the proper operation and functions. The device must only be operated by specially trained and instructed staff. The specified safety measures as well as the regulations and hygiene standards of the respective laboratories must be respected.

Enjoy working with your new device!

Your team from SLEE medical GmbH

Please note:

We always strive to keep our documents up to date and free of errors. However, should you notice any mistakes, we would be grateful if you could let us know. Comments on the content are also welcome at any time. Simply send us an email at marketing@SLEE.de.

SLEE medical GmbH is constantly striving to further develop and improve its products. For this reason, we reserve the right to change technical specifications and production processes at any time without prior notice.

Please note that the illustrations shown in this manual may differ slightly from the actual product. They may also include accessories that are not included in the scope of delivery and are available at an additional cost.

This manual may already be a revised version. If you have any technical questions or uncertainties, our service team will be happy to help: service@SLEE.de.

Thank you for your understanding!

CONTENTS

1	INTRODUCTION	7
1.1	Intended use	7
1.2	General warnings	7
1.3	Report of serious incidents	7
2	SYMBOLS	8
2.1	Type plate symbols	8
2.2	Used symbols and their meanings	9
3	SAFETY NOTES	10
3.1	HAND WHEEL STOP	11
3.2	FINGER PROTECTION GUARD	13
3.3	ELECTRICAL CONNECTIONS	14
3.4	WORKING WITH KNIVES AND DISPOSABLE BLADES	15
4	COMPONENTS	16
4.1	MAGNIFIER WITH ILLUMINATION, DIMMABLE (OPTIONAL)	17
5	SPECIFICATIONS	20
6	UNPACKING AND INSTALLATION	22
6.1	UNPACKING THE DEVICE	22
6.2	INSTALLATION	22
7	OPERATION OF CUT 5062	23
7.1	INSERTION OF SPECIMEN IN STANDARD SPECIMEN CLAMP	23
7.2	INSERTION OF SPECIMEN IN UNIVERSAL CASSETTE CLAMP	24
7.3	SPECIMEN ORIENTATION ADJUSTMENT	25
7.4	EXCHANGING THE CLAMP TYPE	26
7.5	INSERTION AND ORIENTATION OF MICROTOME KNIVES	31
7.6	INSERTION AND ORIENTATION OF DISPOSABLE BLADES	32
7.7	APPROACH TO SPECIMEN	37
7.8	SPECIMEN FEED MEMORY	38
7.9	MOTORISED COARSE ADVANCE	38
7.10	MOTORISED FINE ADVANCE	38

7.11	MANUAL CUTTING	39
7.12	ADJUSTMENT OF TRIMMING	40
7.13	ADJUSTMENT OF CUTTING	40
7.14	ADJUSTMENT OF RETRACTION DURING THE UPWARD MOVEMENT	40
7.15	SECTION COUNTER / SECTION SUM / REMAINING TRAVEL INDICATION	41
7.16	DISPLAY CONTRAST SETTINGS	41
7.17	OVERVIEW KEY COMBINATIONS	42
8	EXTERNAL CONTROL PANEL CUT 5062	44
8.1	EXTERNAL CONTROL PANEL CUT 5062	44
8.2	FUNCTIONAL OVERVIEW OF USER INTERFACE	45
9	CLEANING AND MAINTENANCE	46
9.1	CLEANING	46
9.2	RECOMMENDED MAINTENANCE AND SERVICE SCHEDULE	46
10	OPTIONAL ACCESSORIES	47
11	SERVICE	48
12	WARRANTY	48
13	DISPOSAL	48

1 INTRODUCTION

The purpose of this manual is to explain in detail to the user how to work with the device in the intended manner. Please read the manual carefully and completely and follow the instructions. Use the provided images to acquaint yourself with the control elements and their functioning, to ensure appropriate handling. In case of ambiguity, please refer to your SLEE contact person.

The device at hand is offered in two mains voltage versions. Please refer to the device type plate to ensure that the local power supply and the device power supply are compatible. Operation and functionality of the device at different mains voltage do not differ.

1.1 Intended use

The SLEE CUT 5062 is a semi-automatic (equipped with motorized sample feed) rotary microtome that was specifically developed for the preparation of thin sections of formalin-fixed and paraffin-embedded human tissue samples of varying hardness for use by pathologists in histological-medical diagnostics, e.g., cancer diagnostics. It is intended for cutting soft and hard human tissue samples, provided these samples are suitable for manual cutting. The SLEE CUT 5062 is intended for use in in vitro diagnostics, as well as for industrial applications.

1.2 General warnings

Before using the device, please read this manual carefully.

Please pay particular attention to the precautions that must be taken for user and product safety.

The warranty applies only if the device is used in the correct manner and in accordance with the information and advice provided herein.

The manufacturer declines all responsibility for possible damages to persons and/or objects due to improper or inexperienced use of the device.

1.3 Report of serious incidents

The occurrence of serious incidents that have resulted in or could result in the death of a patient or user, or that cause a temporary or permanent deterioration in the health of a patient or user, must be reported to a local SLEE medical GmbH representative and the relevant local regulatory authority.

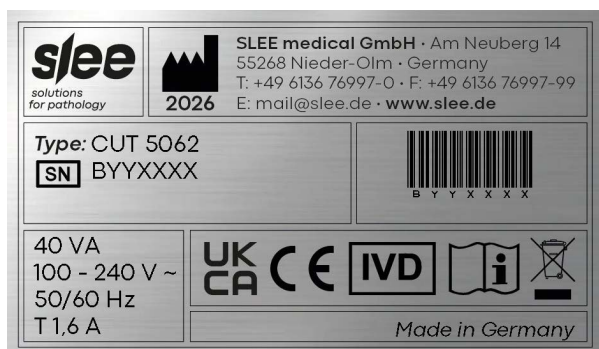
2 SYMBOLS

2.1 Type plate symbols

Not all symbols might appear on the label of the respective device.

 20XX	Year of manufacturing
Rating	It indicates the various voltages at which the instrument can work (by varying the connection in the internal transformer) another label, in the proximity of the main power cable socket, indicates the voltage at which the instrument is connected and at which it must work.
	Manufacturer address
	Serial number
	CE mark
	UKCA - UK Conformity Assessed
	In Vitro Diagnostic Device
	Caution! Please read accompanying documentation.
	Please read the instructions before use.
	Do not throw on domestic garbage, please follow the local rules for special waste recycling and treatment.

Illustration of type plate (example):



2.2 Used symbols and their meanings

Not all symbols might appear in this document.

	Warnings for dangers to life or health of people are marked by a red-bordered triangle with an exclamation mark
	Warnings for dangers to machinery, materials or the environment are marked with a yellow triangle with an exclamation mark.
	Flammability warnings are marked with a yellow warning triangle showing a flame.
	Warnings for heat on parts of the device and the situations in which it arises are marked with a yellow warning triangle showing a hot surface.
	Warnings about the risk of crushing are marked with a yellow warning triangle showing a crushed hand. Working with the device poses risks to people due to rotating or moving machine parts.
	Special instructions regarding the operation of the device are marked by this symbol.
	Indicates the correct upright position of the package.
	Indicates the temperature range permitted for storing and handling the package. Minimum +5 °C and maximum +50 °C.
	The package must be kept in a dry environment.

3 SAFETY NOTES

SLEE rotary microtomes are provided with the following safety features:

	CUT 5062
Hand wheel stop	•
Finger protection guard for knife- or blade-holder	•

The institution which owns the unit and the persons working with the unit, servicing or repairing it have the responsibility for a hazard-free use.

MAGNIFIER WITH LIGHTING (OPTIONAL)

	Risk of glare and injury! Never look into the sun or any other bright light source with optical devices! Do not look directly into the light source.
	Fire hazard! Lenses in optical devices can cause considerable damage due to the "burning glass effect" if improperly handled or stored! Make sure that optical lenses are never left in the sun without a cover! Use the supplied cover!

3.1 HAND WHEEL STOP

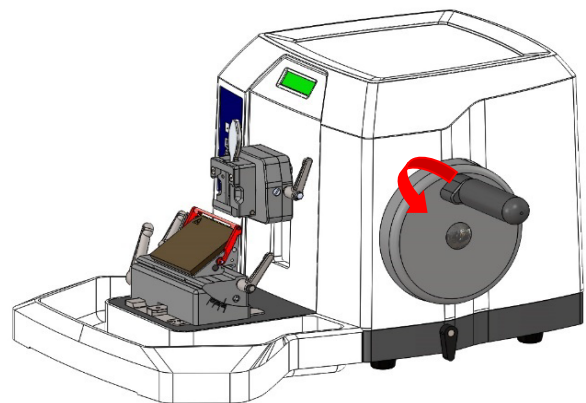
3.1.1 HAND WHEEL STOP WITH BRAKE ON THE HANDLE

Always use the finger protection guard with the knife- / blade holder and put hand wheel in stop position

- before working with the knife or specimen,
- before changing the specimen,
- during break time.

The hand wheel can be stopped in any position. For this purpose, move stop towards the center. To do this, turn the locking lever 90° counterclockwise.

To release the handwheel lock again, turn the lever 90° clockwise.

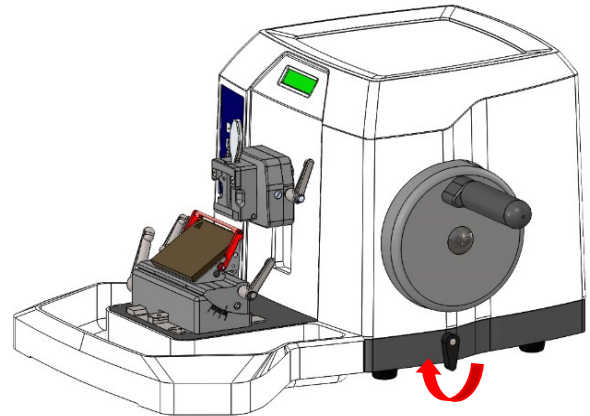


3.1.2 HANDWHEEL STOP WITH BRAKE ON THE BASE (OPTIONAL)

Always use the finger protection guard with the knife- / blade holder and put hand wheel in stop position

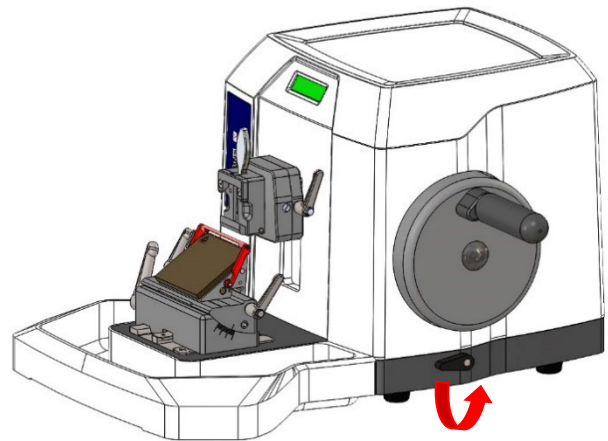
- before working with the knife or specimen,
- before changing the specimen,
- during break time.

The basic brake can be activated in every handwheel position. To close, turn the lever for 90° clockwise vertically (notch).



Basic brake open

To release the handwheel lock, turn the lever 90° counter-clockwise.

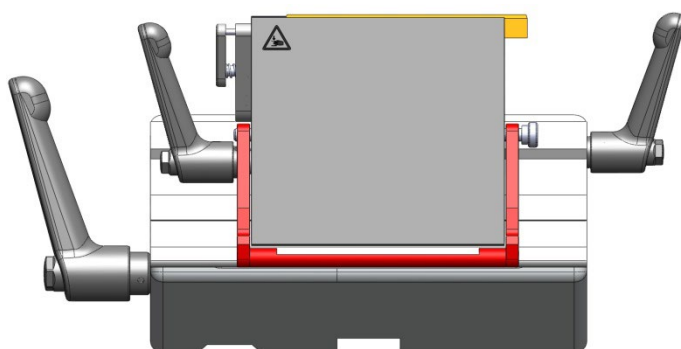


Basic brake closed

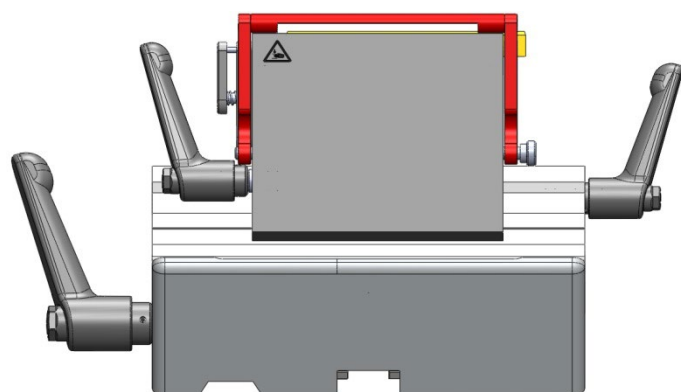
3.2 FINGER PROTECTION GUARD

Use the finger protection guard for the blade and knife holder as well as the handwheel stop always

- before you start any work with the knife or specimen,
- before changing the specimen,
- during work break.



Finger protection guard released



Finger protection guard activated



Please note that the finger protection guard may be engaged throughout processing (exchange of blade, lateral displacement, trimming, cutting), thereby increasing operation safety!



Do never move your fingers or hands above or behind the blade holder during operation of the microtome. For loading and unloading of the sample holders and exchange of disposable blades in the disposable blade holder, always activate the handwheel lock and activate the finger protection guard.

3.3 ELECTRICAL CONNECTIONS

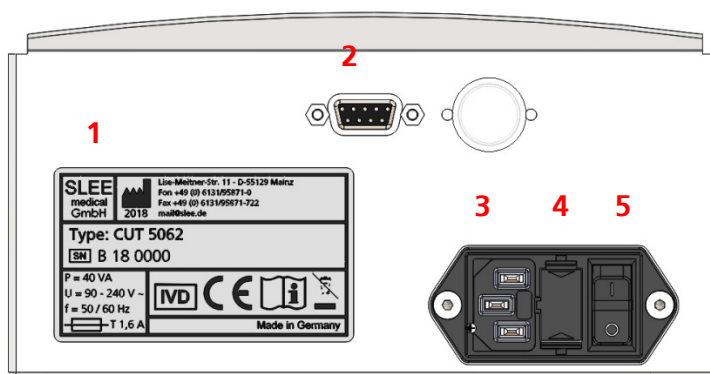


Before connecting any electrical units, the device must be switched off.

Electrical connections are attached at the backside of the microtome. Further on the name plate is located here (pos. 1).

Following connections are available depending on the microtome type:

- 2: External Control Panel
- 3: Mains cable
- 4: Fuse
- 5: ON- / OFF-Switch



- Before installing the device, check that the electrical connection values correspond to the specifications on the type plate and that a constant power supply is guaranteed. This should be examined during installation of the unit by a competent person.
- Do not use any extension cable.
- For maintenance and service always unplug the mains cable.
- Only use a specified fuse for the unit.
- Do not connect another unit to the same power circuit.

3.4 WORKING WITH KNIVES AND DISPOSABLE BLADES

Microtome knives and disposable blades have extremely sharp edges and this can lead to injuries. Please be extremely careful when handling microtome knives and disposable blades.



Do not place microtome knives or disposable blades at unsecured areas. Never position microtome knives or disposable blades with the sharp edge pointing upwards.

Store blades in a covered container. Use a container that has guides to hold the blades rigid.

Never try to catch a falling microtome knife.

Always insert the specimen first and then the microtome knife or disposable blade.

When applying the brake, ensure that it is tight. Most accidents occur when the brake slips and the operator's hand is drawn into the blade.

To avoid compression or knife marks, ensure that the blade is clean.

In case of multiple use of the knife or blade, use the finger guard.

To increase the usage time of knives and blades, avoid increased wear and tear by cleaning the cutting edge and blade holder regularly.

4 COMPONENTS

SLEE rotary microtomes are provided with the following standard components:

	CUT 5062, #10070001
Specimen orientation	•
Universal cassette clamp, orientable, alternatively standard specimen clamp, orientable	•
3-component knife holder, can be used for low profile blades as well as high profile blades	•
Section waste tray	•
Disposable blades (low profile, 50 pcs.), optional with disposable blades (high profile, 50 pcs.) or microtome knife 16 cm C-profile	•
Dust cover	•
Allen key, for fixation of specimen orientation to microtome	•
Mains cable	•

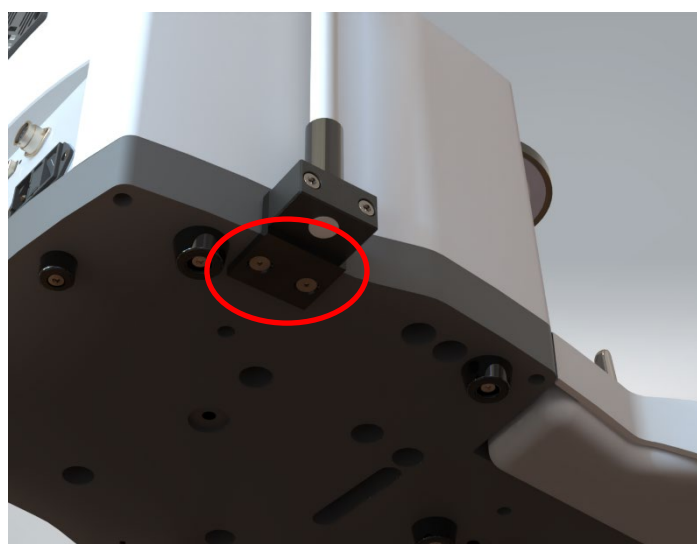
4.1 MAGNIFIER WITH ILLUMINATION, DIMMABLE (OPTIONAL)

Mounting:

The ring magnifier with illumination can easily be attached to the side of the microtome's base plate.



2 M5x12 countersunk screws (supplied) are screwed into the base plate from below.



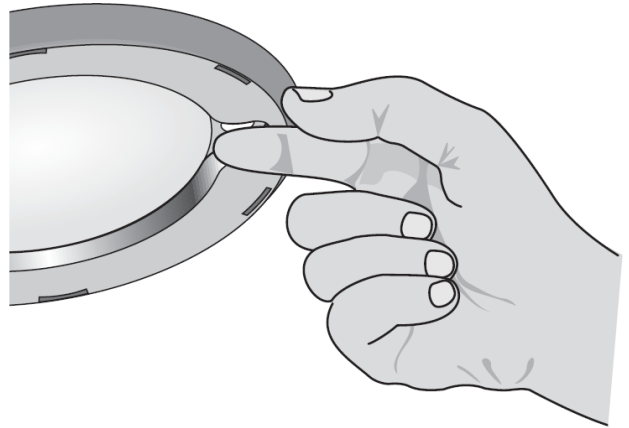
Switching on / off:

The light can be switched on and off via the sensor switch on the light head.

Switching on: Touch the sensor for a brief moment -> the light will be switched on (switch-on value is the last dimming value).

Switching off: Touch the sensor again for a brief moment -> the light will be switched off.

Dimming: Touch the sensor until the desired brightness is obtained. To reverse the dimming direction, briefly interrupt touching the sensor.



Note:

The illumination is equipped with overheating protection. In case the luminaire is switched off because of a risk of overheating, the luminaire must be cooled down, before being put back into operation.

Warning: Fire hazard!

When not in use, cover the magnifier against solar radiation. To do this, use the bag included in the scope of delivery.



Specifications magnifier with illumination:

Protection class	II
Protection type	IP 20
Operating mode	Continuous operation
Technical safety check	EN 60 598-1
Light head	ca. Ø 122 x 13 mm
Magnifier	6.0 dpt. approx. Ø 72
Rated voltage	100 - 240 V AC
Frequency range	50/60 Hz
Power consumption	approx. 6 W

5 SPECIFICATIONS

The rotary microtome CUT 5062 is intended for cutting thin sections of soft paraffin-embedded and harder specimens for professional use in routine and research laboratories in the fields of biology, medicine and industry.

The system of specimen advance operates very reliable from 0.5 to 100 µm. The quality of cutting of this microtome is increased by the automatic retraction during the upstroke of the specimen, which avoids rubbing on the disposable blades or microtome knives. This stops rapid deterioration of the disposable blade or microtome knife.

Nominal supply voltage	100 - 240 V + / - 10 %
Nominal frequency	50/60 Hz
Power draw	40 VA
Protective class (1)	I
Power fuses	2 x T 1,6 A
Pollution degree (1)	2
Overvoltage installation category	II
Operating temperature range	+10 to +35 °C
Operating humidity	max. rel. 80 % non-condensing
Storage temperature range	+5 to +55 °C
Storage humidity	max. rel. 80 % non-condensing
Section thickness range	0,5 - 100 µm
Section thickness settings	0,5 - 2 µm in 0,5-µm steps 2 - 20 µm in 1-µm steps 20 - 50 µm in 2-µm steps 50 - 100 µm in 5-µm steps
Trimming thickness settings	0 - 750 µm 0,5 - 2 µm in 0,5-µm steps 2 - 20 µm in 1-µm steps 20 - 50 µm in 2-µm steps 50 - 150 µm in 5-µm steps 150 - 750 µm in 10-µm steps
Horizontal advance	28 mm (step motor)
Specimen feed speed SLOW	75 / 150 / 300 / 600 µm / s
Specimen feed speed	normally 3.000 µm / s
Specimen feed memory	2 positions programmable
Vertical specimen stroke	72 mm
Maximum specimen size	50 x 50 mm
Knife holder basis - north-south axis	35 mm
Specimen retraction on return stroke	0 - 200 µm, selectable
Specimen orientation, horizontal	8°

Specimen orientation, vertical	8°
Specimen orientation, z-axis	360°
Section counter	Strokes / Distance
Dimensions [width x depth x height]	520 mm x 600 mm x 325 mm incl. handwheel and waste tray
Weight without accessories	33 kg

(1) According to IEC 1010, EN 61010

6 UNPACKING AND INSTALLATION

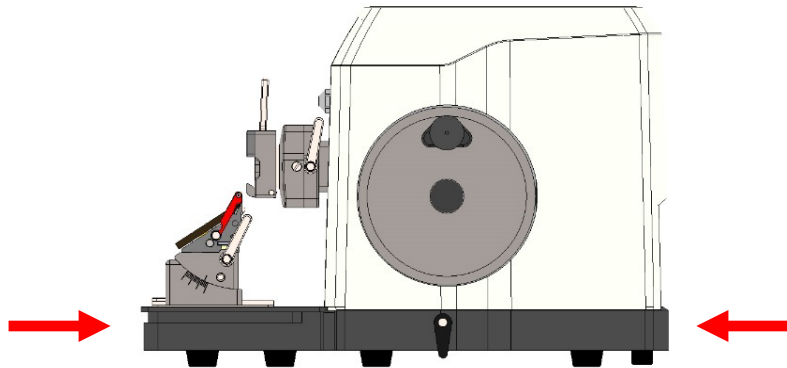
6.1 UNPACKING THE DEVICE

Remove the upper wooden cover.

Remove the upper supporting foams.

Lift the device out of the wooden transportation case.

Grasp the device underneath the base plate from the rear and front as shown in the figure below.



Do not transport the device by holding it on the hand wheel shaft, the object head, the cover or the tray.

Save the packaging material for later transport purposes, as the microtome should be transported in its original packaging to avoid transport damage.

Set up the microtome at its destination.

6.2 INSTALLATION

The unit should be positioned onto a plane, vibration-free surface.

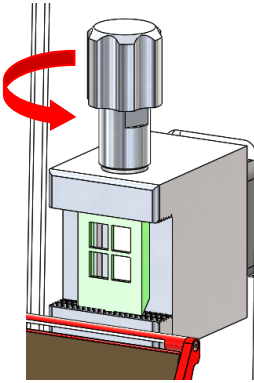
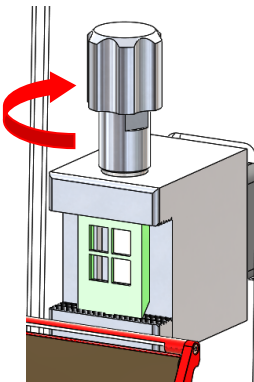
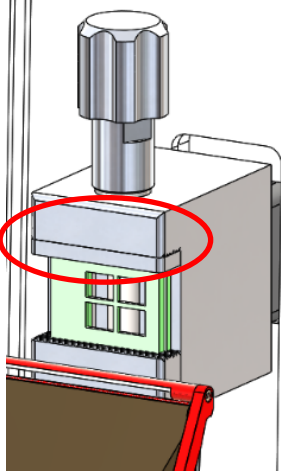
Assure convenient and unobstructed access to the hand wheel.

Before use remove the transport security underneath the specimen head.

Connect the external control panel [optional] with the outlet on the back of the device. Connect the device to the power supply.

7 OPERATION OF CUT 5062

7.1 INSERTION OF SPECIMEN IN STANDARD SPECIMEN CLAMP

Turn the handwheel to the highest position and activate the handwheel lock (see chapter 3.1) and the finger guard. Loosen the standard specimen clamp by turning the fixing screw counterclockwise. Remove the old specimen or insert a new one.	 Loosening of object fixation and insertion of new object
Close the specimen clamp and fix the specimen by turning the clamping screw (see fig.) clockwise. Loosen the finger guard and the handwheel lock (see chapter 3.1) to cut the specimen.	 Closing of specimen clamp and fastening of object fixation
If the cassette is clamped horizontally (rotated 90°), it is recommended to use the supplied clamping block (item no. 34123507) to re-center the cassette. If the cassette is normally clamped vertically, this additional clamping block is not used. In order to bring the specimens closer to the middle section, the clamping block must be clamped to the upper cheek.	 Clamping block

Additional note:

In case you process exceptionally hard specimens, the required clamping force may not be achieved by simply tightening the clamping screw. For these exceptional cases, an attachment for an open-end wrench SW17 is provided in the middle area of the clamping screw. We would like to point out that very high clamping forces can occur when using tools and this can lead to increased wear on the corresponding components.

7.2 INSERTION OF SPECIMEN IN UNIVERSAL CASSETTE CLAMP

Turn hand wheel to its highest position and activate the hand wheel lock.

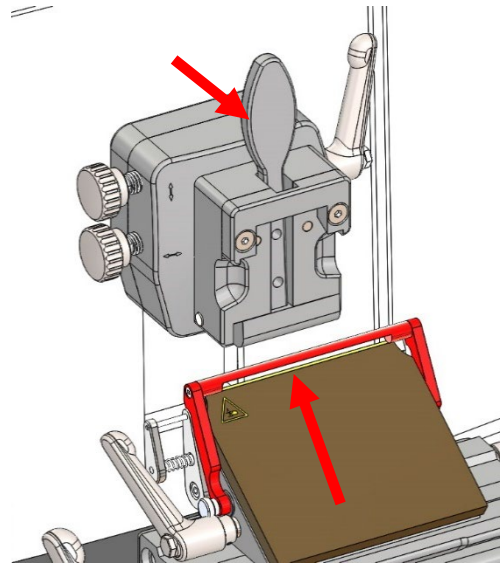
Activate finger protection guard.

Open cassette fixation by pulling the fixation lever.

Insert / remove cassette.

Object fixation will go back into fixation position automatically.

Release finger protection guard and hand wheel lock (see chapter 3.1) for cutting.



Opening of cassette fixation and insertion of new cassette

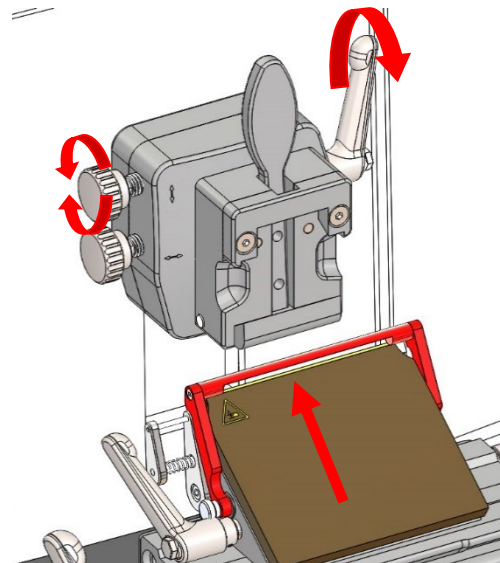
7.3 SPECIMEN ORIENTATION ADJUSTMENT

Turn hand wheel to its highest position and activate the hand wheel stop (see chapter 3.1).

For orientation of the specimen, open the fixing lever on the right side of the orientation.

For upward and downward orientation use the upper orientation wheel (see fig.).

For orientation to the left and right use the left orientation wheel (see fig.).

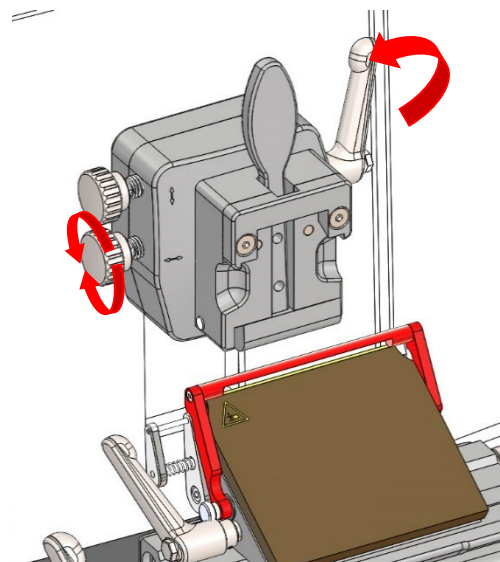


Opening of orientation fixation lever and orientation of specimen holder upwards and downwards

For orientation in the z-axis, turn the cassette clamp (see fig.).

Fix the specimen orientation by locking the clamping lever on the right side of the specimen holder.

Loosen the finger guard and the handwheel lock (see chapter 3.1) for cutting the specimen.

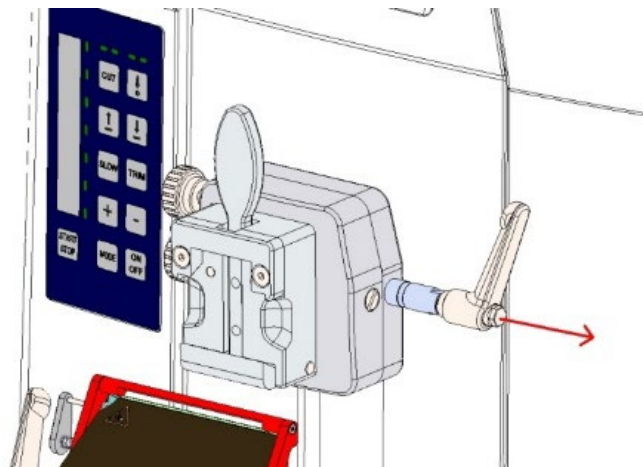


Change specimen orientation to right or left and sample orientation in z-axis

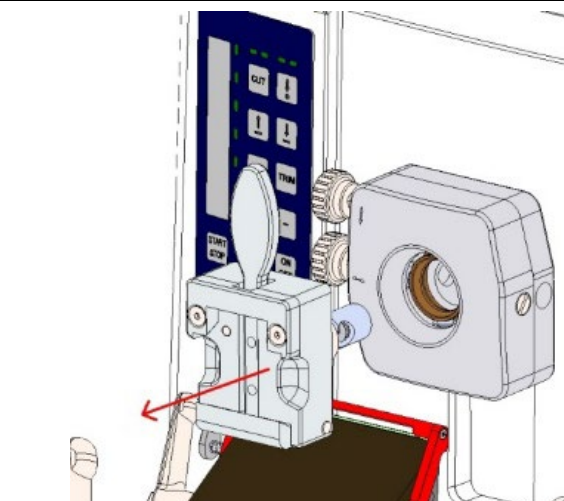
7.4 EXCHANGING THE CLAMP TYPE

For exchanging the universal cassette clamp with specimen orientation with the standard specimen clamp (fixed), please proceed as follows:

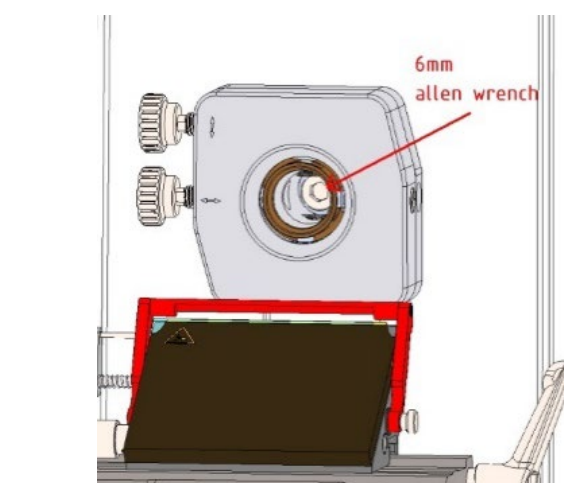
Move the universal cassette clamp to the upper position and fix the hand wheel by pressing the brake lever.



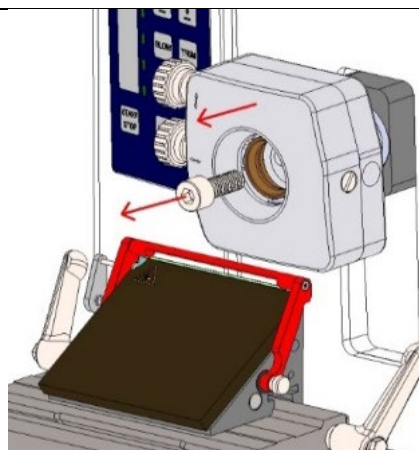
Pull out the right handle of the specimen orientation to release the universal cassette clamp out of the system.



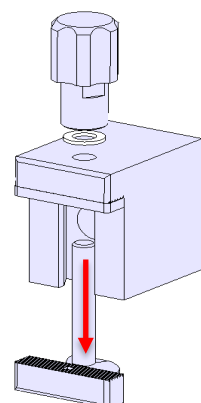
Use a 6 mm Allen wrench to remove the screw out of the center of the specimen orientation.



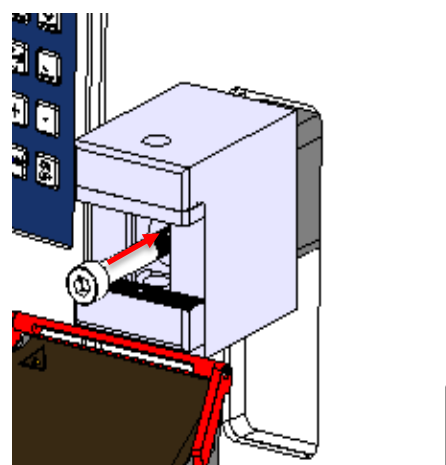
Disassemble the specimen orientation.



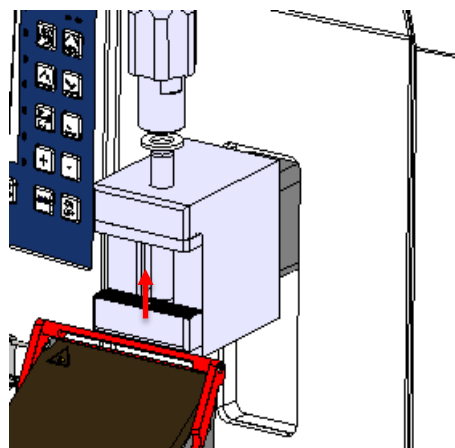
Disassemble the standard specimen clamp to get access to the center screw – M8 x 50 mm.



Install the basic part of the standard specimen clamp and fix it with the Allen screw.

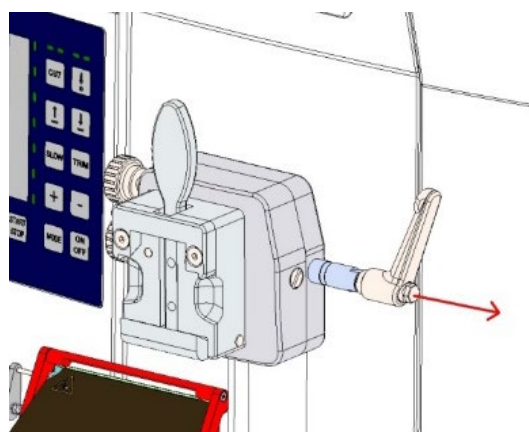


Install the spindle, the washer and the knob.

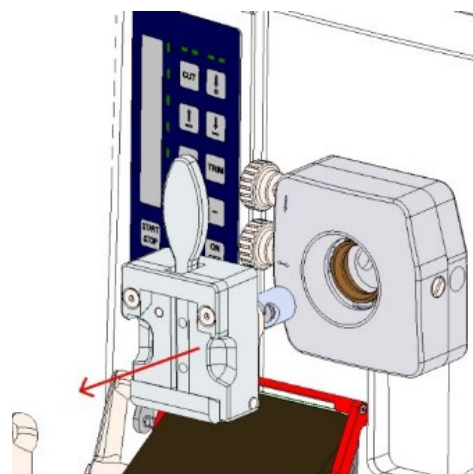


To replace the universal cassette clamp with specimen orientation with the standard specimen clamp with specimen orientation, please proceed as follows:

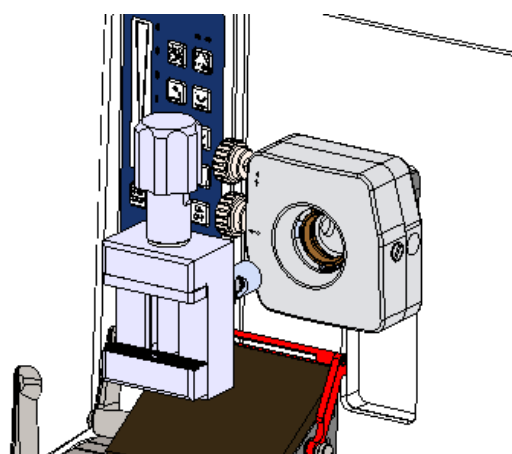
Move the universal cassette clamp to the upper position and fix the hand wheel by pressing the brake lever. Pull out the right handle of the specimen orientation to release the universal cassette clamp out of the system.



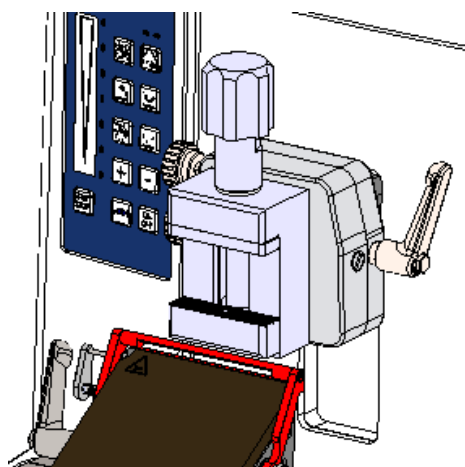
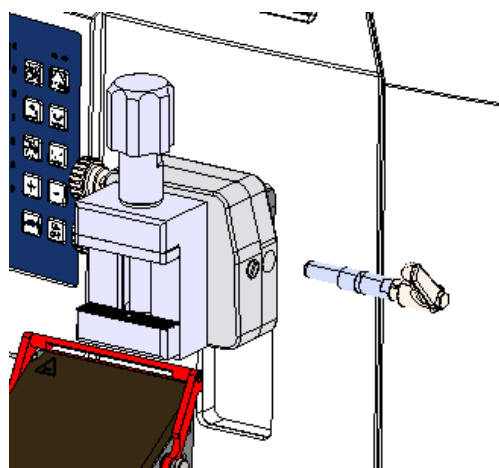
Remove the universal cassette clamp.



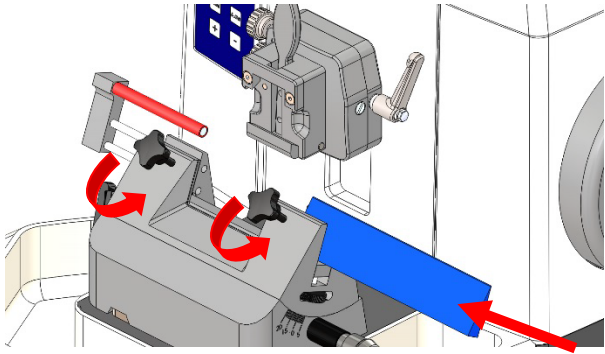
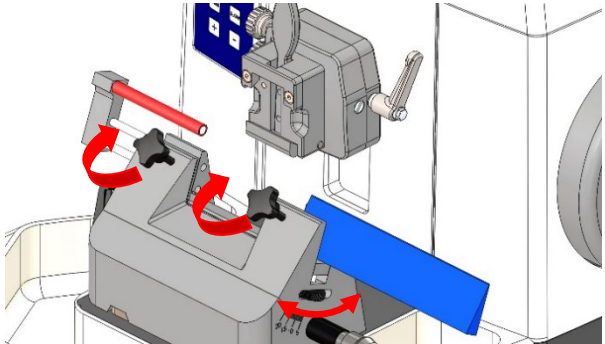
Replace the universal cassette clamp with the standard specimen clamp.



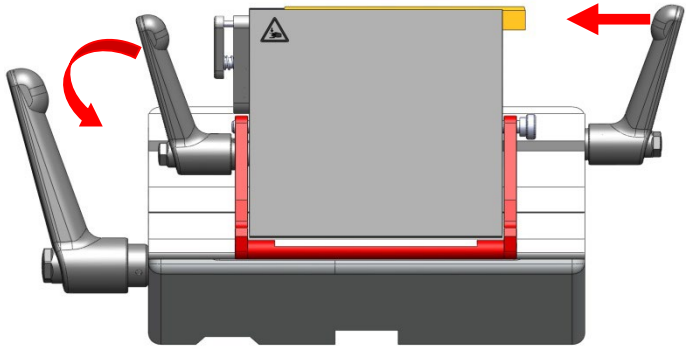
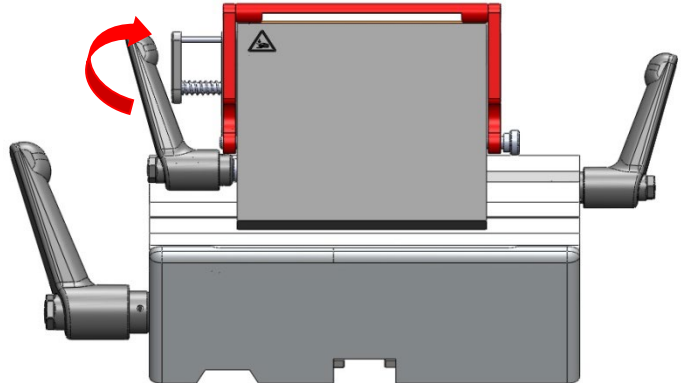
Install the right handle of the specimen orientation to fix the standard clamp.



7.5 INSERTION AND ORIENTATION OF MICROTOME KNIVES

Turn the handwheel to the highest position and activate the handwheel lock (see chapter 3.1). Remove finger protection guard on the right side of the knife holder. Loosen the knife fixation by turning the two black screws counter clockwise (see fig.). Remove the old knife or insert a new knife.	 Loosening of knife fixation and insertion of new knife
Tighten the knife fixation by turning the two black screws clockwise (see fig.). Adjust knife height by turning the wheels on the left and right side of the knife holder base. Install finger protection guard on the right side of the knife holder. Release hand wheel lock (see chapter 3.1) for cutting the specimen.	 Fixation and height adjustment of knife

7.6 INSERTION AND ORIENTATION OF DISPOSABLE BLADES

Turn the handwheel to the highest position and activate the handwheel lock (see chapter 3.1). Release the finger guard. Release the blade clamping lever on the left side of the blade holder by turning it counterclockwise. Remove the old blade or insert a new blade (see fig.).	 Loosening of blade fixation and insertion of new blade
Fix the blade clamp by turning the lever on the left side of the blade holder clockwise. Release hand wheel lock (see chapter 3.1) for cutting the specimen.	 Fixation of blade

Horizontal orientation of the blade

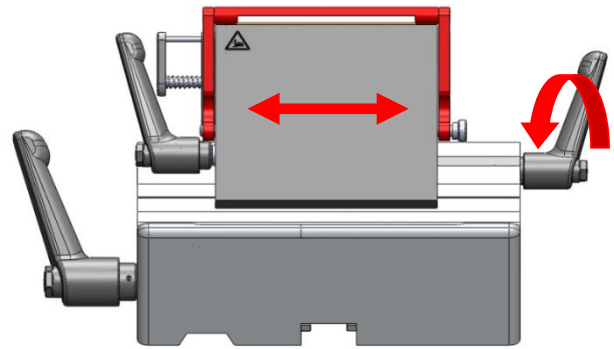
For adjustment of cutting area of the blade, the blade holder can be moved to the left or right.

To do so, release the lever on the lower right side of the swivel piece by turning it counterclockwise (see fig.).

Move the knife holder to the left or right.

Fix the new setting by turning the lever on the lower right side of the swivel piece clockwise.

Release hand wheel lock (see chapter 3.1) for cutting the specimen.



Loosening of blade holder fixation and horizontal orientation of blade holder

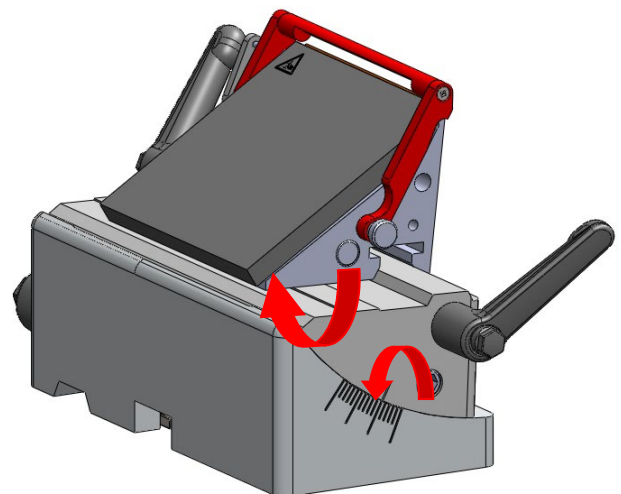
Cutting angle

To change the cutting angle, loosen the hexagon head screw on the swivel piece by turning it counterclockwise (see fig.).

Set new angle for cutting by manually tilting the blade holder. A tilt towards the specimen holder increases the cutting angle (clockwise rotation), a tilt away from the specimen holder decreases the cutting angle (counterclockwise rotation, see fig.).

Tighten the blade holder fixation by turning the indicated hexagon screw with an Allen key (size 6) clockwise.

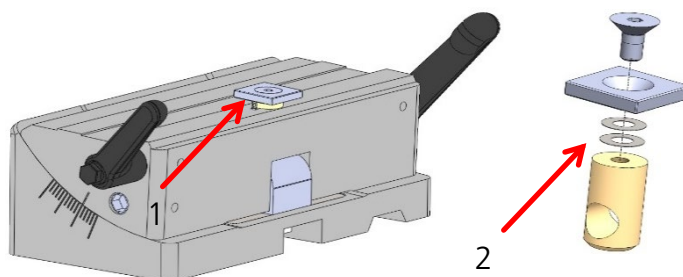
Release hand wheel lock (see chapter 3.1) for cutting the specimen.



Loosening of blade holder fixation and adjusting new cutting angle (Ex. increased cutting angle)

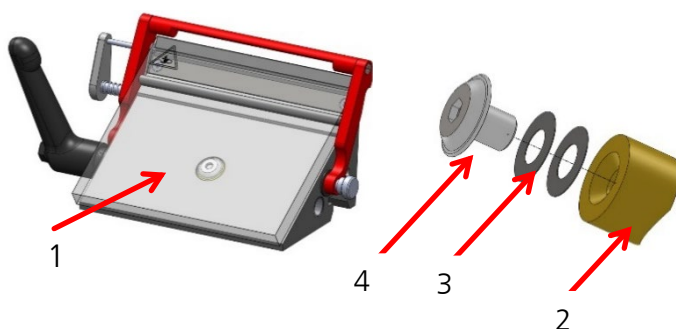
Adjusting the sledge clamping

1. Remove the screw with Allen key size 2,5 (pos. 1).
2. Removing washers makes clamping tighter. Adding washers loosens clamping.
3. Tighten the screw (pos. 1) and test the clamping by assembling the blade holder.



Adjusting the blade clamping

1. Remove away the blade clamping plate (pos. 1).
2. Take the brass plunger (pos. 2) and add / remove one of the supplied adjustment washers (pos. 3). Add washers = clamping tighter. Remove washers = loosens clamping.
3. Tighten the screw (pos. 4) and test the clamping by assembling the blade holder.

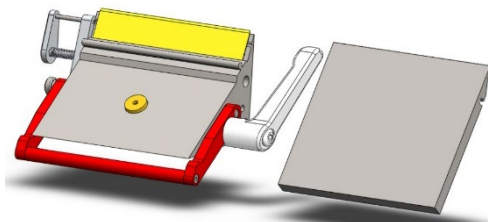
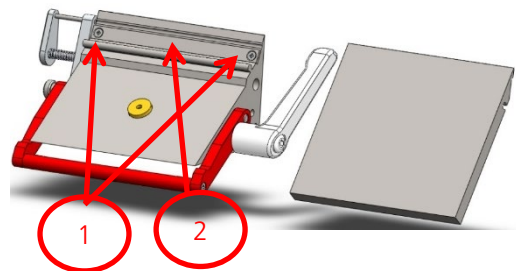
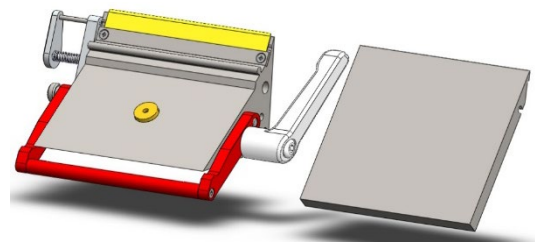


Modification from low to high blades

Before any manipulation of the blade holder remove the blade!

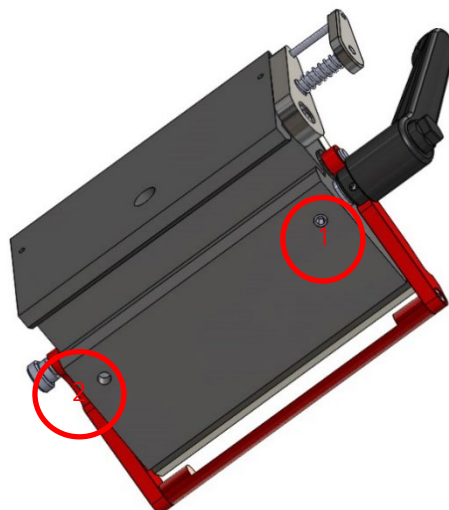
The first picture shows the low-profile configuration, underneath the low-profile configuration without the blade and the third picture shows the high-profile configuration.

To change from low profile to high profile configuration the two screws (pos. 1) have to be unscrewed with a PH0 screwdriver and the adapter strip (pos. 2) needs to be removed.



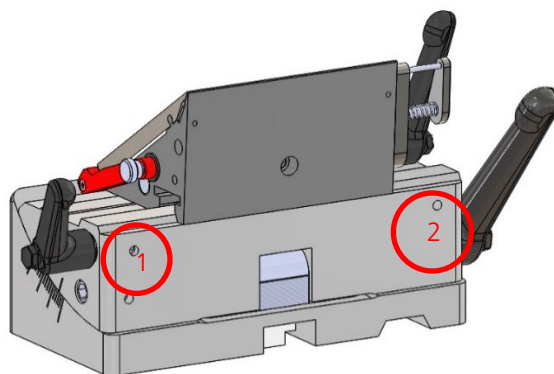
Changing the lever to the other side - blade clamp

1. Loosen the screw (located on bottom side of lateral sledge) with Allen key (see fig., marked with red circle no. 1).
2. Take the lever out of the sledge and put it into the hole from the other side.
3. Tighten the screw at the other side (marked with red circle no. 2).



Changing the lever to the other side – sledge clamp

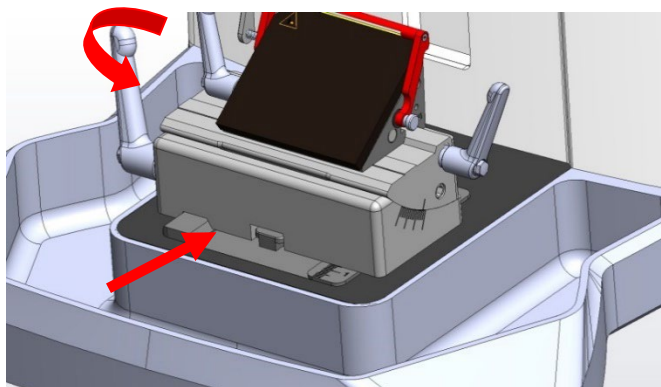
1. Loosen the screws (2x, located on bottom side of middle part) with Allen key (see fig., marked with red circle no. 1).
2. Take the lever out of the sledge and put it into the hole from the other side.
3. Tighten the screws at the other side (marked with red circle no. 2).



7.7 APPROACH TO SPECIMEN

Turn the handwheel to the highest position and activate the handwheel lock (see chapter 3.1).

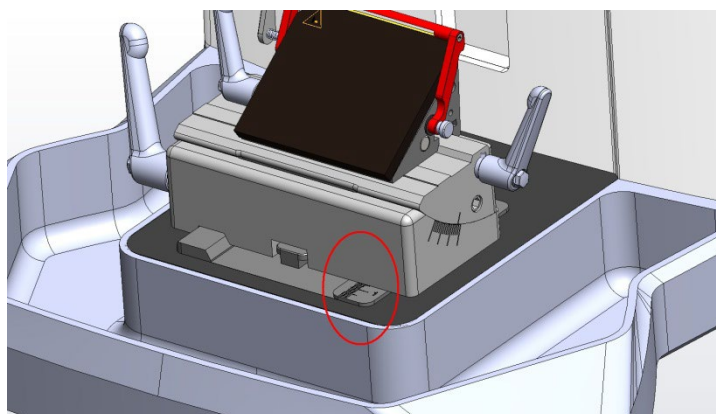
Loosen the knife or blade holder base by turning the left lever counter clockwise (see fig.).



Loosening of knife or blade holder base fixation and movement towards specimen

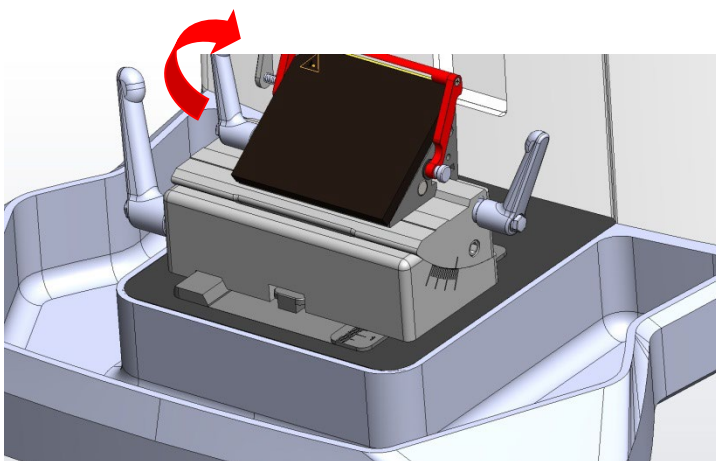
Move the blade holder base inside the guiding rail towards or away from the specimen (see fig.).

There is a scale on the right side of the microtome base plate. This enables faster and better positioning of the knife holder base if various combinations of standard specimens and specimen holders are used.



Fix the new setting by turning the lever on the left side of the knife holder base clockwise (see fig.).

Release hand wheel lock (see chapter 3.1) for cutting the specimen.



Fixation of knife holder base

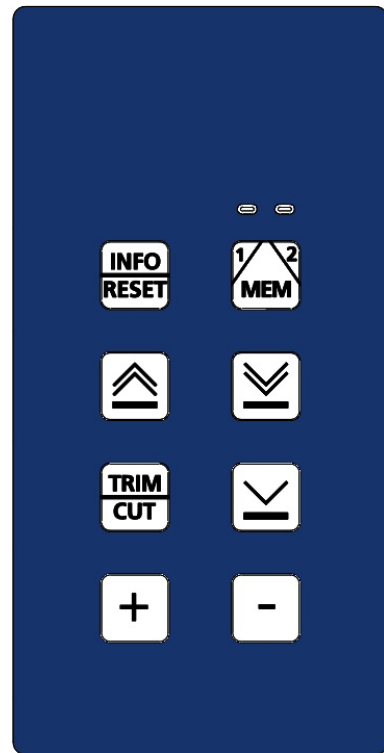
7.8 SPECIMEN FEED MEMORY

CUT 5062 is equipped with a specimen feed memory that stores two independent positions of the specimen. The LED on the upper right of the control panel will indicate which memory position is currently active.

To select the other memory position press  twice quickly.

Press  once to move to the designated memory position.

Press  for two seconds to store the current specimen position to the active memory.



7.9 MOTORISED COARSE ADVANCE

Press  to move the specimen towards the knife or blade.

Press  to move the specimen away from the knife or blade.

7.10 MOTORISED FINE ADVANCE

Press  to move the specimen slowly towards the knife or blade.

There are four speed settings available, which can be selected by holding the  key while switching on the device:

Mode 1: 75 μm / s

Mode 2: 150 μm / s

Mode 3: 300 μm / s

Mode 4: 600 μm / s

Select the desired mode using the keys  resp. .

Pressing  again will guide you to normal operating mode.

7.11 MANUAL CUTTING

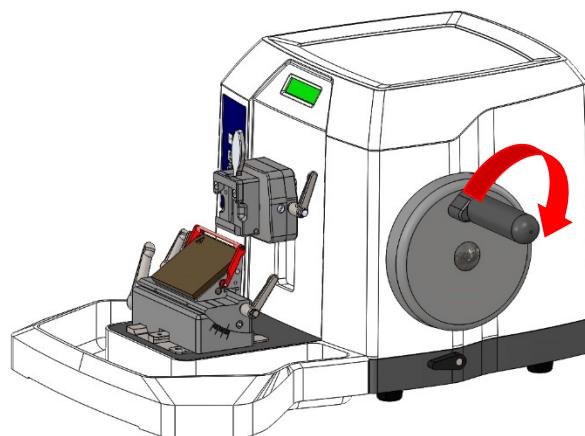
Release hand wheel stop (see chapter 3.1).

Remove the finger guard if necessary.

Turn the handwheel on the right side of the device evenly clockwise.

A counter clockwise movement of the hand wheel will also result in cutting and the specimen is gradually brought closer to the blade.

The cutting angle can be changed as required (see chapter 7.6).



Manual cutting of specimen with CUT 5062

For trimming of specimen, select the thickness as described in section 7.12 (THICKNESS ADJUSTMENT FOR TRIMMING).

If Trim latching mode is activated, trimming function is activated and deactivated by pressing  once. Activation of the trimming function is displayed as illustrated.

To activate trim latching mode, continuously press  while switching on the device.

If Trim latching mode is deactivated, trimming function is activated by continuously pressing . Activation of trimming function is displayed as illustrated (see fig. on the right). Turn the handwheel evenly clockwise.

To activate rocking mode press  and  simultaneously. For cutting in rocking mode, move the handwheel a short distance back and forth. The cutting window in rocking mode is minimum 30 mm.

30 μ m TRIM R 5 μ
0000 n

Display with activated trimming function

7 μ m CUT R 5 μ
0000 n

Display with deactivated trimming function (Cut mode)

7.12 ADJUSTMENT OF TRIMMING

The display indicates the current setting for the trimming mode (e. g. 30 μm in this example). To change the trimming settings, press  continuously and press  or  to increase or decrease the value. To return to the cutting mode, please press the key again.	30 μm TRIM R 5 μ 0000 n
--	--

	Default setting for trimming thickness is 20 μm. For trimming a thickness range of 10 to 40 μm is recommended.
---	---

7.13 ADJUSTMENT OF CUTTING

The display indicates the current setting for the cutting thickness (e. g. 7 μm in this example). To change the cutting thickness, press  or  to increase or decrease the value.	7 μm CUT R 5 μ 0000 n
--	---

7.14 ADJUSTMENT OF RETRACTION DURING THE UPWARD MOVEMENT

The display indicates the current setting for the retraction of the specimen upon upward movement (e. g. 5 μm in this example). To change the retraction setting, press  and  at the same time and  or , to increase or decrease the value. The retraction is usually preset to doubled cutting thickness and minimum of 1 μm. This preset can be abandoned by holding  while switching on the device.	7 μm CUT R 5 μ 0000 n
--	--

	Default setting for retraction is 5 μm.
---	--

7.15 SECTION COUNTER / SECTION SUM / REMAINING TRAVEL INDICATION

The model CUT 5062 allows optional display of different parameters in the lower left display area. These are the number of the performed sections, the section sum or the remaining travel.	7 μm CUT R 5 μ 0015 n
To change from counting strokes to cuts to the remaining travel or vice versa, simply press  once.	7 μm CUT R 5 μ 0105 Σ
To reset the cutting counter, press  for 2 seconds.	7 μm CUT R 5 μ 0000 n
The remaining travel is displayed on the lower left display area. Remaining travel > 1 mm displayed in mm:	7 μm CUT R 5 μ R15.1
Remaining travel < 1 mm displayed in μ m (number flashes):	7 μm CUT R 5 μ R.456
When the device is switched on, the object carriage automatically retracts (initialization) until it reaches the rear light barriers. When the rear-end position is reached, "REAR END POS." is displayed in line 2.	7 μm CUT R 5 μ REAR END POS.
When the front-end position is reached, "FRONT END POS." is displayed in line 2.	7 μm CUT R 5 μ FRONT END POS.

Info: If the remaining travel is < 1 mm, the displayed value starts to flash. If the number of the performed sections or the section sum was previously displayed, the display flashes alternately with the respective value.

7.16 DISPLAY CONTRAST SETTINGS

CUT 5062 has a digital display. For optimized readability the contrast of the display is adjustable to fit the surrounding circumstances.

Hold  while pressing  once and change the contrast setting with  or .

7.17 OVERVIEW KEY COMBINATIONS

7.17.1 Operation via keyboard(s)

Keyboard shortcuts at power-on (for configuration)	
TRIM/CUT	TRIM/CUT switchover latching / momentary
SLOW	Setting feed rate for SLOW
REV	Retraction limitation on / off
INFO/RESET+MEM	Set all settings to factory defaults

7.17.2 Key combinations during operation

INFO/RESET+MEM	Switching Rocking Mode on / off (for 5062)
TRIM/CUT+SLOW+PLUS	Display service cut counter
MODE+TRIM/CUT+PLUS/MINUS	Window size setting (only in WINDOW mode)
MODE+ON/OFF	Switch Preset / continuous
MODE+PLUS/MINUS	Change Preset count (only if PRESET active)
TRIM/CUT+REV+PLUS/MINUS	Set retraction
TRIM/CUT+FWD+PLUS/MINUS	Set contrast
TRIM/CUT+SLOW	Display version and serial number

7.17.3 Short keystrokes

INFO/RESET	Switching between section counter / section sum / remaining travel indication
MEM (1x)	Move to selected memory position (if position still unknown: backwards to stop)
MEM (2x)	Change between memory position 1 and 2 (see LEDs)
TRIM/CUT	TRIM / CUT switchover (if TRIM is momentary)
TRIM/CUT	TRIM is activated, as long as pressed (if latching)
SLOW from V3.15:	Feed by set CUT / TRIM distance
PLUS, MINUS	Change the current cutting value
START/STOP	Start and stop of the drive motor, stop takes place at OT (with CONT / WIND the slider LEDs are switched off after stop actuation, with STEP the drive runs as long as the key is pressed)
MODE	Change CONT / SING / WIND / STEP (motor) or normal / ROCK (manual)
ON/OFF	Switch motor operation / manual operation

7.17.4 Long keystrokes

INFO/RESET (2 s)	Reset cut counter
MEM (2 s)	Save current position in active position memory (confirmation: both position LEDs go off)
REV, FWD, SLOW	Direct movement of specimen holder (as long as key is pressed), while SLOW key is pressed fast "typing" can be done with FWD From V3.13: REV first slow, after 2 s fast From V3.15: SLOW only after 300 ms continuous (before jog mode)

7.17.5 Display

Line 1:	Cut thickness, CUT / TRIM, retraction (with WIND instead of retraction window size)
Line 2:	Cut counter / total, mode, speed. In line 2 also all error messages are displayed, these replace the normal line content
„--- SERVICE ---“	Service due (2 million strokes) - stops approx. 10 s after switching on
„-- H&V Error --“	Failure / error of both pairs of light barriers
„--- H Error ---“	Failure / error of horizontal light barriers
„--- V Error ---“	Failure / error of vertical light barriers
„- Motor Error -“	Error at motor / encoder (no pulses during control) (error is displayed for approx. 10 s, manual operation still possible)
„--- Overload ---“	Drive motor was switched off after overload (10 s display)
„- End Position -“	Specimen grips are in front end position

8 EXTERNAL CONTROL PANEL CUT 5062



Before connecting any electrical units, the device must be switched off.

8.1 EXTERNAL CONTROL PANEL CUT 5062

To provide a more comfortable usage of the microtome the optional external control panels can be used for CUT 5062. The control panel is equipped with a connection cable to the microtome with a length of 1.80 m so the placement of the control panel can be arranged individually. To connect the control element to the microtome please refer to 3.3 ELECTRICAL CONNECTION. The LED's will light up for approx. 2 seconds after the microtome has been switched on.

Symbols and functions are identical to the control panel located in the housing of the microtome shown and described in section 7.8 to 7.16.



8.2 FUNCTIONAL OVERVIEW OF USER INTERFACE

Quick Guide – user interface

CUT 5062



Button		Function
	press once = change display from section counter to section sum to re-maining travel indication	INFO / RESET
	hold for 2 seconds = reset the cutting counter to 0	INFO / RESET
	press once = move to selected memory position press twice = change between memory position 1 and 2 hold for 2 seconds = save current position	MEM
	hold = direct movement of specimen towards blade / knife	FWD
	press once = feed by set distance (jog mode) hold = after 300 ms continuous movement	SLOW
	press once = retraction (5 μ standard setting) hold = fast retraction after 2 s	REV
	press once = switch between TRIM / CUT mode	TRIM / CUT

Please note:

This is a Quick Guide to have the most important commands at hand. For detailed information on how to operate the microtome, please read the user manual.

SLEE medical GmbH · www.slee.de

Quick_Guide_CUT_5062_2023-10-008.00_EN

Quick Guide – user interface

CUT 5062



Button		Function
	press once = change the current cutting value - 0.5 - 100 μ m (CUT mode)	PLUS / MINUS
	- 0.5 - 750 μ m (TRIM mode)	
hold	press once set retraction from 0 - 200 μ m (5 μ standard setting)	TRIM / CUT + REV + PLUS / MINUS
hold	press once set contrast (display)	TRIM / CUT + FWD + PLUS / MINUS

Please note:

This is a Quick Guide to have the most important commands at hand. For detailed information on how to operate the microtome, please read the user manual.

SLEE medical GmbH · www.slee.de

Quick_Guide_CUT_5062_2023-10-008.00_EN

9 CLEANING AND MAINTENANCE

9.1 CLEANING

The recommended frequency of cleaning the microtome depends on how intensely the device is used.

	Wear protective clothing and disposable gloves according to Good Laboratory Practices. Please take note of the safety aspects of the device. To clean the microtome mild domestic cleaning agents can be used. Do not use aggressive cleaning agents or solvents such as acetone or xylene, as the plastic or metal components of the device can be affected or corrode. The hood should be cleaned with commercially available plastic cleaning agents. Do not use alcoholic or organic solvents to clean the hood. Never spray or use cleaning agents directly on the touch panels or the display.
---	---

9.2 RECOMMENDED MAINTENANCE AND SERVICE SCHEDULE

Daily	Remove section waste from the waste tray. Please use supplied dust cover when device is not in use.
Weekly	Cleaning of blade holder.
Yearly	Annual inspection (performed by authorized SLEE service technician) • Check of all functions • Lubricating of movable parts • Check of driving system • Complete cleaning

10 OPTIONAL ACCESSORIES

Aquatec system	#10090056
MTR Bench top quick-freezing unit	#10110000
Magnifier with illumination	#10090060
External control panel CUT 5062	#10090050
Disposable blade holder TC65 (for tungsten carbide blades)	#10090041
Tungsten carbide blade (1 pc.)	#28406000
Glass knife holder (for triangle glass knives)	#10090014
Segment arc incl. universal sample holder (for glass knife holder application)	#10090015
Super Mega cassette clamp, orientable	#10090027
Super Mega cassette clamp, fixed	#10090021
Standard specimen clamp, fixed	#10090026
Foil clamp	#10090025
Prism (set)	#10090017
Round specimen holders (different diameters)	on demand
Disposable blades (low profile; 50 pcs.)	#28407000
Disposable blades (high profile; 50 pcs.)	#28408000
Disposable blades (low profile; 50 pcs.), Plasma LPH, for hard specimen	#28407004
Disposable blades (low profile; 50 pcs.), Plasma LPS, for soft specimen	#28407005
Disposable blades (high profile; 50 pcs.), Plasma HPS, for hard specimen	#28407006
Tungsten carbide blade (1 pcs.)	#28406000
Microtome knife profile: C or D, length: 10 to 40 cm	on demand
2nd handwheel lock	#10090024
More on request	

11 SERVICE

Internal components should only be serviced by technicians authorized by SLEE medical GmbH.

If technical service or spare parts are necessary, please contact your local SLEE medical GmbH distributor. Please have the following information available:

- Complete contact details
- Type of device and serial number
- Place of device and name of user
- Purpose of service call
- Delivery date of the unit

If it is necessary to return the device, it must be cleaned and disinfected before delivery. It must be returned in its original package, to avoid transport damage.

If the device or parts thereof are sent back in a dirty or non-disinfected condition, SLEE medical GmbH reserves the right to return the parts to the debit of the customer without carrying out repairs or maintenance.

12 WARRANTY

SLEE medical GmbH guarantees that the product delivered has been subjected to a comprehensive quality control procedure, and that the product is faultless and complies with all technical specifications and/or agreed characteristics warranted.

SLEE medical GmbH guarantees that the device is manufactured under an ISO 9001:2015 and ISO 13485:2016 quality management system.

Unauthorized modification or repair by third party persons will void the warranty.

Only original SLEE spare parts must be used.

Guarantee claims can be put forward only if the device is used according to this manual and for the purpose described.

Mistakes and errors which occur because of improper use cannot be accepted.

13 DISPOSAL

The device or parts of the device must be disposed of according to existing local applicable regulations.



The device must not be disposed of with normal household or commercial waste, as the electronic components it contains can be harmful to the environment.

Notes



SLEE medical GmbH • Am Neuberg 14
55268 Nieder-Olm • Germany
www.slee.de

T: +49 (0) 6136 76997-0
E: mail@slee.de



www.slee.de



[YouTube](#)



[LinkedIn](#)



[Instagram](#)