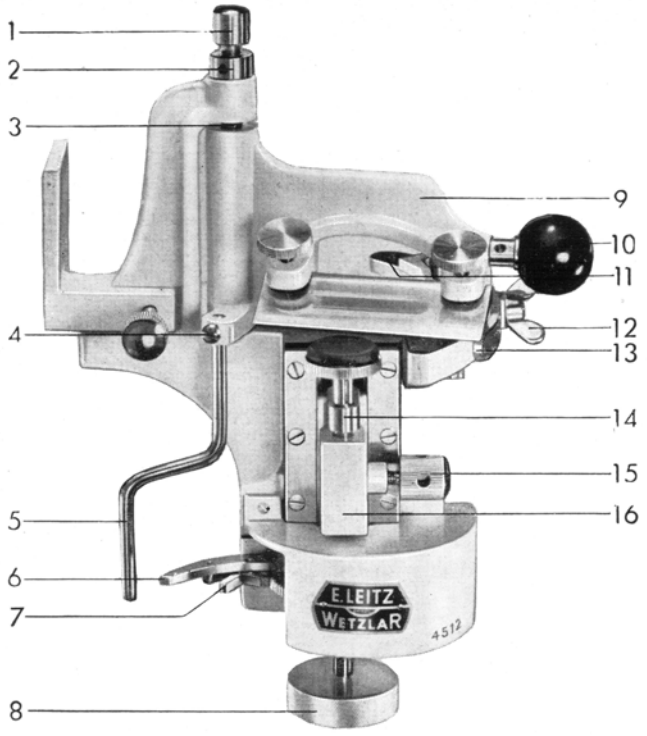
Directions for Use

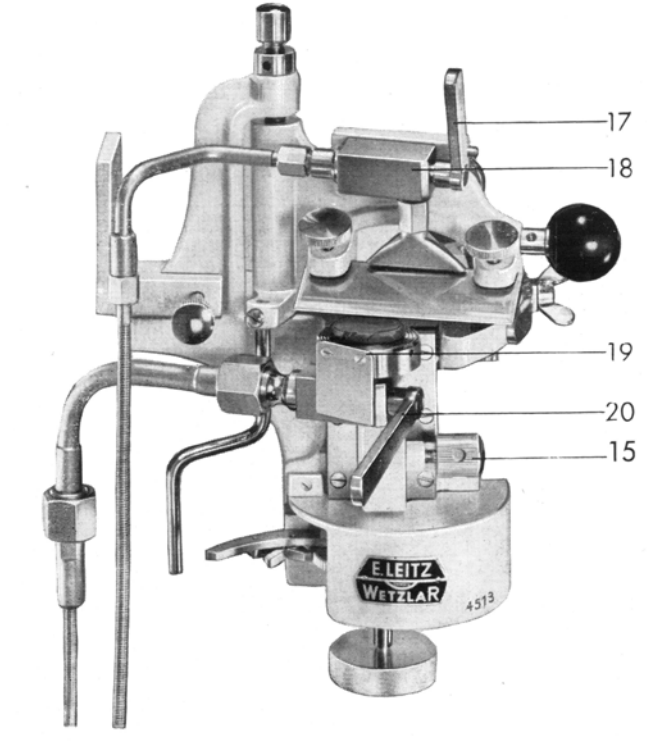
Leitz

Demonstration and Freezing Microtome No. 1213

ERNST LEITZ GMBH WETZLAR

53-2/Engl.





1 Adjusting screw for the motion of the knife holder

2 Check nut for adjusting screw

3 ⎫ Ball-bearings
4 ⎭ of the knife holder

5 Actuating rod for automatic specimen feed

6 Locking lever for the vertical movement of the specimen

7 Pawl operating the specimen feed

8 Knurled screw for raising specimen by hand

9 Knife holder

10 Handle of movable knife holder

11 Guide way for knife holder

12 Wing nut for fixing movable buffer stop

13 Movable buffer stop for setting cutting thickness

14 Interchangeable object stage

15 Clamping screw for object stage

16 Object sledge

17 Valve control lever for CO_2 feed to knife cooling

18 Knife cooling attachment

19 Freezing stage

20 Valve control lever for CO_2 feed to freezing stage

The Microtome No. 1213 is a laboratory instrument of simple but reliable construction which is equally suitable for embedded and frozen objects. It is particularly valuable for the quick preparation of sections from fresh specimens and for rapid diagnosis.

Degreasing

As a protection for storage and for shipping all ground metal parts are covered by a film of grease which must be removed with the aid of a clean cloth moistened in benzine.

Microtome Knives

The knife is usually of the wedge-shaped type and 8 cm. long for cutting embedded or frozen specimens while the additional knife cooling arrangement should preferably be used with a 9 cm. knife of the same profile. The knife must be tightly fitted to the movable holder by means of the two knurled screws as illustrated. Precision movement is ensured by the ball-bearings (3 & 4) of the holder and the guide way (11).

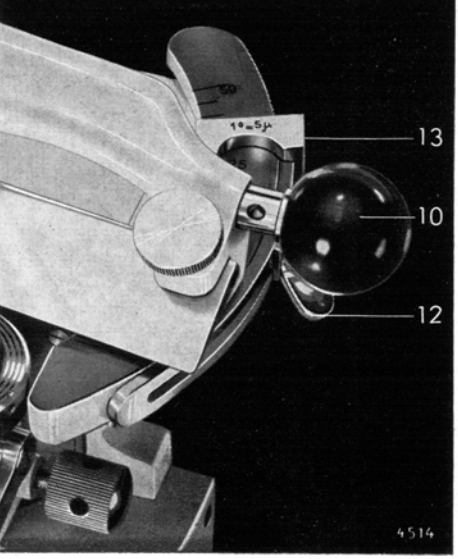
Thickness of Sections

The thickness of the sections to be cut is set by means of the movable buffer stop (13) at the side of the guide way (11) and adjustable in intervals of 5 microns within the range of 5 — 50 microns. The buffer stop can be securely locked by a wing-nut (12); this stop limits the range of the knife return movement and simultaneously the operation of the specimen advance. To ensure even sections the knife must always be swung back right against the stop.

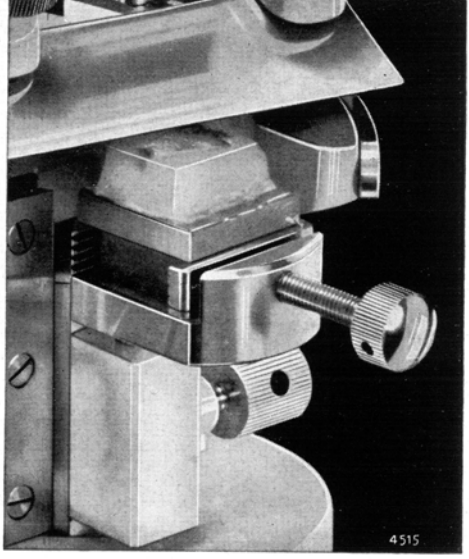
Specimen Feed

The object is raised by means of the micrometer spindle which works vertically upwards fully automatically when sections are cut, but manual adjustment is possible with the lower knurled control (8). The automatic feed can be put out of operation by disengaging the pawl (7) from the gear wheel. The range of movement of the micrometer spindle is 13 mm. and is limited at its upper end by a locking lever (6).

To return the micrometer spindle to its starting position, the locking lever (6) must be moved forward after the pawl (7) has been disengaged when the lower knurled control (8) will be free for manual operation.



The buffer stop (13) is adjustable by means of the wing-nut (12) and limits the knife movement towards the rear. When the knife holder is swung back against the stop the specimen is automatically raised through the pre-set cutting thickness. 10 Handle for moving the knife.



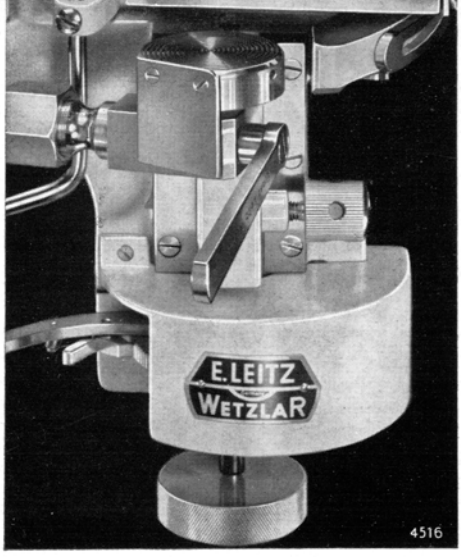
The illustration shows the paraffin stage in position. The specimen embedded in paraffin is preferably mounted on a small stabilite block (see Leitz microtome catalogue).

The micrometer spindle is mounted in a spring-loaded guiding nut which ensures an accurate vertical adjustment free from all backlash.

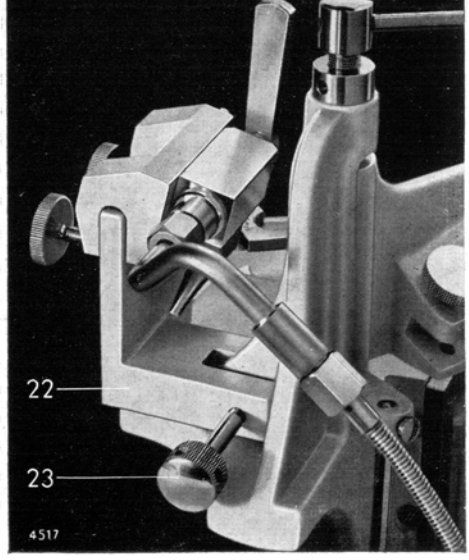
Object Stage

The object sledge (16) is moved by the micrometer spindle and takes the interchangeable object stage (14) which is clamped in position by a screw (15). The object sledge (16) has a continuous tight fitting on the micrometer spindle adequate spring pressure being provided.

The specimen to be cut can be accommodated on an object clamp, a paraffin stage or a freezing stage all of which can be used interchangeably on the microtome and secured by the clamping screw (15). The freezing stage and, if required, also the knife cooling attachment are connected to a commercial CO_2 cylinder.



The illustration shows the freezing stage with CO_2 connection.



If the knife cooling attachment is not in use it can be placed on a special bracket (22). This accessory is attached to the microtome body by a clamping screw.

Using the Microtome for Cutting Frozen Sections.

For this type of work the freezing stage with connection for the CO_2 cylinder is attached and clamped in position (screw 15).

The knife cooling attachment is mounted on the knife holder and secured by two milled screws.

It also includes a CO_2 connection. When not in use the attachment is transferred to a bracket as shown in the above illustration (right). The metal tube connects the freezing stage and the knife cooling attachment with the distributing piece which in turn is connected to the CO_2 cylinder. When assembling the connections it is important to use the various washers in the connection pieces and screw these together sufficiently tightly with the aid of the spanners supplied with the microtome.

The CO_2 feed must be intermittent and is regulated by repeated brief raising of the valve control levers of the freezing stage (20) and the knife cooler (17).

Care and Cleaning of the Microtome

After the guide way of the knife holder has been cleaned, an acid-free light oil (sewing machine oil) should be applied.

From time to time the slides in which moves the object sledge (16) requires the application of vaseline.

The easy motion of the knife holder will be retained by an occasional drop of light oil on both the ball-bearings (3 & 4). If this motion requires additional subsequent adjustment after frequent use of the microtome, the top screw (1) should be somewhat tightened after the check nut (2) has been loosened. The latter must be tightened again after the adjustment has been made.

To retain the proper functioning of the microtome it should be covered when not in use so as to preclude dust.

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