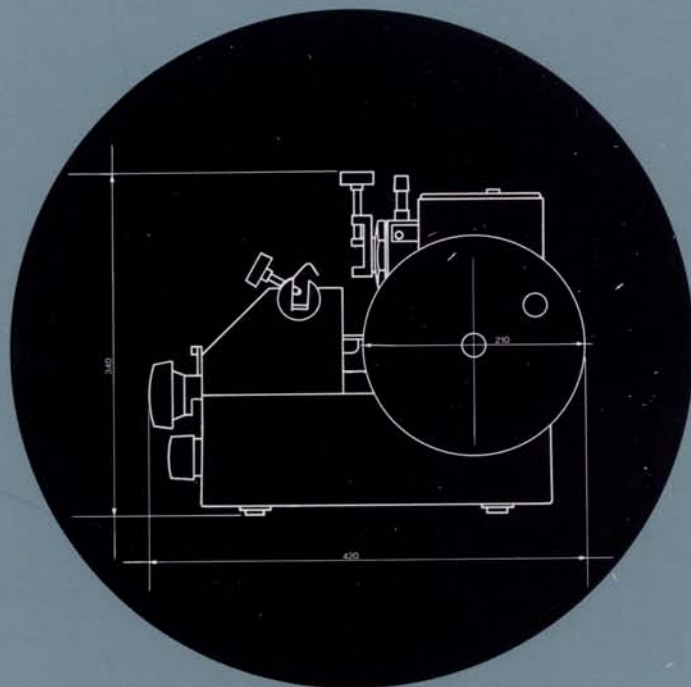
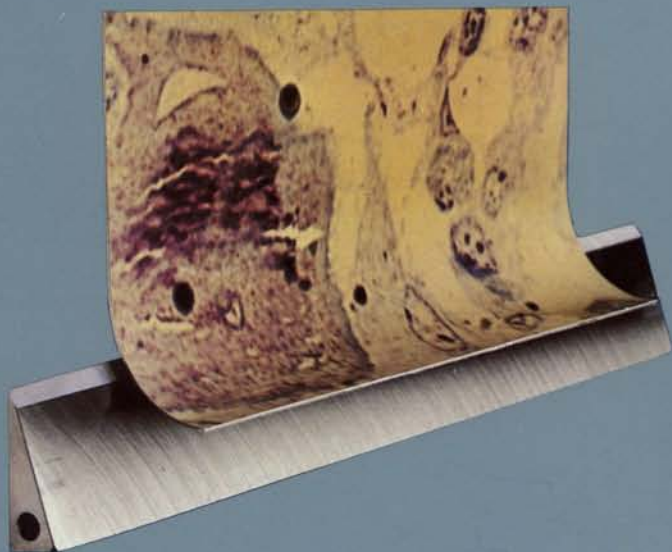


# The LEITZ 1512 Rotary Microtome



## Instructions



# The LEITZ 1512 Rotary Microtome



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# 1. Technical description

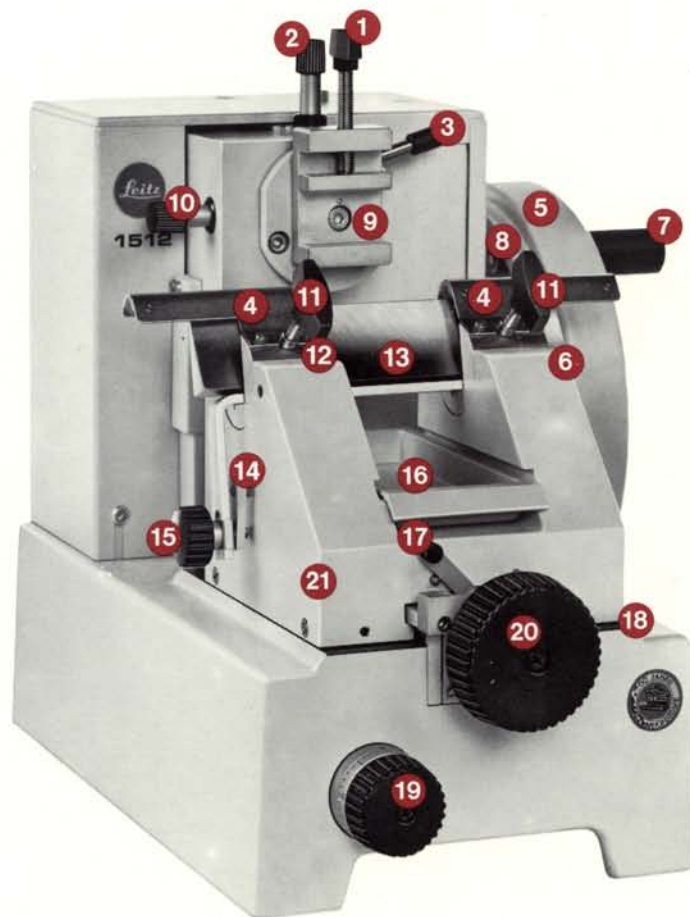


Fig. 1  
The LEITZ 1512 Rotary Microtome

- 1 Wing nut for clamping the object in the object clamp
- 2 Knurled screw for adjusting the object clamp in the Y axis
- 3 Clamping lever for the object clamp
- 4 Knife guard
- 5 Handwheel for vertical object movement
- 6 Scale for setting the angle of inclination
- 7 Handgrip
- 8 Groove for the V-belt of the motor drive
- 9 Object clamp
- 10 Knurled screw for adjusting the object clamp in the X axis
- 11 Wing nuts for fixing the knife
- 12 Knife clamp
- 13 Microtome knife
- 14 Lever for adjusting the angle of inclination
- 15 Clamping device for the angle of inclination
- 16 Section trough
- 17 Clamping lever for the knife block
- 18 Guide track of the knife block
- 19 Knurled wheel for setting the section thickness (1 to 25  $\mu\text{m}$ )
- 20 Knurled wheel for adjusting the knife block
- 21 Knife block

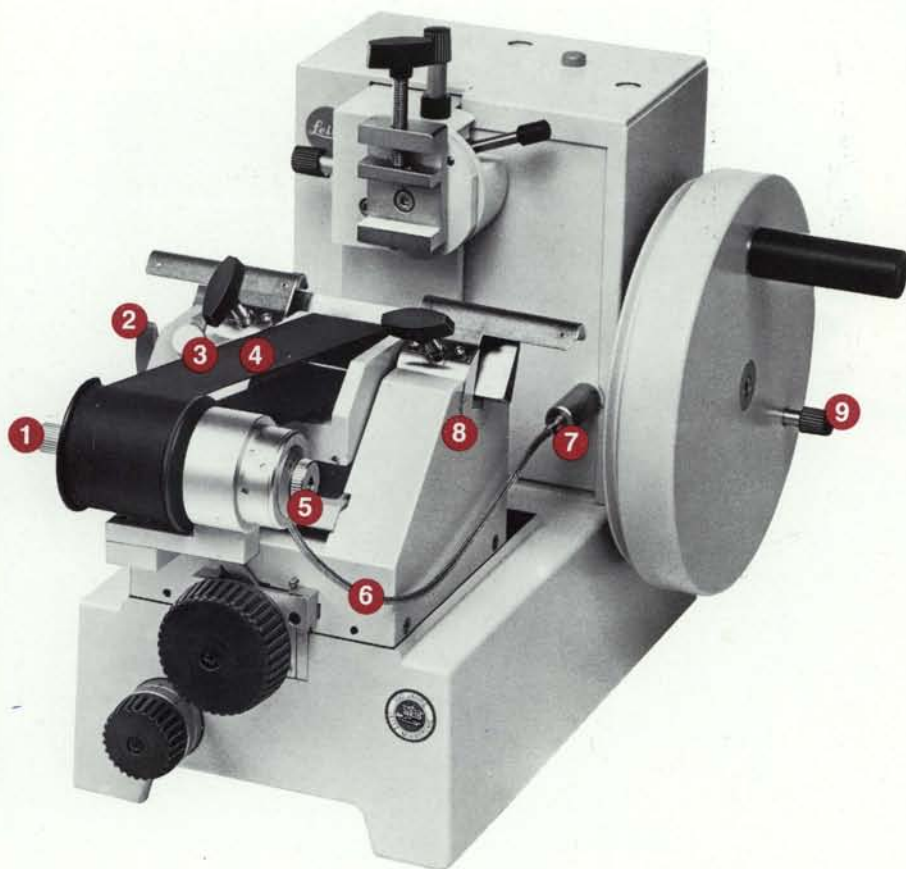
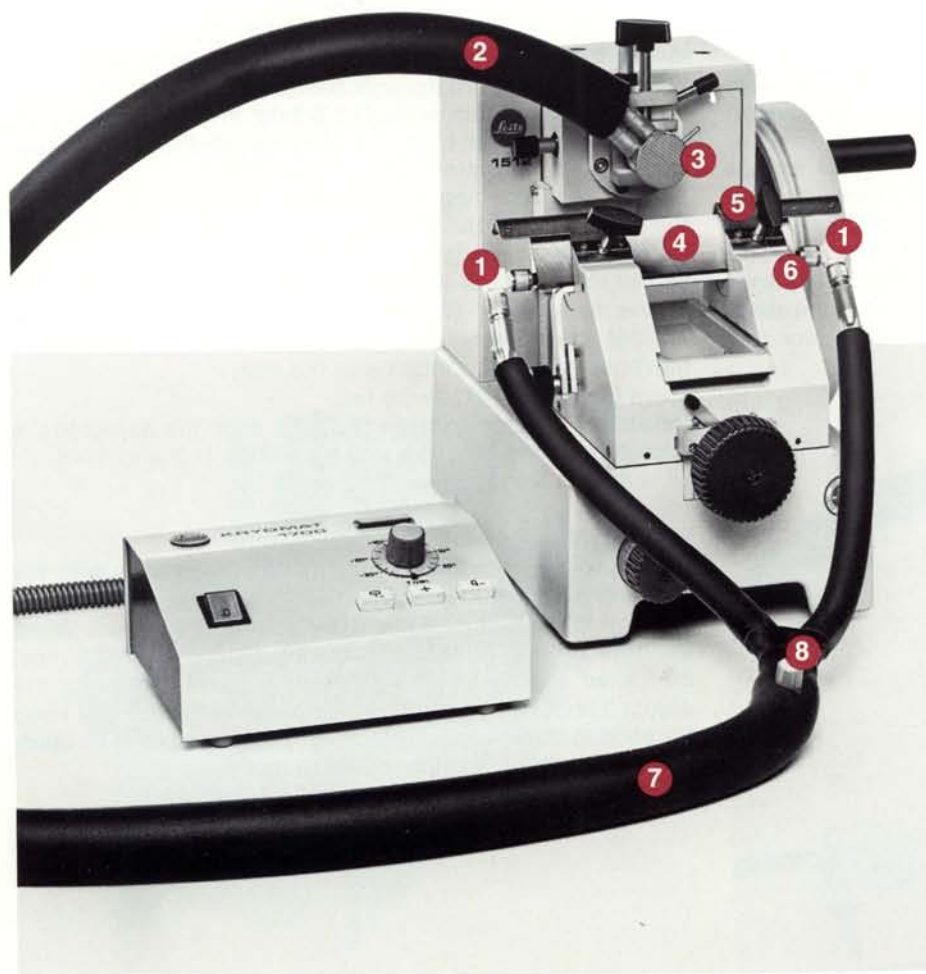


Fig. 2  
The LEITZ 1512 Rotary Microtome with  
automatic conveyor belt

- 1 Knob for turning the conveyor belt manually
- 2 Wing nut for attaching the automatic conveyor belt to the knife block
- 3 Knurled screw for aligning the automatic conveyor belt to the microtome knife
- 4 Automatic conveyor belt
- 5 Knurled knob for setting the conveyor speed
- 6 Bowden cable of the automatic conveyor belt
- 7 Coupler of the automatic conveyor belt
- 8 Scale for setting the angle of inclination
- 9 Handwheel clamp



Fig. 3  
The LEITZ KRYOTOM 1715



- 1 Connecting nozzles
- 2 Connecting hose for the KRYOMAT freezing chamber with object stage
- 3 KRYOMAT freezing chamber with object stage
- 4 Microtome knife
- 5 Knife guard
- 6 Knurled screws for attaching the connecting nozzles to the flow meter
- 7 Connecting hose for the microtome knife
- 8 Hose clamp

Details of operating the KRYOMAT 1700 will be found in the instructions No. 530-037.

## 2. Preparing the microtome for operation

### 2.1 Unpacking the microtome

Open the carton and remove the accessories.  
Remove further packing material.  
Take out the microtome and the handwheel.

### 2.2 Assembly

Place the handwheel on the shaft so that the pin engages in the bore provided for it. Insert the Allen screw with washer and tighten it with the Allen key (5mm). Unscrew the transport anchorage of the object sledge with the Allen key (5mm). Remove the transport anchorage, move the object sledge into the topmost position and pull out the wooden block underneath it. Place the cover in position and secure it with 3 screws. Generously lubricate the guide tracks of the object sledge and the handwheel shaft with the guide track oil (see also point 5 care and cleaning).

## 3. Cutting

### 3.1 Preparation for cutting

Move the lever (1.17) to the right and push the knife block (1.21) towards the front against the stop.

For safety reasons arrest the handwheel (1.5) with the screw (2.9).

Mount the object in the object clamp (1.9) and secure it with the wing nut (1.1).

Push the microtome knife (1.13) into the clamping fixture (1.12). Release the clamp (1.15) and set the angle of inclination on the scale (1.6).

Tighten the clamping screw (1.15). Tighten the knife with the wing nuts (1.11).

Release the arresting screw (2.9).

Adjust the object to the level of the knife by a quarter turn of the handwheel (1.5) and push the knife block (1.21) against the object, leaving a few mm space (the object must not yet make contact with the knife).

Move the lever (1.17) to the left.

Release the clamping lever (1.3) and align the object to the microtome knife with the knurled knobs (1.2 and 1.10).

Now tighten lever (1.3).

### 3.2 Trimming the block

Here it is not necessary to complete whole turns with the handwheel. Especially when objects are small it is of advantage to move the handwheel briefly up and down. When the object is above the knife, the knurled wheel (1.20) must be turned slightly to the right, until a plane surface of the object has been trimmed. For this purpose the knurled knob for section thickness setting (1.19) should be set at 0, which disengages the automatic advance mechanism.

## 4. Accessories



### 4.1 Automatic conveyor belt

The automatic conveyor belt (4.4) is attached to the left of the knife block (1.21) with the wing nut (4.2) and aligned to the microtome knife with screw (4.3). The coupler (4.7) of the Bowden cable (4.6) is screwed into the bush of the microtome. With each turn of the handwheel (1.5) the conveyor belt (4.4) is transported through the distance set with the knurled knob (4.5) (the speed adjustment of the conveyor belt depends on the size of the microtome sections).

Fig. 4



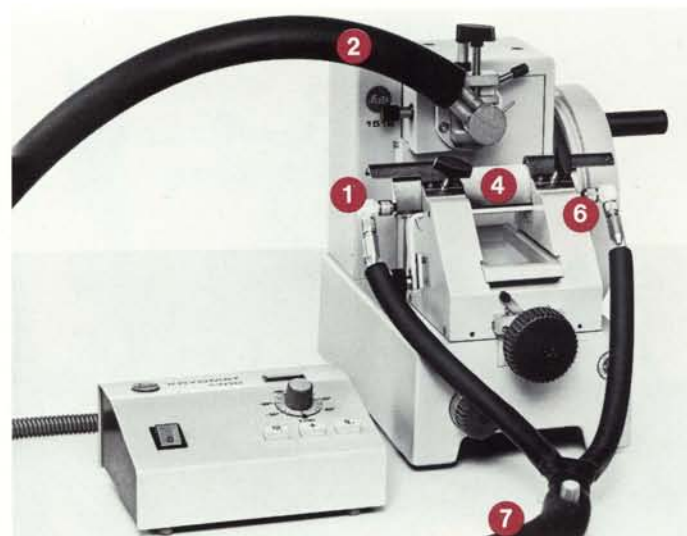
### 4.2 The LEITZ KRYOTOM 1715

With the connection of the electro-automatic KRYOMAT 1700 Cryostat the LEITZ 1512 rotary microtome can also be used for the cutting of frozen sections. In addition to the KRYOMAT 1700 a freezing chamber with a set of 5 object stages and their connecting hoses (5.2), a microtome knife (5.4) for flow cooling, 2 connecting nozzles (5.1), and the connecting hose (5.7) are required.

As shown in Fig. 5 the freezing chamber is mounted in the object clamp of the microtome. Its object stages are pushed onto the chamber and locked in position by a clockwise turn.

The connecting nozzles (5.1) attached to the connecting hose (5.7) are fixed to the 2 connecting pieces of the microtome knife and secured with the knurled screws (5.6).

Fig. 5





#### 4.3 Glass-knife holder and disposable knife

The mounting, setting of the angle of inclination, and clamping of the glass-knife holder (Fig. 6) and of the disposable-knife holder (Fig. 7) is identical to that of the steel knives (cf. 3.1).

Fig. 6

The LEITZ 1512 Rotary Microtome with glass-knife holder

- 1 Guide tracks of the object sledge
- 2 Lubricating point of the rear guide track
- 3 Knurled screw
- 4 Lubricating point of the handwheel shaft



Fig. 7

1 Disposable-knife holder





#### 4.4 Object clamp

Circular araldite embedded specimens of 5.5 to 30mm diameter can be mounted in the object clamp (Fig. 8).

The ordinary object clamp (9.1) is changed after the screw (9.2) has been released with the 4mm Allen key.

The object clamp for araldite-embedded specimens is attached with the same screw (9.2).

Fig. 8

Object clamp for araldite-embedded specimens



Fig. 9

Attaching the object clamp

- 1 Object clamp
- 2 4mm Allen screw



#### 4.5 Lab-Tek adapter

The special clamp (10.1) for the Lab-Tek adapter is mounted as described under 4.4 Object clamp.

Align the special clamp (10.1) as shown in Fig. 10.

Insert the Lab-Tek adapter as shown in Fig. 11 and attach it with screw (11.1).

Release the lever for arresting the object clamp (11.2), rotate the adapter with the special clamp through 90°, and clamp it again (Fig. 12).

See also the special instructions for the Lab-Tek adapter.

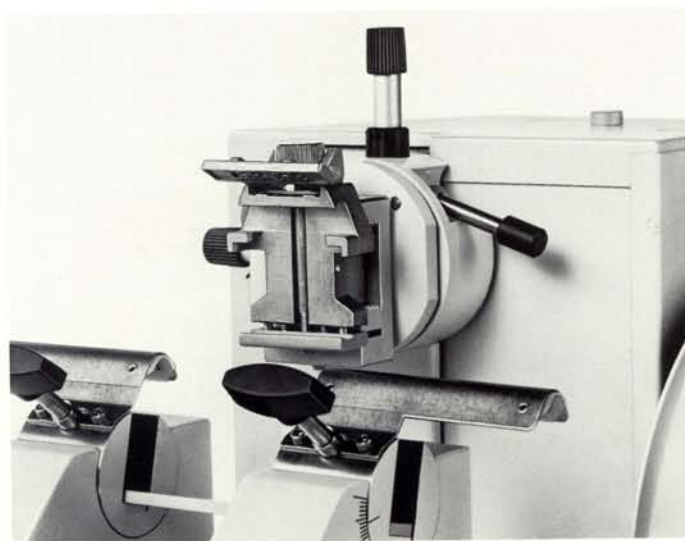
Fig. 10  
Special clamp for the Lab-Tek adapter



Fig. 11  
Lab-Tek adapter in transverse position  
1 4mm Allen screw  
2 Arresting lever



Fig. 12  
Lab-Tek adapter in vertical position



## 5. Care and cleaning

**5.1** The guide tracks of the knife block (1.18) must always be clean. Only petrol should be used for cleaning, which must be done in front of and behind the knife block, i.e. this must be moved backwards and forwards several times. This is the only guarantee of removing dirt and debris that have become lodged underneath the knife block.

**5.2** After each cleaning, the guide tracks of the knife block must be greased with the special grease No. 410. Other oils and greases must not be used.

**5.3** The guide tracks of the object sledge (6.1) must always be well lubricated. Dry guide tracks may cause tight movement of the handwheel and unevenness of sections. They must therefore be lubricated regularly once a day. Only the slide track oil No. 601 (Code No. 530 200 or 530 498) must be used for this purpose. The lubricating points for the rear guide track (6.2) and for the handwheel shaft (6.4) are accessible when the knurled screw (6.3) is turned clockwise.

The front guide track can be oiled directly. After a prolonged period of non-use, the slide tracks of the microtome must also be well lubricated before the next use.

**5.4** The guide tracks of the object sledge, like those of the knife block, can be cleaned with petrol.

**5.5** For the lubrication of the handwheel shaft a few drops of the slide track oil No. 601 should be applied to the lubricating points (6.4) provided for it at longer intervals (weekly).

**5.6** During non-use the microtome should be protected from dust by means of the protective hood.





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**ERNST LEITZ WETZLAR GMBH**

D-6330 Wetzlar Tel. (0 64 41) 29-1 Telex: 483 849 leiz d

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