LEICA

Instructions

LEICA R8

We wish you much pleasure and success photographing with your new LEICA R8.

The multitude of automatic functions and the possibility to make manual settings offer you carefree photography while still allowing all the freedom of creative image arrangement. High quality precision mechanics and electronics ensure reliability and durability. The camera is complimented by a useful accessory program, so that you can master any photographic assignment with the perfect equipment. LEICA R8: The LEICA R philosophy at it's best.

The operation of the LEICA R8 is practically arranged, logical and easy to understand. It is nonetheless recommended that you read these instruction carefully so that you can take full advantage of all the photographic possibilities of your new LEICA R8.

Leica Academy

In addition to the top performance class products for photography, restitution and viewing, for many years we have been offering seminars and courses as a special service of the Leica Academy. These bring the knowledge from the world of photography, projection and enlarging impressively closer to both beginners as well as advanced photo-enthusiasts. The contents of the courses - which are carried out in the modern equipped rooms at the company in Solms and on the court grounds of Altenberg by, a team of experts - vary from basic photography to interesting special areas and offer a range of suggestions, information and tips to be used in practice.

The current annual program of the Leica Academy is available at:

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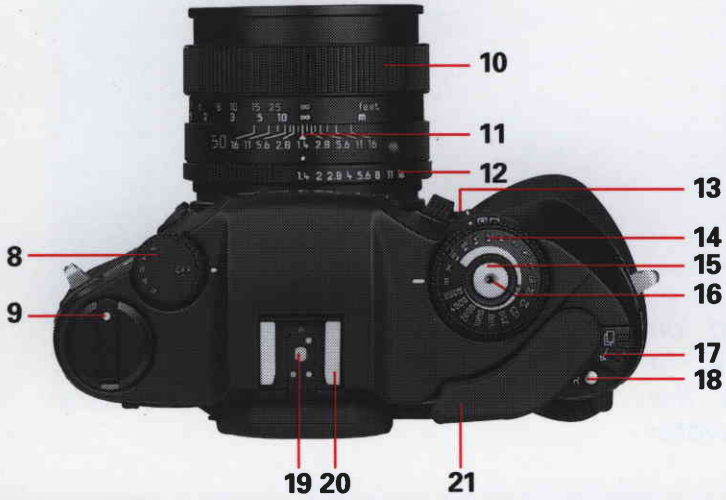
22 Eyepiece setting wheel
23 Eye cup
24 Viewfinder
25 Eye cup release
26 Eyepiece lock lever
27 Film transport window
28 Override setting lever
29 Film cartridge viewing window
30 Buttons for film speed setting
31 Rear cover display
32 Cover flap
33 Buttons for self-timer release setting
34 Battery compartment unlocking button
35 Connection for motorized film transport
36 Tripod thread ¼"
37 Rotation safety
38 Connection for motorized film rewind
39 Control contacts for attachable motors



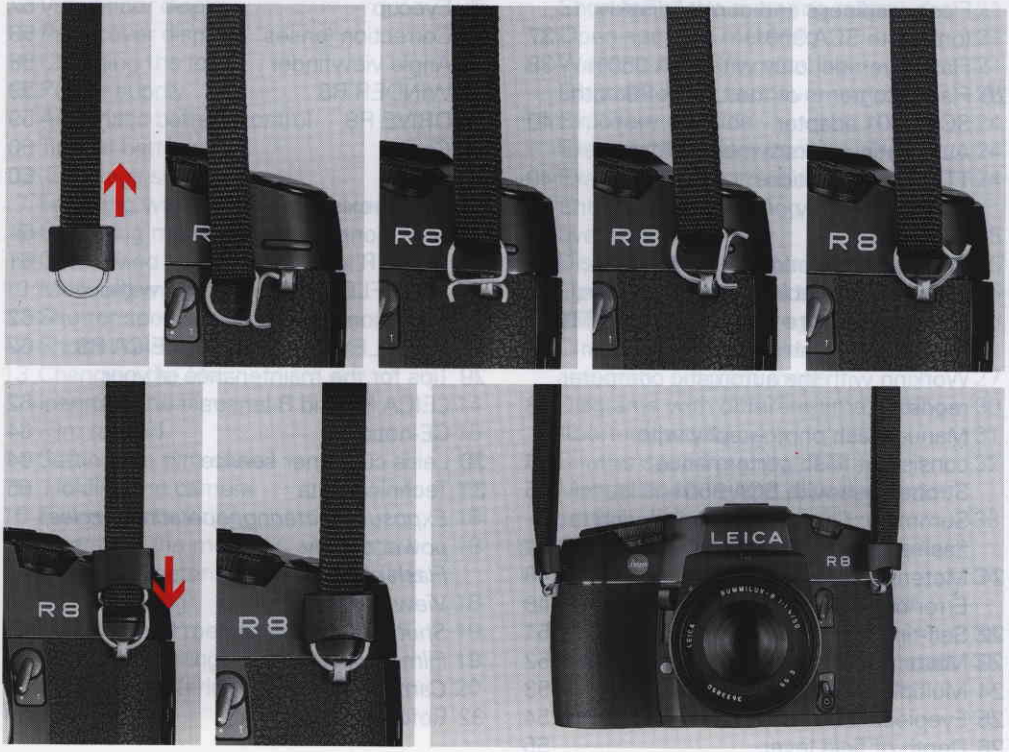
A look at the camera

1 Light diode for self-timer
2 Carrying strap loops
3 Depth of field lever
4 Lens release button
5 Mirror pre-release selector lever
6 Synchronization selector lever (1st or 2nd shutter curtain)
7 Flash connection socket
8 Operating mode selector
9 Rewind crank
10 Range setting ring
11 Depth of field scale
12 Aperture setting ring
13 Metering method selector
14 Shutter speed setting ring
15 Shutter release
16 Connection for cable release
17 Multiple exposure lever
18 Button for rewind clearance
19 Center contact (X-contact)
20 Flash shoe
21 Quick-wind lever

(Continued on rear pages)

Table of Contents

1 Attaching the carrying strap



a b c d e f g h i j

2 Viewfinder display

a Warning symbol when the metering range is insufficient

b Indication of
- exposure correction (override)
- manual film speed setting differing from the DX value

c Metering method symbol:
- square = integral metering
- dot = selective metering
- square and dot = multiple field metering
- extinguishing after light pressure is applied to the release with selective metering = metered value storage

d Flash symbol:
- blinking = flash is charging, flash is not ready

-lit up = flash is ready

e Indication of flash override, plus or minus

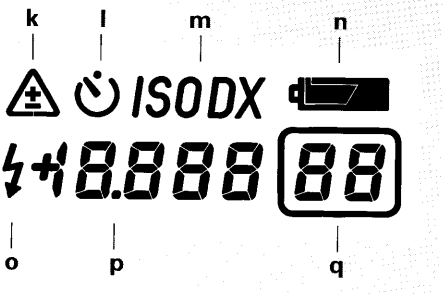
f Operating mode: m, A, P, T, F
blinking of „P" or „T" = smallest aperture has not been set

g Set aperture

h Light balance for the display of:
- manual exposure compensation (small marking: each) EV step, large marking: each 1 EV step)
- override setting for the automatic operating modes
- bracketing setting
- exposure compensation for the metering flash mode

i Exposure time
- display of the occurring exposure time
- display „HI" (high) or „LO" (low) for over or under exposure due to flash light and for the automatic operating modes
- „bulb" = „B" setting for long-time exposures
- „ERR" for not practicable camera settings

j Frame counter
- display of the frame number
- blinking of both numbers = multiple exposures
- blinking left number/right number/both numbers = first/second/third bracketing exposure
- blinking „00" = film is not loaded correctly or not completely rewound (only with use of winder or drive)



3 Rear cover display

k Indication of:
- exposure correction (override)
- manual film speed setting differing from the DX value

l Indication of the self timer

m Film speed setting:
- ISO = manual film speed setting
- DX = automatic DX scanning

n Battery display:
- full symbol = sufficient battery capacity
- half symbol with other displays = battery must be replaced soon
- half symbol without other displays = battery is empty, no release

o Flash (www.butkus.us)
- blinking = flash is charging, flash is not ready
- lit up = flash is ready

p Number display for:
- override setting
- exposure compensation for the metering flash mode
- run-off exposure time for the „B" setting
- self timer - remaining time
- „HI" or „LO" for over or under exposure due to flash light
- „ERR" for not practicable camera settings

q Frame counter
- display of the frame number
- blinking of both numbers = multiple exposures

blinking left number/right number/both numbers = first/second/third bracketing exposure

- blinking „00" = film is not loaded correctly or not completely rewound (only with use of winder or drive)

4 Changing the lens

All lenses and accessories that are equipped with the control cam for LEICA R cameras can be used on the LEICA R8 (see p. 62). This means that over 30 lenses with focal lengths from 15 mm to 800 mm are usable. The LEICA R8 has a contact ledge on the bayonet side - as do many of the newer lenses. With this, an electronic exposure control is achieved, in addition to the existing mechanical one, and lens information - such as the focal length - is transmitted to the camera.

Earlier LEICAFLEX/SL/SL2 lenses without the R control cam must not be used since these can damage the camera. Modification of such lenses is generally possible, the technical customer service of Leica Camera AG would be happy to advise you on the matter.

Regardless of the range and aperture setting, the LEICA R lenses are attached as follows:
Grasp the lens on the fixed ring (11). Position the red dot on the lens mount across from the button for the bayonet release (4) on the camera housing. In this position, insert the lens. A short rotation to the right and one can hear and feel the lens click into place.

To remove the lens, push the bayonet release button (4), unlock the lens with a short turn to the left and pull straight out.

5 Power supply

The LEICA R8 requires 2 lithium cells type „CR2" (Ø 15.6 mm x 27 mm). These are held in a removable battery compartment that simultaneously serves as a hand grip. Before removing the battery compartment - with the latch in on the bottom - the operating mode selector on the camera should be switched to „OFF".

Both MOTOR-DRIVE and MOTOR-WINDER are equipped with their own battery compartment and are attached to the camera with this compartment in place. The battery compartment of the camera has to be removed first. The camera's power supply is then generated by the DRIVE / WINDER.

Notice: The capacity of the batteries varies greatly from manufacturer to manufacturer. For this reason it is not possible to make any statement about the number of exposures that can be made per battery set.

Automatic battery control
The available battery capacity is surveyed automatically by the camera and displayed by the split battery symbol on the rear cover panel:

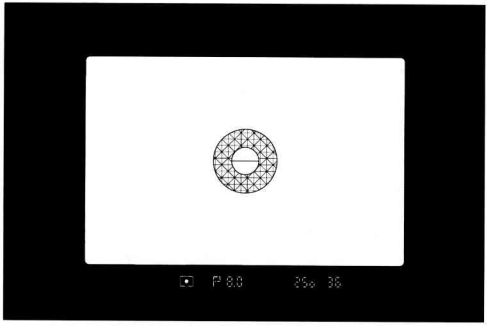
- Complete battery symbol lights up: batteries are fine.
- Half battery symbol and the regular displays light up: keep fresh batteries on hand!
- Half battery symbol lights up, all other displays are off: batteries are empty, release is not possible.

Tips on battery use
Batteries should be kept cool and dry. New and old batteries should never be used together, nor should batteries from different manufacturers or of different types be combined. If the camera is not used for longer periods of time the batteries should be removed. Please do not throw empty batteries into the normal trash (they often contain toxic, environment damaging substances), instead make sure that they are turned in for recycling or proper disposal.

6 Eyepiece setting
In order to take full advantage of the LEICA R8's potential and the high performance of the LEICA R lenses, the viewfinder image must be sharp. For this reason, the eyepiece can be adjusted by ± 2 diopters, in order to set it exactly for one's own eye. To do so, the wheel (22) on the upper left of the eyepiece is pulled out a little and rotated while looking at the viewfinder image until the markings of the selective metering field are focused and contrasting. It is recommended to make this setting without a lens or to set the lens to the shortest distance and adjust the camera in front of an even, bright motive (sky for example). After the desired setting is reached, push the wheel back into it's normal position, the eyepiece setting remains

fixed. The markings enable the setting to be found again easily.

If the eyepiece setting range is not sufficient then further correction lenses are available (see chapter „correction lenses").



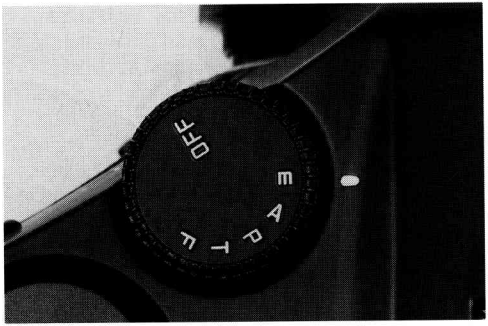
7 Focusing with the universal screen

The LEICA R8 is delivered with the universal focusing screen, which can be used for the most photographic situations and offers three different focusing possibilities:

1. When the focusing is not set precisely, then the edges and lines of the subject do not correspond with each other in the horizontal wedge in the center of the viewfinder.
2. Around the central wedge, there is a ring with prism grid, which is for focusing subjects with weak contours. An unmistakable flimmer indicates that the subject is out of focus.

3. The surrounding image is matte. This area can be used to evaluate the sharpness of the total image field and is especially useful when working with longer focal lengths and in the close-up range.

Further focusing screens are available as accessories. They are easy to change and offer optimum focusing conditions for any area (see chapter „Focusing screens").



8 Operating mode selector

The operating mode selector (8) has the following settings:

OFF In this setting all camera functions and displays are switched off.

m Manual setting of shutter speed and aperture.

A Aperture priority.

P Variable automatic program mode.

T Shutter speed priority.

F Metering flash mode before the exposure, with selective metering.

9 Quick wind lever

The quick wind lever (21) transports the film and cocks the shutter. When swung out (in the ready position) the thumb can extend behind the lever helping to support the camera securely. The film should be transported to the next frame right after the exposure has taken place, to be prepared for the next picture.

10 Metering mode selector

The metering mode selector for the exposure meter (13) is situated below the shutter speed setting ring, so that it can be operated easily while looking through the viewfinder. The LEICA R8 offers three different metering methods, regardless of the selected operating mode. To adjust or select one of these modes, the protruding pin is pushed in and the selector lever is pushed in or out.

- □ Integral metering (selector lever outwards)
- ⊡ Multiple field metering (selector lever in the center)
- • Selective metering (selector lever inwards, toward the lens)

11 Shutter speed setting ring

In the operating modes „m" (manual shutter speed and aperture setting) and „T" (shutter speed priority) „T", the exposure time is set manually on the shutter speed setting ring (14). Speeds between 1/8000 s and 16 s are available and half values can be set as well. In the operating mode „P" (automatic program) the characteristic of the program is influenced by the shutter speed that is set. When working with „A" (aperture priority mode), the shutter speed setting ring can be left at any value except for „B" or „X".

The setting „X" (shortest flash synch time = 1/250 s) is recommended when using non-system-conforming flash units. Long-time exposures take place in the „B" setting.

12 Shutter Release

The LEICA R8 has a three-step release (15):

1. A short tap activates the metering system and starts the countdown if the self-timer has been set.
2. By pushing down until the pressure point is reached and holding in this position, the metered value is stored in the automatic modes with selective metering.
3. Pushing further still releases the camera shutter.

If the shutter speed setting ring is set to „B", then the shutter remains open as long as the release button is held down. In the viewfinder the display „bulb" appears and the run off exposure time can be read off from the rear cover panel. This display works up to 19 min. 59 sec. The thread for the connection of a cable release (16) is found in the middle of the shutter release.

13 Changing the film

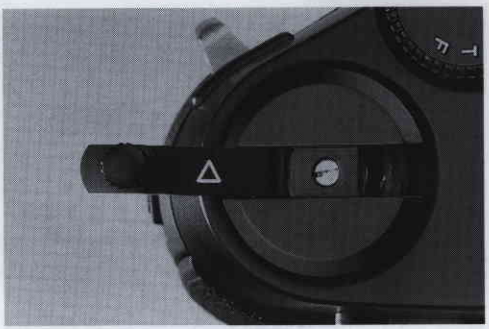
Inserting the film

To open the rear cover, the unlocking button (see above) is pushed in and slid upwards. This causes the rear cover to spring open. The film cartridge is laid into the empty compartment and the film is pulled out until it reaches the markings on the winding spool on the other side. The gear teeth should catch the perforation holes in the film.

After closing, the rear cover transport manually to frame number 1. This causes the film to thread automatically.

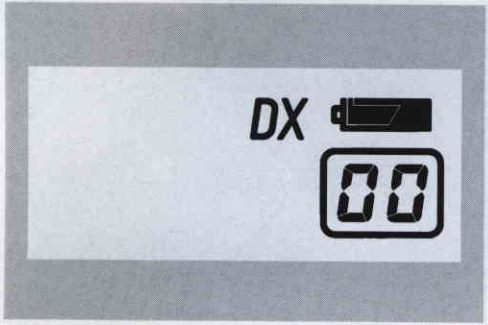
The film transport window (27) makes it possible to check and see that the film is being threaded properly: the line marking moves. When the winder or drive is used, the transport to frame number 1 occurs automatically. If, while using a motor, the frame counter blinks „00" then the film is not inserted properly. In this case, please open the rear cover and correct the film insertion.

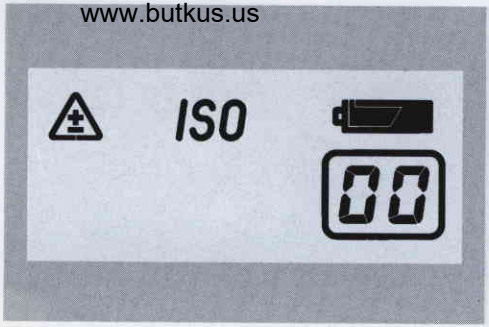
It is important for the automatic film threading that the winding spool is not dirty. If necessary it should be cleaned with a moist cloth.



Film rewind
To rewind, the film the button for rewind clearance (18) must be pushed. Then the rewind lever (9) is flipped out and the film can be wound back. As soon as the markings in the film transport window stand still, the film has been rewound completely. With the WINDER or DRIVE attached, the rewind can also occur with the motor, the film start remains outside of the cartridge. When the motorized rewind is completed, the frame counter flashes „00" and the camera can be opened to remove the film.

Important: To rewind only the button for rewind clearance can be pushed in and not the multiple exposure lever (film brake!). If, after rewinding, the start of the film is still outside of the cartridge, the release must not be activated since it might cause damage to the shutter.





14 Setting the film speed

To set the film speed, open the cover flap (32) on the rear cover. When the camera is switched on (select an operating mode and press slightly the shutter release) „ISO" appears in the display if the film speed was set manually. If „DX" appears then the camera is set for DX scanning.

When the camera is switched on and one of the ISO setting buttons (30) are pressed briefly, then the currently set value appears. By pressing the plus or minus buttons this value changes in ⅓ steps = 1 DIN step.

The DX-setting for automatic speed scanning appears after the position „12800". If, in the „DX"-setting, a film without DX coding is used - or if no film is inserted - the camera works with ISO 100/21. If a film is then loaded with DX coding, the DX scanning is active again.

If an entire film is to be over or under-exposed on purpose and the manually set ISO value deviates from the DX coded film speed, a „⚠" warning symbol appears on the rear cover display beside the „ISO" and in the viewfinder. In this case, the manually set value is the one that counts. A manually set ISO value remains intact after the film is changed, even if a DX coded film has a different film speed.

For safety reasons and to avoid changing the values accidentally, the cover flap on the rear cover should always be closed while taking pictures.

15 Holding the camera

For secure, three-point support, the right hand holds the camera. The index finger is on the release button, the thumb behind the quick wind lever. The left hand supports the lens from the bottom. For vertical format photographs the camera is simply rotated. The hands remain in the same position that they were in for the horizontal format, prepared to transport the film further and to focus.

16 Exposure metering

Operating the metering system

The operating mode selector is set out of the „OFF" position to „m", „A", „P" or „T". By lightly pressing the release button of the camera (15), the drive or a remote control, the exposure metering system of the LEICA R8 is switched on. The LCD displays in the viewfinder and on the rear cover panel light up. When the shutter is cocked they remain on for 14 seconds after the release button is let go. When the shutter is released, they extinguish immediately after the release button is let go.

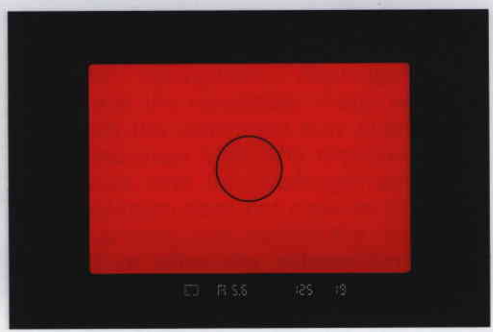
Exposure metering through the lens (TTL metering)

In order to do justice to the different light situations and reflection characteristics of the motives, the LEICA R8 has a through the lens metering with three different metering methods: multiple field metering, integral metering and selective metering. For this TTL metering procedure (TTL = Through The Lens), the camera has two different photo diodes: one round diode on the reflector behind the partially translucent swinging mirror with a precisely bordered metering field and one diode with 5 metering fields in the bottom of the camera, protected from stray light. Depending on the desired metering method the metered values of these six fields are evaluated.

[•] Multiple field metering

Six metered values are assessed in comparison with stored, typical motives.

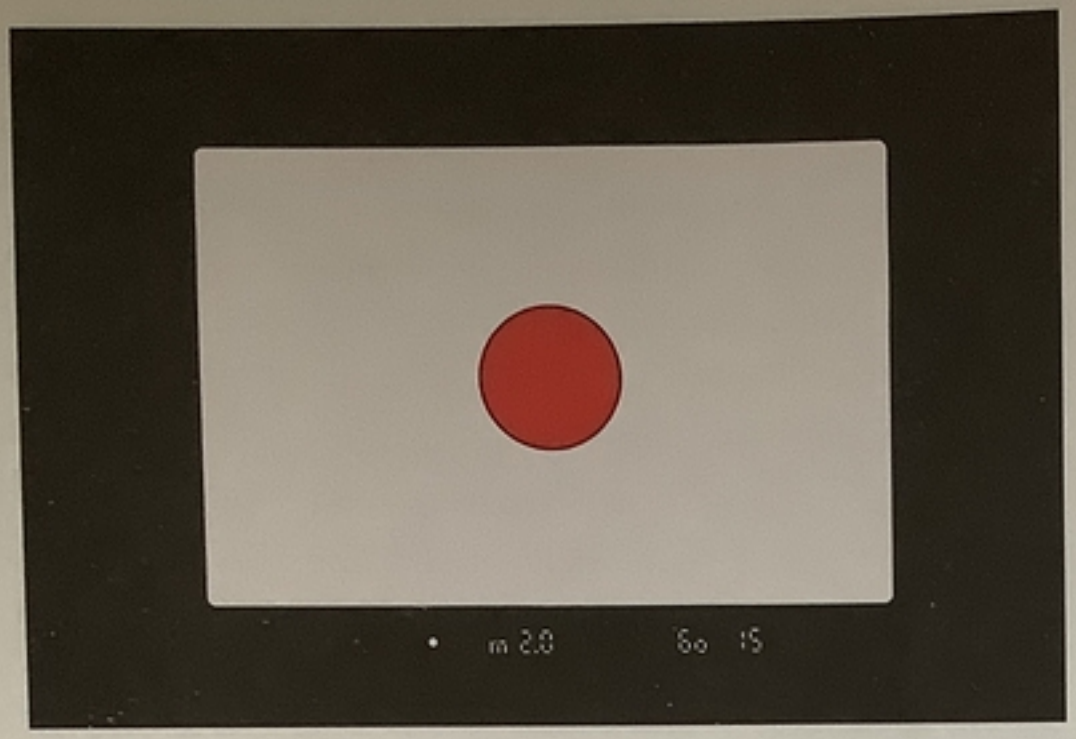
The programming makes it possible to analyze and evaluate common difficult light conditions and contrasts automatically. This presents an unusually comfortable method of exposure metering. Thanks to the analysis of the brightness distribution in the picture, disturbing influences such as reflections, back-lighting, large portions of sky in landscape pictures, etc., that tend to falsify the regular integral metering, can be compensated.



[ ] Integral metering

The four outer fields of the multiple field diode are assessed fairly equally, the center field and the round diode in the middle carry more weight.

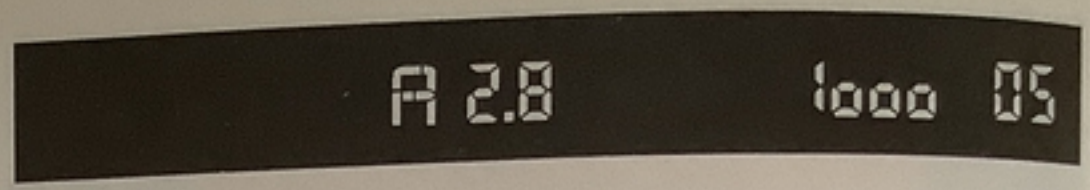
The center weighted integral metering evaluates the overall motive and calculates an appropriate average exposure value. This metering method is suitable for motives without high contrasts and when the different lighter details are distributed evenly. If this motive deviates from this middle gray value (snow landscapes for example) the exposure can be corrected via the override (in this case with an adjustment to plus).



• Selective metering

For the selective metering, only the metering field of the round diode on the reflector is used.

This method is always chosen when the overall motive has great brightness differences and when a specific detail is to be exposed correctly. Since the metering field is indicated in the finder by the large 7 mm diameter circle, it is easy to measure the important photographic detail - or the area that corresponds to the middle gray value - accurately. The metering field is large and clearly visible for all focal lengths and with all focusing screens.



Selective metering with metered value storage

Only the field in the large circle of the viewfinder is registered by the exposure meter. By moving the camera, smaller areas of the image to be metered even if these are not situated in the center of the desired photo lay out. The metered value is stored by pushing the release button down to the pressure point. As long as the button remains depressed as such, the value that was metered remains stored. To show that this has occurred, the metering method display switches off. After the metering and storage has taken place, the camera can be moved until the desired lay out is achieved and then the exposure can be made. If during this time the aperture / shutter speed is altered, then the shutter speed / aperture adapts accordingly and is displayed. The storage is canceled when the pressure point of release button is let go.

Short-fall of the metering range
If the metering range of the camera is not reached a precise exposure metering can not be achieved. The metered values that might be displayed in the viewfinder could lead to false exposure results. This is why the warning signal (⚠) generally appears in the bottom left of the viewfinder.

The metering system of the LEICA R8 is extremely sensitive, especially for the selective metering method. In case the warning display appears when the mode is set for integral or multiple field metering, one should switch over to selective.

Open-aperture metering
Most LEICA R lenses are equipped with an automatic spring-back diaphragm. This means that the viewfinder image is always seen with the diaphragm fully opened, letting in the most light. The exposure metering occurs with the diaphragm open. The lens diaphragm does not close to the selected value until just before the shutter is released or after the independent mirror release or when the depth of field lever is pressed.

Working aperture metering
The PC-SUPER-ANGULON-R f/2.8/28 mm, a few of the earlier LEICA R lenses and various accessories do not have an automatic spring-back diaphragm. For these devices, the exposure has to be metered with the lens aperture that is set - that is the working aperture. In this case the photocell of the LEICA R8 receives more or less light when the lens diaphragm is changed. The operating modes „A" and „m" can be used for lenses and accessories without the spring-back diaphragm. The working aperture can not be shown by the camera.

Diagram of the exposure meter

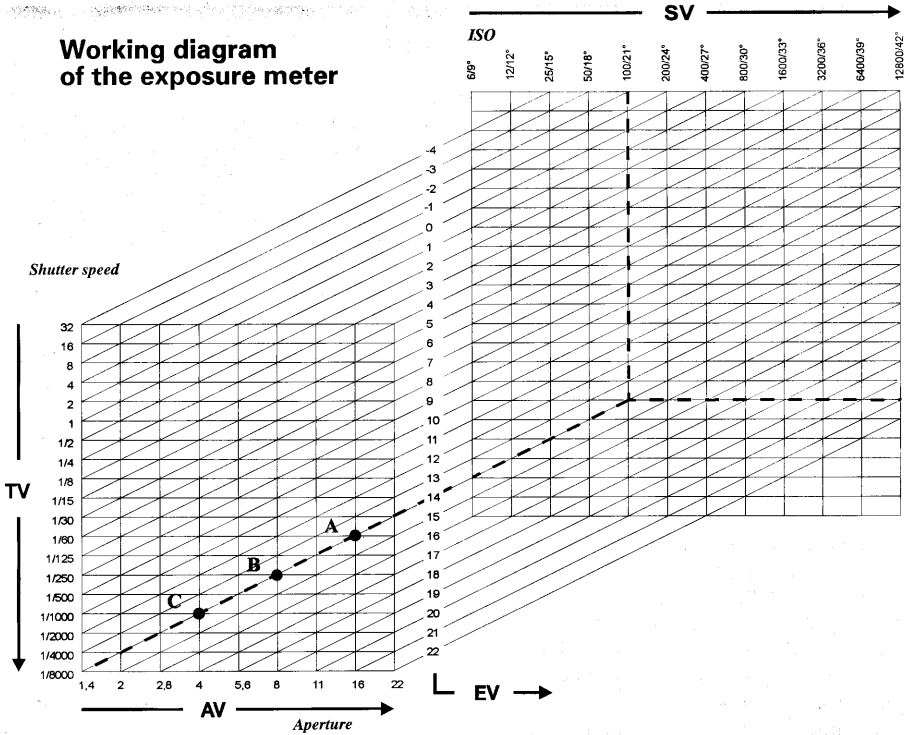
The following diagrams present the relationships between film speed (SV = Speed value) and light intensity (BV = Brightness value) on the one side, and between exposure time (TV = Time value) and aperture (AV = Aperture value) on the other, each with the resulting exposure value (EV = Exposure value). These two diagrams are brought together by the diagonal lines that correspond with the EV values.

An example (dotted line) shows the relationship of each value to each other: The vertical line is followed from the set film speed (here: ISO 100/21°) to the intersecting horizontal line of the given light intensity (here: 2000 cd/m^2). The diagonal line that runs through this intersection leads to the corresponding exposure value (EV 14). This EV value can be translated into different aperture value and exposure time combinations, that is, it can be transposed into the camera's working range.

The intersections of the vertical AV and horizontal TV lines must be on the corresponding diagonal EV line in order for the exposure to be correct, for example f/16 and 1/60 s (case A), or f/8 and 250 s (case B) or f/4 with 1/1000 s (case C). Each of these combinations would result in a correct exposure.

In the aperture and shutter speed priority modes, one of these values is selected and the second is set automatically. In the automatic program mode both values are set automatically.

Working diagram of the exposure meter



17 Exposure override

Exposure meters are calibrated according to an average gray value (18 % reflection), which corresponds to the brightness of a normal photographic motive. If the metered motive does not fulfill this requirement, an exposure correction must take place. The override is used especially often in the integral metering mode. In the selective metering mode it is usually possible to pick a representative detail with an average gray value out of the overall motive. The multiple field metering evaluates the brightness distribution automatically and - as far as this is possible - balances out the disturbing influences.

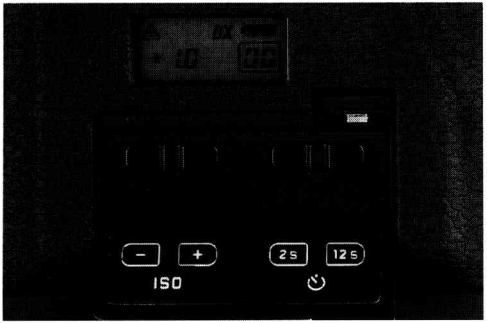
A set exposure correction on the camera affects the metering of the available light as well as the flash exposure metering.

Example for a correction to plus

With very bright motives, such as snow or sand on the beach, the exposure meter selects a relatively short exposure time due to the extreme lighting. As a result, the snow comes through in an average gray and if people are in the photograph, they appear much too dark: underexposure! To remedy this problem, the exposure time needs to be lengthened or the diaphragm must be increased. This means that an override setting - of +2 for example - has to be made.

Example for a correction to minus

For very dark motives that reflect very little light, the exposure meter sets an exposure time that is much too long. A black car for example, might appear gray: overexposure! The exposure time must be shortened, that means that an override setting, of -1 for example, must be made.



Entering and canceling the exposure override

To set the exposure override, shift the catch slide (28) to the right with the left thumb and move the override lever up (for a correction to plus) or down (for a correction to minus). Each movement of the lever makes the override jump up or down by ½ EV. Correction values can be set from -3 EV to +3 EV.

Once the value is set, it remains effective even after the camera is switched off. To set an exposure correction of +2 EV back to zero for example, the lever is either pushed down 4 times or held down for approximately 2 seconds. To erase a minus value, the lever is moved upwards accordingly.

Display of the exposure override

As soon as an exposure correction is entered, the corresponding warning symbol (⚠) appears in the viewfinder and in the automatic program modes A, T and P the set value can be read from the light balance. On the rear cover panel and with all programs, the warning symbol (⚠) and set value appear.

18 Operating mode selection

Variable automatic program mode „P"

With this operating mode one can always be prepared to take photographs. It is perfect for carefree photography since aperture and shutter speed are set automatically. The shutter speed/aperture combination can be influenced at any time with the shutter speed setting ring (see below). The operating mode „P" can be used with all LEICA R lenses that have a fully automatic spring-back diaphragm.

The following settings should be made or are recommended for a snapshot setting:

- Put the program selector to setting „P" ,
- Stop the aperture down completely (e.g. 16 or 22),
- Set the shutter speed setting ring to „30 P",
- Set the metering method selector for multiple field metering.

Important: The smallest aperture (16 or 22) must be set on the lens, so that the entire aperture range is available for the automatic control. If this is not the case, the display „P" will blink in the viewfinder. When the shutter is released, the camera automatically sets a correct speed-aperture combination anyway. In this case though, the range of the aperture is limited to the range between open aperture and the set aperture value. With the ELMARIT-R 2.8/16 mm lens with the smallest aperture 16 - and with some older lenses - the display „P" blinks even when it is stopped down all the way. The correct aperture is created anyway.

In cases of very little light or extreme brightness, it can occur that the automatically controlled shutter speed/aperture range is not sufficient. Then „LO" for underexposure (and possibly also the warning that the metering range has not been reached) or „HI" for overexposure appears in the viewfinder.

Characteristics and use of the variable automatic program mode

The variable automatic program mode of the LEICA R8 combines the security and quickness of the fully automatic exposure control with the freedom to change the values that were selected by the camera at any time, according to one's personal wish. That is what the shutter speed setting ring is for. If one would like to take sport photographs for example, preferably with fast speeds and open aperture, then a short shutter speed is pre-selected. If, on the other hand, one would rather have a large depth of field (closed aperture) and can accept the necessary longer exposure times, then a longer shutter speed is set (for landscape photography for example). The overall exposure, that is the brightness of the image, remains unchanged.

The operation of the automatic program mode is generally as follows: If one begins with very low lighting, only the exposure time is shortened automatically to the preset shutter speed value as the brightness increases, while the lens aperture remains completely open. From the set exposure time on, the shutter speed and aperture are changed automatically, that is the exposure time is shortened variably and the lens is stopped down variably. If, due to the program, the lens aperture has reached the smallest f/stop, then only the exposure time is shortened (as far as 1/8000 s) according to the increasing light. If 1/8000 s is reached before the smallest aperture however, then only the aperture is changed at this exposure time.

A) Standard setting:
Shutter speed dial at „30 P".

- especially suitable for normal motives and in uncritical light conditions and for
- focal lengths between 35 mm and 90 mm

Example: A lens with the light speed 2.8 is used and 1/30 s is set on the speed setting ring. The setting corresponds to line A. If an exposure value of 14 is set for example, it leads to an exposure of 1/250 s at f/8.

B) When a large depth of field is desired:
Shutter speed dial set between 16 s and 1/15 s.

- Tendency toward stopped down lenses with longer exposure times,
- especially suitable in good light conditions and for short focal lengths,
- stationary motives, such as landscape photography,
- *Attention:* the danger of blurred images due to camera-shake is increased by the longer exposure times.

Example: The setting is according to line B. With the same exposure value EV 14 for example, would result in an exposure of 1/60 s at f/16.

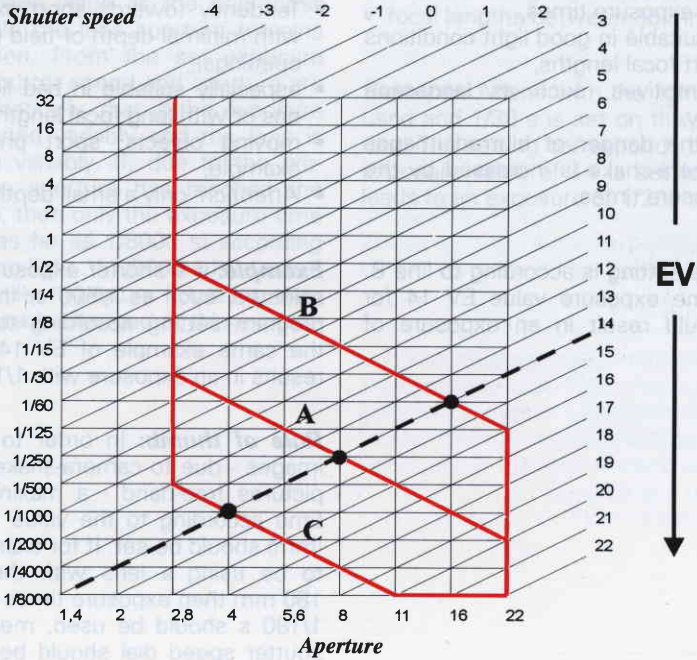
C) When a short exposure time is desired:
Shutter speed dial between 1/60 s and 1/8000 s.

- Tendency towards short exposure times with minimal depth of field (large aperture openings),
- especially suitable in bad lighting conditions or with long focal lengths,
- moving objects, sport photography for example,
- *Attention:* only a small depth of field!

Example: if a shorter exposure time is preselected, such as 1/500 s, this results in a program setting according to line C. With the same example of EV 14 this program results in an exposure with 1/1000 s at f/4.

Rule of thumb: In order to avoid blurred images - due to camera-shake, when taking pictures free-hand - a maximum exposure time according to the value 1 : focal length (mm) should be set. If for example one were to be using a lens with the focal length 180 mm then exposure times no longer than 1/180 s should be used, meaning that the shutter speed dial should be set to „250" for example.

Automatic program tendencies at different shutter speed setting



Aperture priority „A"

This operating mode is especially suitable when the depth of field is an important element in the design of the photograph. The operating mode selector is put into the „A" position and the shutter speed setting ring is set to any value except for „X" or „B". The aperture and therewith also the depth of field range is set with the aperture setting ring (12). The exposure time forms automatically (variably between 1/8000 s and 32 s) according to the available light. The closest half or full exposure time value is displayed in the finder.

It can occur, in extremely bright lighting, that the exposure time range is no longer sufficient for the pre-selected aperture. In this case „HI" appears in the finder. To remedy the problem - if possible - a smaller f/stop must be selected. If in very bad light conditions, the display „LO" appears in the viewfinder, a larger f/stop should be selected since otherwise an underexposure would occur. In case the metering range is not reached, the corresponding warning signal appears. A correct exposure measurement is not possible.

Shutter speed priority „T"

This operating mode is used especially for mobile subjects, where the exposure time is a creative tool. This applies, for example, for movement sequences, sport photography, pictures taken from an unsteady camera standpoint as well as pictures taken while using longer focal lengths.

The operating mode „T" is selected on the operating mode selector, the smallest aperture is set on the lens and the desired exposure time (between 1/8000 s and 16 s) is pre-selected on the shutter speed setting ring. The lens aperture then forms automatically according to the available light. The „T" operating mode functions with all of the LEICA R lenses with an automatic spring-back diaphragm.

Important: The smallest aperture (16 or 22) must be set on the lens so that the entire aperture range is available for the automatic control. If this is not the case, the display „T" flashes in the viewfinder. When the shutter is released, the camera automatically sets a correct speed-aperture combination anyway. In this case though, the range of the aperture is limited to the range between open aperture and the set aperture value. With the ELMARIT-R 2.8/16 mm lens, at the smallest aperture 16 - and with a few older lenses - the display „P" blinks even when it is stopped down all the way. The correct aperture is created anyway.

In extremely bright light conditions or in case of very low lighting, it can occur that the automatically controlled aperture range is not sufficient for the pre-selected exposure time. In this case a correction of the exposure time occurs automatically. The display „HI" or „LO" appears for over or under-exposures.

Manual aperture and exposure time setting „m"

In many interesting photographic situations, an automatic exposure control is not desired. Instead, the shutter speed and aperture are to be set by hand. In these cases, the operating mode selector is set to „m". The symbol „m" appears in the viewfinder along with the display for the selected metering method.

The exposure adjustment occurs with the help of the light balance. It displays the divergence from the newly set shutter speed-aperture combination to the correct exposure value. Within the range of -2.5 EV to +2.5 EV, the difference can be recognized clearly in ½ EV steps. Greater divergences are shown by the illumination of all the markings on the plus or minus side of the light balance.

The aperture and/or shutter speed setting is to be changed until only the zero marking of the light balance lights up. This operating mode can be used with all LEICA R lenses and additional equipment, such as adapters, focusing bellows etc.

19 General information about the use of flash units

All flash units and studio flash systems, that are in accordance with the ISO standard 10 330 and have a *maximum ignition voltage of 24 V*, can be attached to the LEICA R8.* The electron flash units that are equipped with a System-Camera-Adaptation (SCA) of the system 3000 and are attached to the LEICA R8 via the SCA 3501 adapter offer the most possibilities. Other flash units with the standard flash shoe can also be used and are ignited via the center contact (X-contact). Studio flash systems and other flash units with flash cable and standard flash plug are attached through the flash connection socket (7).

In addition to the release and control of the flash units, the LEICA R8 also offers the possibility to meter the flash performance selectively before the exposure is made and use this information to determine the aperture that is to be set (see chapter „Metering flash operation").

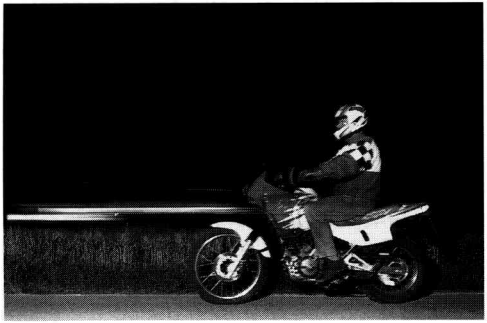
* If you would like to attach e.g. a studio flash system that is not in accordance to the ISO standard to the LEICA R8, please refer to the customer service department of Leica Camera AG or the customer service department of one of the Leica agencies.

Flash synch time and selection of the synch moment

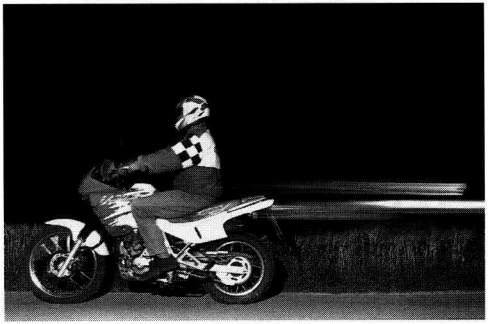
The flash synch time of the LEICA R8 is 1/250 s. Flash units with very high performance and especially studio flash systems often have lighting times that are considerably longer. In order to take advantage of the full light quantity of these flash units, longer shutter speeds - such as 1/180 s or 1/125 s for example - are recommended.

The flash moment is set with the synchronization selection lever (6) of the camera:

- Position 1: flash after the first shutter curtain, that is, at the beginning of the exposure,
- Position 2: flash before the second shutter curtain, that is, at the end of the exposure.



Flash on the first shutter curtain



Flash on the second shutter curtain

Position 2 can be selected when, during a long-time motion exposure for example, a focused image is to be superimposed with an unfocused image (due to movement). The focused image is at the end of the movement. This flash technique gives the photograph a natural impression of movement and dynamics

When flashing with the synch time, no image difference results between the two flash moments. The selection of the second shutter curtain does not work for the strobe flash operation.

Flash photography with the X-contact

With a connection via the accessory shoe without the SCA 3501 adapter, the flash can be ignited with either the first or with the second shutter curtain. Since no information can be transmitted from the flash unit however, the camera cannot „recognize" an attached flash unit and therefore reacts as though there were none attached. The exposure time is to be set manually to the flash synch time X=1/250 s or to a longer shutter speed. The switchover does not occur automatically. The flash readiness and control displays are not active. If the flash unit is suited, the light control can occur via the computer

aperture, that is via the sensor on the flash unit (see flash unit instructions).

Flash photography with the flash connection socket

Flash units and large studio flash systems with a standardized flash plug can be attached through the flash connection socket (7). The camera ignites the flash with either the first or the second shutter curtain. Since no flash information is transmitted however, the camera behaves as it would without a flash. The exposure time is to be set manually to the flash synch time X=1/250 s or to a longer shutter speed. The switch-over does not occur automatically. Flash units with very high performance and especially studio flash systems often have lighting times that are considerably longer. In order to take advantage of the full light quantity of these flash units, longer shutter speeds - such as 1/180 s or 1/125 s for example - are recommended. The flash readiness and control displays are not active.

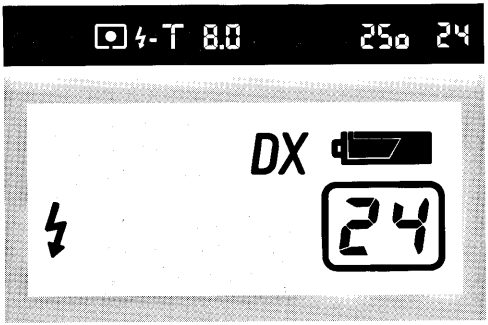
Flash photography with SCA-3000 compatible flash units and SCA 3501

When a suitable flash unit is connected via the SCA 3501 adapter, the LEICA R8 offers advantages in many different areas and helps achieve successful flash photographs. Depending on the selected operating mode, the camera performs diverse functions automatically while still leaving room for the necessary creative freedom to form the requirements of the flash photograph:

- Flash exposure metering during the exposure and through the lens (TTL-metering). This TTL-flash exposure measurement is recommended especially for macro photography, the attachment of filters, zoom or tele lenses to name a few possibilities.
- All information about the flash charge status and flash over or under-exposure is found in the viewfinder and on the rear cover display.
- Automatic switch-over to the flash synch time (depending on the operating mode).
- Flash override, meaning the specific over or under dosage of the flash light quantity, to illuminate shadows in the foreground regardless of the available light or to achieve a better distribution of the light in back-lighting situations.

- Transmission of the lens focal length for automatic reflector adaptation of the flash unit (only for lenses with the electrical contacts).
- Transmission of the set lens aperture for the control of the computer automatic mode of the flash unit.
- Transmission of the film speed and override settings of the camera for the control of the computer automatic of the flash unit.
- Automatic switch-over to longer exposure times with use of the strobe flash.

The TTL-flash exposure measurement occurs integrally through separately arranged silicium photo-diodes that are placed beside the photo-cell for the multiple field exposure measurement in the bottom of the camera and protected from stray light. With the help of the corresponding adapters (available in photo-shops), several flash units can be attached simultaneously or the TTL control can be carried out without a cable.



Flash readiness and control display (only with SCA 3501)

With the use of the SCA 3501, the flash symbol in the viewfinder and on the rear cover display shows the charging status of the flash unit, hence the flash readiness:

- The flash symbol blinks : The flash unit is in the process of charging. Since the flash is not yet ready, the camera reacts as it would without a flash and works in the set operating mode. If the shutter is released, the flash will not ignite.
- The flash symbol is lit up: The flash is ready.

If the light from the flash in TTL control or the automatic computer mode is not sufficient for a correct exposure (underexposure), the „LO" (low) display appears in the viewfinder for about 4 seconds after the shutter is released. With the TTL-control, an overexposure that occurred due to the light from the flash is also shown for 4 seconds with the „HI" display (high). In these cases please pay attention to the working range of the flash unit and take the photograph again with the aperture setting changed accordingly.

Flash override (only with SCA 3501)

With the switch on the SCA 3501 adapter, in addition to the regular override setting (on the camera), a flash override can be set to make the flash stronger or weaker. An adjustment to minus is made whenever the flash is only to be used as a fill-in flash. In such cases the existing atmosphere created by the light remains intact and the additional flash merely brightens darker subject areas or shadows.

This correction is effective when flashing with the automatic computer mode and with TTL metering, with the exception of the automatic program mode „P" . In the automatic program mode - with the flash illumination mode and use of the TTL au-

Without flash illumination

With flash illumination

tomatic flash mode - a fixed brightening step of -1 ⅔ EV is set automatically. Flash override does not work for the metering flash mode „F" or the manual flash mode, for these the flash performance remains constant.

The input and activation of the flash override occurs through three switches. With the first switch, the flash override full light values are set (EV-steps) -3 EV, -2 EV, ..., +3 EV. The second switch is for the fine setting in ⅓ EV steps (-⅓ EV, 0 EV or +⅓ EV), so that all values from -3 ⅓ EV to + 3 ⅓ EV can be set in ⅓ steps. To put the set values into effect, the third switch is put into the „ON" position. As a notice that the flash override activated, a red light diode lights up on the SCA 3501 adapter. In the viewfinder a „+" or „-" appears to the right of the flash symbol.

20 Flash programs with the SCA 3501 adapter

Automatic program mode „P" and TTL-flash operation

The automatic program mode „P" offers a fully automatic coordination of the available light and the flash light.

For problem-free flash photography in all situations and with all conditions and automatic flash illumination, the following setting should be made, or are recommended:

- Put the operating mode selector in the „P" position ,
- Stop the aperture down all the way (to 16 or 22),
- Set the shutter speed setting ring to „30 P",
- Set the metering method selector to the multiple field metering mode,
- Set the flash unit with SCA 3501 to the „TTL" position.

Depending on the available light, the camera functions as follows:

a) Full flash in bad light conditions

In bad light conditions - inside of a dark room for example - where, when combined with the synch time 1/250 s and the largest aperture setting, a properly exposed photograph cannot be achieved, the camera automatically selects f/5.6 and regulates the flash as the main light. A „regular" flash exposure occurs.

b) Automatic flash illumination in normal light conditions

In normal light conditions, the camera automatically sets the exposure time to the flash synch time 1/250 s and selects an aperture according to the available light so that the motive is already exposed properly without the flash.

The flash is now regulated by the camera as a fill-in flash (-1 ⅔ EV) to illuminate dark shadows in the foreground or subjects with back-lighting for example and to attain an overall better balanced lighting.

c) No flash ignition in very bright lighting

In extremely bright light situations where 1/250 s and even the smallest aperture would lead to an over-exposure, the camera does not ignite the flash. Shutter speed and aperture are regulated as usual according to the automatic program mode and displayed in the viewfinder. The flash symbol still lights up since the flash is charged.

Aperture priority „A" and TTL-flash operation

For „normal" flash exposures inside and generally in bad light conditions.

The aperture setting is selected freely according to the working range of the flash unit and the desired depth of field. The exposure time is set automatically to 1/250 s by the camera. If this combination will lead to an over-exposure due to the surrounding light, the exposure time display „250" starts to blink. In this case a smaller aperture setting should be selected.

Shutter speed priority „T" and TTL-controlled, variable flash illumination

For regular exposures with available light and additional flash illumination.

All exposure times between 16 s and 1/250 s can be selected freely. The smallest aperture should be set manually (e.g. 22). When a shorter exposure time is selected, the camera automatically switches to the flash synch time 1/250 s. The aperture is regulated automatically according to the available light so that a correct exposure of the subject (already without a flash) is ensured. If this combination will lead to an over-exposure due to the surrounding light, the exposure time display „250" starts to blink.*

The flash causes a TTL controlled, additional illumination. On the SCA adapter, the flash illumination can be reduced specifically through the override (-2 EV for example) so that merely shadows or subject details in back-lighting situations can be brightened. This allows for the natural lighting situation to remain intact.

* see also page 32!

Manual exposure control „m" and TTL-controlled, variable flash illumination

The exposure with available light and the influence of the flash light can be controlled independently of each other.

Exposure time and aperture are adjusted to the available light manually via the light balance. All speeds between 16 s and the flash synch time 1/250 s can be applied. The effect of the available light, hence also the brightness of the background can be influenced systematically through over or underexposure. The impact of the flash light can be regulated on the SCA 3501 adapter. If the flash is only to serve as a fill-in, then a corresponding flash override is applied.

Working with the automatic computer mode

When working with the automatic computer mode of the flash units and SCA 3501, the amount of light reflected back from the subject is metered and evaluated by the sensor integrated in the flash unit instead of by the camera. If the setting X is selected on the speed setting ring of the camera, the exposure always takes place with the flash synch time 1/250 s. Otherwise the camera operating modes generally function the same as they do without the flash. The shortest shutter speed is the synch time 1/250 s however. If due to this limitation an overexposure will occur then this is indicated on the light balance in the viewfinder (for „m") or by a flashing of the shutter speed display „250" in the automatic modes.

Since the operating modes P, A and T already create a normally exposed photograph due to the ambient light, the flash should be throttled. This means that, for example -1 EV to -2 EV should be set in the flash override. With modern flash units, the aperture setting of the lens is relayed to the flash unit and automatically founded as the computer aperture. For the measurement, the following camera settings are taken into consideration; film speed, ambient light override, and a possible flash override.

Manual flash photography with consistent flash performance

If the flash unit is used in the manual flash operation mode with full performance or fixed partial performance (as far as this can be set on the flash unit), no flash light control occurs. The camera operating modes generally function the same way as they do without the flash. The shortest exposure time however is the flash synch time 1/250 s. If this restriction to the flash synch time is going to result in an overexposure, then this is indicated by a blinking of the exposure time display „250" (for the automatic operating modes) or on the light balance (for „m") in the viewfinder.

The lens aperture to be set results out of the flash performance, film speed and the distance to the motive (see the instructions of the flash unit) or it can be established by the camera with a metering flash (see chapter „Metering flash operation").

Strobe flash with SCA 3501

This flash method, with which multiple flashes occur in succession during one exposure, can be used with the camera operating modes manual „m" and aperture priority „A". If the operating modes „P" or „T" are selected, the error message „Err14" appears in the viewfinder.

In the manual camera operating mode, the aperture and the shutter speed (between 16 s and 1/250 s) are set manually; the light balance is used to check on the available light. If the total flash time - which results out of the selected flash quantity and the flash frequency of the strobe flash - is longer than the selected exposure time, then it is lengthened automatically. The light balance remains visible and shows the status of a possible over-exposure due to the ambient light. This can be corrected with the f/stop.

When working with the aperture priority mode, the camera automatically forms the necessary time, depending on the number and frequency of flashes. If this were to cause an overexposure due to the ambient light, the shutter speed display would flash.

For a successful strobe photograph, for example when several phases of one movement sequence are recorded on one picture - the working range of the flash unit, the flash quantity, the distance and of course the aperture are all of very great importance. You will find information about this in the instructions for your flash unit.

Summary: Camera hehavior during flash photography with SCA 3501

Camera setting	Setting on the flash unit (with SCA 3501):		
	TTL-automatic	**Computer automatic**	**Manual flash with fixed performance**
X or **B** (any program)	The operating modes m, A, T, P are no longer effective, an exposure measurement for ambient light does not occur. The exposure generally occurs with 1/250 s at „X" or for any length with „B" with the aperture set manually. The flash light is controlled according to the operating mode.		
m	In the operating mode „m" flash exposures with shutter speeds between 16 s and 1/250 s can be made. The available light is metered and controlled with the light balance. The flash light is controlled according to the operating mode.		
A	The aperture priority mode is switched off, 1/250 s is always used.	The set automatic operating mode (A, T or P) carries out a regular exposure*) with the available light.	The set automatic operating mode (A, T or P) carries out a regular exposure*) with the available light.
T	The shutter speed priority mode*) is active and carries out a regular exposure with the available light. For this reason the additional flash should be reduced via flash override.	For this reason, the flash should be reduced via flash override.	The full flash performance is added.

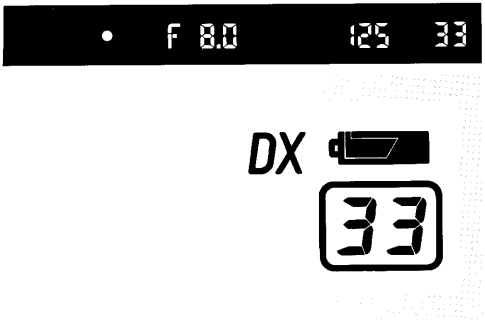
Camera setting	Setting on the flash unit (with SCA 3501):		
	TTL-automatic	**Computer automatic**	**Manual flash with fixed performance**
P (in darkness)	The exposure is carried out automatically with 1/250 s and f/5.6 , the flash is completely TTL-controlled.	The set automatic operating mode (A, T or P) carries out a regular exposure*) with the available light.	The set automatic operating mode (A, T or P) carries out a regular exposure*) with the available light.
P (in regular light conditions)	Via the aperture control a regular ambient light exposure is carried out with 1/250 s. With an automatically reduced performance (-1 ⅔ EV) the flash serves as an additional illumination.	For this reason, the flash should be reduced via flash override.	The full flash performance is added.
P (in extreme brightness)	Since a flash would cause overexposure with 1/250 s in this light, the flash is not released. The camera works with the regular automatic program mode.		

**) The flash synch time 1/250 s is selected as the shortest exposure time.*

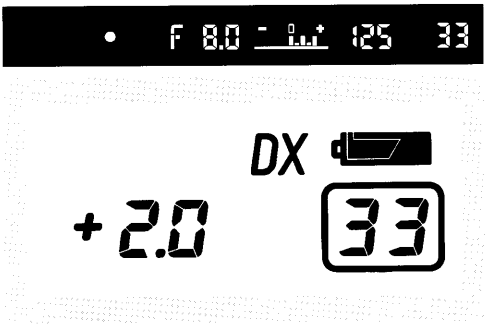
21 Metering flash operation

The metering flash mode of the LEICA R8 offers the possibility to meter the light energy of non-controllable flash units (such as studio flash systems and flash units with fixed performance) so that the correct aperture can be selected without having to use an additional exposure meter. Different from the external exposure meters, the LEICA R8 meters through the lens (TTL). This brings considerable advantages when filters are to be used, for zoom or close-up photography. Metering details that are vital to the photograph, or for example a gray card, are evaluated in the selective mode, according to the markings on the focusing screens.

The operating mode selector is set to the „F" position and the selective metering field is aimed at the detail of the motive that is to be metered. The flash unit is then released by pushing the depth of field lever all the way down. After the flash release, the exposure deviation of the flash, when compared to a correct exposure, appears in the viewfinder (light balance) and in the rear cover panel display. Deviation is only displayed within the -2,5 EV to +2,5 EV range (in 0,5 EV-steps). Deviation of 3 EV or more can not be differentiated and a new measurement with different aperture settings must be made.



Displays before the measurement



Displays after the measurement

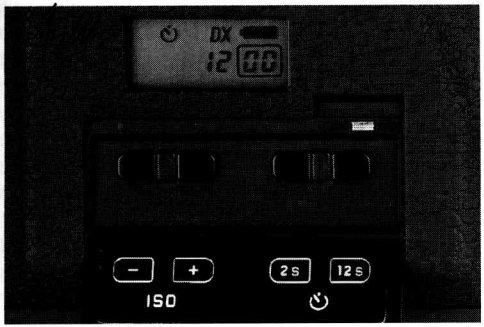
The shortest exposure time that can be set is the flash synch time of the LEICA R8 (1/250 s) must be set. Flash units with very strong performance and especially studio flash systems, often have much longer illumination times. In order to be able to take advantage of the full light quantity of these flash units, longer exposure times such as 1/180 s or 1/125 s are recommended. The metering flash also works together with the strobe setting on the flash unit. In this case the total number of flashes are metered and evaluated.

With a lot of flash units, the displays about aperture and range apply to a single flash. This information can be used advantageously when the object does not remain in the same place but rather moves around in front of the background.

Error messages

The manual operating concept of the camera and the multifarious possibilities - especially with system flash units - allow for settings that are not sensible. In these cases a error message „Err xx" appears in the display.

Error code:	Cause:	Remedy:
Err 12	Camera in the metering flash mode („F") and flash unit in TTL control	Flash unit must be set to manual
Err 13	Camera in the metering flash mode („F") and flash unit in computer automatic	Flash unit must be set to manual
Err 15	Camera in the metering flash mode („F") and shutter speed setting ring at „X", flash unit in	Set the shutter speed setting ring to any time except for „X" or „B".
Err 17 Err 18	The film speed is below ISO 25/15°. The film speed is above ISO 400/27°.	The metering flash function is only possible for film speeds between ISO 25/15° and ISO 400/27°, so another film speed must be used.



22 Self-timer

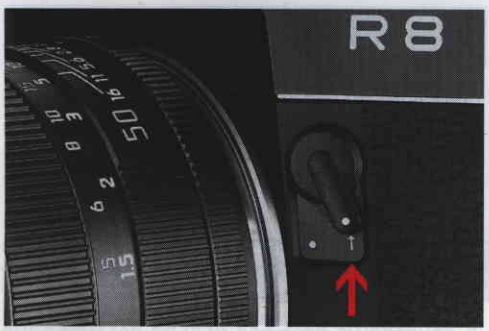
To use the self-timer, the cover plate (32) on the rear cover is opened. There is a choice of two different countdown times: 2 s or 12 s. With the camera on and at the first tap of one of the two buttons (33) the entry is set to readiness, the self-timer symbol and „OFF" appear in the rear cover display. By briefly pressing one of the two buttons again, one of the two countdown times is selected.

After tapping and letting go of the release button, the countdown commences. The time remaining until the shutter release is displayed on the rear cover panel. An optical indication is the blinking of the LED on the front of the camera. The slow blinking becomes faster approximately 2 seconds before the release.

The countdown can be stopped by pressing one of the two buttons or restarted by pressing the release button again.

A countdown time can only be set when the shutter is cocked. The self-timer mode only works for one exposure. The setting is removed automatically when the shutter releases.

For safety reasons and to avoid accidentally changing the set values, the cover flap of the rear cover should always be closed while taking pictures.



23 Independent mirror release

To eliminate the remaining minimal effects from the movement of the mirror and closing of the lens diaphragm, the LEICA R8 offers the possibility of an independent mirror release. To activate, the independent mirror release switch (5) is moved outwards. Then, as soon as the release is pressed, only the mirror is flipped up and the diaphragm closes at the correct value. The shutter is released - and the picture is taken - when the shutter is pressed a second time. After the exposure, the mirror moves back down into place and the diaphragm opens again to the regular setting. If the next photograph is desired without independent mirror release, then the selector switch (5) has to be moved back again.

The independent mirror release can additionally be combined with the self-timer. Then it is so, that when the shutter release is pressed, the mirror is released independently and as soon as the release button is let go, the self-timer countdown is started. When the countdown is finished, the shutter is released and the mirror returns to the regular position. This combination is recommended for situations where it is difficult to achieve shake-free photographs, for example when using long focal lengths on a tripod.

When using an automatic operating mode „A", „T" or „P", the exposure metering occurs when the shutter release is pushed the first time, that is shortly before the independent mirror release. The value is stored and the photograph is made with this exposure. In the operating mode setting „m", the shutter speed/aperture combination is selected manually.

After the independent mirror release, the exposure must take place within a 2 minute time span, since the mirror automatically returns to it's position after this period in order to preserve the batteries. Tapping the shutter release during this waiting period starts the 2 minutes anew. Before the next exposure, the shutter has to be cocked again. To prevent the film from moving to the next frame, the rewind button can be pressed first. It is not possible to set the flipped up mirror back manually

24 Multiple exposures

For multiple exposures, the multiple exposure lever (17) is moved via the button for rewind clearance (18), the frame counting mechanism starts to blink. All of this occurs prior to the first exposure. As a result, after the exposure, when the shutter is cocked manually or with the motorized winder, the film is not transported to the next frame. This piece of film can be exposed again any number of times. Shifting the multiple exposure lever simultaneously activates a „film brake" so that the film remains positioned precisely in the film canal.

Before the last exposure is made, the lever is moved back into place. Then the film is moved on to the next frame - with the wind lever or with a motor - after the shutter is released.

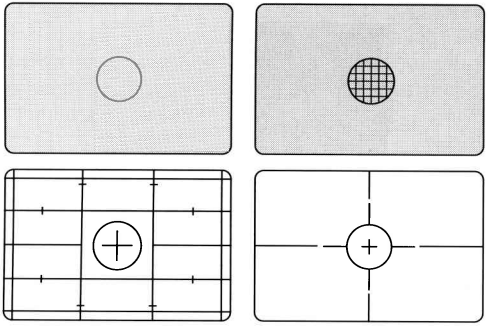
25 Eyepiece lock

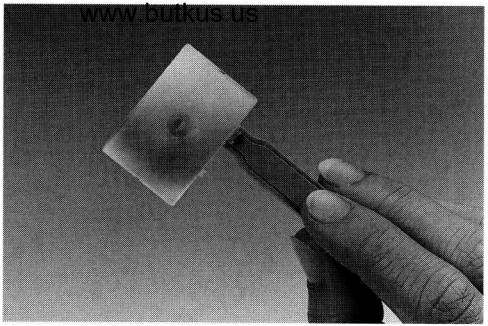
The silicium photo diode of the LEICA R8's exposure meter is down in the bottom of the camera where it is shielded from stray light. For this reason light entering into the eyepiece can only influence the metered result in extreme cases, for example when the photographer, while using a tripod, is not looking through the viewfinder and direct sunlight or a spotlight is shining directly into the eyepiece from behind. In this case, the eyepiece lock lever (25) - to the right of the viewfinder - can be used to close the eyepiece. The cover that swings unto place is red.

26 Depth of field lever

The LEICA R8 meters the exposure with the lens diaphragm open. When the depth of field lever is operated (3), the lens diaphragm closes and permits a visual evaluation of the focused and unfocused areas in the viewfinder (the exposure meter then displays incorrect values!). This is especially useful for close-up photographs. In the operating mode metering flash „F", pushing the depth of field lever also activates the flash. The shutter release is blocked when the depth of field lever is pushed down.

The depth of field scale of the lens shows the range of the depth of field for each of the subject distances. If the SUMMICRON-R f/2/50 mm lens is set at 5 m for example, the depth of field with f/4 reaches from approximately 4 m to 8 m, with f/11 from approximately 3 m to 20 m. Our depth of field chart, number 920 003, contains more detailed information about the depth of field for all focal lengths.



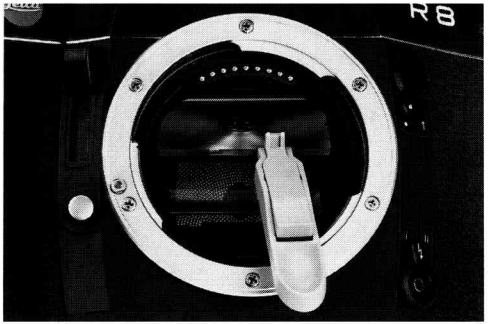


27 Accessories for the LEICA R8

Focusing screens

Special assignments require tailored systems for fast and precise work. This is why there are four extra focusing screens for the LEICA R8 in addition to the universal screen:

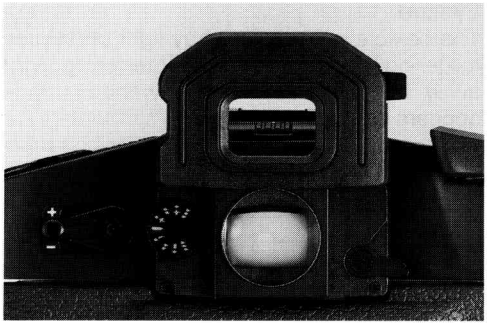
- The uniform ground-glass screen (order-no. 14 344), e.g.. for the extremely close-up range and very long focal lengths.
- The micro-prism screen (order-no. 14 345), e.g. for an undisturbed evaluation of the image lay-out.
- The uniform ground-glass screen with grid divisions (order-no. 14 346), e.g. for architecture, panorama and reproduction uses (also has markings for the creation of slides for TV restitution).
- The clear-glass screen (order-no. 14 347) for research photography, e.g. micro or astro-photography.



The focusing screens are delivered separately in a container with tweezers and a dust brush. To change the screen, remove the lens, flip down the screen holder and remove the screen with the tweezers.

Eyecup

The flexible eyecup for stray light protection (order-no. 14 217) keeps interfering light away from the eye. The viewfinder image appears even more brilliant.



Correction lenses

Correction lenses from -3 to +3 diopters (in whole diopter steps) are available to make it possible to change the eyepiece setting by more than the built-in ±2 diopters. To insert the correction lens, the eye cup is removed, the lens is placed in the eyepiece hollow and the eye cup is slid back into place. A safety catch keeps the two from being lost.

Angle viewfinder

The angle finder (order-no. 14 300) makes surveying the viewfinder image while taking pictures from the repro-tripod or out of the „worm perspective" easier. It is simple to switch in an additional 2x magnifying glass. To attach the angle finder the regular camera eyecup needs to be removed first.

WINDER R8

The WINDER R8 is attached after removing the camera's battery compartment and permits an exposure frequency of approximately 2 frames per second as well as a motorized rewind. The WINDER batteries (2, type 123) also take over the power supply for the camera. The WINDER has a connection for a possible remote control.

DRIVE R8

The DRIVE R8 is attached after removing the camera's battery compartment. It allows for single exposures or series with a frequency of 2 or also of 4 frames per second. Additionally, the DRIVE can be used for motorized rewind. The drive also offers a bracketing function, this means, 3 photographs can be made automatically with different exposure values (with ½ or 1 EV value difference). The batteries of the DRIVE (4, type Mignon/AA) then also take over the power supply of the camera. The DRIVE has a connection for a remote control.

Cases

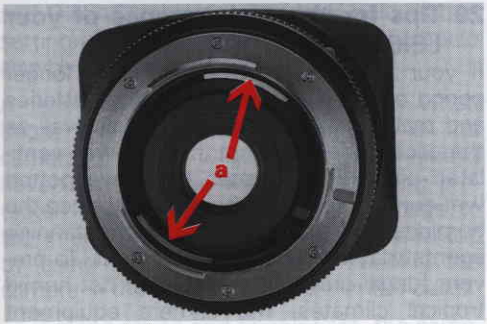
Ever-ready cases are available for the LEICA R8 (order-no. 14 519 for the camera without the motor, order-no. 14 527 for the camera with WINDER R8 attached). They provide a lot of mechanical protection for the camera. In addition, there are various combination cases available for the vast array of equipment with several lenses and accessories.

Filters

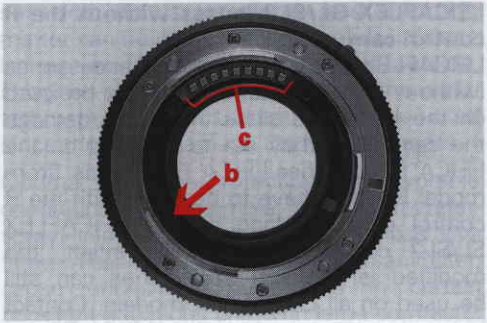
An assortment of color, UVa and polarizing filters are available for use on the LEICA R lenses.

When the exposure metering takes place through the lens, the light absorption of the filter is usually automatically taken into consideration. The different films have a varying film speed in the individual spectral areas however. For this reason, filters that are more dense and more extreme might cause deviations from the metered exposure time. Orange filters for example, generally require an extension of one exposure value, red filters usually need around 2 exposure values. It is not possible to quote a general value that is valid for all, since black and white films show very different sensitivities to red.

Metering and setting with circular polarizing filters can be done the same as with regular filters. Linear, polarizing filters should not be used. Metering with linear polarizing filters can result in extreme deviations since the translucent main mirror has a polarizing effect as well and - depending on the filter's setting - can greatly falsify the measurement.



R cam and LEICAFLEX control cams



R cam and electric contacts

28 Use of existing lenses and accessories

LEICA R lenses

All lenses and lens accessories from the LEICA R program, fit on the LEICA R8 without any modification.

Some of the earlier lenses without spring-back diaphragm - as well as some of the accessories without spring-back diaphragm relay - can only be used in the aperture priority and manual modes (see chapter Working aperture metering).

Most LEICA R lenses can be equipped with the electrical contact ledge for data transfer and electronical exposure compensation. For this though, the LEICAFLEX SL/SL2 control cam must be removed which means that these lenses will only be usable on LEICA R models (from LEICA R3).

LEICAFLEX SL/SL2 lenses without the R control cam

LEICAFLEX model lenses and accessories (without R control cam) must not be used on the LEICA R8 since these can damage the camera. If they are to be used on the LEICA R8 or other LEICA R cameras (from model R3) they have to be fitted with the R control cam. As long as the LEICAFLEX SL/SL2 control cams remain intact, the modified lenses and accessories can still be used on all LEICAFLEX models. Contact ledges for data transfer to the LEICA R8 can not be added.

VISOFLEX lenses on the LEICA R8

All lenses from the LEICA M-program that fit on the VISOFLEX can also be used with the adapter (order-no. 14 167) on the LEICA R8. The work requirements, for example exposure range and attainable object field sizes, remain the same as when used on the VISOFLEX. There is no automatic spring back diaphragm, so the exposure time is metered with the working diaphragm.

29 Tips for the maintenance of your LEICA R8 and R-lenses

If your Leica is to be stored for a longer period of time, please remove the batteries and make sure that the camera as well as the accessories are kept in a dry, well ventilated place. Photo cases that have gotten wet during use should be emptied, since the humidity and the release of leather-tanning agents may damage the equipment. To prevent fungal growth during use in hot humid tropical climates, the camera equipment should be exposed to as much ventilation as possible. Storage in airtight containers or cases can only be recommended when a drying substance such as Silicagel is used additionally. Since any dirt is also be breeding ground for micro-organisms, the equipment should carefully be kept clean.

All the mechanical operated bearing and gliding surfaces on your LEICA R8 have been lubricated. Please remember this when the camera is not in use for a longer period of time. To prevent the grease from becoming tacky, the camera shutter should be wound and released several times with each shutter speed. This should occur around every three months without film loaded. It is also recommended to move and use all the other operating elements (e.g. program selector,

and DIN-ASA-setting). The lens helix (range setting) and aperture setting rings should also be moved from time to time.

A lens works like a burning glass when bright sunlight shines on the front of the camera. This is why the camera should never be laid aside without first being protected against strong sunlight. Damage to the interior of the camera can be prevented by using the lens cover and keeping the camera in the shade (or directly in the case).

To remove stains and fingerprints, the camera and lens are wiped with a clean, lintfree cloth. We recommend microfiber cloths, that are stored in a protective container. They can be washed in temperatures up to 40 °C (without fabric softener, never iron!). Rougher dirt in hard-to-reach corners of the camera body can be removed with a small brush. Please do not use any liquid cleaning agents to clean the camera body. Dust and lind of the inside of the camera (e.g. on the mirror or film track) are best removed carefully with a softhair brush that has been lubricated repeatedly with ether and then dried. Be careful not to damage the focusing screen with the shaft of the brush. Normally a soft-hair brush is sufficient for the removel of dust from the outer lens elements. In case of more stubborn dirt, a very clean, soft cloth that is completely free of foreign matter can be used, wiping carefully in circular motion from the inside to the outside. Eyeglass cleaning cloths, that are impregnated with chemicals, should not be used since they may damage the lens elements.

Optimal front-lens protection in unfavorable conditions (for exemple sand, salt-water-spray) can be achieved with colorless Uva filters. These can however, as with any filter, cause undesirable reflections in certain backlight situations and with large contrasts. It is recommended to use the lens hood since it also protects the lens from fingerprints and rain.

Note the fabrication numbers of your camera (engraved on the bottom plate of your LEICA R8) and lenses since these are extremely important in case of loss.

CE notice
The CE identification of our products documents the adherence to the fundamental requirements of the respectively valid EU guidelines.

Modern electronic elements react sensitively to electrostatic discharge. Since people can easily charge up to several 10.000 Volt, by walking on synthetic carpet for example, a discharge might occur when you come into contact with your LEICA. This can happen especially when it is sitting on a conductive surface

If only the camera housing is affected, then this discharge is totally harmless for the electronics. The outer contacts, for the winder or the rear cover contacts for example, should preferably not be touched - in spite of additional safety circuits.

For possible cleaning of the contacts, please do not use the optical micro-fiber cloth (synthetic!) but instead use a piece of cotton or linen. If before doing so, you consciously touch a heating or water pipe (conductive, grounded material) then you can be sure to have discharged any possible electrostatic charge.

Please prevent soiling and oxidization of the contacts by storing your LEICA in a dry, dust protected environment.

30 Leica customer service

The customer service department of Leica Camera AG or of one of the Leica agencies (see warranty card) is at your disposal for the maintenance of your LEICA R8 or in case of damages. Please contact the authorized Leica distributor nearest you.

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31 Technical data

Camera type: Micro-processor controlled, single **eye,** MF-35 mm format, reflex camera with multiple automatic modes and motor attachment capability.

Lens attachment: LEICA R bayonet with additional electrical contacts. All LEICA R lenses from 15 mm to 800 mm focal lengths can be used, as well as the earlier LEICAFLEX SL/SL2 lenses that were modified with the R control cam.

Exposure metering, operating modes, power supply

Switching the camera on: Turn the operating mode selector out of the „OFF" setting and touch the shutter release (camera, motor or remote control). When the shutter is wound, the displays remain for 14 seconds after the release button is let go.

Exposure metering methods:
- Selective metering with all operating modes. Metering field indicated in the viewfinder by a circle with a diameter of 7 mm.
- Multiple field metering (6 fields) with all operating modes.
- Center-weighted integral metering with all operating modes.
- Center-weighted TTL integral metering for flash lighting with system conformed flash units.
- Selective flash metering with preferred manual flash unit.

Open diaphragm metering with all LEICA R lenses and accessories with an automatic spring-back diaphragm, otherwise working-aperture metering.

Operating modes:
m manual exposure time and aperture setting via the light balance
A aperture priority
P variable automatic program mode
T shutter speed priority
F selective TTL pre-flash metering

Metered value storage: For the selective metering with all operating modes by applying light pressure on the release.

Exposure override: Plus/minus three exposure values in half steps.

Film speed range:
- Manual setting from ISO 6/9° to ISO 12.800/42°. (With additional override of -3 EV to +3 EV, films from 0 DIN to 51 DIN can be exposed as well.)
- DX-scanning from ISO 25/15° to ISO 5.000/38°.

Metering range with f/1.4 and ISO 100/21°:
- Selective metering: from 0.007 cd/m² to 125.000 cd/m², that is from EV -4 to EV 20 or from 32 s at f/1.4 to 1/8000s at f/11.
- Integral and multiple field metering: from 0,03 cd/m² to 125.000 cd/ m², that is from EV -2 to EV 20 or from 8 s at f/1.4 to 1/8000 s at f/11.

Warn display occurs in the viewfinder when the metering range is not reached.

Photocell: Silicium photo diode protected from stray light.

Power supply: Operating voltage 6 Volt.
2 lithium cells - type „CR 2".
Automatic warn display when the battery voltage is failing.

Flash photography

Flash synchronization: Via the center contact in the accessory shoe or the flash connection socket. Optionally on the first or second shutter curtain. Flash synch time: X = 1/250 s.

TTL-flash exposure metering: Center-weighted integral metering with system conforming flash units and adapter SCA 3501.

Computer automatic: Automatic relay of film speed, override and set lens aperture with a corresponding flash unit with SCA 3501 adapter.

Metering flash before the exposure is made: Selective TTL metering, also with flash units that do not conform to the system, studio flash systems for example.

Strobe flash mode: Multiple flash releases during one exposure. Automatic adaptation of the exposure time with corresponding flash units and SCA 3501 adapter.

Film speed range for TTL flash exposure metering:
- For TTL flash exposure metering: ISO 12/12° to ISO 3.200/36°.
- For TTL flash metering: ISO 25/15° to ISO 400/27°.

Flash readiness display: By illumination of the flash symbol in the camera viewfinder and the rear cover display.

Flash success control: Displays for under or overexposure or correct exposure appear automatically for approximately 4 seconds after the picture has been taken.

Flash exposure corrections flash illumination (flash override): Corrections from -3⅓ to +3⅓ EV steps can be set in ⅓ EV steps on the SCA 3501 adapter. Fixed setting of -1⅔ EV steps while using the automatic program mode.

Zoom reflector of the flash units: Automatic adaptation of the zoom reflector to the lens focal length for corresponding flash units with SCA 3501 adapter and lenses with electric contacts.

Viewfinder system

Prism: Built-in penta-prism

Focusing screens: 5 interchangeable focusing screens:
- Universal screen (ground glass screen with micro-prism ring and wedge),
- Uniform ground glass screen,
- Uniform ground glass screen with grid divisions,
- Micro-prism screen,
- Clear-glass screen with cross-lines.

Eye piece: High-eye-point viewfinder. Diopter correction from -2 to +2 dptr., to be set on the viewfinder. Additional attachment of correction lenses from -3 to +3 dptr. is possible. Built-in eye piece lock.

Viewfinder field: 23 x 35 mm^2 , equivalent to approx. 93 % of the film format (96 % vertical, 97 % horizontal) according to the standard slide frame format.

Viewfinder magnification: 0,75 x with 50 mm lens in the infinity setting and with 0 dptr.

LED displays in the viewfinder:
- Warning display in case of a short-fall of the metering range
- Warning display for manually set film speed that deviates from the DX value
- Override setting
- Metering method
- Occurred meter value storage
- Flash readiness and flash control
- Operating mode
- Aperture in half values
- Light balance for manual exposure compensation
- Result of the TTL metering flash measurement
- Exposure time in half values
- Warning display for over and under exposure
- Frame number

Shutter and release

Shutter: Microprocessor controlled, metal leaf shutter with vertical run-off.

Exposure times: Can be set manually on the shutter speed setting ring:
- 16 s to 1/8000 s in half values.
- B for long time exposure of any length
- X = 1/250 s for flash synchronization

For automatic program modes infinitely variable from 32 s to 1/8000 s.

Release: Three steps: activation - metered value storage - release.
Standard thread is integrated in the release for the cable release.

Self timer: 2 countdown times: 2 s or 12 s. Red LED display during the countdown.

Swinging mirror: 70 % reflection, 30 % transmission.

Mirror pre-release: After selection via the release. After the release, the mirror swings back into position.

Bracketing: In connection with the DRIVE, 3 pictures can be made with an exposure difference of either ½ EV or 1 EV.

Film transport

Film insertion: Easy and fast procedure due to the automatic film threading.

Forward film transport: Manually with the quick wind lever or motorized with the WINDER (2 fps) or DRIVE (can be switched to 4 fps, 2 fps or single framesetting).

Film rewind: Manually with the rewind lever or motorized with attached WINDER or DRIVE.

Frame counting mechanism: In the viewfinder and rear cover display. Automatic resetting after the rear cover is opened.

Multiple exposures: An unlimited number of multiple exposures - without image disalignment and without the frame counter moving on - is possible.

Camera housing

Material: Cover plate is of die-cast zinc, with black or silver chrome finish.

Inner housing is of aluminium.

Base plate is of synthetic material with a metal tripod plate, bottom part has a rubber base.

Depth of field lever: For visual evaluation of the depth of field and to release the metering flash.

Tripod thread: A ¼ (¼") secured against rotation according to DIN 4503.

Film cartridge viewing window: To check the type of film loaded.

Dimensions and weight: Width: 158 mm - Height: 101 mm - Depth: 62 mm
Weight: 890 g

32 Reference Index