

INSTRUCTIONS

LEICINA SPECIAL



210-31a / Engl.

LEICINA SPECIAL

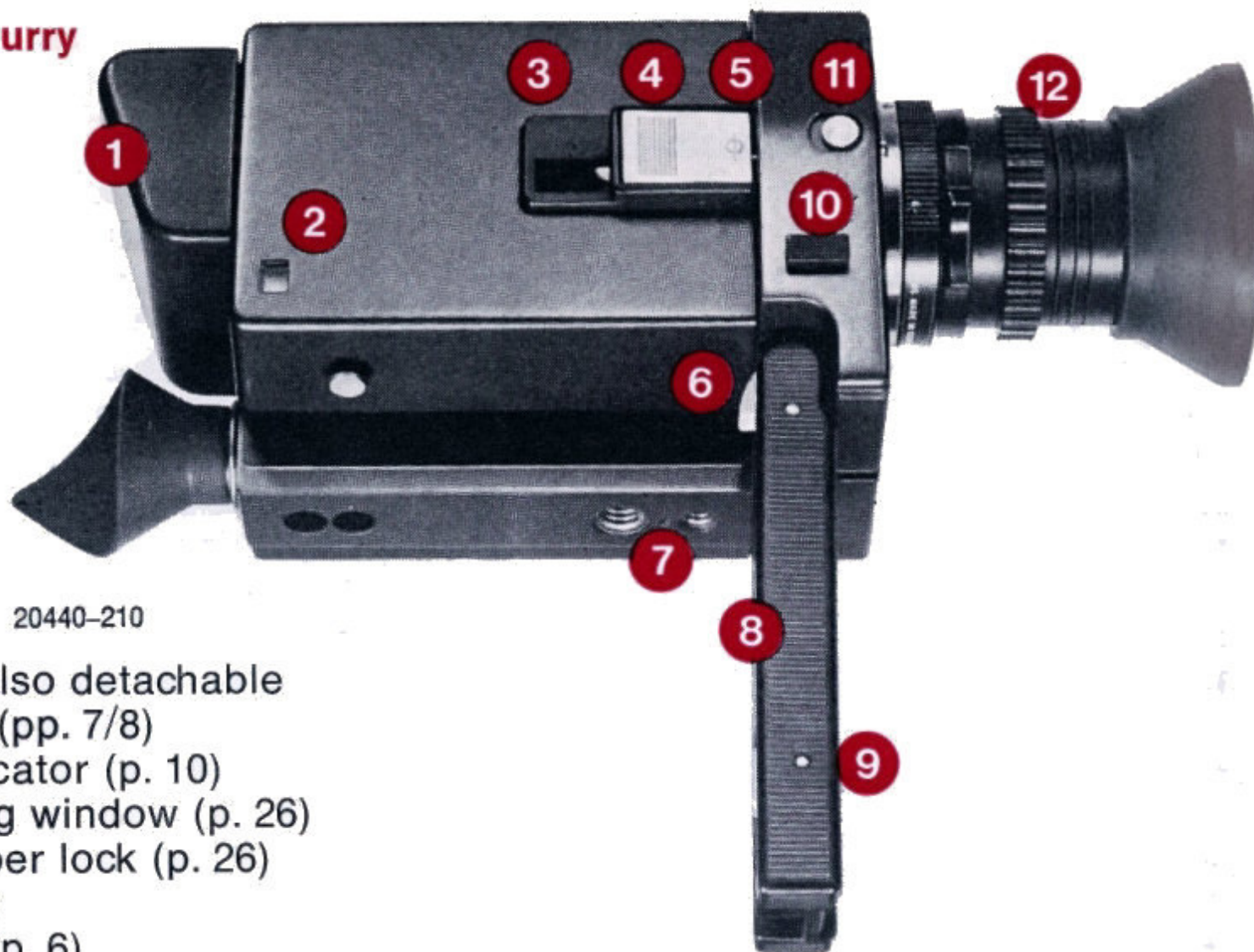
The LEICINA® SPECIAL is the nucleus of a universal Super-8 cine camera system. Its characteristic feature is the large lens-changing bayonet; it corresponds to the well-tried LEICA bayonet. For highly sophisticated filming a zoom lens, the 6-66mm OPTIVARON f/1.8, is available, with LEICINAMATIC for automatic exposure control and power zoom. The LEICINA SPECIAL cine camera thus opens up versatile possibilities to the ambitious cine amateur as well as the widest range of applications in the scientific and technological fields.

No intricate technical knowledge is required for the operation of the LEICINA SPECIAL. We nevertheless recommend the study of the following directions and use of the aids described, for correct operation enhances the fun of filming.

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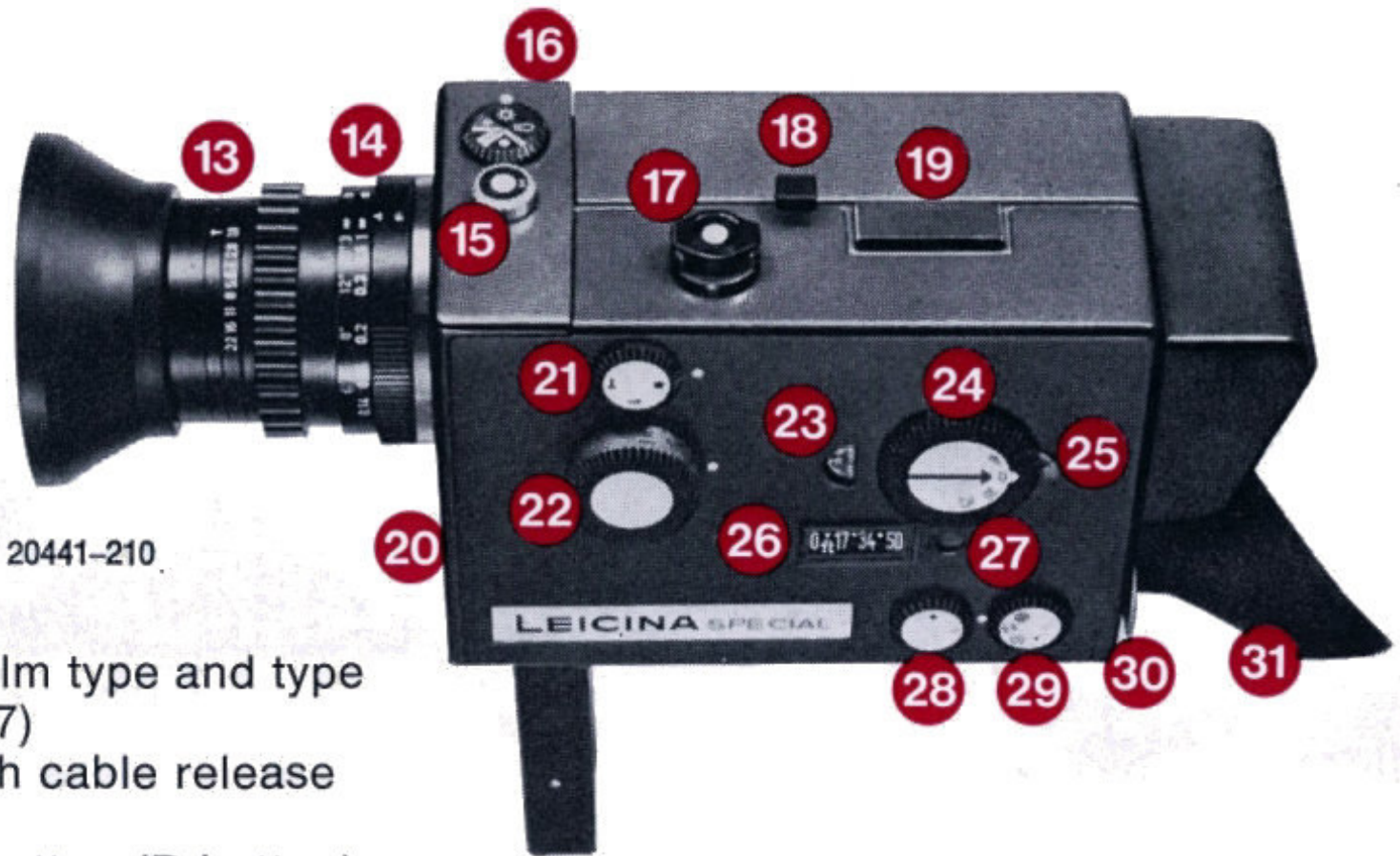
For the reader in a hurry



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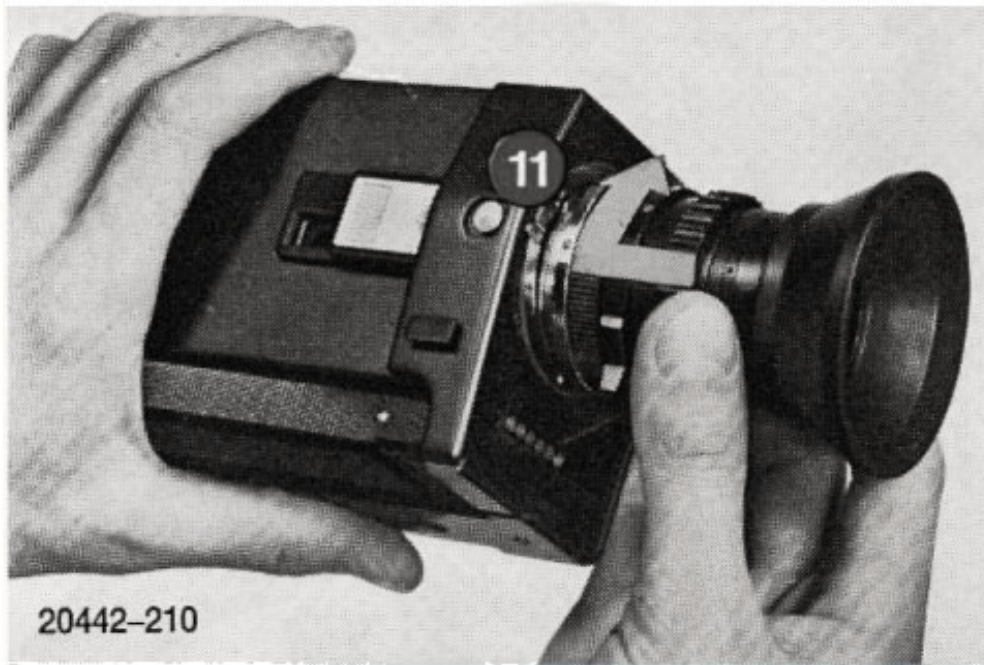
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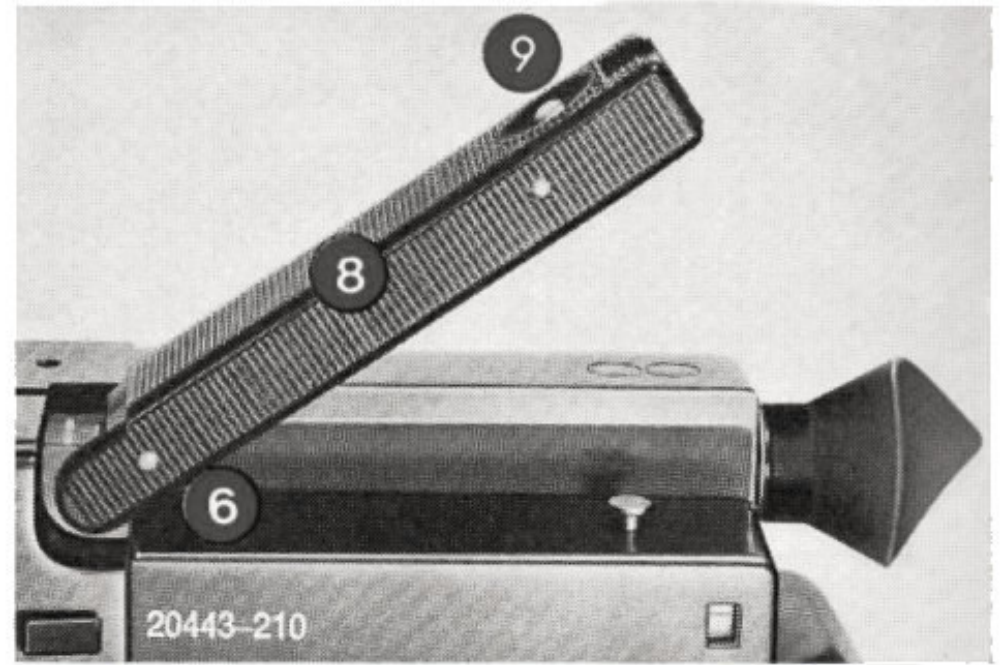


Inserting the lens

The red dot on the lens mount must face the bayonet mount lock (11). After a slight rotation to the right the lens engages in the bayonet mount with a click.

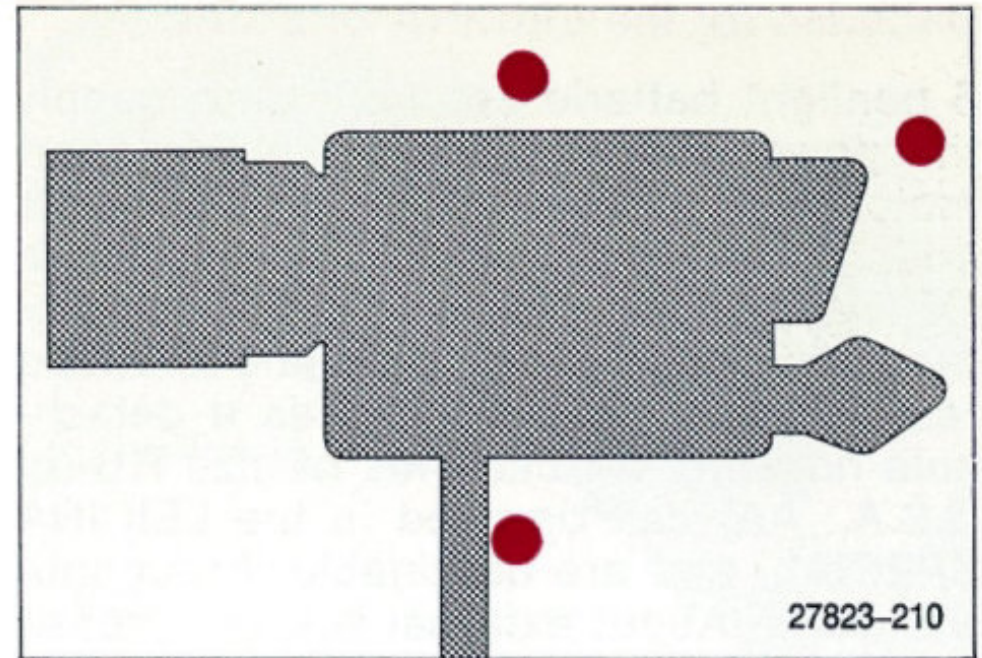
Removing the lens

Grip the rear fixed ring of the lens, pull the bayonet mount lock (11) to the rear, rotate the lens to the left and remove it.



Handgrip and release

To turn the handgrip (8) up depress and grip lock (9), at the same time pulling the grip up. The release button (6) is now accessible.

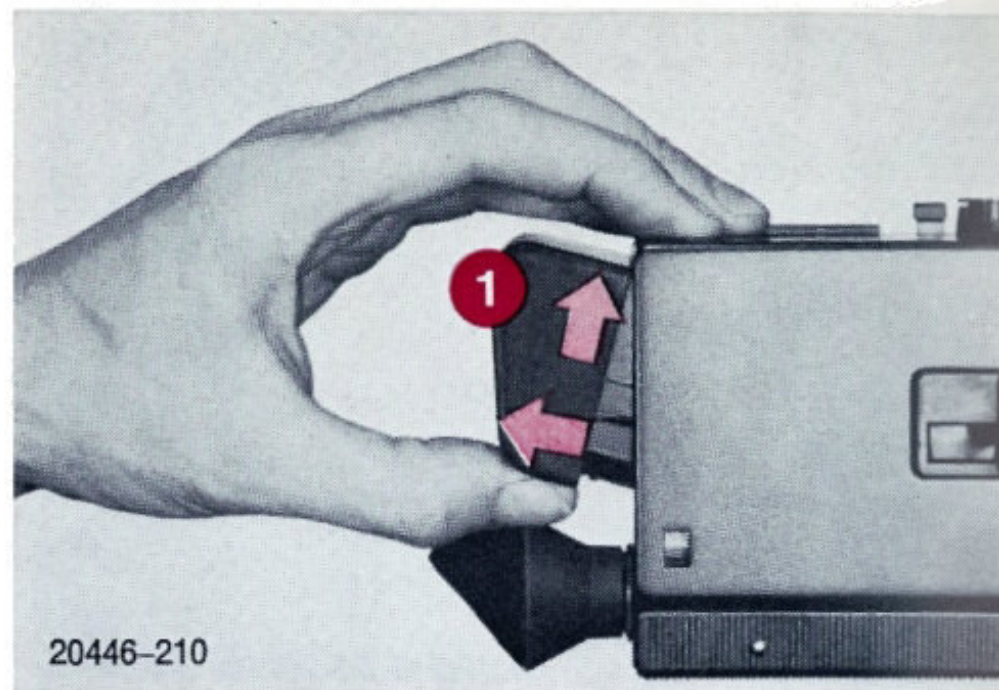


Holding the camera correctly

The LEICINA SPECIAL is designed so that the handgrip (8) can be held with either the left or the right hand. The thumb lies against the release button (6). The other hand grips the camera body. The forehead rest (1) of the camera is propped against the forehead for steady three-point-support.

Batteries for the LEICINA SPECIAL

5 penlight batteries of 1.5 V each supply the power that drives the film transport motor and supplies the exposure meter and, in the LEICINAMATIC, the 6–66mm OPTIVARON f/1.8 zoom lens. The complete battery set is housed in the forehead rest (1), which is designed as a detachable housing. All batteries of size R6 (in U.S.A.: AA) can be used in the LEICINA SPECIAL, and are obtainable throughout the world. About external sources please consult the relevant Working Sheets No. 210–27.



Inserting the batteries

Push the forehead rest (1) upwards and swivel it to the back.

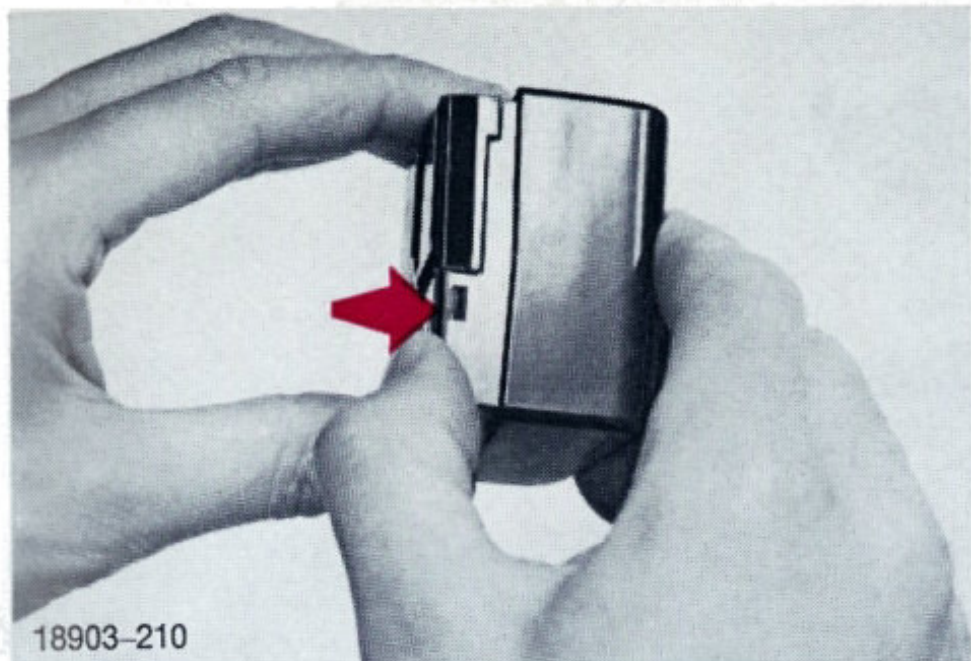
Batteries we have so far tested and can recommend:

Varta Pertrix 244
Daimon 298
Ever Ready HP 7

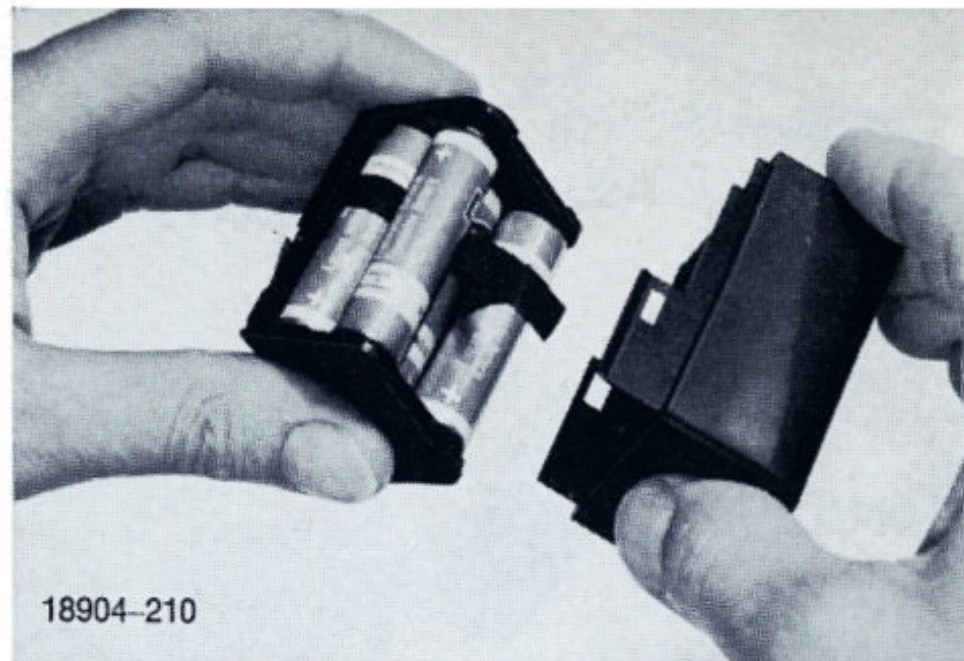
Country of origin:
Western Germany
Western Germany
U.K.

Berec HP 7
Piles Wonder "Orest"
Hellesens 738
Eveready 1015
Eveready E 91
Mallory Mn 1500

U.K.
France
Denmark
U.S.A.
U.S.A.
U.S.A.

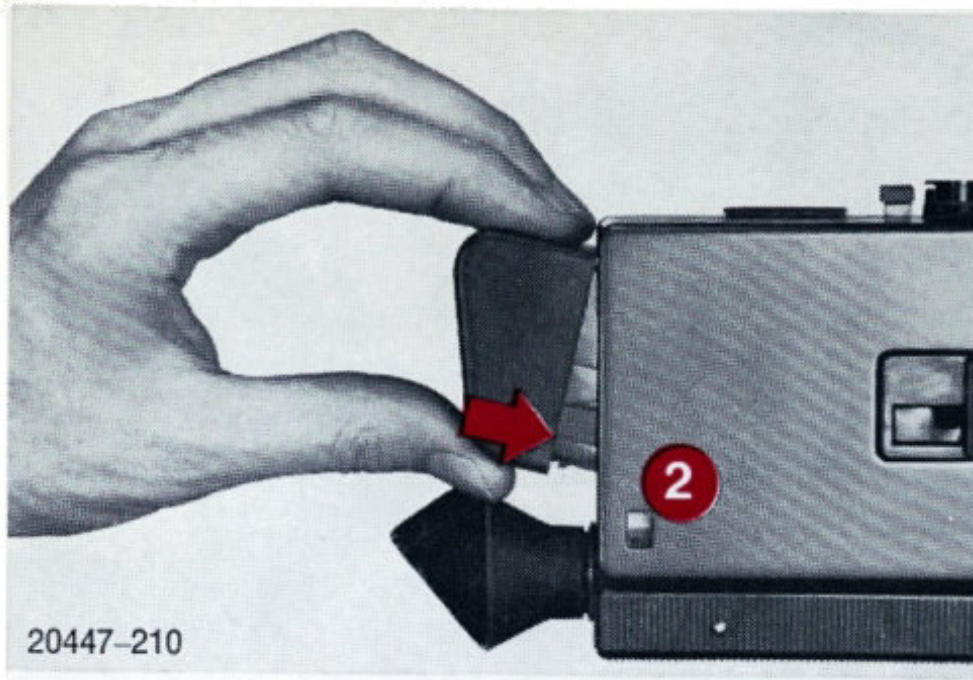


To open the battery housing lift the upper (slightly bent) lid from its catch and separate both parts.



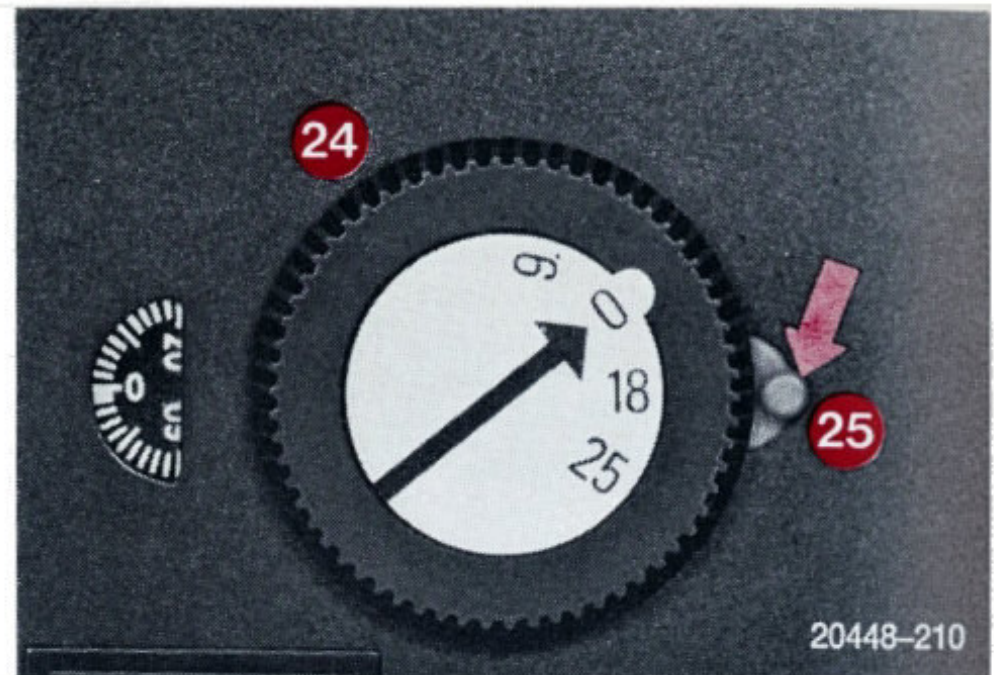
Insert each cell in its retaining clip observing + and - polarity. Place the end of the cell against the spring contact and push it into the clip. The fabric bands are placed beneath the lower cells (see illustration) to facilitate their removal. Close the battery housing.





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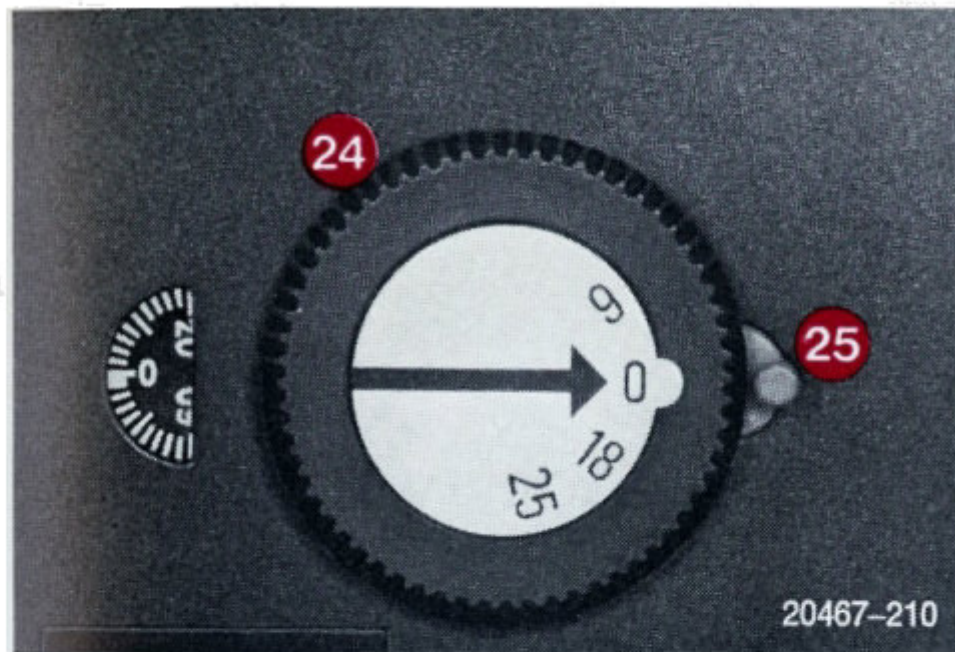
Insert battery housing (1) into the camera by engaging its upper portion with the spring clip in the camera body. Tilt the housing downward until it is secured. Test the battery set. During freezing weather the battery housing should be carried in an inside coat pocket and inserted in the camera immediately before filming begins. (A spare battery housing is available under Code No. 22224.)



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Testing the battery set

Set the speed selector (24) at one of the three film speeds, depress its locking button (25) and watch the pointer in the control window (2). The pointer must be clearly deflected into the white field. If it is deflected only as far as the red field or not at all, the batteries are exhausted or inserted incorrectly.



Speed selector

The speed selector (24) has the following functions:

- 9 = 9 f.p.s. = $1/20$ sec. for time lapse
- 0 = all camera functions are switched off
- 18 = 18 f.p.s. = $1/40$ sec. for general shooting
- 25 = 25 f.p.s. = $1/55$ sec. for panning and general professional use

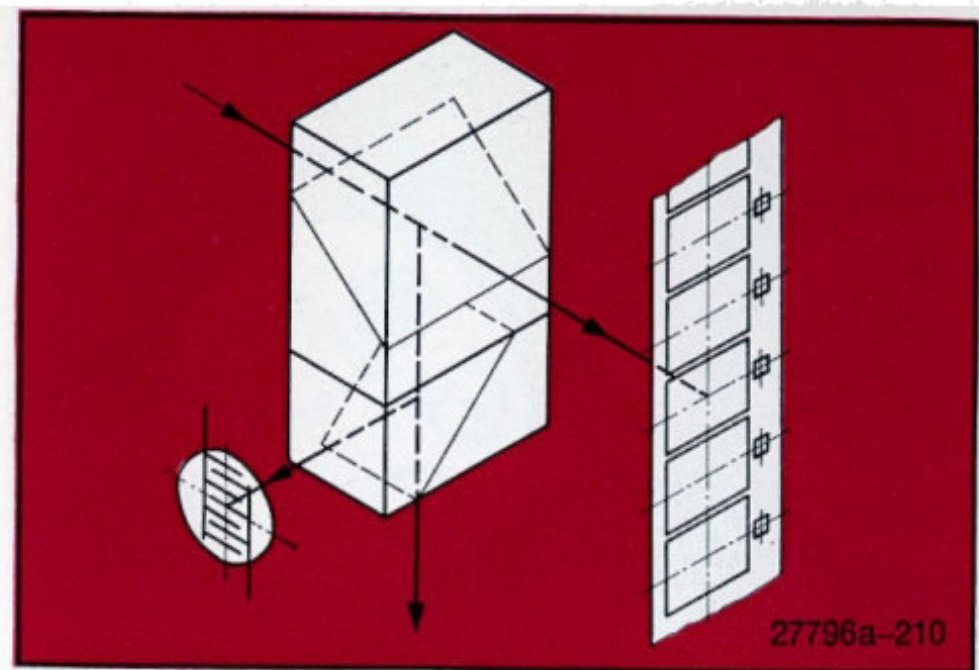
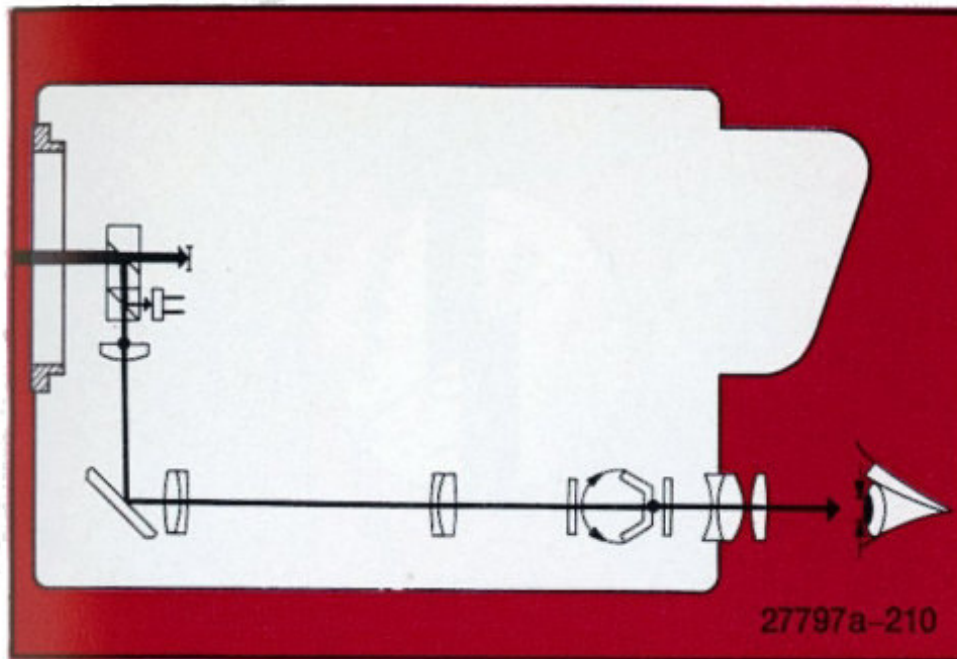
To rotate dial depress locking button (25) first.

Note

When camera is not in use keep power switched off and save batteries!



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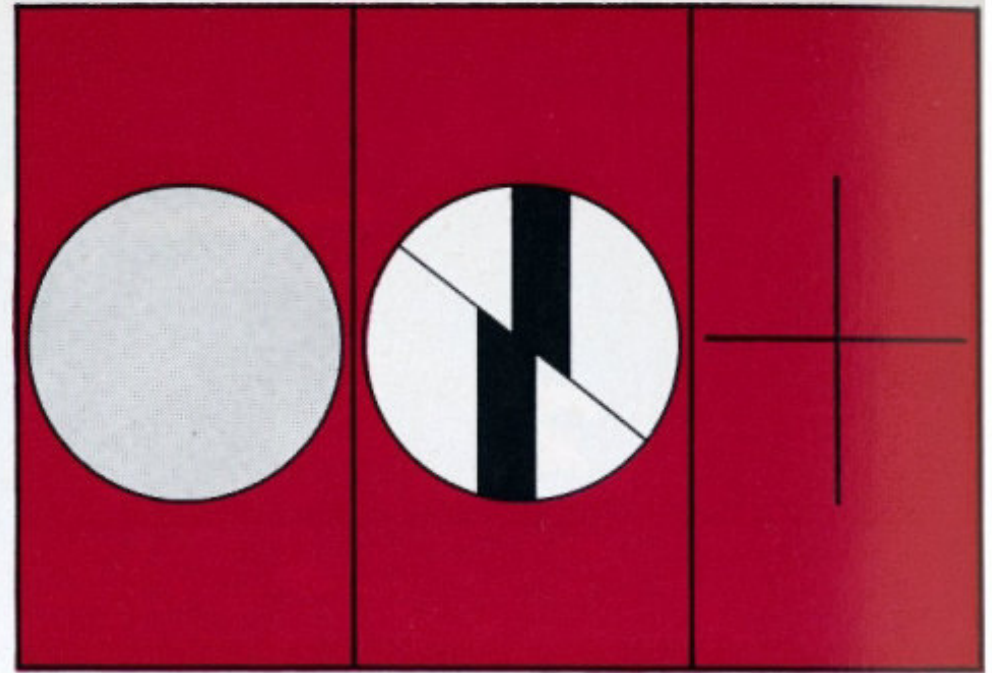
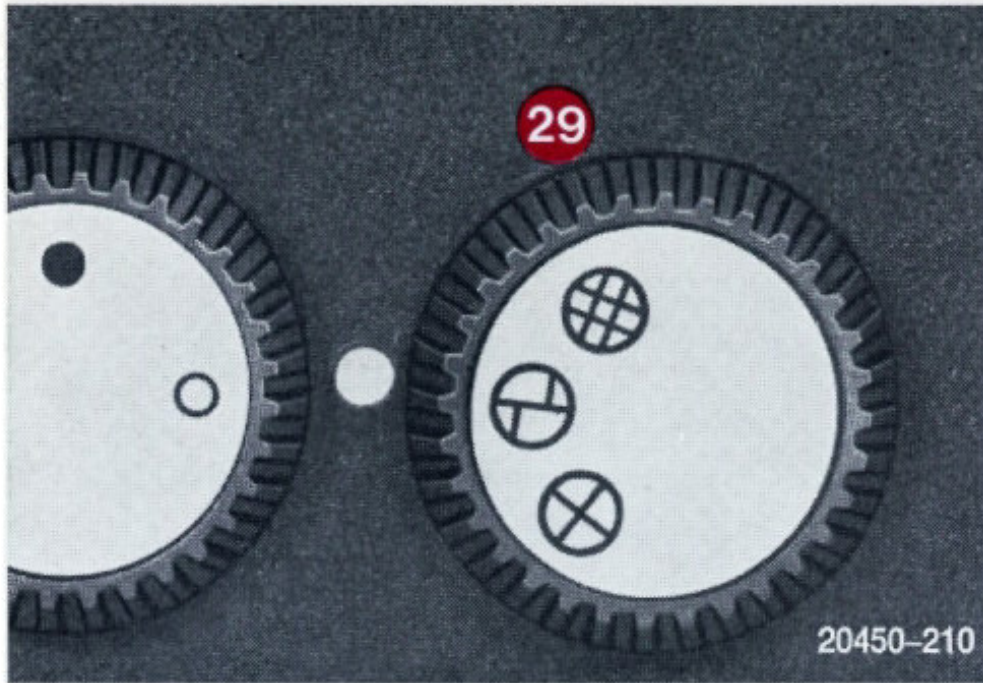


◀ The viewfinder

The viewfinder indicates pictorial contents, sharpness and exposure at a single glance.

The optical system

The LEICINA SPECIAL has a high-quality flicker-free reflex finder. The eyepiece, pupil distance 18mm, has a very large exit pupil (4.2mm diameter), enabling even spectacle wearers to survey the viewfinder image completely. About 20% of the light entering through the lens is deflected from the optical path – 10% each for the viewfinder and for the light measurement.

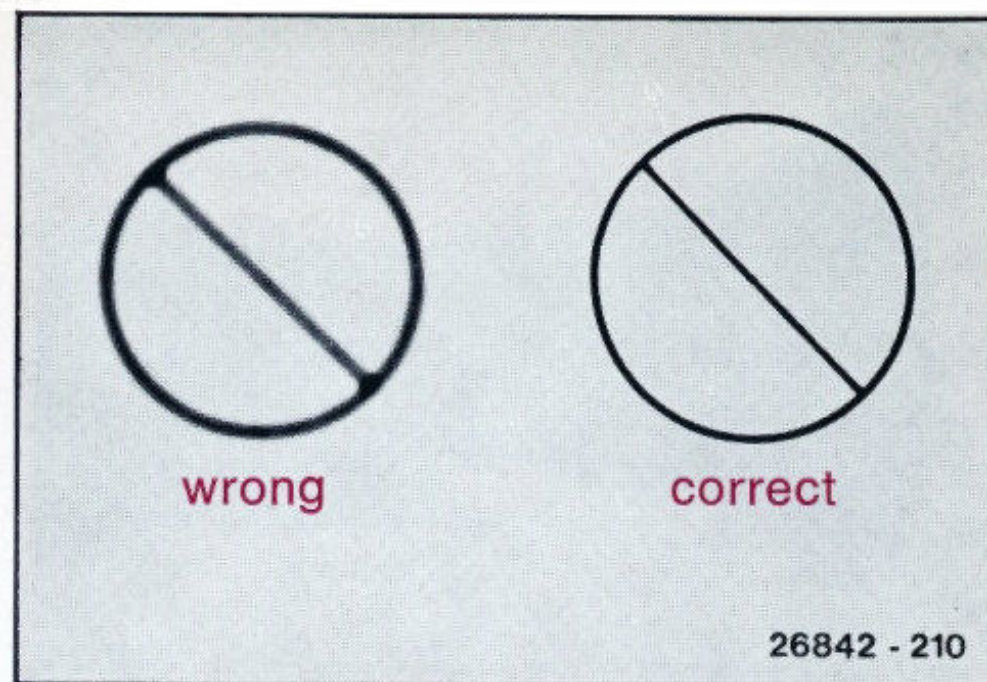
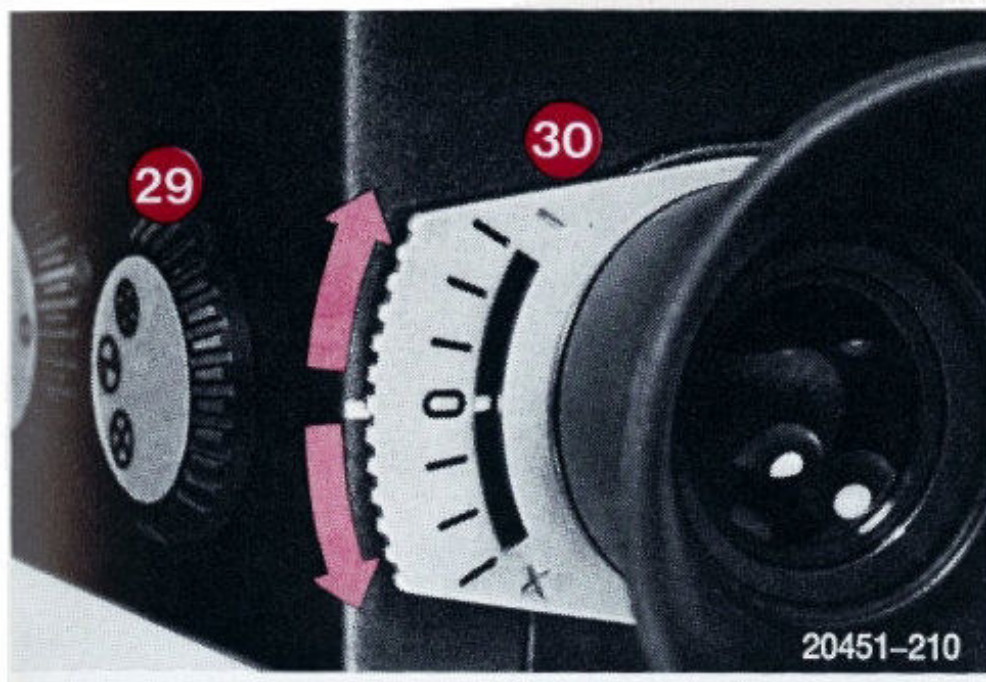


Viewfinder turret

For optimum sharpness control the LEICINA SPECIAL offers a choice of three different focusing devices on a turret:

- 1) Micro-prism screen
- 2) Central split-image rangefinder
- 3) Aerial image with crosslines.

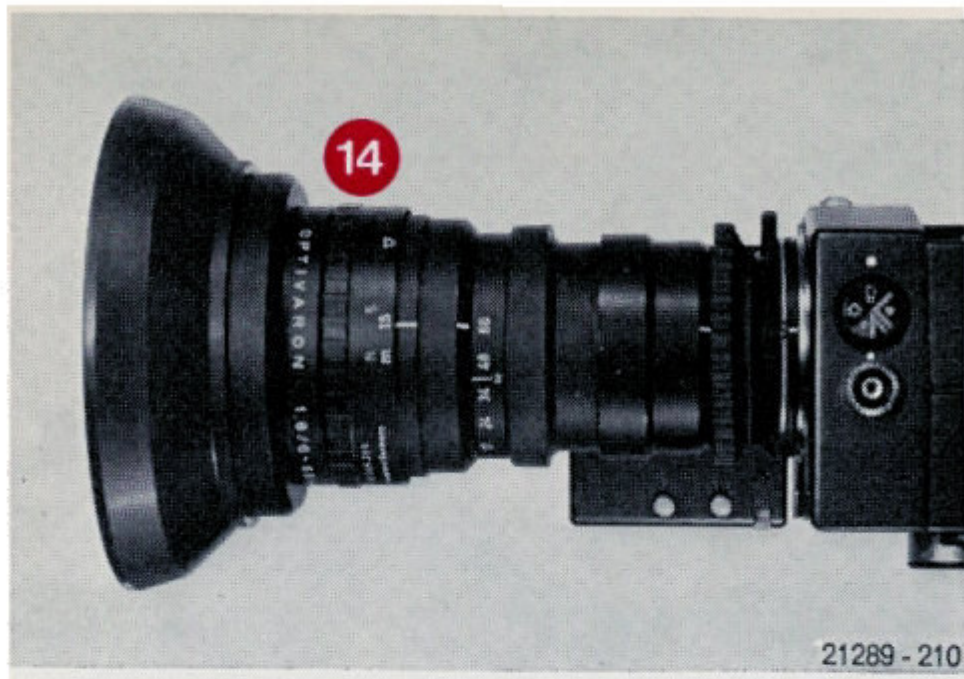
The various discs are introduced into the optical path by means of the viewfinder turret (29).



Eyepiece setting

The eyepiece setting is carried out as follows: introduce the split-image rangefinder into the optical path by means of the viewfinder turret (29), set the lens in the camera at infinity. Sight a uniformly bright or grey area and move the eyepiece setting lever (30), starting from +, downwards until the diagonal measuring edge of the split-image rangefinder has reached maximum sharpness and optimum contrast (see illustration).

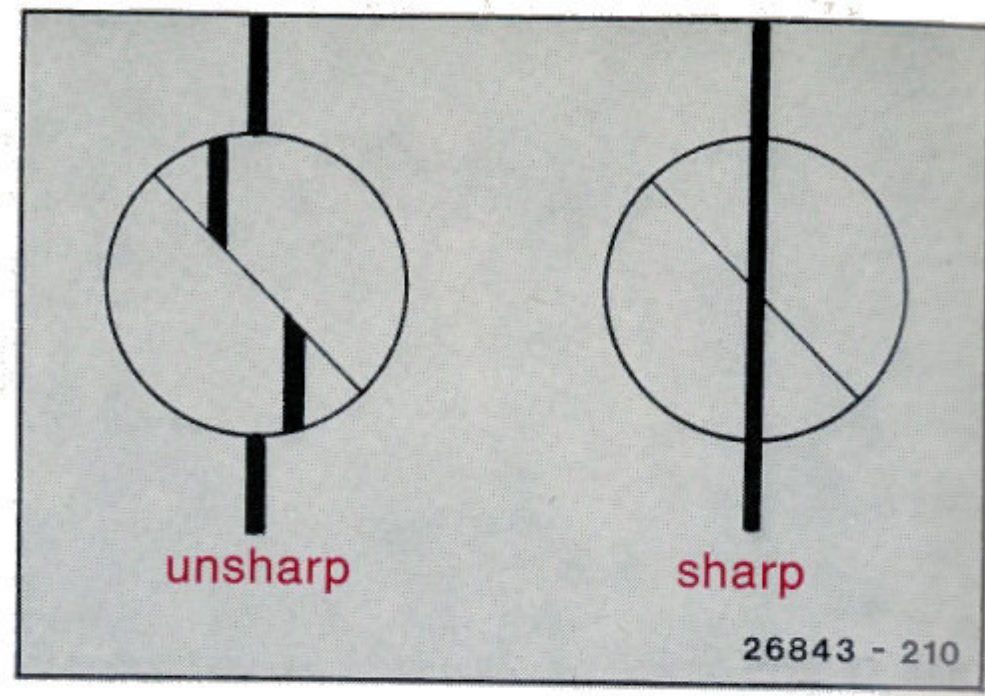
**Correct eyepiece setting
is essential
for critical focusing**



Focusing

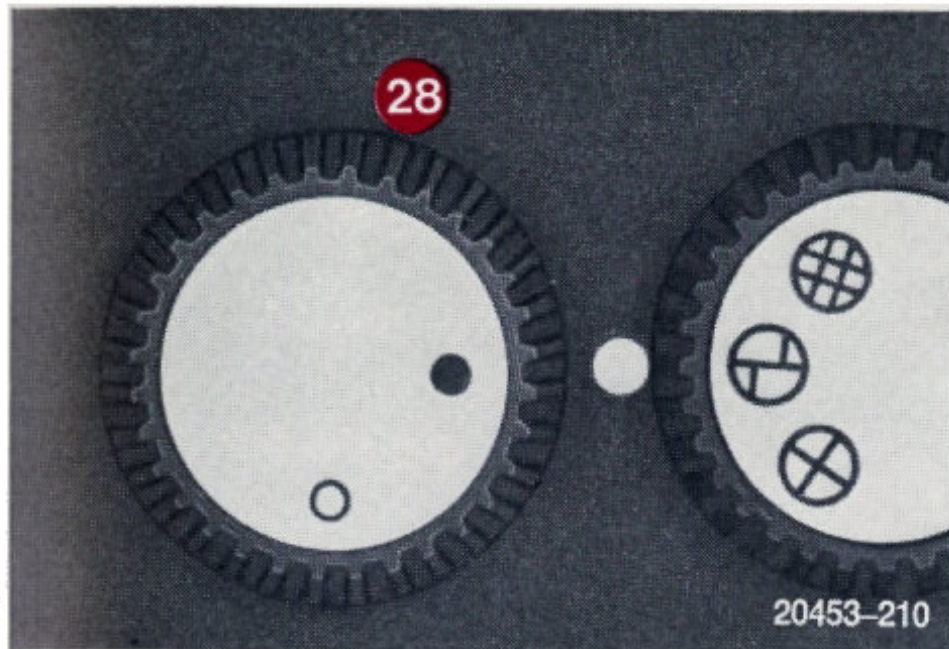
When focal lengths below 15mm, normal for filming, are used the micro-prism screen is the universal focusing aid. It offers great brightness at minimum interference with the viewfinder image.

The lens must always be focused at full aperture; zoom lenses must be set at maximum focal length. In the close-up range, too, the camera viewfinder should always be used for focusing.



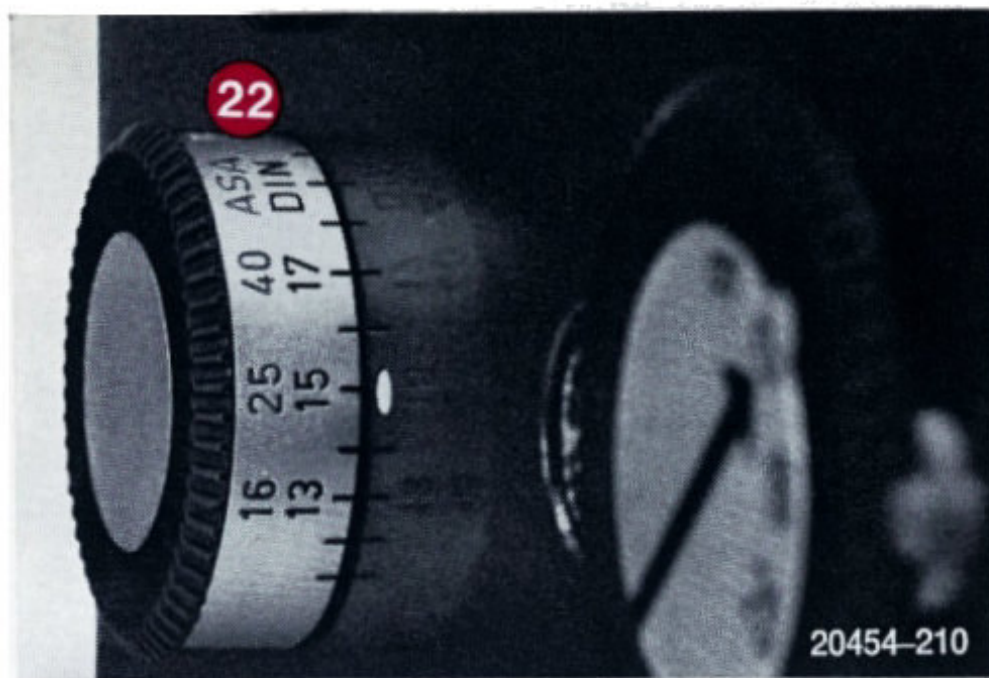
For focusing with the split-image rangefinder the distance setting ring on the lens (14) is rotated until vertical lines are continuous in the measuring field.

Critical focusing is necessary especially when longer focal lengths are used and in the near-focusing range.



Viewfinder black-out control

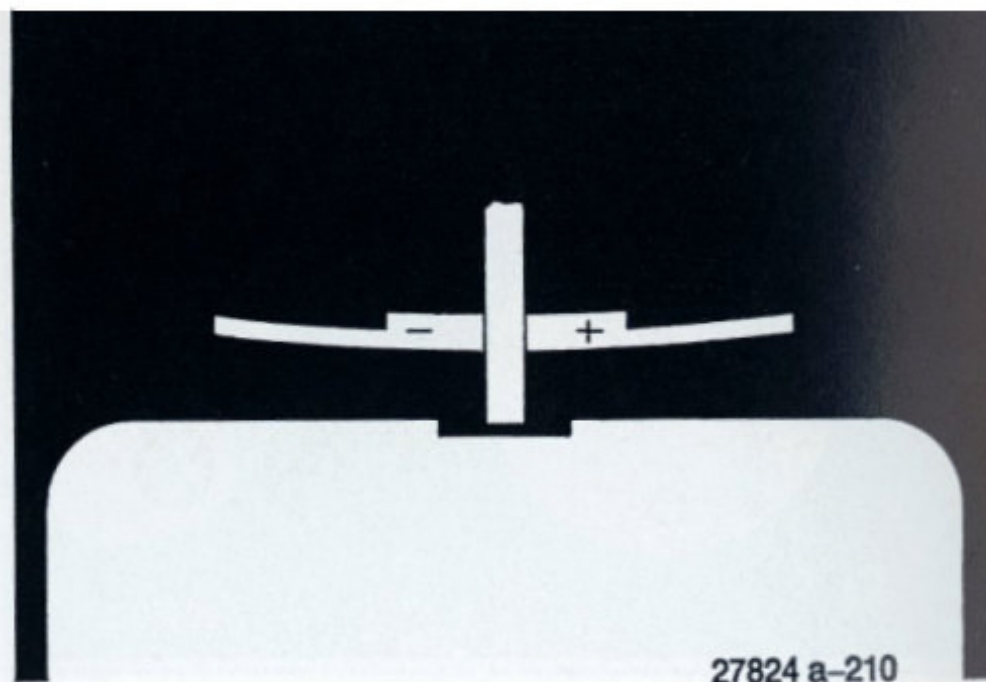
When the black dot on the rotating knob (28) faces the white dot, the optical path of the viewfinder is completely blocked. This setting is recommended to avoid any entry of light through the eyepiece when the viewfinder is not used during filming from a tripod.



The built-in exposure meter

The exposure meter is switched on when the speed selector (24) is set at one of the speeds. For correct exposure measurement the film speed must be set first with the setting knob (22).

As a large number of interchangeable lenses, especially still camera lenses, can be used on the LEICINA SPECIAL, the camera has a built-in exposure meter with follow pointer system. The light is measured through the lens. The effect of the various filming speeds is automatically



allowed for. The correct lens stop must be set by rotation of the aperture ring (13) of the interchangeable lens on the camera. The follow pointer is reflected above the viewfinder image. The correct lens stop is set when the pointer is within the rectangular recess.

Seen from the centre of the measuring field the pointer deflection towards or – corresponds to one lens stop.



The LEICINAMATIC allows automatic exposure control and power zoom with the 6-66mm OPTIVARON f/1.8 zoom lens (see also p. 29). Power supply is via contacts (20).



Connection for external zero instrument

By means of the connection (10) an external zero instrument can be connected for the purpose of exposure control. It indicates, for instance, light changes required during filming through the microscope, which can be compensated by an appropriate adjustment of the transformer of the microscope lamp or with filters. The sensitivity of the zero instrument can be varied.

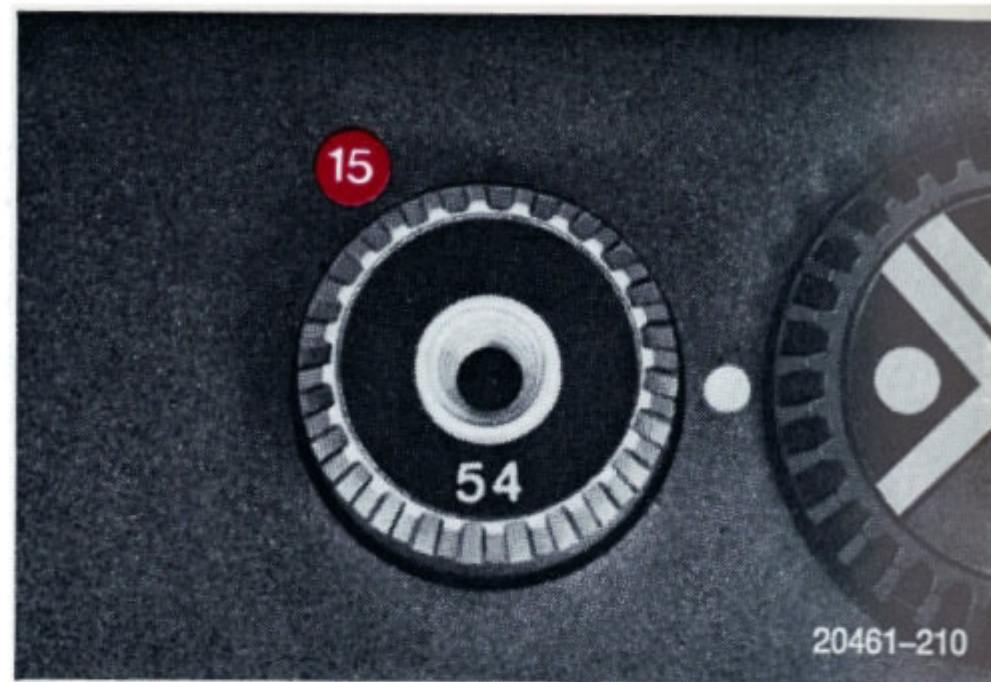
Slow motion

During filming, instant change to high speed (54 f.p.s. = $\frac{1}{120}$ sec shutter speed) is possible from all other speeds simply by pressure on the button (15).

When the high-speed button is operated the lens aperture must be adjusted to the higher shutter speed. This adjustment is automatic only when the OPTIVARON is used with the LEICINAMATIC.

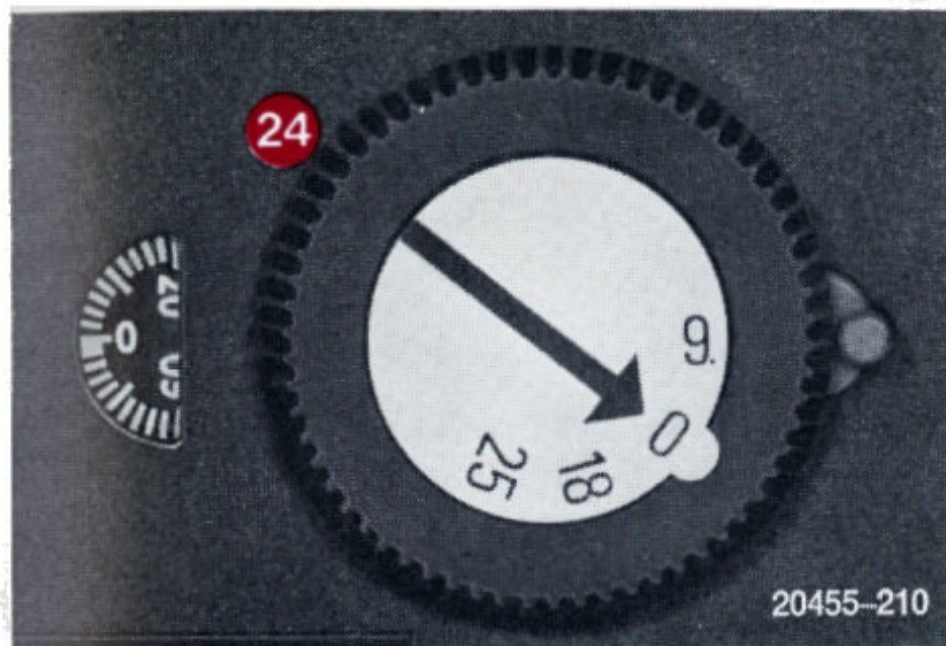
The button (15) has a cable release bush. It is therefore possible to change directly from normal to high speed with the twin cable release. Code No. 16494. The longer of the cable release is screwed into the camera release, the shorter into the high-speed button (15).

The high filming speed slows down movements during projection to produce a genuine slow-motion effect.



High-speed operation only

Press button (15) before depressing a release and lock it by a short turn. Measure the exposure, i.e. set the appropriate lens aperture. As soon as one of the two releases is operated, the camera immediately runs at high speed.



Time lapse at 9 f.p.s.

The 9 f.p.s. setting on the speed selector (24) provides time lapse filming. Slow movements are speeded up; a kind of early bioscope effect is produced with moving persons. Because of the slow speed equalling an exposure of $\frac{1}{20}$ sec., this setting often makes it possible to operate in poor light conditions.



Second release

The second release button (17) has a cable release bush. It is protected against accidental operation. For release it is rotated through 90° and pressed. It can be locked for continuous running by simultaneous pressure and slight rotation. With cable release operation the release (17) can remain locked.



Single-frame operation

For single-frame operation the figure 1 on the rotating knob (21) is lined up with the white dot. The speed selector (24) must be set to "18".

The release frequency for single frames can be doubled during hand-held filming if the release button (6) in the handgrip remains depressed and the second release (17) is operated.

Long time exposures of single frames

For long time exposures of single frames the letter T on the rotating knob (21) is lined up with the white dot. The exposure must be determined with a separate exposure meter, and the lens opened $\frac{1}{2}$ stop.

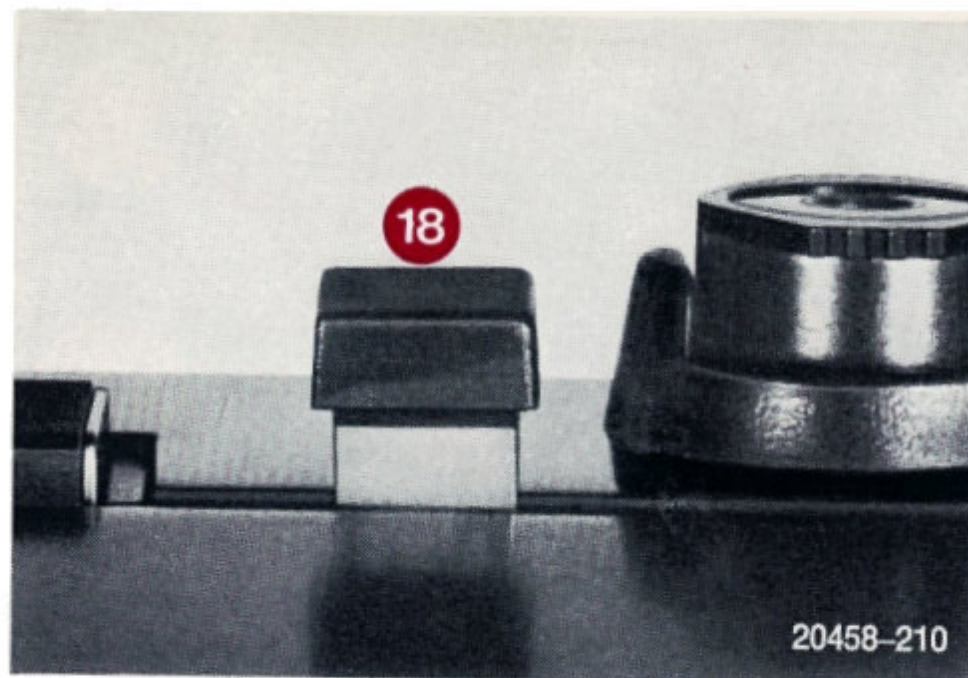
During the first release impulse the rotary shutter is opened, the second one will close it again. Release can be effected

either by one of the two release buttons (6) or (17) or by the electronic control unit ST1 (see p. 37). Use of the latter ensures uniform exposure of all single frames (see also Working Sheets No. 210–27 under “Long time exposure”). The red “open shutter” pilot light (27) indicates when the shutter is open for exposure.

Single-frame counter

The counter (23) turns during both continuous running and single-frame operation. One rotation of the counter corresponds to 80 frames and therefore a projection time of 4.4sec at 18 f.p.s. taking and projection speed.

When the rewind button (18) for lap dissolves or double exposures is depressed, the single-frame counter runs backwards.



The following hints for lap dissolves, fading out, and fading in, and double exposures apply mainly to lenses with diaphragms that can be completely closed, e.g. the 10mm MACRO-CINEGON f/1.8 or the 6-66mm OPTIVARON f/1.8. Fading out and in and lap dissolves are also possible with other lenses when the first scene is filmed at large apertures.

Lap dissolves

1) Automatically with OPTIVARON® and LEICINAMATIC: at the end of the lap dissolve setting, depress R button (18) and release until the lens diaphragm is closed and the film has been wound backwards by means of the automatic rewind mechanism. After the automatic switch-off of the rewind, release the release and R button (18).

After the setting of the new scene close the lens diaphragm by pressing the R button (18). Release button (18) and press the release button. The lens diaphragm opens automatically to the correct value during filming.

2) Manually: at the end of the lap dissolve setting depress R-button (18) and close the lens diaphragm by hand completely within a time of about 3-4 sec. Keep the release and R button (18) depressed until the film has been wound backwards by means of the automatic rewind mechanism and the camera switched off.

After setting the new scene completely, close the lens diaphragm, press the release and open the lens diaphragm within a period of about 4sec until the follow pointer of the exposure meter stops within the rectangular measuring field. This produces a smooth transition between the two scenes.

Fading out

At the end of a scene slowly close the lens diaphragm by hand.

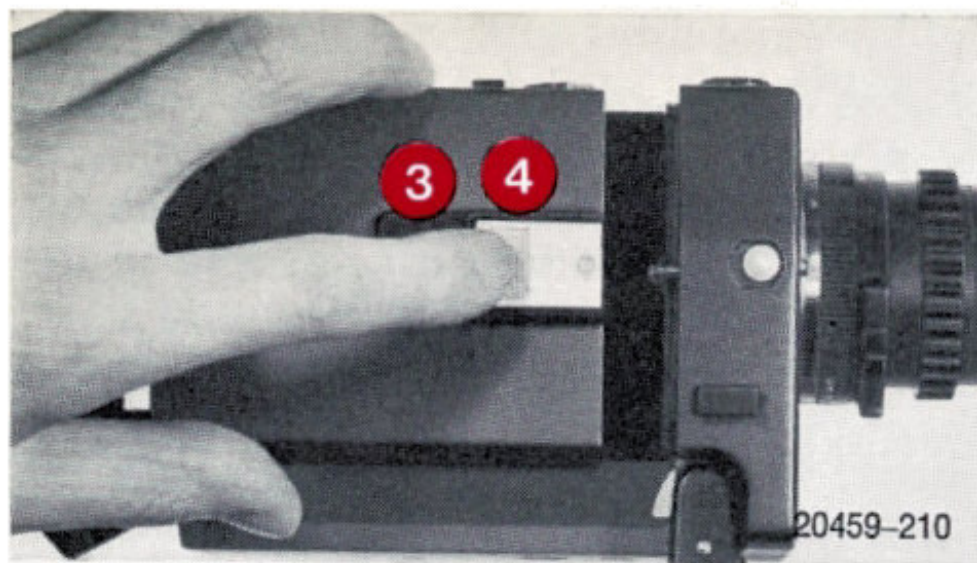
Fading in

Close the lens diaphragm before the start of a scene, press release button and open the lens diaphragm until the follow pointer has moved into the rectangular recess in the viewfinder.

Double exposures

Double exposures of scenes are possible for a duration of up to about 4sec. Normally expose the first scene with "R" button (18) pressed. This forms a reserve in the film cartridge which can be wound back. Since the LEICINA SPECIAL is automatically switched to rewind after about 4sec when the "R" button (18) is pressed, the running time must be counted during this operation and the lens diaphragm completely closed by hand before the automatic change-over to backwind. The release button must continue to be pressed until the camera stops automatically; otherwise the delayed-action time is not electronically stored.

A minus correction may be required with a double exposure.



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Inserting the film cartridge

Press the locking bar (4) and withdraw the lid of the cartridge chamber as far as possible. Insert the Super 8 cartridge with the legend facing upwards. When the film cartridge is inserted the guide pin of the camera must engage in the guide groove in the centre of the cartridge (on the right in front of the legend).

The type of film can always be read in the viewing window (3) when the cartridge chamber is closed.

After insertion of the film cartridge the appropriate film speed must be fed into the exposure meter system by rotating knob (22) (see p. 18). **This adjustment is indispensable for correct exposure measurement.**

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The unused length of film is shown on the footage indicator (26). When the entire film has run through, the camera switches itself off automatically.

The daylight/artificial-light filter

Normally the Super-8 cartridge contains artificial-light film. For filming in daylight the built-in conversion filter must therefore be swung into the optical path of the lens. The filter factor must be allowed for, i.e. during filming in daylight with the filter in position the setting on the rotating knob (22) must be lowered by 2 DIN or five eighths of the ASA value.

Examples, for the KODAK KA II or Agfa Gevaert CK 17 colour films:

- 1) Exposure in daylight (filter inserted). Rotating knob (22) at 15 DIN (25 ASA).
- 2) Exposure in artificial light (without filter): Rotating knob (22) at 17 DIN (40 ASA).



The rotating knob (16) has two setting positions.

Large index:

- 1) Exposure of artificial-light colour film in daylight (**with** conversion filter).

- 2) Exposure of artificial-light colour film in artificial-light (**without** filter).

Small index:

- 1) Exposure of black-and-white film with conversion filter inserted, which here has the effect of a weak orange filter.

- 2) Exposure of black-and-white film in day- or artificial-light without filter, and of daylight colour film.



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Accessories

Interchangeable lenses

On the LEICINA SPECIAL a large number of interchangeable lenses can be used:

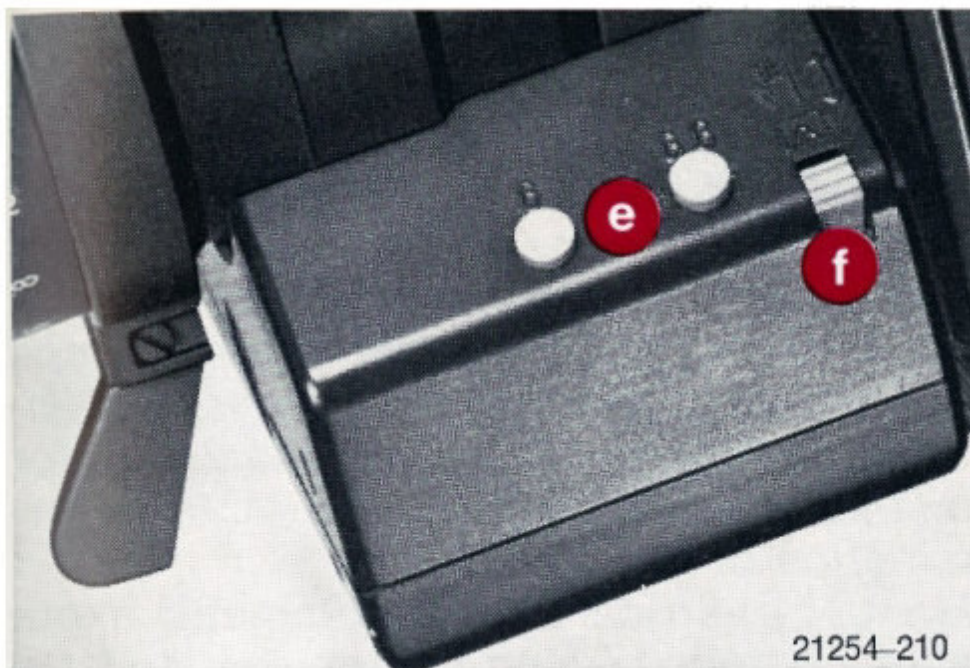
1) 10mm MACRO-CINEGON f/1.8

This lens, of fixed focal length, meets many practical requirements and offers the great advantage of excellent hand-held filming. Its diaphragm can be closed completely (important for lap dissolves). The long focusing range from infinity to

12cm (4.8") (object-to-film plane), free working distance (object-to-front lens) about 3cm (1¼"), and object field 36 x 27mm, permits filming of the most minute details in the close-up range without special attachments.

2) 6–66mm OPTIVARON f/1.8

The 6–66mm OPTIVARON® f/1.8 zoom lens has a focusing range from ∞ to 1.5m (60in) (distance scale a). If the maximum focal length 66mm is set on the zoom ring b, a smallest object field of 108 x 8mm ($4\frac{3}{8} \times 3\frac{1}{4}$ in) is already obtained. When the macro ring d is moved into the yellow M range, the close-up range is extended down to about 3cm (1¼in) (smallest object field 37 x 28mm [$1\frac{1}{2} \times 1\frac{1}{8}$ in]). When the zoom ring b is set at the yellow indicator line M, the focusing range is extended right up to the front lens. The smallest object field will then be 23.5 x 17.7mm ($\frac{7}{8} \times \frac{3}{4}$ in). The diaphragm can be manually adjusted with the diaphragm setting ring c.



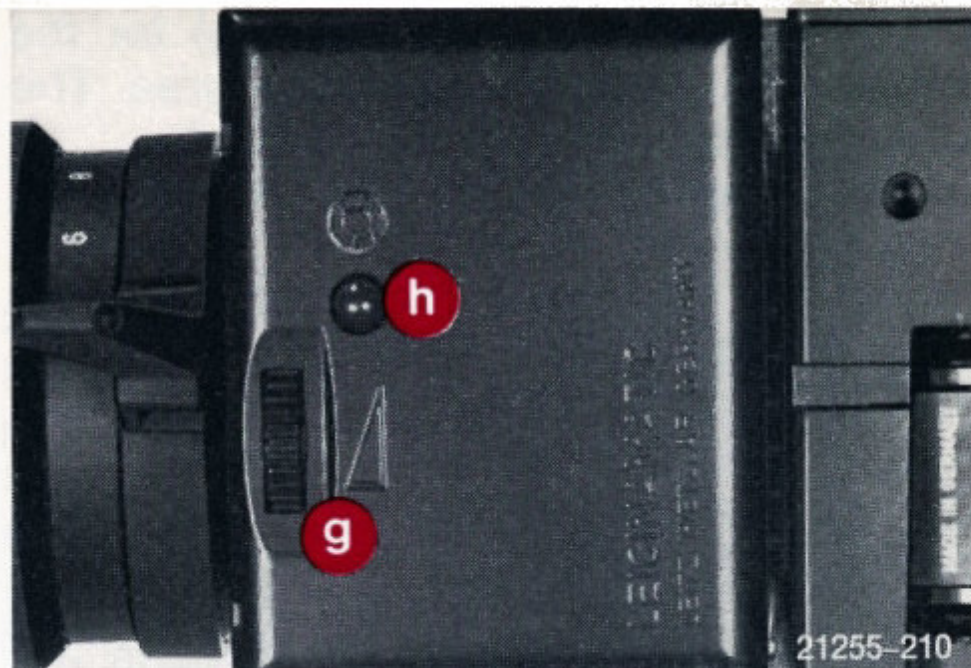
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LEICINAMATIC

On request, the OPTIVARON® can be supplied with the LEICINAMATIC, an automatic setting device for diaphragm control and power zoom.

An existing OPTIVARON lens must be returned to the factory for the attachment of the LEICINAMATIC.

When an OPTIVARON lens fitted with the LEICINAMATIC is attached to the camera, current supply is established via the contacts (20). For automatic exposure control



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the selector switch (f) must be set at A (automatic).

For focusing (see p. 16) set the lens at maximum focal length. Depress red button (h) on the underside of the LEICINAMATIC: the lens diaphragm opens. Carry out focusing. Release the red button: the exposure appropriate for the scene is now set automatically. When the automatic control is disengaged (selector switch (f) set at "manual" symbol) the lens diaphragm can be adjusted by hand.

Press one of the two buttons (e) for the selection of the correct picture area. The zoom will then be power-operated.

A setting wheel (g) on the underside of the LEICINAMATIC regulates the zooming speed for the entire focal length range from 6–66mm continuously between 1.5 and 6 seconds. This allows the production of striking, dramatic effects.

1) Rapid zoom: setting of the running speed at 9 f.p.s. and of the wheel (g) at maximum zooming speed produces a zoom effect of only 0.75sec through the entire zoom range during 18 f.p.s. projection.

2) Extremely slow zoom, for instance with simultaneous panning: setting of the running speed at 25 f.p.s. and of the wheel (g) at slowest zooming speed produces a time of 9 seconds for zooming through the entire focal length range with 18 f.p.s. projection.

To alter the zooming speed during filming, the wheel (g) must be adjusted simultaneously with the operation of one of the buttons (e). For accomplished pic-

ture direction it is important that the adjustment should be continuous, if, for instance, a smooth transition is required from the slow initial to rapid movement.

Advanced cine-men prefer the manual adjustment of the focal length of the zoom lens. An easy-grip lever permits manual zoom at any time without additional switching. This is recommended for instant zooming and for the rapid determination of the picture area.

Manual override of the automatic exposure control, i.e. the immobilization of a set lens diaphragm, is possible with the selector switch (f) or by means of holding the diaphragm setting ring (13) stationary during filming.



In the lenses described on next column, which are not specially made for the LEICINA, focusing must always be carried out with the viewfinder of the camera.

3) LEICA lenses

Except for the lenses of extremely deep protrusion (21mm SUPER-ANGULON® and 28mm ELMARIT f/2.8 (up to No. 2314920), all LEICA lenses and in addition all LEICA accessories can be attached directly without adapter ring.

For screw-thread LEICA lenses the bayonet adapter rings, Code No. 14097, 14098 or 14099, are required.

4) LEICAFLEX lenses

By means of the adapter, Code No. 22228, all lenses of the LEICAFLEX programme can be used on the LEICINA SPECIAL, except the early 21mm SUPER-ANGULON-R® f/3.4 for the LEICAFLEX® with external exposure measurement.

5) 16mm lenses in Arri mount

For the use of these lenses the adapter, Code No. 22230, is available.

16mm lenses with standard thread (C-mount) cannot be used.



6) Lenses with M-42 thread

The adapter, Code No. 22 232, permits the use of all lenses with M42xM1 connecting thread.

7) Minolta lenses

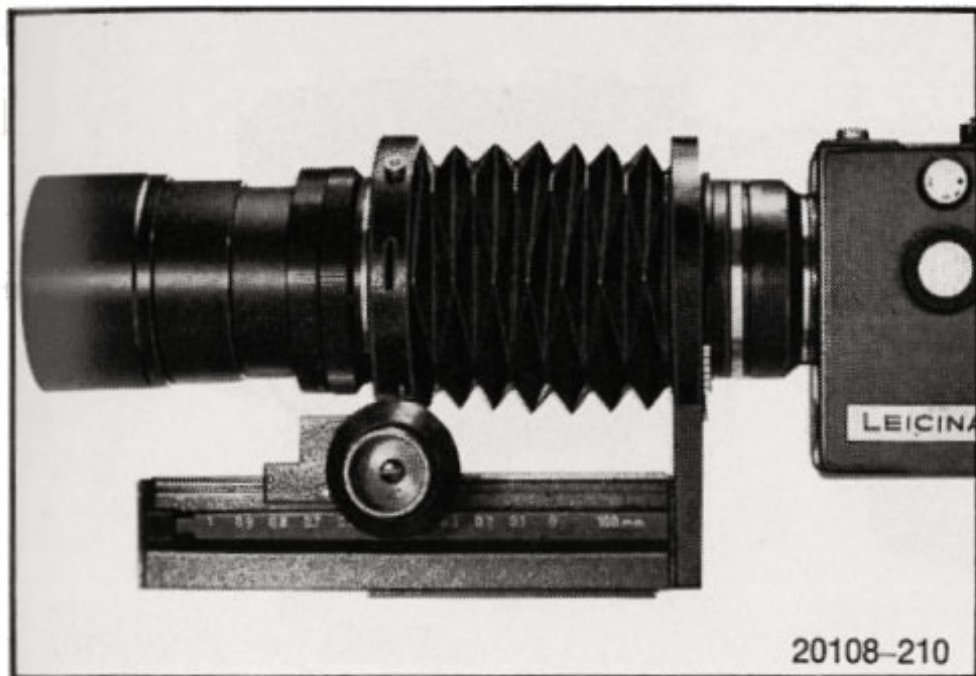
For the attachment of lenses with Minolta bayonet the adapter, Code No. 22 233, is supplied.

8) Canon lenses

Canon lenses with interchangeable thread have the same thread as the LEICA screw-thread lenses. They can therefore also be attached via the bayonet adapters (Code Nos. 14 097, 14 098 and 14 099). Canon lenses of the series FL and FD also require the Canon converter B.

Universal handgrip

The universal handgrip with shoulder stock, Code No. 14 188, with cable release, Code No. 22 219, ensures steady hand-held filming, even with long-focal-length lenses.

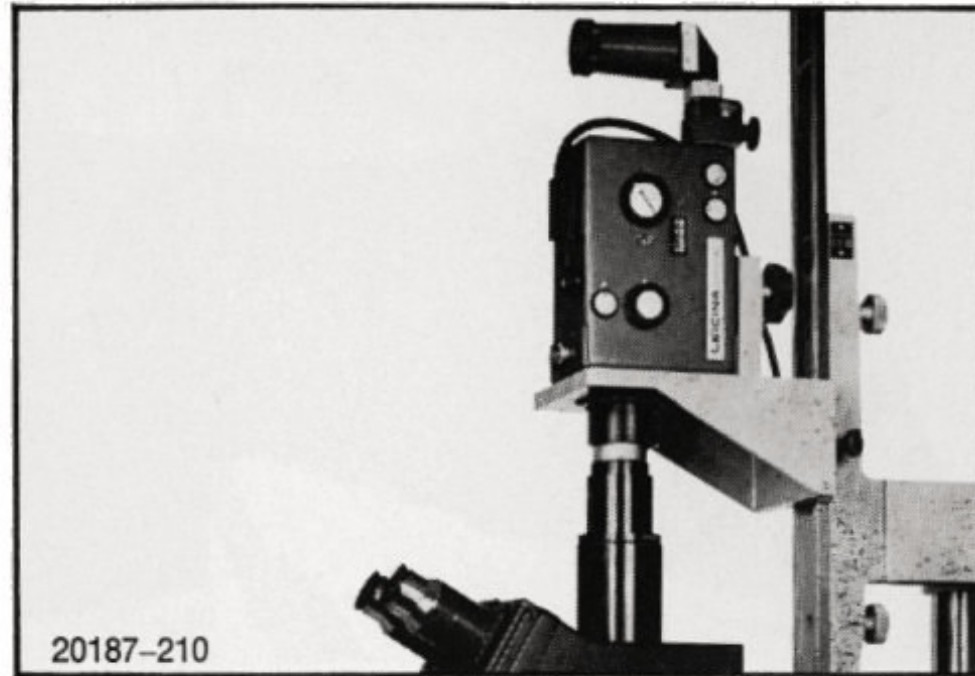


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Macro / Endo

For the macro range the near-focusing devices for the LEICA or LEICAFLEX, i.e. the focusing bellows or the 60mm MACRO-ELMARIT® LEICAFLEX lens, are recommended.

These are attached to the LEICINA SPECIAL via the appropriate adapters (see p. 31). For the focusing bellows for the LEICA the adapter, Code No. 543 195, is required if the VISOFLEX® attachment is not to be used.

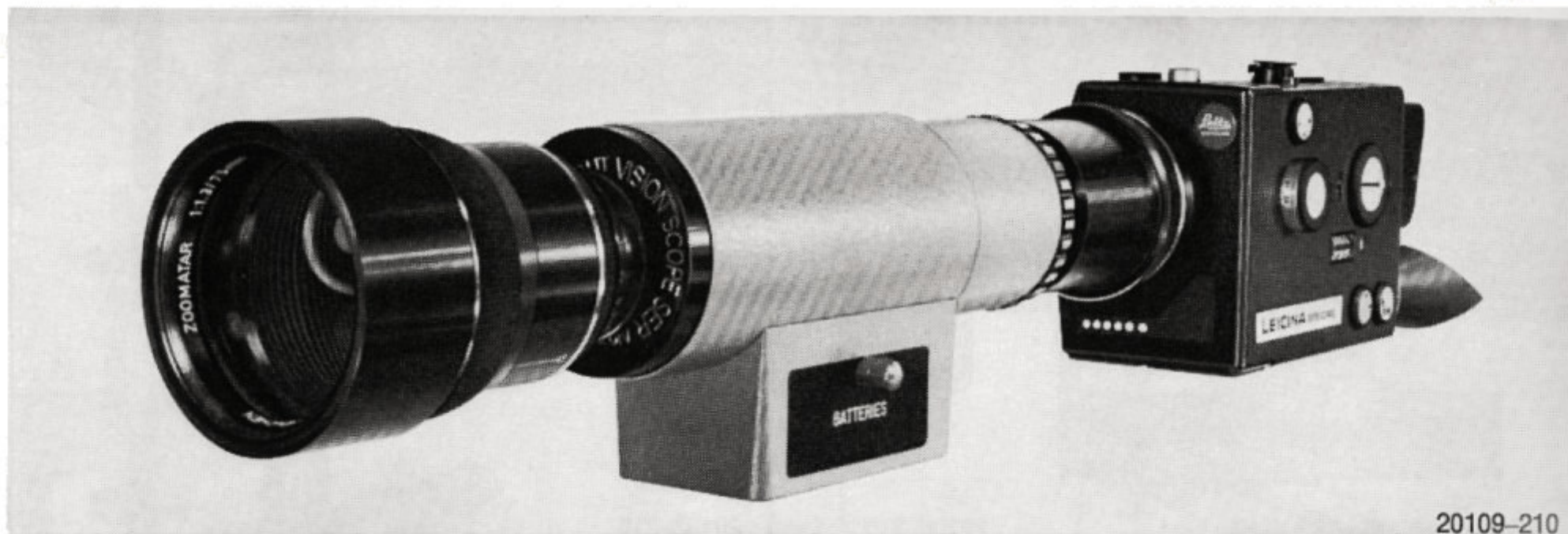


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For endo-cinematography the LEICINA SPECIAL is used like the LEICA for still endophotography.

Micro

By means of the appropriate adapters and photographic attachments the LEICINA SPECIAL can be attached wherever the LEICA is attached for photomicrography. The LEICINA SPECIAL is recommended for cinemicrography both because of its simple operation, and the low



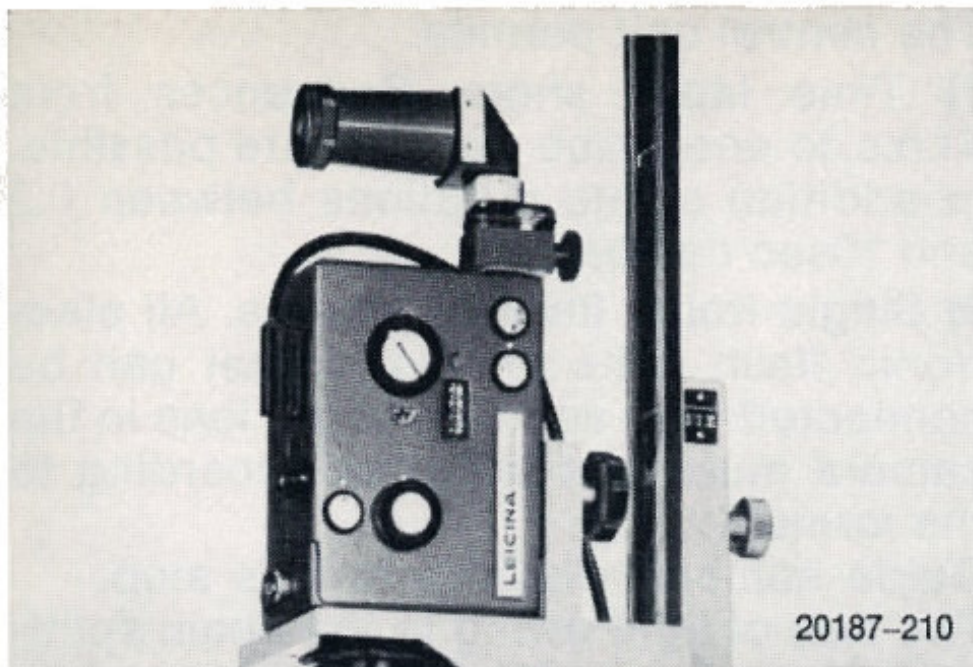
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cost of investment and expendable materials. Another considerable advantage is the low radiation load on the specimen because of the reduced illuminating intensity.

Night-vision instruments

Various manufacturers produce night-vision instruments with possibilities of adaptation to the LEICINA SPECIAL, such as

1. Firma Zoomar Vertriebsgesellschaft mbH
8000 München 55
Ehrwalderstrasse 79
2. ELTRO GmbH & Co.,
Gesellschaft für Strahlungstechnik
6900 Heidelberg 1
Kurpfalzring 106
3. VAROATLAS GmbH
2800 Bremen 44
Hemelinger Hafendamm 1
4. N.V. Optische Industrie
"DE OUDE"
Delft (Holland)



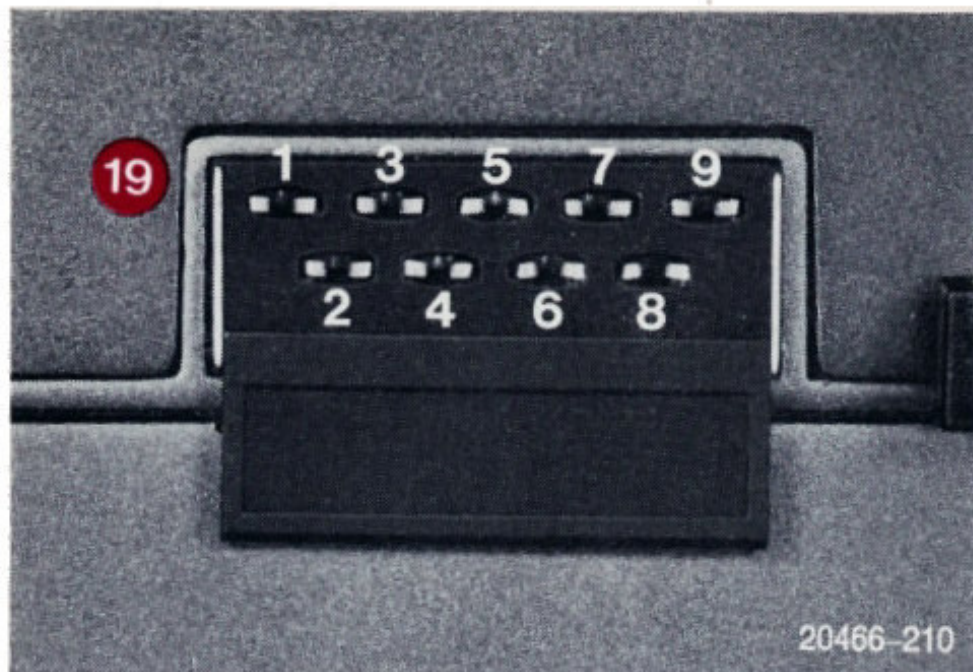
Angle viewfinder

The angle viewfinder is used for tilting e.g. in conjunction with a copying outfit. It is also a useful accessory for low camera view points and in cinemicrography. After removal of the eyepiece cup (31) the holder of the angle viewfinder, Code No. 22221, can be mounted on the eyepiece. In turn this accepts the rotatable angle viewfinder, Code No. 14186.



Ever-ready case

For the protection of the camera we recommend the ever-ready case No. 22443. The lens support has an adhesive lock and can therefore be adjusted to suit the lens fitted to the camera. The ever-ready case accommodates the camera body with the 6-66mm OPTIVARON® f/1.8 lens, the ST 1 control unit and numerous other accessories – interchangeable lenses, films, etc.



Control unit

The ST 1 control unit with connecting cable, Code No. 22227, is connected with the LEICINA SPECIAL via the 9-pin socket (19).

The individual terminals of the socket (19) have the following functions:

- Terminal 7 + 8 = external supply
- Terminal 1 + 8 = remote release
- Terminal 2 + 8 = flash synchronization
- Terminal 3 + 8 = synchro-impulse
- Terminal 4 + 8 = magnetic tape start

The control unit permits:

1) Time lapse shots. Sequences from 4 f.p.s. to one frame per 6 min are possible. In addition scene durations between 0.2 and 10 sec can be set.

2) Single-frame flash exposures. All electronic flash units on the market can be connected. The aperture of the lens in the camera must be calculated according to the formula:

Guide number: distance = lens stop.

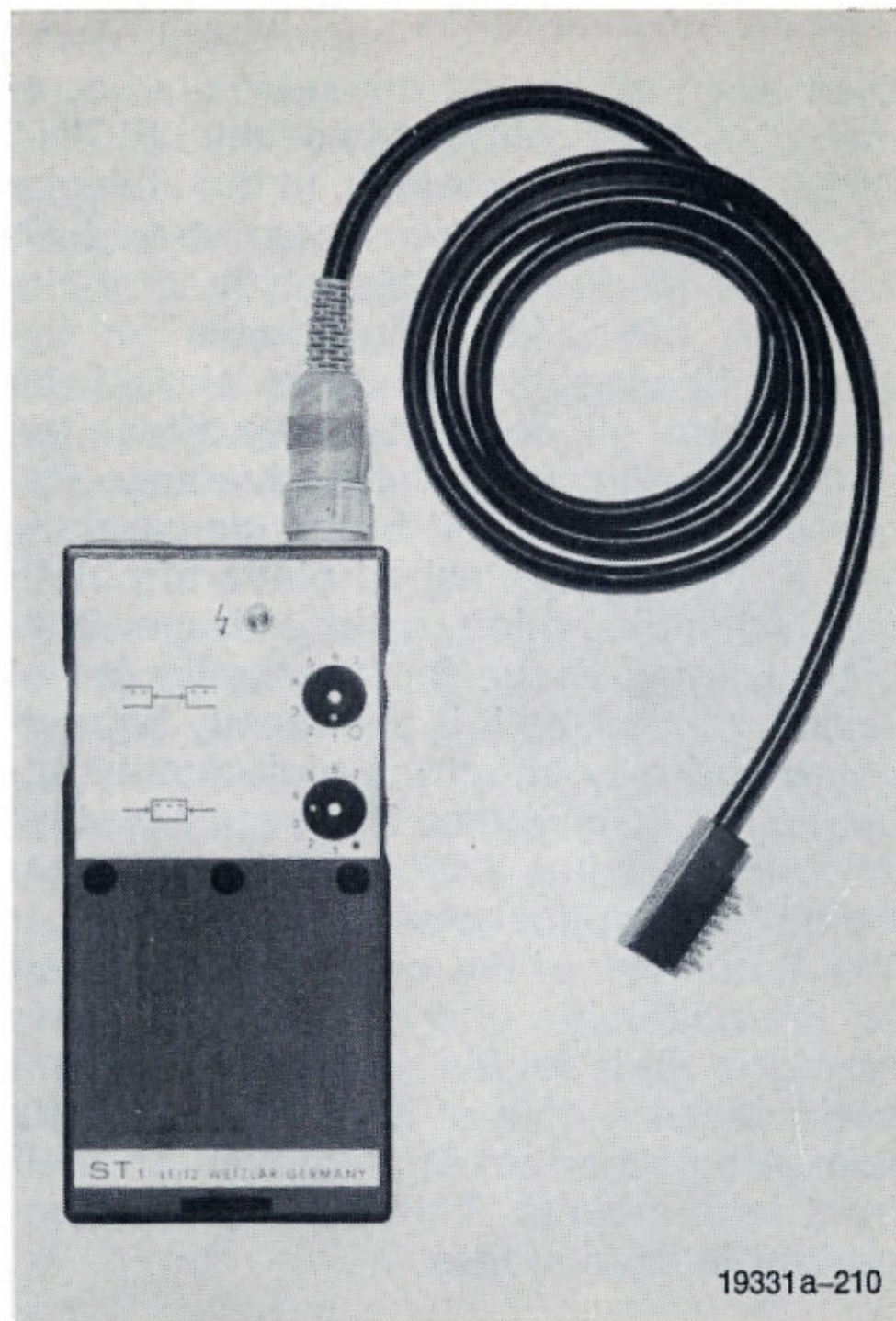
The loss of light owing to the beam splitting prism (see p. 13) must be taken into account.

3) Lip-sync sound filming. Portable and stationary tape recorders using the standard sound system (1 impulse per 4 frames) can be connected. Other, unconventional, impulse series can be set on request, free of charge, in authorized LEITZ After Sales Service Stations.

4) Remote control. The unit is also wired as a complete remote control unit. It can be used, for instance in intense cold, also as an external power supply for the camera.

Here the control unit with batteries is carried in the inside jacket or anorak pocket, in contact with body heat.

A set of **working sheets** is available, No. 210-27, containing a detailed description of the possibilities of the control unit. They give information on the equipment combinations required for external power supply, sound film recording and projection, automatic time lapse shots, and remote control of the camera.



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Tips for the care of the LEICINA SPECIAL

Dust and fluff should occasionally be removed from the film guide of the LEICINA SPECIAL with a soft brush. In the absence of a lens the protective cover should always be inserted in the bayonet of the LEICINA SPECIAL. Fingermarks on the visible beam-splitting prism should be avoided at all costs as they affect the optical performance very adversely. Remove dust with a soft brush, or carefully use a repeatedly washed piece of cotton (e.g. a handkerchief), or lens tissue. Special cleaning tissue for spectacles is not recommended, as it is chemically impregnated and may affect the high-quality optical glass. (Glass used in the manufacture of spectacles has a composition different from that of optical glass.)

The Serial No. of the camera is engraved on the underside and is visible when the handgrip (8) is folded against the camera body. Make a note of it as well as of the numbers of the lenses, engraved on their front lens mounts. This can be most important in case of loss.

International LEITZ Warranty

Our products are manufactured to standards of especially high quality and are checked by experienced specialists at the various stages of manufacture. They are covered by the International LEITZ Warranty for perfect quality and expert processing of the raw materials used, for accurate assembly of all components, and for the functional reliability of the design. The warranty period for the optical and mechanical parts is two years, for the electrical parts one year from the date of purchase confirmed by the dealer. A Service Card with the serial number of the camera is supplied with every LEICINA SPECIAL. Keep it in a safe place.

After-Sales service

In case of damage our After-Sales Service will look after you. The address:

ERNST LEITZ GmbH

Kundendienst

D 6330 WETZLAR

Postfach 2027

Outside of Germany you should contact your national LEITZ agency or an authorized LEITZ after-sales service establishment.

During the warranty period repair is free of charge unless the damage is the result of incorrect handling or interference. The Service Card, completed by the dealer, should, however, always be enclosed. Every LEICINA SPECIAL is accompanied by a list of the LEITZ agencies and the authorized After-Sales Service establishments.



Symbol of Optical Precision

® = Registered Trademark

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