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LEICA® R5

Instructions

Ernst Leitz Wetzlar GmbH



We wish you pleasant and successful photography with your new LEICA. The following Leitz services are available to you:

Leitz Information Service

All questions connected with photography, projection, enlarging and binoculars can be answered by the Leitz agency for your region.

Customer Service

The Technical Service of your Leitz agency (see guarantee card) will undertake maintenance of your LEICA R5 as well as repairs in case of damage.

LEICA School

The LEICA School of Ernst Leitz Wetzlar GmbH offers as part of Leitz service a practical photo-technical program, with stimulation, information and tips in German.

Further details and registration forms for the German courses are available from

Ernst Leitz Wetzlar GmbH
LEICA School
P. O. Box 20 20
D-6330 Wetzlar
West Germany

For English courses please contact your Leitz agency.

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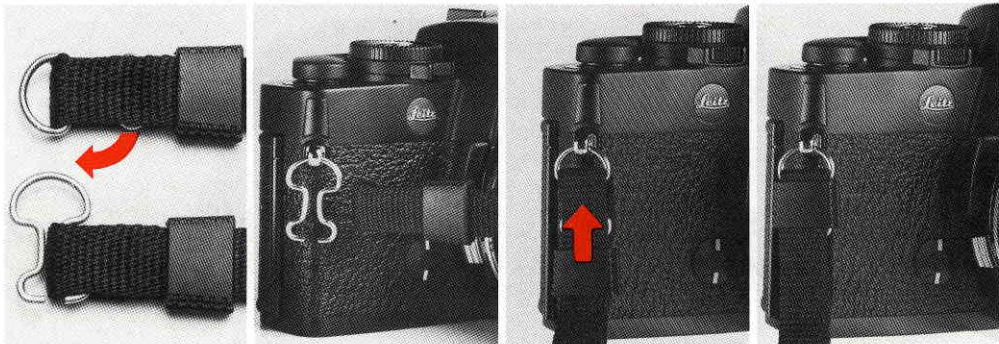
Brief description

- | | |
|--|--|
| 1 Automatic frame counter | 10 Locking button for exposure correction |
| 2 Lever for rapid shutter wind and film transport | 11 Lever for adjusting the Override |
| 3 Release button with thread for cable release | 12 Scale for exposure correction |
| 4 Shutter speed dial | 13 Locking button for setting the film speed (ISO) and battery test knob (C) |
| 5 Program selector with locking button | 14 Film speed dial |
| 6 Control window for set program | 15 Film speed control window (ISO) |
| 7 Accessory show with centre- and control contacts | 16 LED for battery test |
| 8 Illuminating window with shutter speed display | 17 Hinged rewind crank |
| 9 LED for self-timer | 18 Electronic self-timer |



- 19 Bayonet lock
- 20 Depth of field lever
- 21 Red dot marking for lens change
- 22 Distance setting dial
- 23 Depth of field scale
- 24 Aperture preselection dial
- 25 Contact for flash unit with cable connections
- 26 Eyelet for carrying strap
- 27 Viewing window for inserted film
- 28 Eyepiece blank

- 29 Eyepiece adjustment
- 30 Viewfinder eyepiece, correction lenses can be inserted
- 31 Cap for battery compartment
- 32 A ¼ tripod thread
- 33 Rewind release and double exposure button
- 34 Connections for Motor Winder and Drive
- 35 Contacts for cable-free Data Back (visible when back is opened)

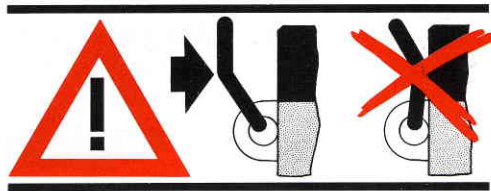


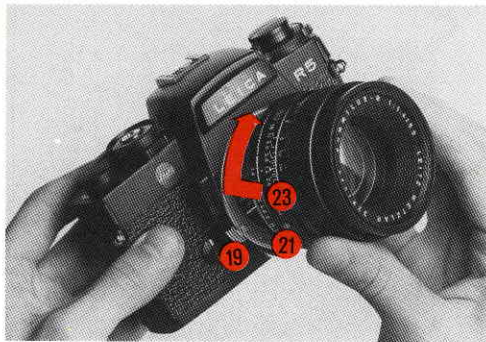
Attaching the carrying strap

Attach the carrying strap to the eyelets (26).

Remove the metal hooks from the carrying strap and hook them into the eyelets on the camera.

Attention: Make sure that the carrying strap is inserted to the second part of the metal hooks completely before you push the securing loops over them (see pictures above).



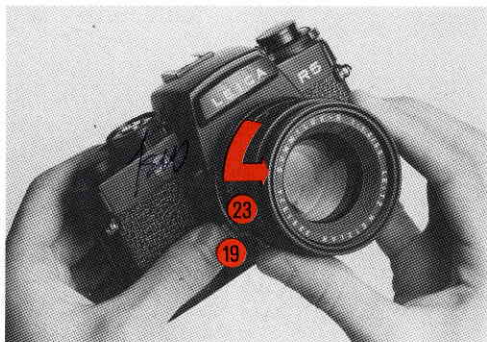


Inserting the lens

Only lenses with control cam for Leica R cameras may be attached to the Leica R 5 (see page 56) otherwise damage to the camera will result.

Independently of the distance and aperture setting the LEICA R lenses are exchanged as follows:

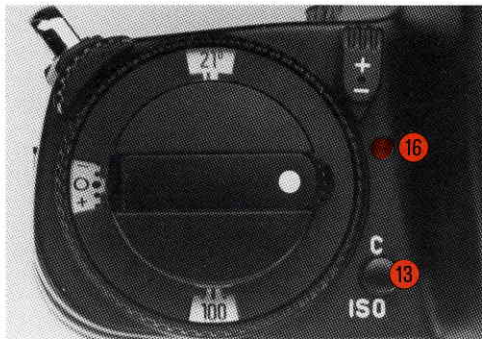
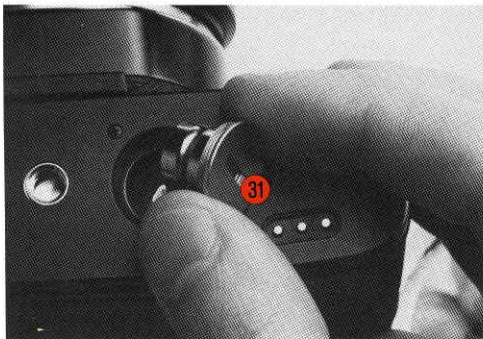
Grip the lens by the fixed ring (23). Make the red dot (21) on the lens mount coincide with the bayonet lock (19) on the camera body. Insert the lens in this position. After a slight clockwise turn the lens clicks into position.



Removing the lens

Grip the lens by the fixed ring (23). Depress the bayonet lock (19) on the camera. Turn the lens anticlockwise and remove it.

With the camera loaded change lenses in the shadow of your body, since light may enter through the shutter when openly exposed to direct sunlight.



Inserting and testing the batteries

The LEICA R5 requires electrical power for exposure measurement shutter/aperture control. This is supplied by two silver oxide button cells or a lithium cell.

To insert the batteries, unscrew with a coin and remove the cap (31) on the underside of the camera body. Remove films of oxide from the batteries with a clean cloth and insert the batteries in the cap according to the insertion symbols. Screw the cap and batteries into the baseplate of the camera. Check the state of the batteries before you start taking photographs, especially when you have not used the camera for a prolonged period. Press the battery testing

button (13) marked "C" on top left of the camera. The LED (16) fitted in front of the battery test button lights up in red when the batteries are in working order. The battery test knob should remain pressed for about 5 seconds. A noticeable reduction in the light intensity of the LED during the 5 sec indicates the imminent exhaustion of the batteries, which should be replaced.

If the LEDs fail to light up, it may be due to external oxidation of the batteries. In this case, simply wipe them.

Depressing battery test button (13) will switch on the camera and the LEDs in the viewfinder will light up.

Silver-oxide button cells

Suitable for the LEICA R 5

Ucar	EPX 76
Ucar	S 76 E
Ucar	Nr. 357
Duracell	D 357 (10 L 14)
Varta	V 76 PX
Varta	V 13 GS
Varta	V 357
Eveready	S 76 E
National	G 13
National	WL-14
Ray-o-vac	RS 76 G
Ray-o-vac	RW 42
Maxell	SR 44 P
Maxell	SR 44
Maxell	SR 44 SW

Lithium batteries

Suitable for the LEICA R 5

Duracell	DL 1/3 N
Varta	CR 1/3 N
Ucar	2 L 76

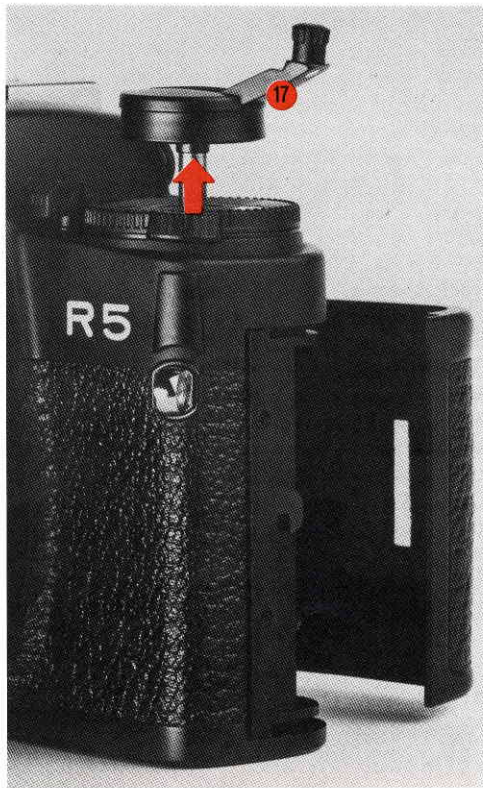
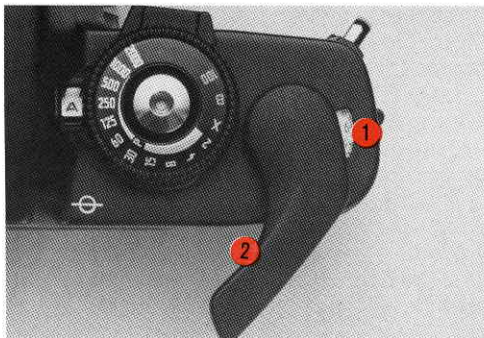
Attention:

Remove batteries if the camera is not being used for a long time.

Important: When the Motor Winder or Motor Drive are attached, these supply the current for the camera, i.e. it is not possible to check the camera batteries. When the battery test button (13) is pressed and the exposure system switched on at the same time, e.g. by pressing the locking button on the program selector (see Switching on the exposure system, page 18), you can check that the current from the motor batteries is sufficient to supply the camera.

Tips for battery care and use:

Store batteries in a cool and dry place. Do not use old and new batteries together. Do not mix different makes. The batteries cannot be recharged. Discarded batteries should be returned to the camera shop for recycling.



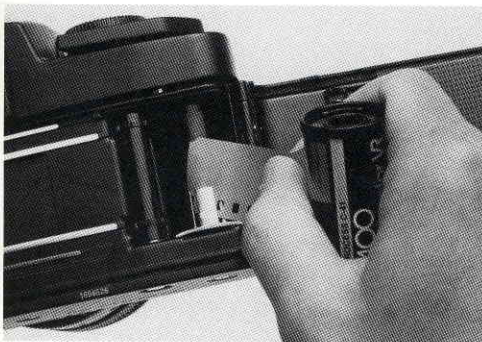
Rapid transport lever

The rapid transport lever (2) transports the film, winds the shutter, and operates the frame counter (1).

When the lever is turned out (standby position) the thumb can be moved behind it and thereby securely support the camera.

When the MOTOR-WINDER or MOTOR-DRIVE is attached, consult instructions for the MOTOR-WINDER or MOTOR-DRIVE respectively.

The \ominus symbol indicates the film plane.

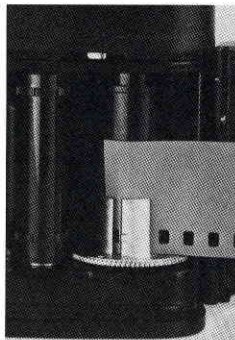


Inserting the film

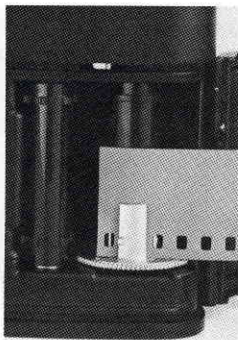
Pull up the rewind crank (17) to open the camera back*. After some spring force has been overcome the camera back opens automatically. The frame counter returns to "S" (start).

Wind the shutter with the rapid transport lever and release it.

To save time during film loading, it is recommended to set the speed dial to "X", thus setting a short shutter speed independent of the exposure automation. Pick up the film cartridge as illustrated above. The emulsion side points to the



Correct

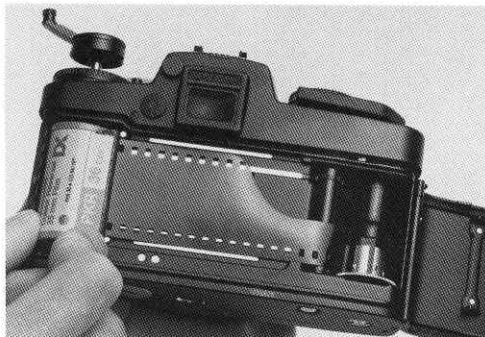


False

viewer. Push the end of the film obliquely from above into one of the slots of the take-up spool. Ensure that the end of the film is fully gripped by at least one lug and protrudes **under** the next lug.

Fully pull up the rewind crank and insert the film cartridge in the empty film cartridge chamber. Now push in the rewind crank. The edge of the film must be parallel to the film guide and the sprockets of the transport drum must engage in the perforation holes of the film when the rapid transport lever is operated.

* = The operation is identical with the Databack attached.



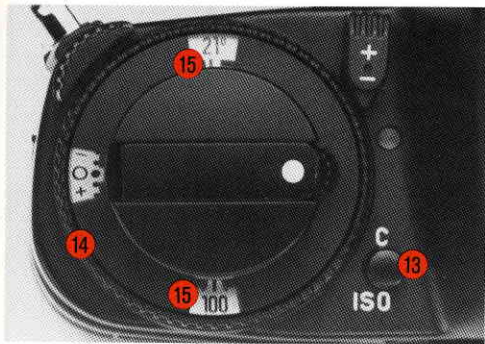
Important:
Shield the film from direct light when inserting.

Turn the film one frame forward with the rapid transport lever so that it lies taut in the film guide and the film cartridge does not stick out.

If you want to be sure that the film is always inserted under the same conditions, e.g. if it is to be removed when semi-exposed and later reinserted, it is a good idea to cock and release the shutter with the rapid transport lever before inserting the film.

Close the camera by snapping the camera back shut. Release the shutter. Transport the film through one frame and again release the shutter. Transport the film once again. The camera is now ready for operation. The film counter (1) points at 1. It counts forward to "36". For the various lengths of film the numbers "20", "24", and "36" are marked in red.

Do not forget:
If the speed dial was set to "X" while loading the film, it must now be re-set.



Setting the film speed

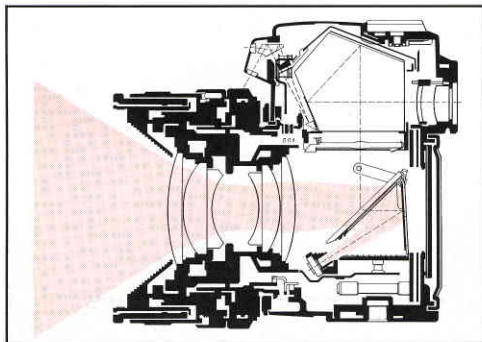
To set the exposure meter for the speed of the film in the camera, press the locking button (13) and at the same time rotate the setting ring (14) until the desired film speed is displayed in the viewing windows (15). All ISO values are divided e.g. ISO 100/21°: Lower display = 100/Upper display = 21°.

The adjustment range extends from ISO 12/12° to 3200/36°.

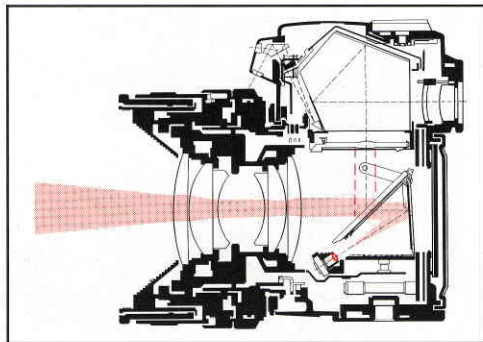


Rewinding and taking out the film

When the film has been exposed to the last frame the rapid transport lever can no longer be operated. Before the film is removed from the camera it must be rewound into its cartridge. Press the rewind release button (33) on the underside of the camera body, turn out the rewind crank and rotate it clockwise (in the direction of the arrow) until the film is pulled out of the take-up spool after slight resistance has been overcome. Open the camera body by pulling up the rewind crank and take out the film cartridge.



Largefield averaging



Selective measurement

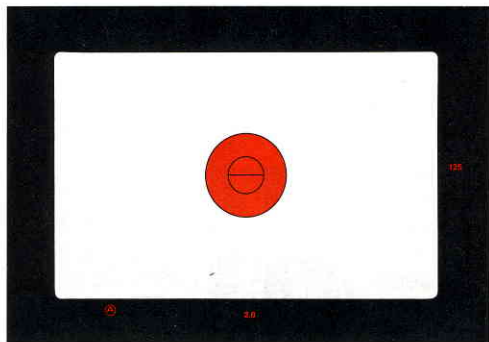
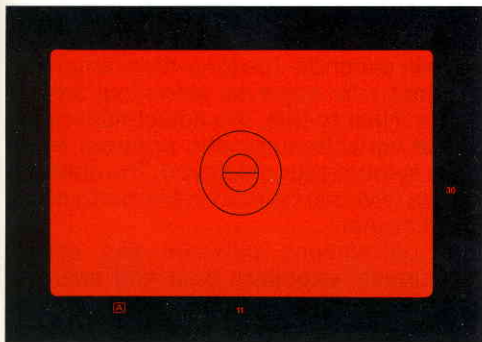
The alternative exposure measuring methods

The LEICA R 5 has an exposure measuring system with alternative measuring methods:

- Largefield averaging
- Selective measurement




These exposure measurement methods are combined with four operating modes to make up the programs.

The exposure is measured through the lens. With the LEICA R lenses with fully automatic preset diaphragm measurement is carried out at full aperture. The symbol of the measuring method employed is displayed in the viewing window (6) next to the program selector and in the bottom left-hand corner of the viewfinder as a program. The exposure is measured by a silicon photo diode housed in the bottom part of the camera where it is protected against stray light.



Largefield averaging



Most photographic subjects are composed of details of varied brightness. The reflection of such ordinary subjects corresponds to that of a mean grey value of 18 %, for which every exposure meter is calibrated.

As a rule the details of varied brightness are equally distributed throughout the entire field. Here the programs with large-field integrating measurement ,  or  (see pages 24, 28 and 30) should be chosen.

Selective measurement

This method is used whenever great brightness differences occur in the entire subject and a certain detail is to be exposed accurately.

Since the measuring field in the viewfinder is outlined by the large central circle, the important image detail is measured exactly. The measuring field is the same size for all lenses and all focusing screens and is, therefore, clearly visible in the viewfinder.

The programs with selective measurement are called  and  (see pages 26 and 38).

Sensitivity of the exposure meter

The measuring range with averaging is 0.25 cd/m^2 to $63\,000 \text{ cd/m}^2$ at $f/1.4$. In exposure values (Ev): at ISO 100/21° from +1 bis +20, or $f/1.4/1 \text{ sec}$ to $f/22/1/2000 \text{ sec}$.

The measuring range with selective measurement is 1 cd/m^2 to $63\,000 \text{ cd/m}^2$ at $f/1.4$. In exposure values (EV): at ISO 100/21° from +3 to +20 or $f/1.4/1/4 \text{ sec}$. to $f/22/1/2000 \text{ sec}$.

The working diagram contains all the important data of the LEICA R5 exposure measurement system, such as the sensitivity and range of the exposure meter.

Working diagram of the exposure meter

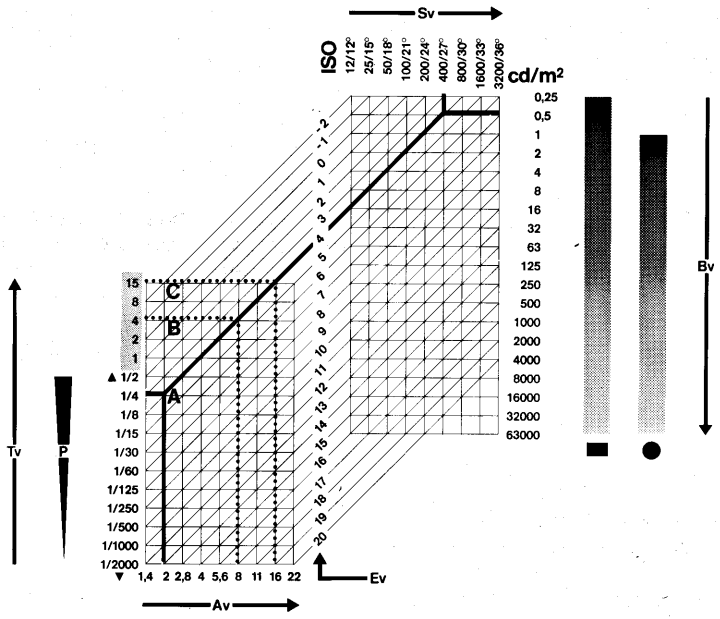
The measuring range of the exposure meter can be seen on the right of the diagram, whereas the working range of the focal-plane shutter and the lenses is on the left. The exposure values (Ev) can be read in the centre of the diagram.

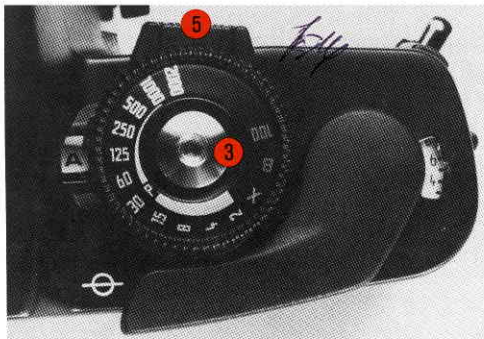
The range of brightness values (Bv) picked up by the measuring range of the exposure meter can be read on the right of the diagram (cd/m^2). The different ranges for selective measurement and averaging are indicated with the symbols \circ and \square respectively. At the top of the diagram, the

speed values (Sv) are given in ISO.

On the left, the time values (Tv) can be seen in seconds. The long-time range ($1/2 - 15 \text{ secs.}$) is made to stand out by the raster. Next to this, the adjustment range of the variable automatic program mode (P) is symbolically displayed. The aperture values (Av) can be read in the bottom left-hand corner.

The correlations between film speed, brightness, exposure time and aperture can be seen from the following example. Taking the film speed ISO 400/27°, first follow the vertical line to the point of intersection of the horizontal line representing brightness. This is 0.5 cd/m^2 for this example, which corresponds to the brightness for night-time exposures. Line A now leads diagonally to one of the vertical lines for aperture values (in this case, $f/2$), and from there, horizontally to the left of the corresponding exposure time ($1/4 \text{ sec.}$). Using the aperture- or shutter-priority modes, one of these values is automatically computed. The exposure value (Ev 4) can be read on the diagonal line.





Switching on the exposure system

The exposure system of the LEICA R5 is switched on with light pressure of the release button (3), or pressure of the locking button on the program selector (5), or by pressing the battery test button (13). The LEDs in the viewfinder light up.

When the shutter is cocked, they remain lighted for ca. 12 secs. after the button used for switching on has been released; when the shutter is run down they go out immediately.

Measurement at full aperture

LEICA R lenses are equipped with an automatic spring-back diaphragm. That means that exposure metering is always done at full aperture regardless of the aperture setting.

Measurement with the working aperture

Some lenses and accessories have no automatic spring-back diaphragm or no coupling for it, for example the long focal-length lenses from 400 mm upwards, the Focusing Bellows-R. Here the exposure must be measured through the lens aperture used, i.e. through the working aperture. In this case the lens aperture is adjusted to regulate the amount of light reaching the metering cell of the LEICA R5.

The programs \square , A and m can be used with the lenses and accessories without automatic spring-back diaphragm.

Long-time range

The working range of the exposure meter of the LEICA R5 depends on the measuring sensitivity of the photo diode, the film speed setting, and the speed of the lens. The highest shutter speed measured or determined is $\frac{1}{2000}$ sec., the slowest about 15 sec.

In the viewfinder the shutter speeds from $\frac{1}{2000}$ sec. to "1/2 sec. or longer" are displayed. In addition an indication is given by the override symbol ∇ when the measuring range is not being reached, i.e. if a correct exposure is impossible.

If the shutter is released in spite of this, undesirably long times of up to 15 sec. may result. Using averaging measurement and the f/1.4 lens (at full aperture), the slowest measurable shutter speed is:

ISO 800/30° = $\frac{1}{8}$ sec.

ISO 400/27° = $\frac{1}{4}$ sec.

ISO 200/24° = $\frac{1}{2}$ sec.

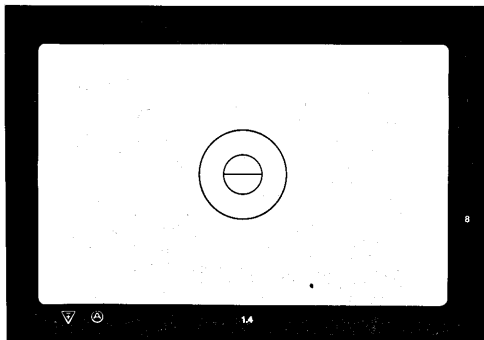
ISO 100/21° = 1 sec.

ISO 50/18° = 2 secs. etc.

For exposure times longer than $\frac{1}{4}$ sec. in the long-time range, the indication is " $\frac{1}{2}$ sec. and longer"). Whether the film is exposed for 2, 3, 4 or 8 seconds is practically immaterial, because as a rule slow

exposures are taken from a tripod.

Of course you can also measure at full aperture, convert the shutter speed measured for a different aperture value and take the exposure at the "B" setting. This is shown in the diagram on page 17 by the dotted lines (B and C). The measured shutter speed for f/2 is $\frac{1}{4}$ sec. For f/8, 4 secs. is the correct shutter speed, and for f/16, 15 secs.



If the shutter is released in spite of this, undesirably long times of up to 15 secs. may be formed. They can, however, be terminated by setting the shutter speed dial to "X".

Values below the measuring range

The measuring range of the camera used for correct exposures is linear. When in very poor light this range is not reached, these conditions no longer apply and an accurate exposure can no longer be determined. The measuring values indicated in the viewfinder will lead to wrong results. A warning signal is therefore given by a constant lighting up of the override symbol ▽.

Attention: In the transitional range the symbol might flash.

Exposure correction (override)

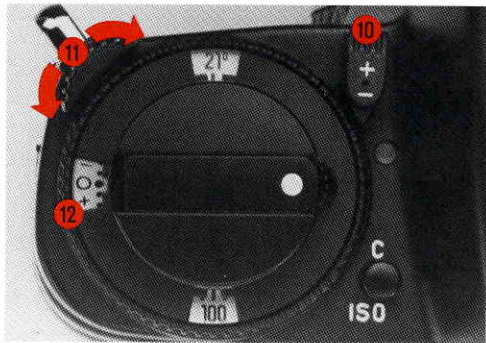
Exposure meters are calibrated for a mean grey value corresponding to the brightness of an ordinary photographic subject. If the subject of which a reading is taken does not meet these requirements, a suitable exposure correction must be applied. Exposure corrections are used particularly with largefield averaging measurements. With selective measurement, a representative detail of average grey value can be selected from the entire subject for a reading through the smaller and precisely defined measuring field.

Example for a "+" correction

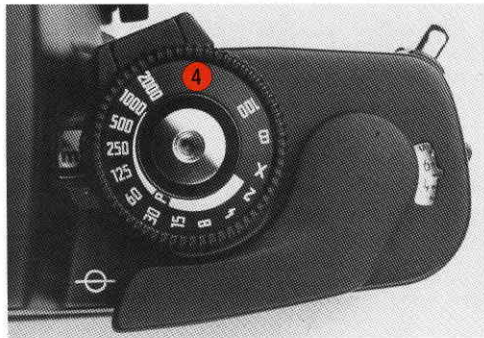
With very bright subjects, such as snowscapes or the beach, the exposure meter, owing to the greater reflection of the light, will indicate a shutter speed which is too high and therefore produces underexposure. Consequently the shutter speed must be reduced, e.g. for a snowscape from $\frac{1}{125}$ to $\frac{1}{30}$ sec. Correction: "+ 2".

Example of a "-" correction

With very dark subjects which reflect little light the exposure meter will indicate a shutter speed which is too slow and therefore produces overexposure. Consequently the shutter speed must therefore be increased, for instance from $\frac{1}{60}$ to $\frac{1}{125}$ sec. through the "- 1" correction.



To set the corrections a locking button (10) is pressed and the scale (12) set to the desired value with the lever next to it. The button (10) is locked by turning it to the left after it has been pressed in. "O" position is set when the lever (11) fully fits into the curve of the camera. Thirds of exposure values up to ± 2 can be set and clamped. At the end values of the ISO (ASA/DIN) scale, exposure corrections can be set only within limitations. When the camera is switched on, the symbol ∇ will flash in the bottom left-hand corner of the viewfinder when a correction has been set.



Shutter speed dial

For programs \square and \oplus the shutter speeds are set with the shutter speed dial. For program \square the characteristics of the automatic program mode are influenced by the set shutter speed. The shutter speed dial has clickstops; intermediate values cannot be set. The shutter speeds from $1/2000$ sec. to $1/2$ sec. are determined electronically.

In the \square and \oplus programs the shutter speed dial may be set for any desired values except "X", "100" and "B". All shutter speeds between $1/2000$ and ca. 15 sec. are determined continuously and displayed on the right in the viewfinder window up to $1/2$ sec. by LEDs. If 2 diodes

light up simultaneously, the values produced are intermediate.

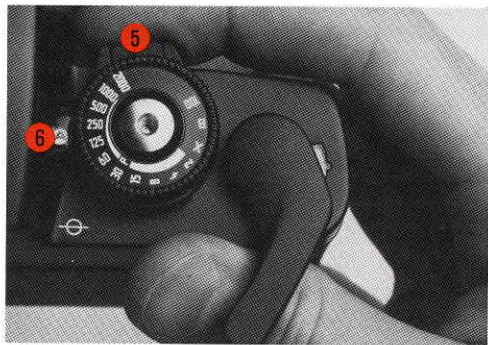
The use of undedicated* electronic flash units requires the "X" setting. At "B" the shutter remains open as long as the release button is being pressed.

Slightly more resistance is to be overcome between "2" and "X" when compared to the other values, so as to avoid accidentally leaving the automatic range.

"B" and "100" (= $1/100$ sec.) can be used without batteries.

At "X", "B" and "100" the exposure is not measured even when the button cells are inserted. This is indicated in the viewfinder by the lighting up of the upper triangular LED.

* see page 46 "Flash units"



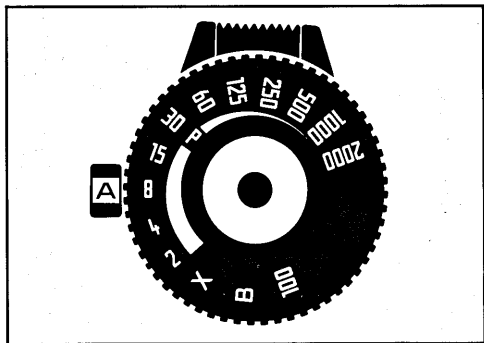
Choice of programs

The programs are set by pressure of the locking button and simultaneous sliding of the program selector (5). As the locking button is being pressed the camera is switched on. The chosen program is displayed in the bottom left-hand corner of the viewfinder window. In addition, the program setting can be read at any time in the viewing window (6) next to the shutter speed dial.

The program selector must engage in the chosen position. It can be reset only after the locking button has been pressed.

The following program can be chosen:

- A** **Aperture-priority** with largefield averaging.
- A** **Aperture-priority** with selective measurement.
- T** **Automatic-shutter priority** with largefield averaging.
- P** **Automatic program mode** with largefield averaging.
- m** **Manual setting** of shutter speed and lens aperture with selective measurement.



A **Aperture priority** with largefield averaging.

Preselect the desired lens aperture.

This program is particularly suitable when the main element of composition is the depth of field and normal lighting conditions prevail.

This program is used, for instance, for landscape and architectural photography. The range of the depth of field is determined with the aperture preselection ring (24). The shutter speed is automatically determined between $\frac{1}{2000}$ sec. and ca. 15 secs. according to the existing brightness. The shutter speed dial may be set at any value between $\frac{1}{2000}$ sec. and $\frac{1}{2}$ sec.,

but not at "X", "100" or "B"

The **A** program functions with all LEICA R lenses and accessories such as adapters, Universal Focusing Bellows-R, etc., see page 56).

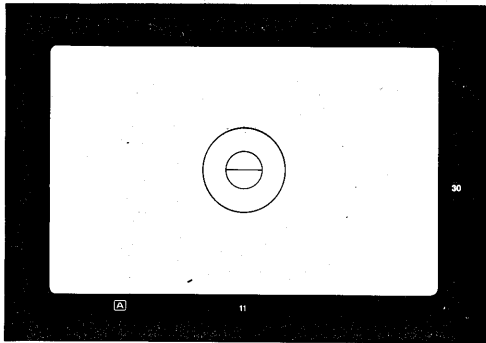
Viewfinder displays:

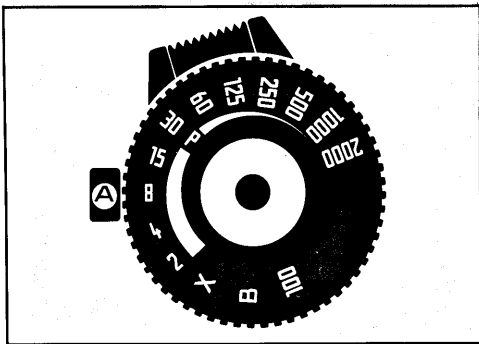
The program setting is displayed in the bottom left-hand corner of the viewfinder window, the preset aperture to the right of it.

The time scale is visible on the right in the viewfinder frame. The automatically produced shutter speed is indicated by an LED next to the figures. The shutter speeds are produced continuously, two LEDs light up with intermediate values.

With extreme brightness the shutter speed range may no longer be adequate for the preselected aperture. This is indicated by a red triangular LED at the top end of the scale. To remedy this, stop down if possible.

The lighting up of the lower triangular LED indicates that the shutter speed is $\frac{1}{2}$ sec. or longer. If the ∇ symbol lights up, the value is below the measuring range (see page 20).





Ⓐ Aperture priority with selective measurement.

Preselect the desired lens aperture.

This is the right program when you have to take spot readings, for instance, a portrait against the light or spotlight stage scenery.

The depth of field range is set with the aperture diaphragm ring (24). The shutter speed is computed automatically between $1/2000$ sec. and about 15 sec. depending on the brightness.

The shutter speed dial may be set at any value between $1/2000$ sec. and $1/2$ sec., but not at "X", "B" or "100".

The Ⓐ program can be used with all LEICA R lenses and accessories such as adapters, focusing Bellows-R etc. (see page 56).

Storage of measured values

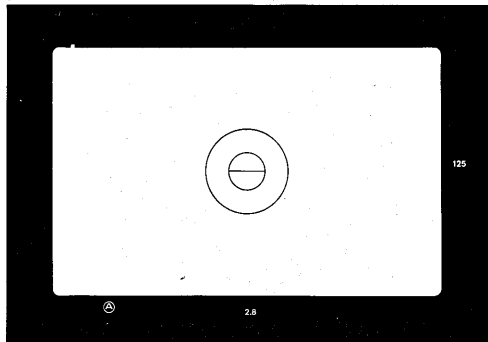
The exposure meter only covers the field in the central large circle of the viewfinder. This allows for measurements of smaller portions of the picture. The measured value is stored by depressing the release button beyond the initial pressure point to the second pressure point. The value remains stored as long as the button is depressed. As a visible indication of value storage, the Ⓐ symbol goes out. During value storage the camera may be panned until the desired picture area has been determined. (The indication of value storage remains). Then the shutter is released. The exposure time may be stored up to approx. 30 secs. If the aperture is changed during this time, the shutter speed alters accordingly and is indicated. Storage values are extinguished as soon as the finger is removed from the release button.

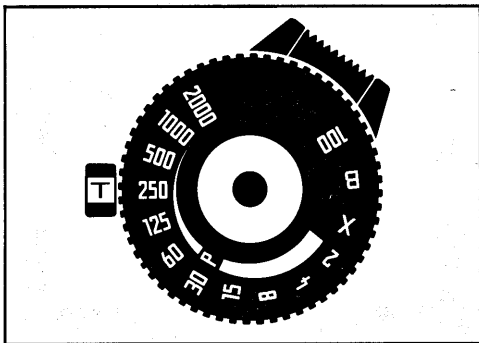
Viewfinder displays:

The program setting is displayed in the bottom left-hand corner of the viewfinder frame, the preset aperture to the right of it. The time scale is visible on the right in the viewfinder frame. The automatically produced shutter speed is indicated by an LED next to the figures. The shutter speeds are produced continuously, two LEDs light up with intermediate values.

With extreme brightness the shutter speed range may no longer be adequate for the preselected aperture. This is indicated by a red triangular LED at the **top** end of the scale. To relieve this condition, stop down if possible.

When the **bottom** triangular LED lights up the shutter speed is $\frac{1}{2}$ sec. or longer. If the symbol ∇ lights up, the exposure falls below the metering range (see page 20).





- T** **Automatic shutter priority** with large-field averaging.
Preselect the desired shutter speed, set the minimum lens aperture.

This program is used above all for quickly moving subjects, where the shutter speed is the element of composition. This applies particularly to movement sequences, such as sports subjects, exposures from an unsteady support, or with long-focal-length lenses.

With a high shutter speed, rapid movements can be photographed at perfect contour sharpness. A slower shutter speed produces deliberate movement blur, which may enhance the pictorial dynamism.

The desired shutter speed is preselected on the shutter speed dial, which engages at the engraved values. Intermediate settings are not effective. The lens aperture is automatically determined depending on the existing brightness.


Important

The lens must be stopped down to its minimum aperture (f/16 or f/22 respectively) so that the entire aperture range is available for the automatic control.

With the 16 mm f/2.8 and 19 mm f/2.8 lenses with the minimum aperture f/16 the display **T flashes even if the lens has been stopped down completely. Nevertheless the correct aperture is determined automatically.**

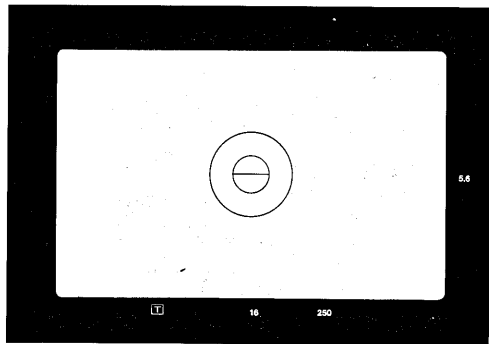
The **T** program functions with all LEICA R lenses with fully automatic diaphragm (see pages 53 and 56).

Viewfinder displays:

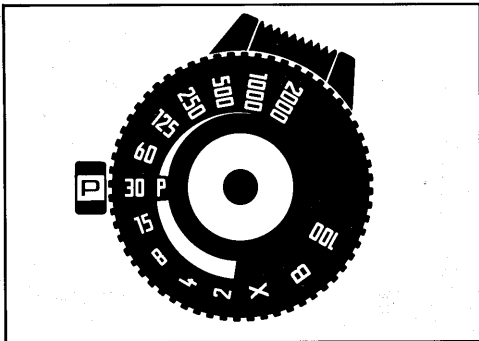
The program setting is displayed in the bottom left-hand corner of the viewfinder, the preselected shutter speed in the bottom right. The aperture setting is faded in at bottom centre. If the lens has not been fully stopped down, the program display  flashes and the aperture values on the right in the viewfinder frame are, if at all, incorrectly displayed. If the lens is still not stopped down to its minimum aperture, the shutter speed will be automatically adjusted independently of the preselected and displayed speed (from 15 sec. to $\frac{1}{2000}$ sec.).

The aperture scale is visible on the right in the viewfinder frame. The automatically determined lens aperture is indicated by an LED next to the figures. The apertures are produced continuously, two LEDs will light up with intermediate values.

At extreme brightness or with very little light the aperture range may no longer be adequate for the preselected shutter speed. This is indicated by a red triangular LED: with overexposure at the **top** end of the aperture scale, with underexposure at the **bottom** end.



If it is possible within the shutter speed range ($\frac{1}{2000}$ sec. to about 15 sec.), however, correction is made by automatic change of the preselected shutter speed. If the override symbol lights up, the measuring range is not reached (see page 20).



P Variable automatic program mode with largefield averaging.
Set the minimum aperture of the lens.


Set the tendency of the automatic program with a shutter speed value.


With increasing brightness, only the shutter speed is continuously reduced automatically until this set value is reached, whereas the lens remains at full aperture. From the set shutter speed onwards, shutter speed and aperture size are reduced simultaneously.

This is the right program if you want to be always ready for action. It is also ideal for carefree photography, without bothering about technicalities.


Important!

The lens must be stopped down to its smallest aperture (f/16 or f/22 respectively) so that the entire aperture range is available for the automatic control.

With the 16 mm f/2.8 and the 19 mm f/2.8 with the minimum aperture 16 the  display flashes even if the lens has been stopped down completely. Nevertheless, the correct shutter speed / lens aperture combination will be determined.

The  program functions with all LEICA R lenses with fully automatic diaphragm (see pages 53 and 56).

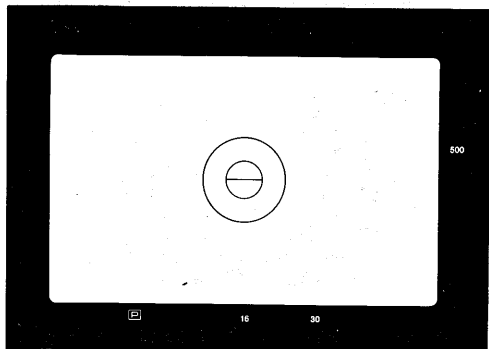
Viewfinder displays:

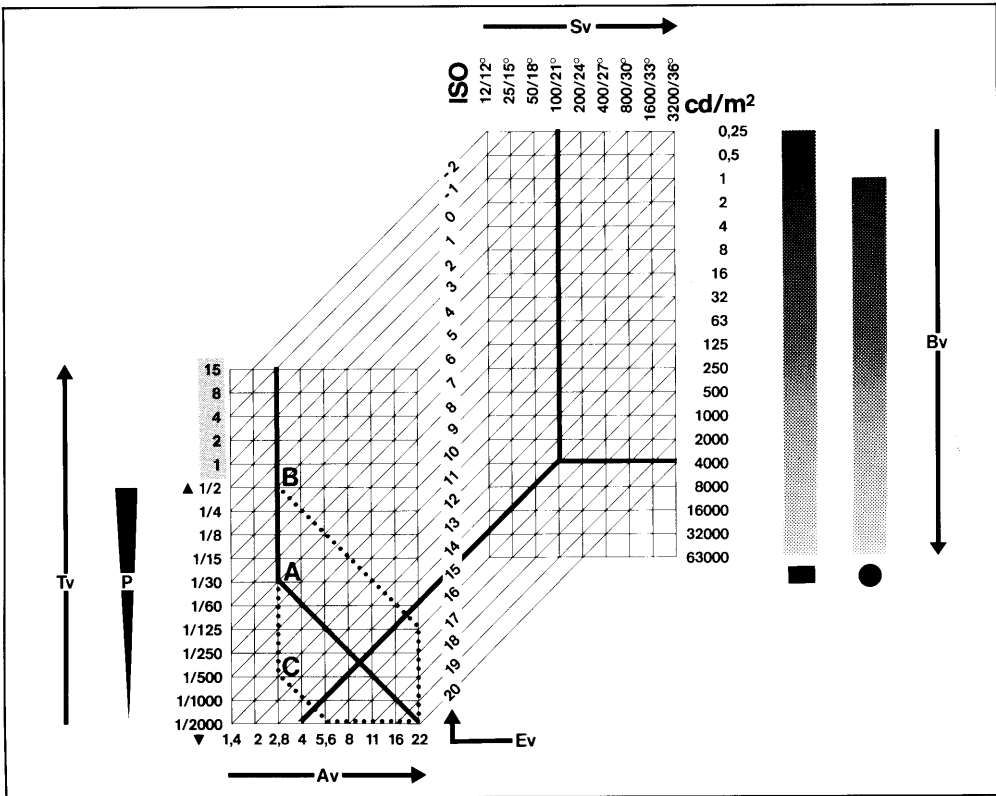
The program setting is visible in the bottom left-hand corner in the viewfinder. The aperture setting is faded into the bottom centre with the set shutter speed to the right of it. If the lens has not been completely stopped down, the program display  flashes. If the lens is still not stopped down to its minimum aperture, the shutter speed is automatically adjusted from 15 secs. to $\frac{1}{2000}$ sec.).

The shutter-speed scale is visible on the right in the viewfinder frame. The automatically determined shutter speed is indicated by an LED next to the figures.

In extreme brightness or with very little light the automatically controlled shutter speed/aperture range is no longer adequate. This is indicated by a red triangular LED: with overexposure at the **top** end of the shutter speed scale, with underexposure at the **bottom** end.

If the override symbol lights up, the measuring range is not reached (see page 20).





Working diagram for the variable automatic program mode

The variable automatic program mode of the LEICA R 5 depends on the preselected shutter speed, the speed of the lens aperture, the film speed and brightness. This can be seen from the diagram. Using the normal program (see page 35), i.e. with a shutter speed set at $\frac{1}{30}$ sec. (P) on the shutter speed dial, only the shutter speed is reduced at first if the brightness increases, whereas the aperture (in this case f/2.8) remains fully open. From the preselected value onwards ($\frac{1}{30}$ sec.) shutter speed and aperture change simultaneously (Line A).

The shutter speed/aperture combination produced with a given film speed and brightness can be determined on the diagram by the point of intersection of the lines. In this example, using a 90 mm ELMARIT-R f/2.8 and a film speed of ISO 100/21° at 4000 cd/m², i.e. brilliant sunshine, a shutter speed between $\frac{1}{250}$ – $\frac{1}{500}$ sec. ($\frac{1}{350}$ sec.) is produced with f/8-11. Using the variable automatic program mode, the shutter speed can be set on the shutter speed dial from the point where shutter speed and aperture are changed

simultaneously. The dotted lines B and C show two very different examples of this. Both the preselected shutter speed and that which is being automatically computed are displayed in the viewfinder. Line B example: with the same film and the same illumination, the aperture is stopped down more for this program than for the normal program and the exposure time is increased on the other hand = $\frac{1}{60}$ – $\frac{1}{125}$ sec. ($\frac{1}{90}$ sec.) with f/16 – 22.

Line C example: with the same film and the same illumination, the short exposure times dominate with this program, whereas the aperture is only slightly stopped down = $\frac{1}{1000}$ – $\frac{1}{2000}$ sec. ($\frac{1}{1400}$ sec.) with f/4 – 5,6.

Characteristics, tendency and applications of the variable automatic program mode

$1/2$ $1/4$ $1/8$ $1/15$ $1/30$ $1/60$ $1/125$ $1/250$ $1/500$ $1/1000$ $1/2000$



Tendency towards stopping down the lens

Program for depth of field

Longer exposure time
Increased stopping down
More depth of field
More risk of camera shake

Especially suitable for:
Good lighting conditions
Short focal lengths
Stationary subjects

Normal program

Tendency towards a shorter exposure time

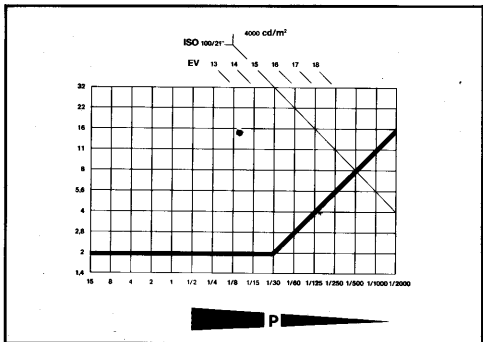
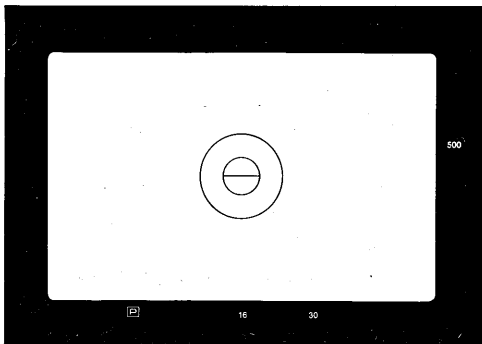
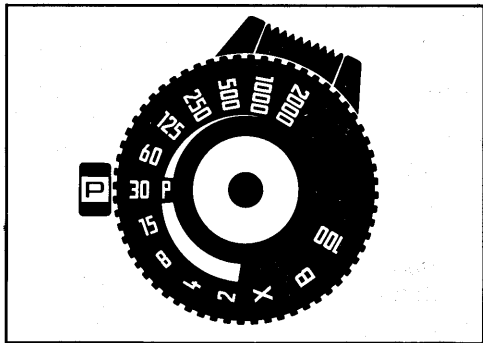
Program for movement shots

Shorter exposure time
Larger aperture
Less depth of field
Less risk of camera shake

Especially suitable for:
Poor lighting conditions
Long focal lengths
Moving subjects

Normal program

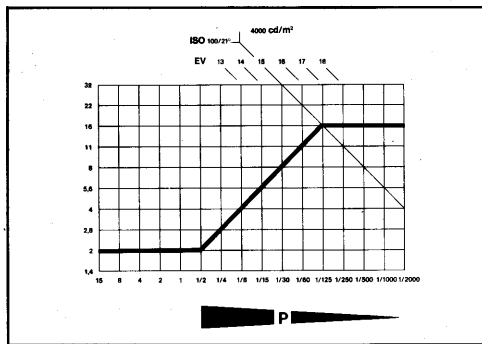
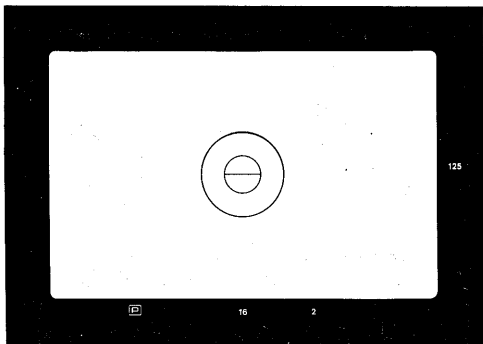
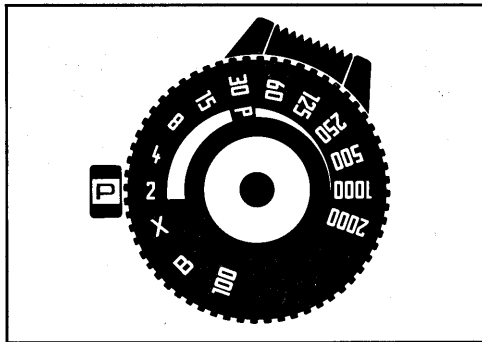
This universal program is suitable for most subjects photographed with 35 mm – 90 mm lenses under normal lighting conditions.



Program for depth of field

Set the shutter speed dial at a value between 2 and 15, e.g. 2 = $\frac{1}{2}$ sec.

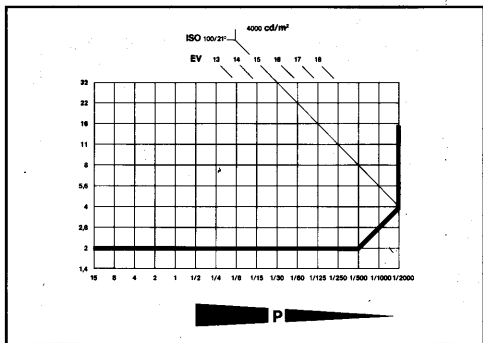
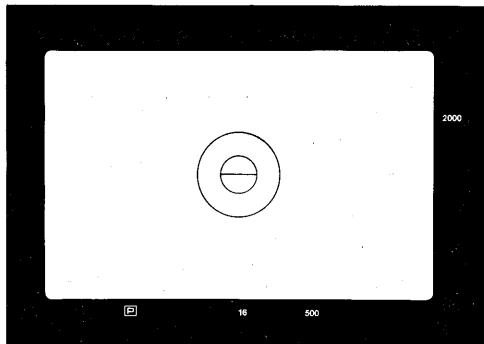
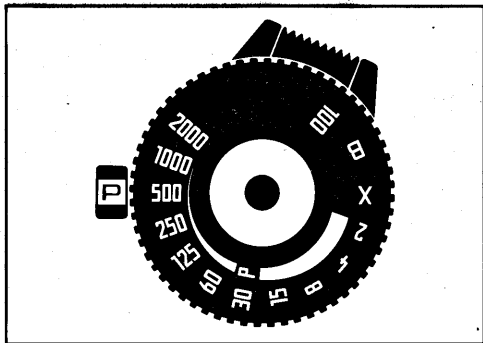
This program is selected when a large depth of field is required. It is especially suitable for short focal lengths, for stationary subjects or when lighting conditions are good.

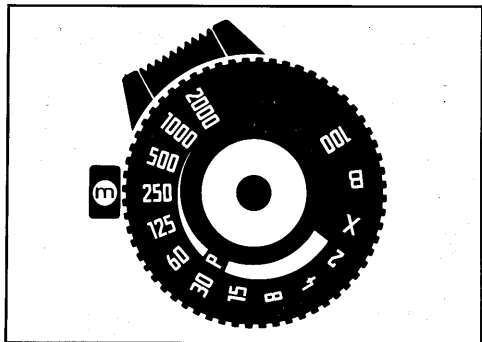


Program for movement shots

Set the shutter speed dial to one of the values between 60 and 2000, e.g. 500 = $\frac{1}{500}$ s.

This program favours short shutter speeds. For this reason, it is especially suitable for moving objects or long focal length lenses.





Ⓜ **Manual setting** with selective measurement.

Set shutter speed and lens aperture manually.

In certain exposure situations the switching-off of the automatic exposure control is desirable. Shutter speed and aperture are set manually in steps.

The exposure value, i.e. the shutter speed/aperture combination must be determined before the exposure. There are two possibilities:

1) Preselect aperture.

Switch on the camera by pressing the locking button on the program selector or touching the release button and line up the subject. Set the shutter speed indicated by the red LED on the shutter-speed dial. Intermediate values cannot be set. If two LEDs light up during the determination of the shutter speed, the aperture should be opened or closed by half a stop.

2) Preselect the shutter speed.

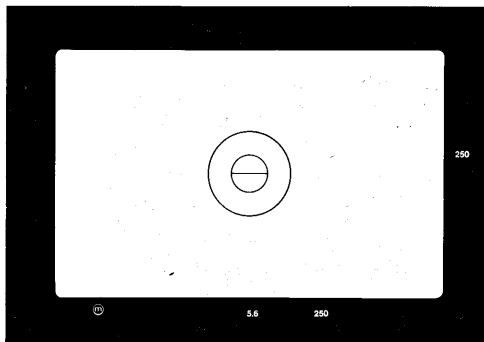
Line up the subject and adjust the lens aperture with the camera switched on until the shutter speed indicated by red LEDs on the right in the viewfinder frame agrees with the preselected shutter speed.

The Ⓜ program functions with all LEICA R lenses and accessories, such as adapters, Universal Focusing Bellows-R, etc. (see page 56).

Viewfinder displays:

The program setting is indicated in the bottom left-hand corner of the viewfinder frame, the preselected aperture at the bottom in the centre, the **preselected** shutter speed to the right of it. The shutter speed can be seen on the right in the viewfinder frame. The LEDs indicate the **measured** shutter speed. When the triangular LEDs at the top or bottom light up (indicating over- or underexposure) choose a different shutter-speed/aperture combination. If necessary, use a more rapid lens or higher or lower film speed.

If the ▽ symbol lights up, the exposure value is below the measuring range (see page 20).



The viewfinder as a composition and control centre

The viewfinder of the LEICA R5 is the centre for the composition and control of all important items of information:

Sharpness, picture area and perspective can be easily assessed, the field for the selective exposure measurement (the outer circle) can be clearly distinguished. The viewfinder covers 92% of the film format, the viewfinder magnification is 0.8 with the 50 mm lens in the camera at the infinity position.

All the necessary values are displayed in the viewfinder corresponding to the program setting. The LED displays light up when the locking button on the program selector, the battery test knob or the release button is being pressed.

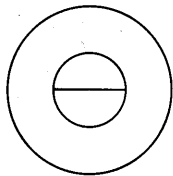
To prevent confusion in the viewfinder, only the information relevant for the particular program is indicated (see pages 24 – 39).

The illustration opposite shows all the displays simultaneously.

The ▽ display in the bottom left-hand corner in the viewfinder frame indicates override and the limit of the measuring range, to the right of it is the display of the program setting. In the bottom centre the preselected lens aperture is faded in, and on the right, the pre-selected shutter-speed is visible.

On the right of the viewfinder frame the shutter speed scale is visible; to the left of it the line of LEDs with warning display for overexposure at the top and a warning display "1/2sec. or longer" i.e. underexposure will show up at the bottom.

A circle in the centre of the viewfinder indicates the field for selective measurement. The illustration shows the universal focusing screen.

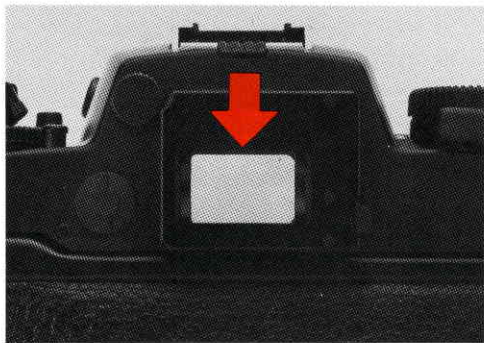
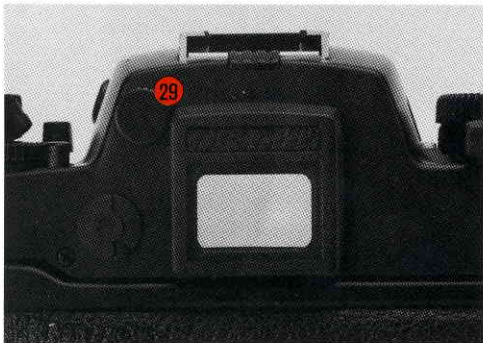


▲	▲
2000	32
1000	22
500	16
250	11
125	8
60	5.6
30	4
15	2.8
8	2
4	1.4
2▼	▼

▽ m A A P T

2.8

30



Eyepiece focusing

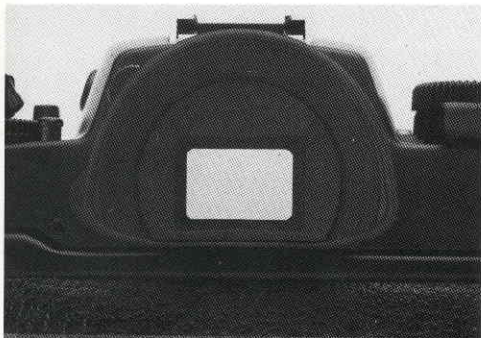
It is important that the viewfinder image is as sharp as possible to make full use of all the possibilities of the LEICA R 5 and the high performance of the LEICA R lenses. For this reason, the eyepiece can be adjusted by ± 2 dioptres so that the viewfinder image can be matched to the eyes of the individual.

To do this, pull out the small wheel at the top of the eyepiece (29), turning it at the same time until it is set to the right position. Looking through the viewfinder with the lens out of focus, e.g. at the smallest distance setting pointing the camera at the sky, rotate the wheel until

the circle encompassing the field for selective measurement appears sharp and contrasty. Now push the wheel back into its normal position, the chosen eyepiece setting is fixed. Whereas in its normal position the wheel can be easily turned, you distinctly notice the clickstops if you turn the wheel when it is pulled out.

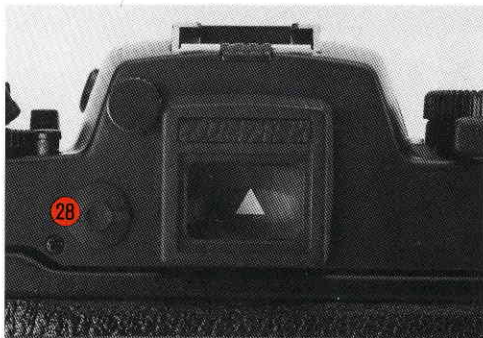
Correction lenses

If the ± 2 dioptres eyepiece adjustment range is insufficient for optimal focusing, correction lenses of plus or minus 0.5/1.0/1.5/2.0/3.0 dioptres are available.



Eyecup

The flexible eyecup (Code No. 14 215) shields the eye from stray light. Also, the viewfinder image appears considerably more brilliant and can be viewed more clearly.



Eyepiece blanking

The silicon photo diode of the exposure meter of the LEICA R 5 is in the base of the camera where it is protected against light. This is why light entering through the viewfinder eyepiece only affects the measurement in extreme cases, for instance when the user does not look through the viewfinder when taking photographs from a tripod and direct sunlight or powerful spotlights enter the eyepiece from the rear. A knob (28) is located on the left of the eyepiece window; turning it in the direction of the arrow closes the eyepiece. When the stop is swung in, a white triangle will appear in the eyepiece.



Focusing with the universal focusing screen

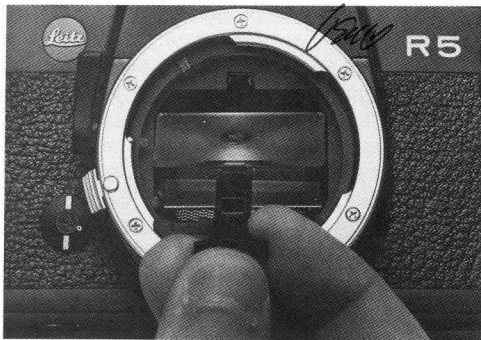
Normally the LEICA R5 is supplied with the universal focusing screen, which is bright, contrasty, and can be used universally for the most frequent photographic situations.

The image is focused by rotation of the distance setting ring (22) on the lens.

When the image is out of focus, the edges and lines of the object are mutually displaced in the horizontal split wedge of the viewfinder.

A ring with a rectangular-prism screen surrounds the central split wedge. It serves for the focusing of objects with weak contours. The out-of-focus position is clearly indicated by flickering. The outer boundary of this ring indicates the outline of the field for selective measurement.

The surrounding field consists of matt triangular prisms, which produce a groundglass screen effect. Here the image is focused above all with long-focal-length lenses and in the near-focusing range.

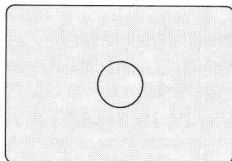


Interchangeable focusing screens

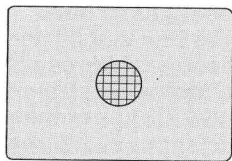
In addition to the universal screen, four other focusing screens are available for the LEICA R5. They are supplied singly in a container with a pair of tweezers and a dust brush.

Important

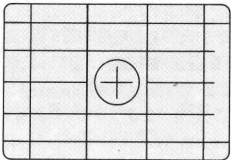
Always use the appropriate tweezers to exchange the focusing screens (see instructions "Interchangeable focusing screens"). Do not touch them with your fingers.



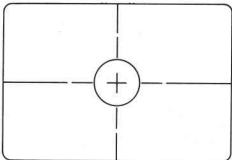
2



3



4



5

Special tasks call for tailor-made systems for rapid and accurate work. This is why four additional focusing screens are available for the LEICA R5: the uniform groundglass screen (No. 2) for the extreme close-up range and very long-focal-length lenses. The microprism screen (No. 3) for undisturbed assessment of the pictorial composition. The uniform groundglass screen with grid division (No. 4) for architectural photography and reproductions. The clear glass plate (No. 5) for scientific photography such as photomicrography and astronomical photography.

Using flash units

The LEICA R 5 has through the lens (TTL) flash exposure metering, carried out by a silicon photo diode separately located next to the metering cell for averaging/selective measurement in the base of the camera, where it is protected from stray light (see page 14).

When using dedicated flash units of the SCA 300 system in combination with the SCA 351 adapter, the camera electronics automatically switch to the correct flash synchronisation ($X = 1/100$ sec.) after the flash unit has been recharged, the amount of light from the flash being regulated by the flash exposure measurement through the lens.

With the SCA 350 and 550 adapters, the LEICA R 5 is also switched to "X", but here the amount of flash light is regulated by the flash unit's own meter cell.

Besides this, the LEICA R 5 accepts all commercially available electronic flash units with standardised flash contacts (coaxial plugs) or with hot shoe. The simultaneous connection of both contacts to flash units is not recommended, as this can cause interference.

- Flash synchronisation works for all programs.
- The lens aperture must be set manually to the right value for flash exposure, regardless of the program selected.

TTL flash exposure measurement

The accessory shoe of the LEICA R 5 has, beside the hot shoe, additional control contacts for electronic flash units with SCA 351 adapters. Flash exposure measurement is done through the lens. When switched on, the camera automatically switches to X ($1/100$ sec.) when the flash unit is ready to fire. This applies to all programs at any setting of the shutter speed dial except for "X", "B", or "100".

We recommend the use of the aperture-priority mode.

At and the automatic aperture control does not work; the aperture must be set manually.

When the flash has been recharged, the triangular LED in the top right-hand corner of the viewfinder flashes slowly at 2 Hz (Hertz). If the flash is not yet or no longer ready for action, or the unit has been switched off, the camera automatically returns to the selected program. If your finger remains on the release button after the flash exposure, the upper triangular LED also shows if the exposure was correct:

○ Flash light was sufficient, whereby the capacitor discharge was only slight = Flashing at 2 Hz (immediate readiness to fire).

○ Flash light was sufficient, but capacitor discharge was greater - however, the flash unit is ready to fire again after 2 secs. = 2 secs. rapid flashing at 8 Hz. and then readiness for action indication at 2 Hz.

○ Flash light was sufficient, but capacitor discharge was considerable = 2 secs. flashing at 8 Hz., then the upper triangular LED goes out. If you remove your finger from the release button for a moment, the exposure meter display in the right of the viewfinder works according to the selected program until the flash is recharged and the camera automatically switched to X. The upper triangular LED then starts

flashing again at 2 Hz.

○ Flash light was not sufficient, the capacitor was totally discharged = upper LED goes out. If you remove your finger from the release button for a moment, the exposure meter display in the right of the viewfinder works according to the selected program until the flash is recharged and the camera automatically switched to X. The upper triangular LED then starts flashing again at 2 Hz.

Important! The film speed setting on the camera (see page 13) also applies for TTL flash exposure measurement. The setting on the flash unit is not taken into consideration.

Regardless of the set program, exposure measurement is always done with the averaging method. The light reflected from the film is received by a silicon photo diode situated next to the meter cell for averaging/selective measurement (see page 14). As the film layers of normal 35 mm films possess almost the same reflection properties, although they may look different, exposure is usually correct. In exceptional cases, e.g. with Polaroid instant slide films, a correction value can be given with the Override. This is also

necessary when the subject for a flash exposure consists of a predominance of dark or of light details (see pages 20 and 21).

Note: With some flash units, the ready-for-action signal and automatic switch to X occurs already at 70% capacity. If an exposure is taken immediately requiring the whole energy, this leads to under-exposure. In such situations it is better to wait a few seconds before photographing.

Automatic switching to "X"

The accessory shoe of the LEICA R 5 has control contacts for SCA 300 and 500 system flash units. In combination with the SCA 350 and 550 adapters, the camera electronics automatically switch to "X" ($1/100$ sec.) when the flash unit is recharged and the camera switched on. This applies to all programs regardless of the shutter speed setting, except for "X", "B" or "100".

We recommend the use of aperture-priority.

At \square and \square the automatic aperture control does not work: the aperture must be set manually.

When the flash has been recharged, the triangular LED in the top right-hand corner of the viewfinder flashes slowly at 2 Hz (Hertz). If the flash is not yet or no longer ready for action, or the unit has been switched off, the camera automatically returns to the selected program.

Traditional electronic flash units

As a rule, the shutter speed dial is set to "X" (= $1/100$ sec.) for exposures with traditional type electronic flash units. This switches off all programs.

If the value is set manually, flash synchronisation is guaranteed even for shutter speeds between $1/2$ and $1/60$ secs. and at "B". For automatic setting this only applies when modern thyristor-charged flash units are used.

When the camera batteries are exhausted, the flash unit can still be used by setting the shutter speed dial to "100".

Connection via coaxial plugs

All commercially available electronic flash units and studio flash equipment with standardised flash contacts (coaxial plugs) can be used on the LEICA R5. They are connected by means of a synchronised cable via the contact (25) for cable connection (X contact) on the left side of the prism roof. Using a multiple plug (available from your dealer) several flash units can be connected to the X contact.

Simultaneous connection of central contact and coaxial plug to flash units is not recommended as it may lead to interference.

Connection via central contact

Traditional type electronic flash units with a central contact are connected to the flash contact ("X") in the accessory shoe.

Flashbulbs

Flashbulbs are likewise connected via the contact (25) or the central contact in the accessory shoe. The following chart provides information on the exposure times for the synchronisation of flash bulbs.

Electronic flash		X, 100 (1/100) 1/2 → 1/60, B
Flashbulbs	AG 3 B Flashcubes P F 1 B XM 1 B M 3 PFC 4	1/2 → 1/30, B



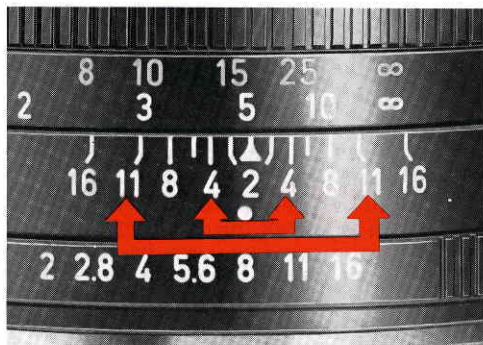


Depth-of-field lever

The LEICA R5 measures the exposure at full lens aperture. When the depth-of-field lever (20) is operated the lens aperture closes and permits assessment of the sharpness/unsharpness range in the viewfinder. This is particularly useful with close-up subjects.

Important

During exposure measurement the lever must not be pressed; this would produce wrong exposure values.



Depth-of-field scale of the lenses

The depth-of-field scale indicates the range of the depth of field for the object distance set on the camera.

If, for instance, the 50 mm SUMMICRON®-R f/2 lens has been focused on 5 m, the depth of field will extend from 3 to about 20 m when the lens has been stopped down to f/11. If it has been stopped down only to f/4, sharpness will extend from 4 to about 8 m.

Our depth-of-field table (No. 110-57) contains detailed information about the depth of field at all focal lengths.



Self-timer

Set the delay time of about 9 sec. by turning the knob (18) clockwise (direction of the arrow) through 30°. The self-timer starts when the camera is switched on by a slight touch of the release button or by pressure of the locking button of the program selector. The flashing LED (9) visually indicates the function. About 2 seconds before the camera is released flashing gives way to constant light.

As long as the LED is flashing, the knob (18) can be turned back to stop the self-timer, or, if the release button is pressed again, to prolong the delay time. However, if the knob (18) is turned back during the 2

secs. constant light or the release button touched, the shutter is triggered off immediately.



Multiple exposures

Make the first exposure. Press the rewind button (33). Operate the rapid transport lever. The already exposed film can now be exposed once again.

At the end of its travel the rapid transport lever automatically switches off the rewind button. If further exposures on the same frame are desired, the rewind button must be pressed again before each operation of the transport lever.

For multiple exposures with the MOTOR-WINDER or MOTOR-DRIVE see instructions for these accessories.



Lens hoods

A functionally-designed lens hood is part of all LEICA R lenses. It should always be used, because it offers effective protection against stray light and glare as well as against raindrops and finger marks. Most LEICA R lenses have a built-on extensible lens hood.

From some lenses the lens hood can be detached. It is attached – white dot facing white dot – and locked by a clockwise turn. To unlock it, slightly raise the lens hood and release it by an anticlockwise turn. This lens hood also serves as an adapter for series filters.

Automatic spring-back diaphragm

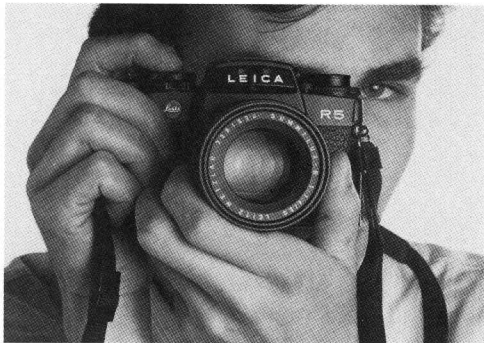
LEICA R lenses have spring-back diaphragms. This means that the viewfinder image is always – i.e. before and after the exposure – seen at full aperture and therefore at maximum viewfinder brightness. Shortly before the exposure or when the depth of field lever is depressed the lens diaphragm closes to the preselected value.

See "Measurement with working aperture, page 18 for the following lenses: 35 mm PA-CURTAGON®-R f/4, 400 mm TELYT®-R f/6.8, 500 mm MR-TELYT-R f/8, 560 mm TELYT-R f/6.8 and 800 mm TELYT-S f/6.3.



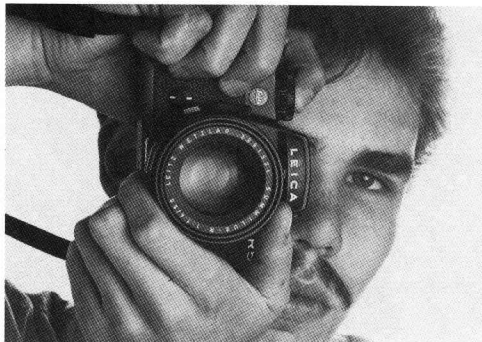
Design of the LEICA R lenses

All LEICA R lenses share the external design, i.e. the arrangement of the rotatable aperture preselection ring (24), the fixed ring with depth-of-field indication (23), and the distance setting ring (22) is the same. The left hand therefore soon becomes accustomed to quick and reliable operation with all focal lengths.

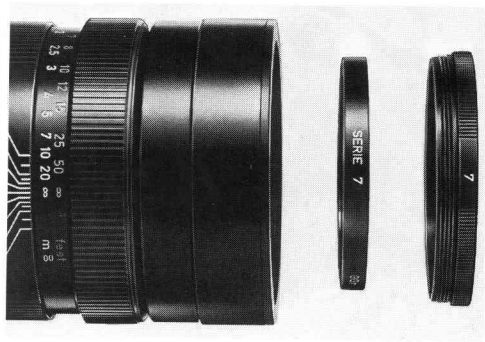


Holding the camera correctly

To ensure steady 3-point support the right hand grips the camera. The index finger rests on the release button (4), the thumb on the rapid transport lever. The left hand supports the lens from below.



Simply turn the camera for upright pictures. The hands remain in the same position as for horizontal pictures, ready to transport the film and for focusing.



ELMARIT-R f/2.8 mm and the 35 mm PA-CURTAGON-R f/4 lenses.

Filters and adapter rings can be easily released when, to avoid distortion, gripped only on one side.

Filters

Both screw-in filters and series filters can be used with LEICA R lenses with built-on extensible lens hood. Adapters are available for series filters.

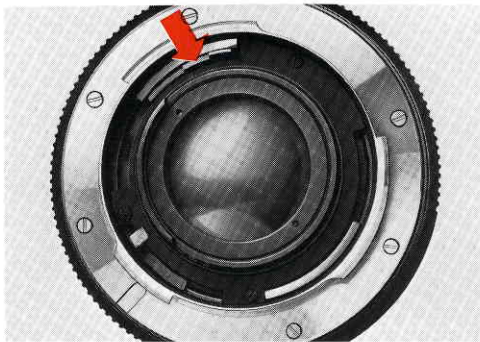
Screw-in filters are preferable. This applies particularly to circularly polarising filters because of simple handling. With lenses with detachable lens hood the use of series filters is recommended. Here the lens hood also functions as a filter adapter: the filters are first inserted in the lens hood and in this combination attached to the lens (does not apply to the 19 mm ELMARIT®-R f/2.8). Rotating devices are fitted to the 24 mm and the 28 mm

The use of filters

When the exposure is measured through the lens, the reduction of the light intensity is generally automatically allowed for. But the various films have different sensitivities in the various regions of the spectrum. Deviations from the measured value can therefore occur with dense and extreme filters.

Thus, orange filters for instance as a rule call for an extension by one aperture value, red filters on average by about 2 values. A generally valid figure cannot be quoted, because the red sensitivity of black-and-white films varies widely. Through the circularly polarizing filters we supply for our lenses, measurement and setting can be carried out as for normal filters both with averaging and with selective exposure measurement. We do not recommend linearly polarizing filters.

Measurement through such filters produces strong deviations, because the highly effective multiple coating of the semi-transparent main mirror acts like a strong polarizer. This applies to both the extinction and the transmission position of the polarizing filter.



Hints for the use of existing LEICA R lenses and LEICA R accessories

All lenses and the accessories of the LEICA R range can be used on the LEICA R5 without modification.

Lenses and accessories for LEICAFLEX® models (without control cam) should not be inserted in the LEICA R5; it could damage the camera body.

They can be fitted with such a cam (see illustration) at any time for use of the LEICA R exposure measuring methods. The functions of modified lenses and accessories on all LEICAFLEX models remain unrestricted.



LEICA M lenses on the LEICA R5

All the lenses of the LEICA M range suitable for use on the VISOFLEX® attachment can also be used on the LEICA R5. The operating conditions, for instance camera distance and achievable object area sizes, will then be the same as when these M lenses are used on the VISOFLEX. A special adapter (Code No. 14 167) forms the bridge between the two Leitz systems of 35 mm photography. These lenses have no auto-diaphragm. The exposure is measured at the working aperture (see page 18).

Hints for the care of the LEICA R5 and its lenses

It is best to remove dust and fluff on the mirror carefully with a soft, dry sable brush, from which grease is repeatedly removed with ether before and during cleaning. For the cleaning operation itself, the brush must be absolutely dry.

Take care not to damage the focusing screen mechanically, for instance with the mount of the brush.

Do not blow into the mirror chamber, because this may introduce dust into the interior of the camera.

A camera lens acts as a burning glass when it is pointed into direct sunlight. The camera should therefore be protected by means of the lens cap, or should be kept in its bag and placed in the shade.

In addition to its type designation each lens has its individual Serial No. Please make a note of this as well as that of your camera, which you find on the baseplate of your LEICA R5. This may be very important in case of loss.

Dust on the external surfaces of the lenses is removed with a soft sable brush, or a clean, dry, soft piece of lint used carefully. Special spectacle cleaning tissue is not recommended. This is impregnated with chemicals which may attack the glasses of the camera lens. (The glass used for spectacles is of a composition different to that of optical glass for high-quality camera lenses).

In unfavourable conditions, for instance by the seaside, in subtropical regions, etc., a colourless UV filter protects the front lens against external influences such as seawater spray and sand. An additional colourless and optically flat glass plate, i.e. a filter, can, however, cause undesirable reflections at certain angles of incidence of the light, especially in contre jour light and high contrast. The lens hood protects the lens also against accidental finger-marks and raindrops.

Camera bags

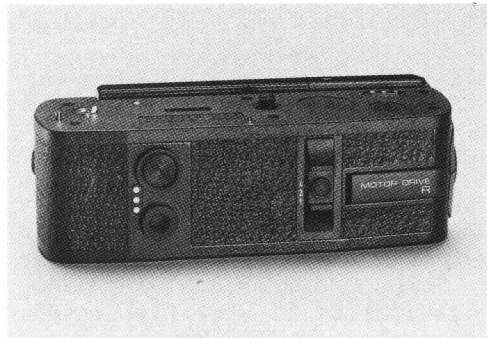
Two everready bags, one with a standard and one with a large front, are available for the LEICA R5. The front is detachable after the press stud on the back of the bag has been pushed up for unlocking. The two versions of everready bag can be used with the following lenses:

	Standard everready bag Code No. 14 569	Everready bag with large front Code No. 14 568
16 mm f/2.8	-	yes
19 mm f/2.8	-	without lens hood
21 mm f/4	without lens hood	without lens hood
24 mm f/2.8	without lens hood	without lens hood
28 mm f/2.8	without lens hood	yes
35 mm f/2	yes ¹⁾	yes
35 mm f/2.8	yes ²⁾	yes
35 mm PA	without lens hood	yes
50 mm f/1.4	yes	yes
50 mm f/2	yes	yes
60 mm f/2.8	-	yes
80 mm f/1.4	-	yes
90 mm f/2	-	yes
90 mm f/2.8	-	yes
35 - 70 mm	-	yes

¹⁾ From No. 2791417

²⁾ From No. 2928901

In addition, combination bags are available for extensive camera outfits which include several lenses and various accessories.



MOTOR-WINDER R
MOTOR-DRIVE R

The MOTOR-WINDER R and MOTOR-DRIVE R on the LEICA R 5 make motorized film transport and shutter wind possible. With the winder frame frequencies of up to 2fps and with the drive of up to 4fps are possible. The drive can be switched to 2fps and to single-frame exposures. All shutter speeds can be used. The Winder is powered by 6, the Drive by 10 commercially available alkali manganese batteries or NiCd rechargeable batteries.

MOTOR-WINDER R, Code No. 14 208
MOTOR-DRIVE R, Code No. 14 310



The LEICA R 4 with WINDER or DRIVE can be held more securely and comfortably with the handgrip with adjustable leather loop.

Handgrip, Code No. 14 308



Remote-Control LEICA R electronic control unit

This handy control unit is a remote release with illuminated digital display of the completed exposure through feedback from the camera, and at the same time a timer for automatic single-frame releases at variable time intervals of about 2 frames per second to 1 frame about every 10 minutes. The RC LEICA R can be attached to the MOTOR-WINDER R and to the MOTOR-DRIVE R.

Remote-Control LEICA R,
Code No. 14 277



DB 2 LEICA R Databack

This is a quartz- and microprocessor-controlled camera back for the printing of data onto the film during exposure.

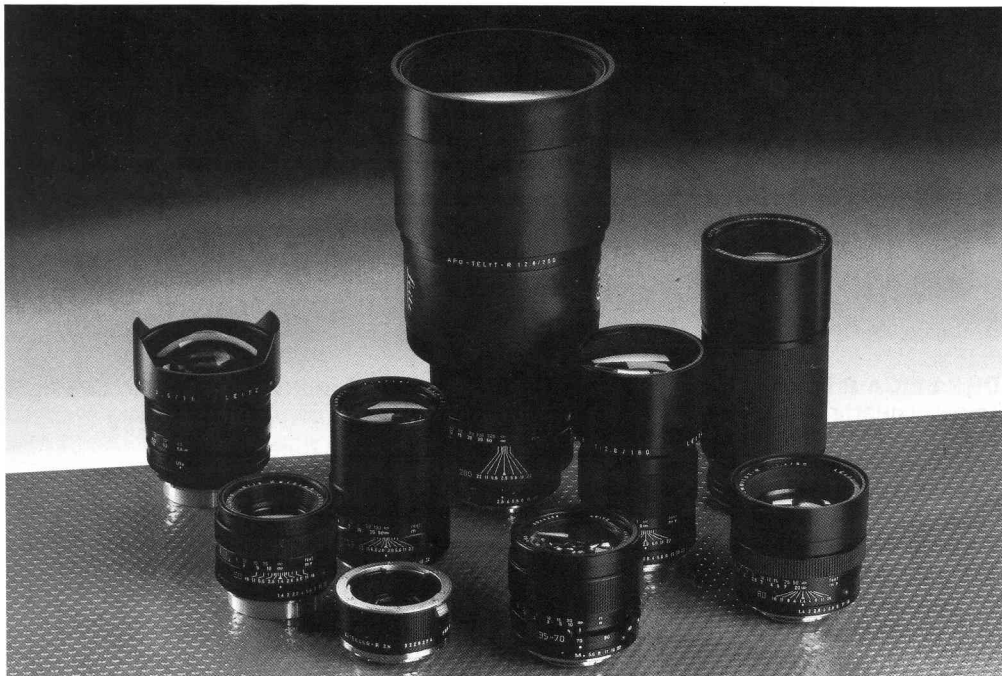
The DB 2 LEICA R can be attached to the LEICA R5 instead of the camera back. Contact with the camera is cable-free.

The following data can be printed:

- Day, hour, minute.
- Automatic calendar up to 31.12. 2099, optionally day, month and year in a different order.
- Any numbers up to 999999.
- Numbering of exposures in increasing or decreasing order.

The data is printed onto the bottom right corner of the picture (for oblong format)

DB 2 LEICA R Databack
Code No. 14 216



Interchangeable lenses

The LEICA R system offers the basis for optimum adaptation to any photographic task or situation. The comprehensive

range of lenses extends from the fisheye to the zoom lens, from the distortion-free 15 mm ultra-wide angle to the 800 mm telephoto lens.

www.orphancameras.com

Enlarger

A top-quality camera such as the LEICA R5 calls for top-quality reproduction equipment.

For enlarging we supply a well-ried top quality unit with automatic focusing, the FOCOMAT® V35, a pure 35 mm enlarger.

Projectors

A comprehensive range of projectors satisfies every requirement of projection. They offer maximum operating convenience and versatile possibilities of extention.

The outstanding common feature of all Leitz projectors is optimum optical performance combined with traditional Leitz precision.

Binoculars

The major plus points of TRINOVIDs are their superior optics. Manufactured from the same high-grade optical glass as the world-renowned Leica lenses, they exhibit highest optical performance, tremendous resolution and top image brilliance. The image retains plasticity even under poor lighting conditions.

Camera spare parts

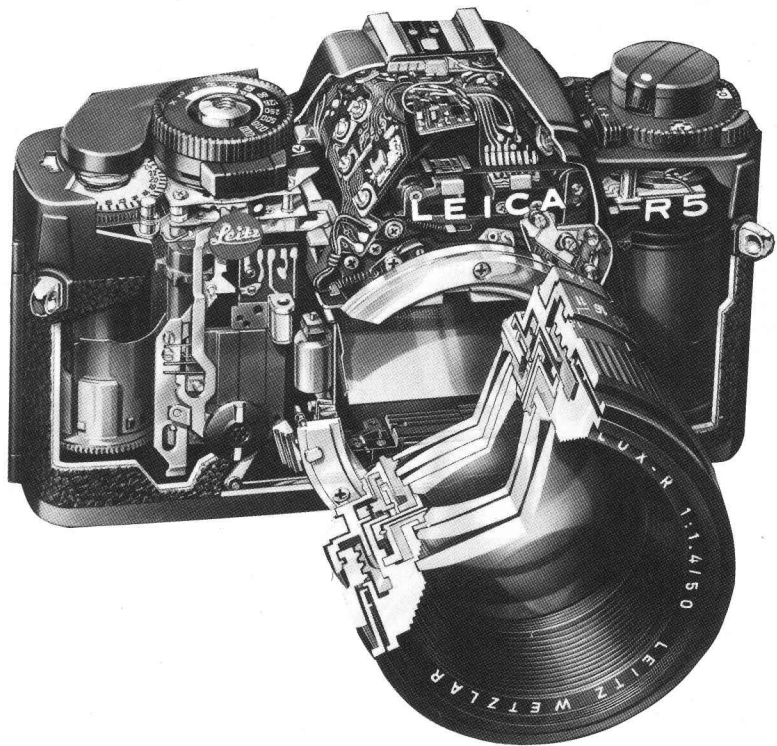
Camera body cover	14 103
Carrying strap	14 253
Flash contact cover	14 315
Universal focusing screen	14 303

Focusing screens

Uniform groundglass screen	14 304
Microprism screen	14 305
Uniform groundglass screen with grid division	14 306
Clear-glass plate with crosslines	14 307

Suitability for use in the tropics

Before prolonged journeys in sub-tropical regions our Technical Service offers treatment of the camera and lenses with fungicides, which largely protect the equipment against fungal attack.



Technical Data

Camera type: Electronically controlled single-lens reflex camera with multiple automation for the format 24 x 36 mm.

Lens connection: LEICA R bayonet.

Lenses: More than 30 Leica R lenses with focal lengths from 15 – 800 mm.

Operating the camera: The camera is switched on by pressing the release button, by actuation of the program selector or by pushing down the test button for battery control (LEDs in viewfinder light up – exposure meter is working). After releasing the displays will be lighted for some 12 sec. before they go out automatically, provided that the shutter is being cocked.

Methods of exposure measurement: Selective and average metering through the lens, practically combined with modes to make programs. Exposure measurement at full aperture and at working aperture.

Measuring cell: Silicon photodiode in the lower part of the camera, protected against stray light. For selective measurement, a collector lens is moved in front of the silicon photodiode, automatically by setting the program.

Selective measurement: Measuring field 7 mm in diameter, visible in viewfinder. The selectively measured value can be stored by taking up the slack of the camera release button for up to 30 seconds.

Averaging measurement: Center-weighted large-field averaging measurement.

Measuring range: Selective measurement: From 1 cd/m² up to 63 000 cd/m² at f/1.4, i.e. a working range from EV + 3 to EV + 20 at ISO 100/21° corresponding to aperture/shutter speed combinations from f/1.4/1/4 sec. to f/22/1/2000 sec.

Averaging measurement: From 0.25 cd/m² to 63 000 cd/m² at f/1.4, i.e. a working range from EV + 1 to EV + 20 corresponding to aperture/shutter speed combinations from f/1.4/1 sec. to f/22/1/2000 sec.

Programs: Combination of the aperture-priority, shutter speed-priority, automatic program modes as well as the manual setting of shutter speed and aperture with the selective and averaging exposure measurement methods. With the program selector can be set:

- Ⓐ Aperture priority mode with selective metering.
- Ⓐ Aperture priority mode with averaging metering.
- Ⓙ Shutter speed priority with averaging metering.
- Ⓛ Variable mode automation with averaging metering.
- Ⓜ Manual setting of shutter speed and aperture with selective metering.

Exposure override: Plus/minus 2 exposure values in 1/3 steps with clickstop. The override is indicated in the viewfinder.

Film speed range: ISO 12/12° to ISO 3 200/36°.

Power supply: Two silver oxide button cells or one lithium battery. Battery test with push button.

Viewfinder system: Built-in pentaprism. Five interchangeable focusing screens.

Eyepiece: Setting of correction values with dial from +2 to -2 dioptres. Integrated eyepiece diaphragm.

Viewfinder image area: 23 x 34.6 mm = 92% of the film area.

Viewfinder magnification: 0.8x at 0 dioptres with 50 mm lens.

LED displays in viewfinder (depending on selected program): Program symbol, exposure value determined by exposure measurement (shutter speed or aperture), flash readiness and flash exposure control in combination with dedicated flash units, memory hold i.e. the storage of the selectively measured shutter speed in the aperture priority mode with selective metering, indicated by the program symbol extinguishing (the shutter speed indication remains indicated).

Reflected data in the viewfinder (depending on selected program): Preset aperture, preset shutter speed.

LED warning indications in viewfinder: Override setting, over- and under exposure warnings when measuring range is exceeded, restricted control range of aperture in shutter speed priority mode and mode automation, setting "X", "B" and "100" (in this case the exposure measurement does not work).

Flash synchronization: Standard contact bush (X) for flashbulb- and electronic flash units, at the side of the prism housing. Central contact ("hot shoe", X) in the accessory shoe.

TTL flash exposure measurement with automatic changeover to "X": By using dedicated flash units (flash units designed for the system camera adaptation 300 - SCA 300) and in combination with the SCA 351 adapter the flash exposure measurement is controlled automatically and also the camera's electronics are set to "X" ($1/100$ sec.) when the flash unit is recharged. The flash readiness and the exposure control are indicated by a flashing LED (the LED indication of shutter speed and aperture disappears).

Override for TTL flash exposure measurement: Plus/minus 2 stops. In $1/2$ values with clickstops. The override is indicated in the viewfinder.

Automatic changeover to "X": When using dedicated flash units of the SCA systems 300 and 500 in combination with the SCA 350 and 550 adapters the changeover of the camera electronics to "X" ($1/100$ sec.) takes place automatically after the flash unit has been recharged. A flashing LED in the viewfinder indicates readiness to flash (LED display of shutter speed/aperture disappears).

Manual settings for flash synchronization using the time-setting button: "X" = $1/100$ sec. is produced mechanically and released electromagnetically. "100" = $1/100$ sec. is produced mechanically and released mechanically. All shutter speeds from $1/2$ to $1/60$ sec. with manual setting and "B" = exposure of any duration.

Metering cell for flash exposure measurement: Silicon photodiode in the lower part of the camera, next to the metering cell for exposure measurement.

Film speed range: ISO 12/12° to ISO 3200/36°.

Shutter: Electronically controlled metal-blade focal-plane shutter. Vertical action.

Shutter speeds computed by electronics: For automatic programs from 15 s to $1/2000$ s, continuously variable. With manual setting and aperture-priority in full values from $1/2$ s to $1/200$ s.

Shutter speeds produced mechanically: "X" = $1/100$ s for electronic flash synchronization. "B" for exposures of any duration. "100" (orange) = $1/100$ s if the batteries are exhausted.

Hinged mirror system: Semi-transparent hinged mirror with 17 deposited layers ((70% reflection, 30% transmission). Behind this, Fresnel reflector for selective metering and averaging (1345 microreflectors of the Fresnel reflector concentrate the light on the metering cell). Vibration-free mirror movement.

Film transport: With single-stroke advance lever (angle of movement 130°) or optionally motor-driven with the Motor-Winder R (2 frames/s) or the Motor-Drive R (switchable 4 frames/s, 2 frames/s and single frames).

Identification of the film plane: By symbol on the top of the camera.

Exposure counter: Forward counting. Automatic reset when camera back is opened.

Multiple exposures: By pressing the rewind locking button. Automatic reset when the shutter is cocked. Exposure counter does not move on. Any number of exposures possible. Multiple exposures can also be taken by Drive or Winder.

Film rewind: Hinged rewind crank on the top left of the camera.

Shutter release: Shutter release button with standard thread for cable release. Circuit switched on (LEDs light up in the viewfinder – exposure meter in operation) by pressing after 0.3 mm. Storage of exposure value for \odot (light pressure) after 1 mm. Electromagnetic release for electronically computed shutter speeds and "X" (= $1/100$ s) after 1.3 mm. Mechanical release for mechanically produced shutter speeds "B" and "100" after 2.25 mm.

Self-timer: Delay time approx. 9 s. Operation indicated by a flashing red LED on the front of the camera.

Camera body: Die-cast aluminium, die-cast camera top of 1 mm thick zinc. 0.8 mm brass base plate. Camera back with film cartridge window (to check which film is inserted and the film type); can be replaced by the Data Back. Field depth lever on the right at the lens attachment permits visual assessment of the depth of field. Tripod thread = A $1/4$, ($1/4$ "). Eyelets on both sides for carrying strap. Mechanical connection and electric contacts for the Motor-Winder R and the Motor-Drive R. Optionally black or silver chromium finish.

Dimensions (without lens): Height 89.1 mm – length 138.5 mm – total depth 62.2 mm (depth of camera body 32.2 mm), weight = 625 g.