User Manual

LEICA R7

We wish you a great deal of pleasure and many years of successful photography with your new LEICA R7.

To enable you to fully enjoy and take advantage of the wide range of possibilities offered by this high-quality, precision camera, we recommend that you first read this manual carefully.

This user manual was printed on paper bleached without chlorine - a process which protects our natural water resources and the environment.

Leica Akademie.

Leica not only develops and manufactures high-performance products for photography, projection, observation and photographic reproduction - an additional service available to you is the Leica Akademie. For many years, this internationally famous school has been teaching photographic know-how in application-oriented seminars and training courses. It meets the needs of photo enthusiasts, both beginners and advanced students, for special training in demanding areas of 35mm photography, projection, and enlargement.

Up-to-date, well-equipped classrooms at our Solms headquarters are available for courses, which are held by experienced instructors, with syllabuses ranging from general photography to specialized fields of interest. They provide a wealth of practical suggestions, help, and advice. Further information and details of seminars are available from:

Leica Camera GmbH, Leica Akademie
Oskar-Barnack-Strasse 11,
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Telephone +49 (06442) 208-421

Brief description

1 Window for display and illumination of aperture scale
2 Self-timer LED
3 Coaxial flash-cable contact
4 Eyelet for carrying strap
5 Depth of field lever
6 Bayonet lock
7 Electronic self-timer
8 Connection for independent mirror release
9 Switch for aperture scale illumination
10 Focusing ring
11 Depth of field scale
12 Red dot for alignment of interchangeable lenses
13 Aperture setting ring
14 Release button for override lock
15 Window for override setting display
16 Override setting lever
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18 Film speed setting ring
19 ISO film speed control window
20 Release button for setting film speed
21 LED (light diode)
22 Accessory shoe with central hot-shoe and control contacts

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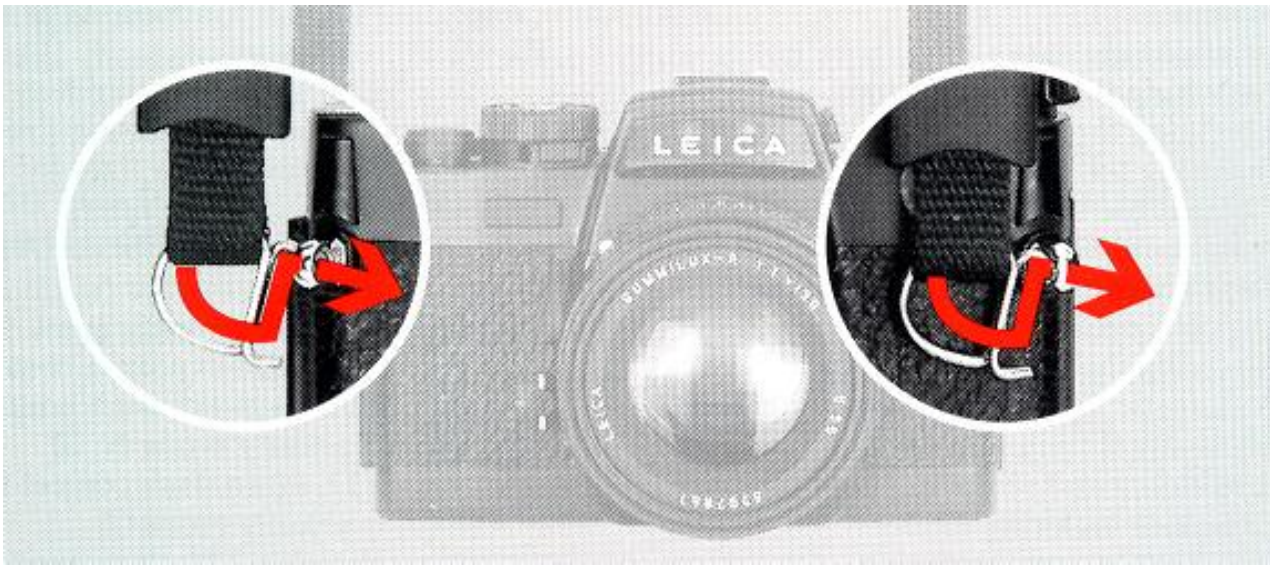

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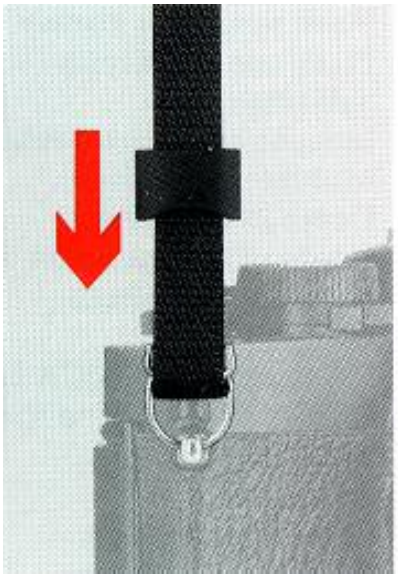
Attaching the carrying strap



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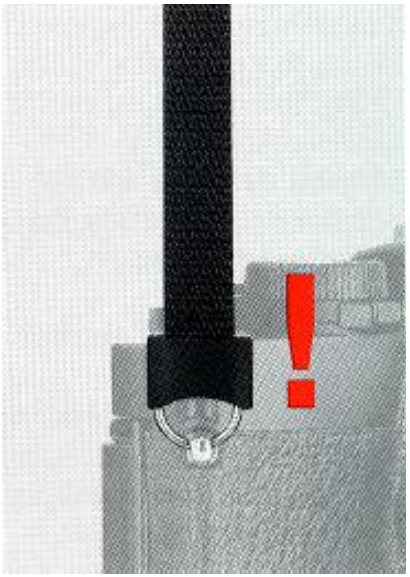

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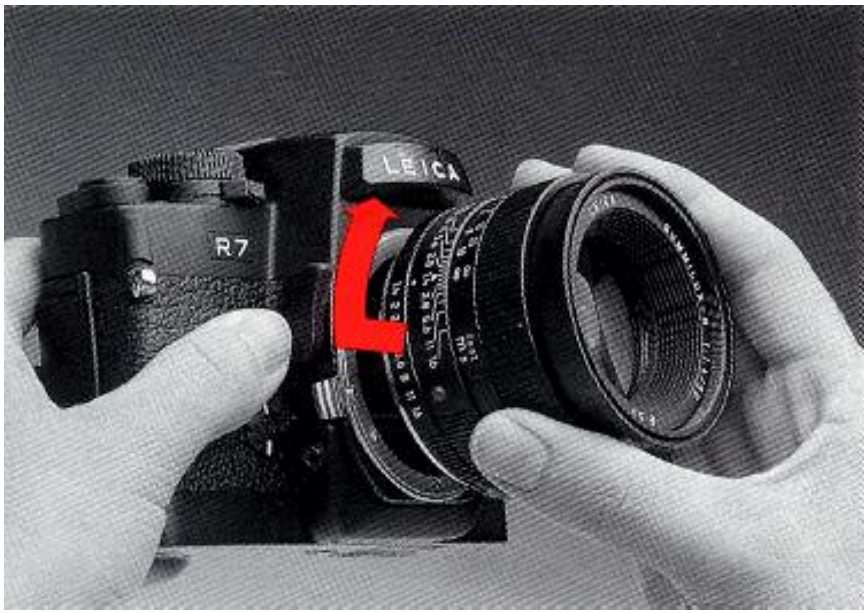


Changing the lens

To avoid damage to your LEICA R7, do not attempt to fit any lens that does not have a control cam for a LEICA R Camera (see page 47).

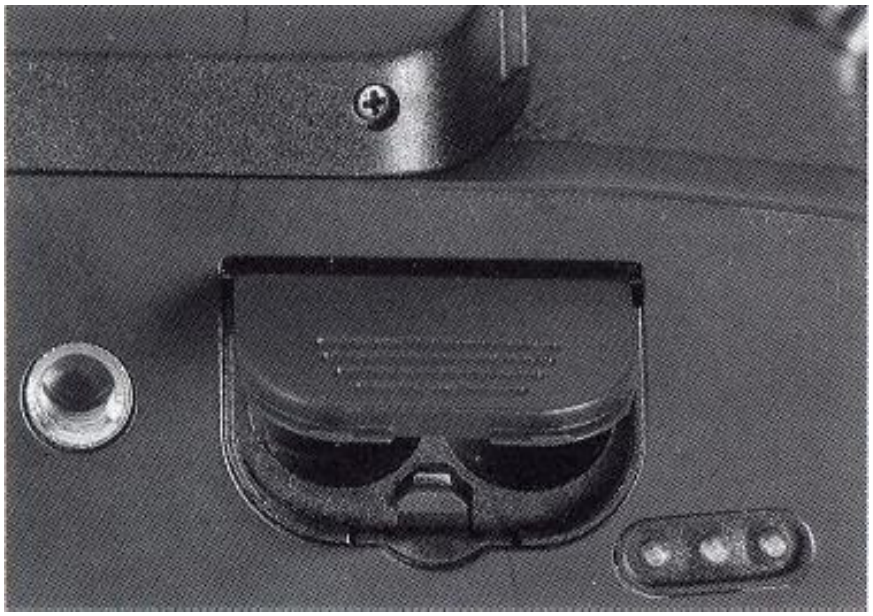
To insert a LEICA R-Lens regardless of the focus and aperture settings, proceed as follows:

Hold the lens by the fixed ring [11]. Position the red dot [12] on the lens mount opposite the dot on the bayonet lock [6] on the camera body. Insert the lens in this position. A slight clockwise turn locks the lens into position audibly.

Removing the lens:

Hold the lens by the fixed ring [11]. Press in the bayonet lock [6] on the camera body. Turn the lens anticlockwise and remove.

Always change lenses in the shade or in your body's shadow.



Inserting the batteries

The exposure meter and shutter release of the LEICA R7 require a 6V power supply, either four silver oxide button cells (1.5V) or two lithium cells (3V).

Open the battery compartment cap [37] by pressing the locking button [36] and push the cap in the direction of the camera front. Use a clean cloth to wipe off any oxidization on the surface of the battery cells and insert the batteries in the battery cap; position them as marked by symbols in the battery cap. Close battery compartment cap and push it toward the camera back until it clicks shut.

Notes on battery care and use:

Store battery cells in a cool, dry place. Keep away from children. Never use old and new battery cells together. Do not mix battery cells of different makes. These battery cells are not rechargeable.

Batteries contain toxic and environmentally damaging substances. Do not discard used battery cells, but return them to your camera dealer for recycling or dispose of them at special waste collection points.

Compatible batteries

Silver oxide button cells suitable for the LEICA R7 (valid Spring 1992):

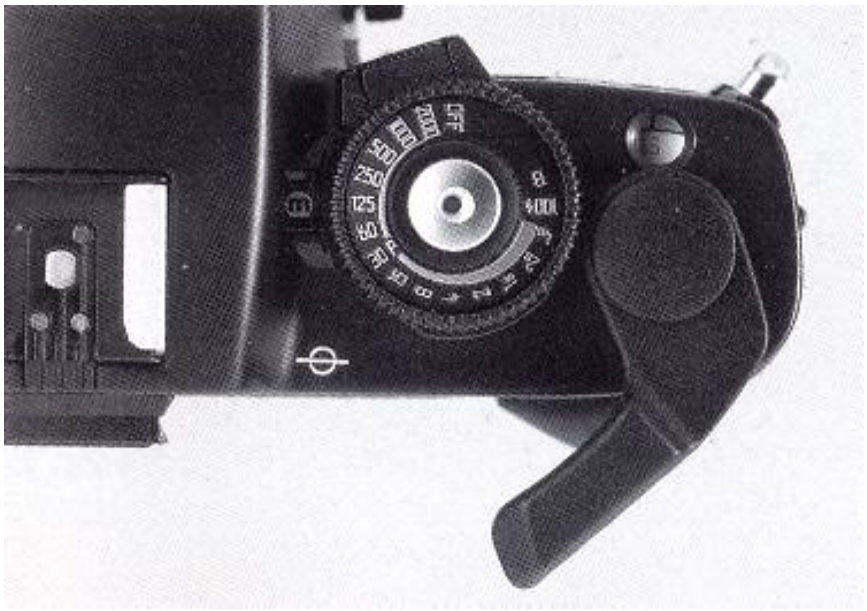
Duracell	D 357 (10 L 14)
EverReady	EPX 76
Kodak	KS76
Maxell	SR44
National	SR44
Panasonic	SR44
Philips	357
Ray-o-vac	357
Sony	SR44
Ucar	EPX 76
Varta	V 76 PX

Lithium cells
(valid Spring 1992):

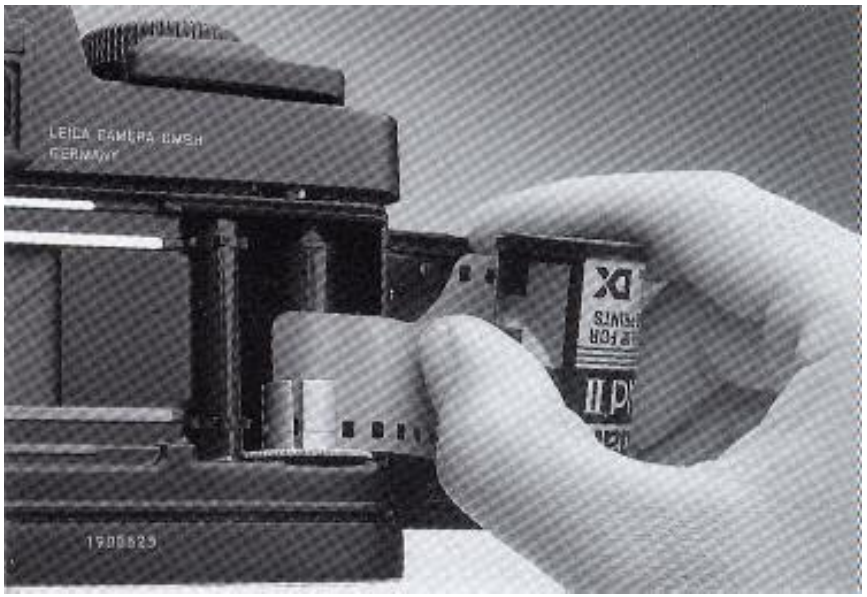
Duracell	DL ⅓ N
Kodak	K 58 L
Philips	CR ⅓ N
Ucar	2 L 76
Varta	CR ⅓ N

Automatic Battery Check
If battery power is low, the symbol "BC" lights up in the lower right corner of the viewfinder. This indicates sufficient power for the camera to operate, but the batteries should be replaced as soon as possible. If battery power is too low for camera functioning, the exposure release is blocked and all displays, except the "BC" symbol extinguish. If the battery is completely flat, the "BC" symbol no longer lights up.

Shutter release without batteries
You can still use the camera when the battery cells are flat or have been removed. To do so, set the shutter speed to "B" or "100".

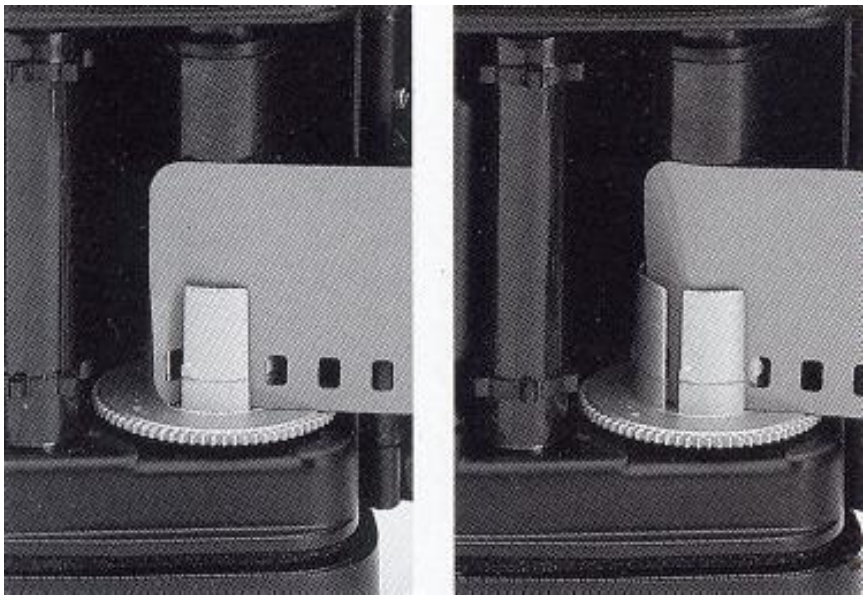


Quick-wind lever
The quick-wind lever **[27]** winds the film, cocks the shutter, and turns the frame counter **[28]**. When hinged out in the stand-by position, there is room to slide your thumb behind it and firmly support the camera. After each exposure, the film should be advanced immediately to the next frame to ensure instant readiness for the next photograph.



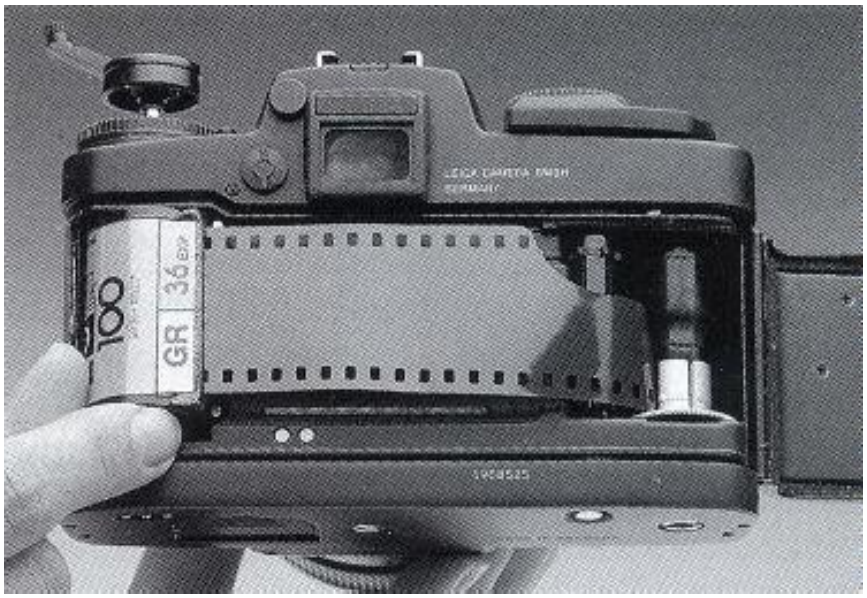
Inserting the film

Pull up the rewind crank [17] and knob past the spring resistance to release and open the camera back. The frame counter resets to “S” (start).



Incorrect Correct

Pick up the film cartridge as shown above, with the emulsion side facing up. Slide the end of the film obliquely from above into one of the slots of the take-up spool, making sure that the film is gripped by at least one of the retaining clips and projects under the next clip.



Pull up the rewind crank as far as it will go and insert the film cartridge in the empty cartridge chamber, then push in the rewind crank. The edge of the film must be parallel with the film guide. As you move the quick-wind lever, the sprockets of the transport drum must engage in the edge perforations of the film.

Use the quick-wind lever to wind the film one frame forward, to ensure that it lies tensioned in the film guide and that the mouth of the cartridge does not project too far. You may occasionally wish to take out a partly exposed film and later insert it again.

To ensure that the film is always inserted under the same conditions, use the quick-wind lever to cock the shutter, then release the shutter before you insert the film.

Snap shut the camera back to close the camera. Release the shutter. Wind the film one frame forward, release the shutter again, then wind on one more frame. The camera is now ready for use. The frame counter **[28]** stands at "1". It counts up to "36".

Important: Bright light may enter through the mouth of the cartridge and damage your film. Always insert film in your body's shadow; never in bright light.

Normally, the film speed setting ring **[18]** can be left in the "DX" position, other film speeds can be manually set (see following section). The camera is now ready for exposure.

Automatic DX-Setting

If DX-coded films are used, push the locking button **[20]** to switch the setting ring **[18]** to the "DX" position, as displayed in the window. It appears at the end of the ASA scale, i.e. next to the ASA setting "12800". "Reading" and setting the film speed occurs automatically for all speeds from ISO 25/15° to ISO 5000/38°.

If, in this setting, a non DX-coded film is inserted, or if there is no film in the camera at all, the symbol "ASA" blinks in the viewfinder display. The outer LED [21] also blinks.

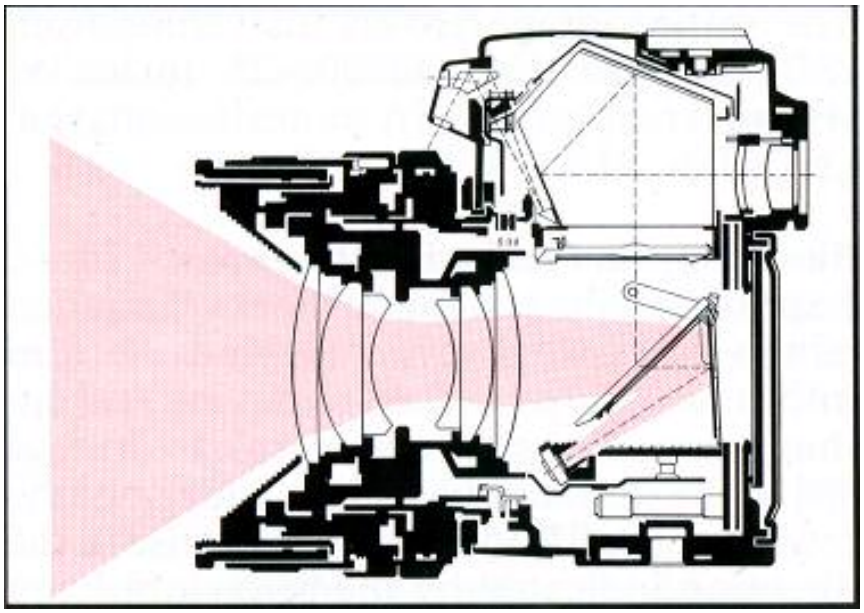
If exposure is nevertheless released, the selected aperture and shutter speed settings are activated, regardless of the camera mode chosen.

In the case of discrepancy between the manually set film speed and the DX-code, the manually set value becomes operative. The warning symbol ⚠ lights up at right in the viewfinder display.

Setting the film speed manually
To set the film speed in ISO units, press the release button **[20]** and turn the setting ring **[18]** at the same time until the window **[19]** displays the required film speed in ASA.

The setting range covers all values from ISO 6/9° to ISO 12800/42° inclusive.
(However, only the ASA-value is displayed, i.e. "6" to "12800")

Rewinding and removing the exposed film
Exposure of the last frame blocks the action of the quick-wind lever. Rewind the film into its cartridge before removing it from the camera. Press the rewind release button **[39]** in the camera's baseplate, hinge out the rewind crank **[17]** and turn it clockwise in the direction indicated by the arrow until you feel a slight resistance as the film is pulled out of the take-up spool. Pull up the rewind crank and knob to open the camera back, and remove the cartridge with the exposed film.



Full-field integral metering

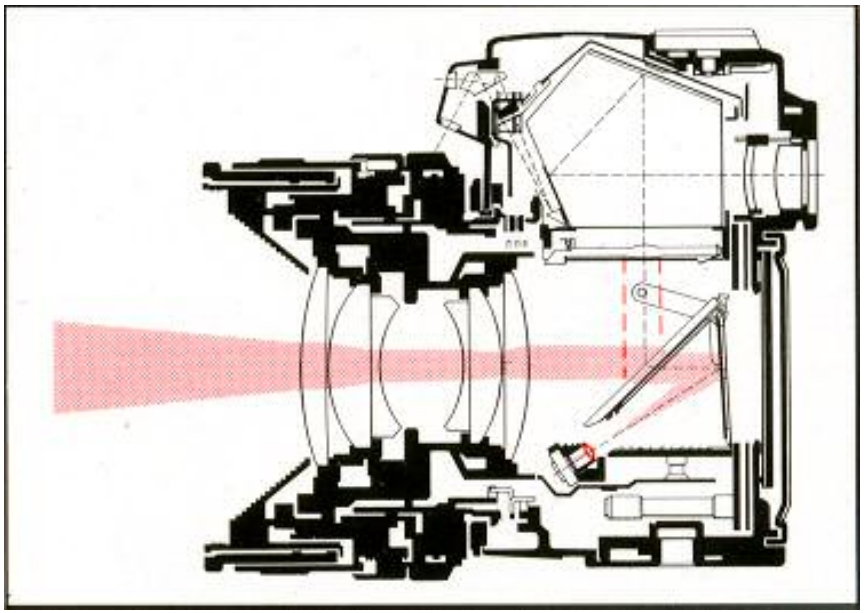
Exposure metering modes

The LEICA R7 has an exposure-meter system that provides two alternative metering modes:

□ Full-field integral metering

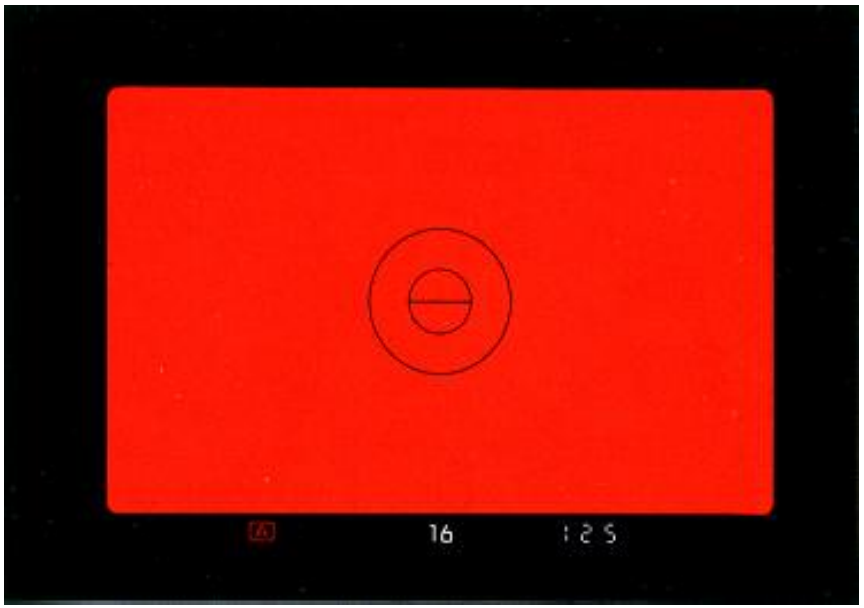
○ Selective metering

The exposure metering modes are linked to the camera mode chosen, i.e. they form independent programs.



Selective metering

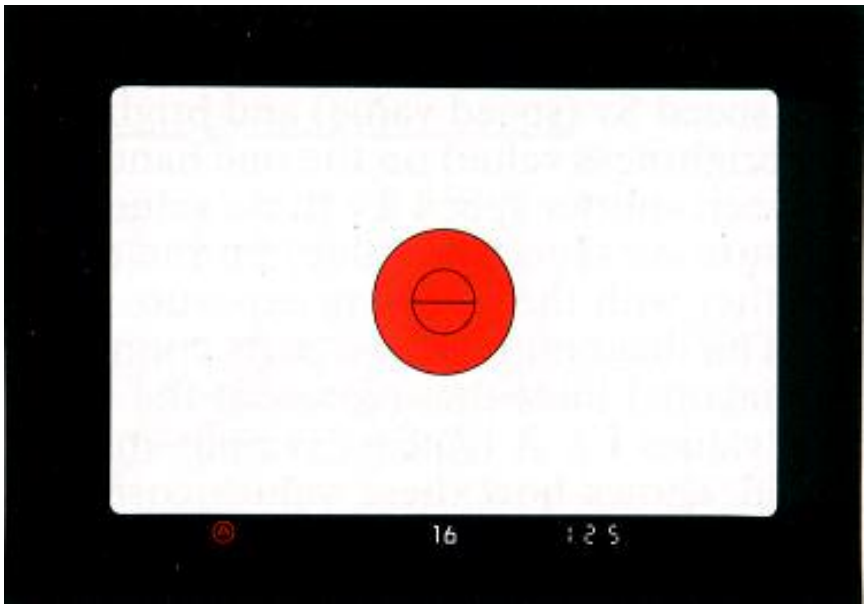
The exposure meter measures the light that passes through the lens (TTL exposure metering system). It uses a silicon photodiode, placed in the base of the camera to protect it from stray light. When you use any LEICA R-Lens with an automatic spring-back diaphragm, the exposure meter works at full aperture. The symbol displayed in the window **[23]** next to the mode selector **[26]** and at the lower left of the viewfinder indicates the program (mode) selected.



Full-field integral mode

Most photographic subjects contain details of varied brightness. The light reflected by this type of subject has a mean grey value of 18%, i.e. it is the same as that of a standard grey area that reflects 18% of the light it receives. This is the calibration value for all exposure meters.

The full-field integral mode is suitable for all subjects in normal light, with no extremes of light or color, and where the light and dark areas are fairly evenly distributed over the entire visual field. For this type of subject, choose one of the programs that use the full-field integral mode [A], [T] or [P].



Selective mode

This is the method of choice with high-contrast subjects that have a wide brightness range and correct exposure of a certain detail is particularly important.

The large central circle in the viewfinder indicates the field covered in this mode, in which the exposure meter measures only the light reflected by the exact area of the subject that you want determine the exposure. The field is the same size on all focusing screens and for all lenses, whatever their focal length, and is clearly marked in the viewfinder. For selective mode, choose programs Ⓐ and ⓜ.

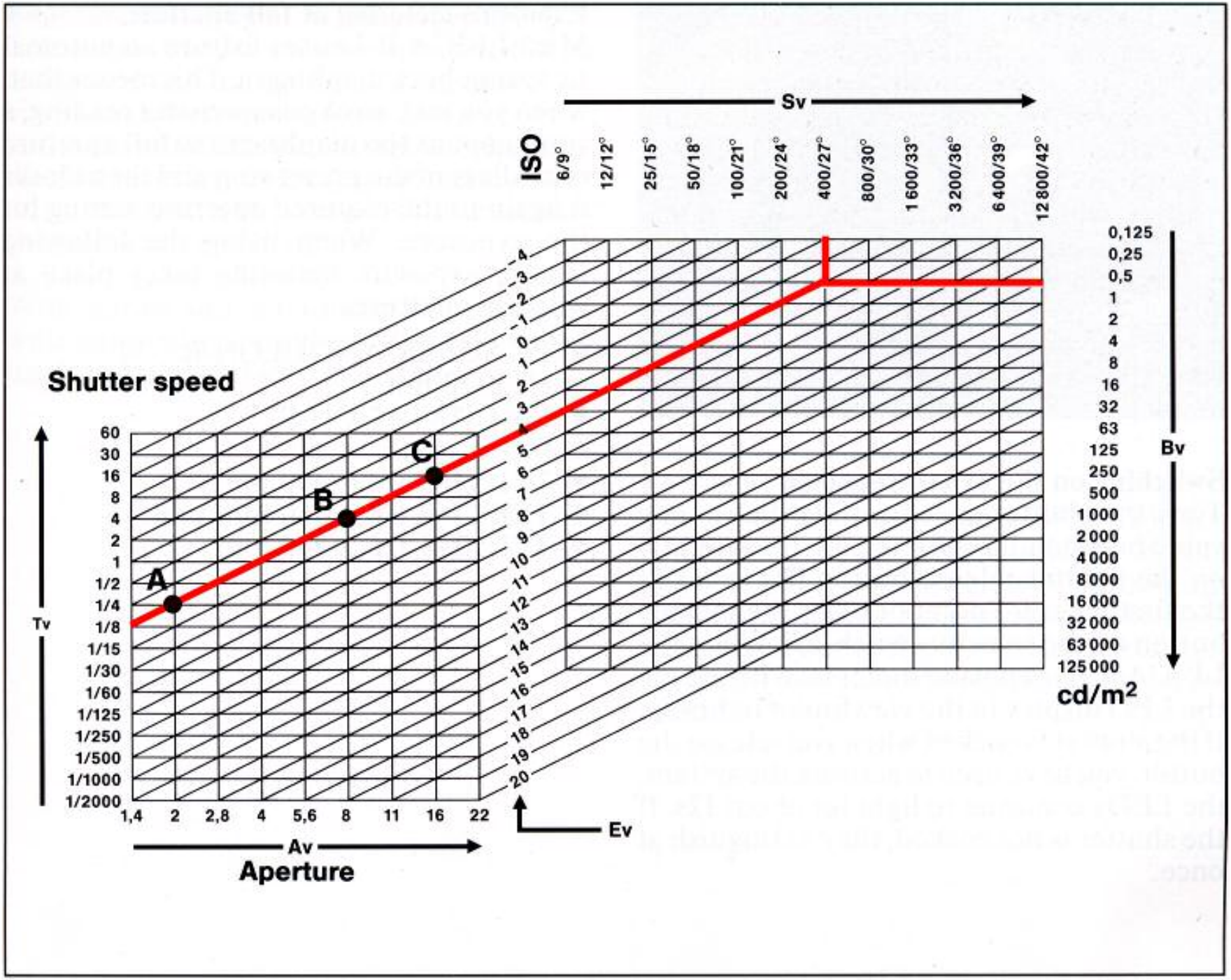
Working diagram of the exposure meter

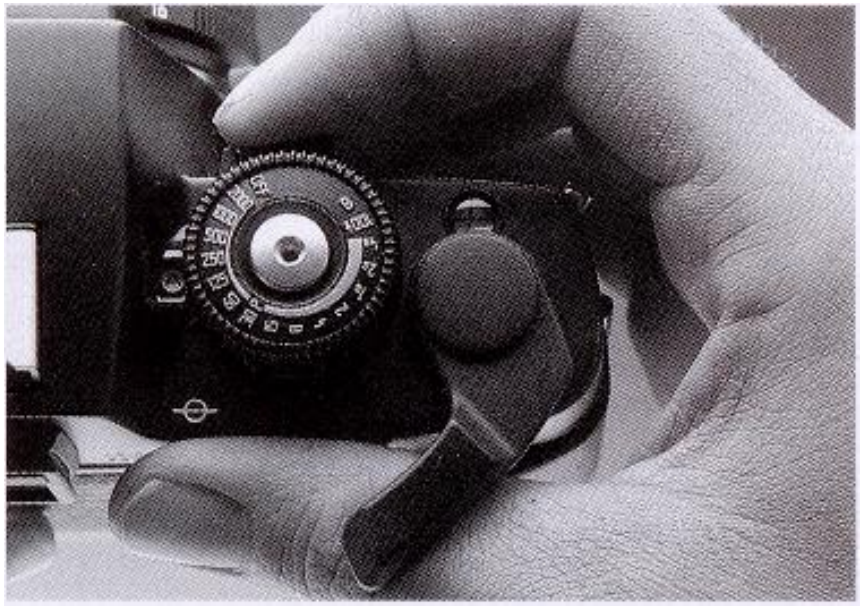
The diagram shows the relationship between film speed Sv (speed value) and brightness Bv (brightness value) on the one hand, and between shutter speed Tv (time value) and aperture Av (aperture value) on the other, together with the resulting exposure value Ev. The diagram is in two parts connected by diagonal lines that represent the exposure values Ev. A typical example, marked in red, shows how these values correlate. Assuming a film speed of ISO 400/27°, follow the vertical line to the point where it intersects with the horizontal line for brightness, in this case 0.5 cd/m^2, typical for night-time photography.

A diagonal which passes through this point of intersection leads to the relevant exposure value, in this case Ev 4. Various combinations of aperture and shutter speed can produce this value, i.e. transfer to the camera's working range.

For correct exposure, the points of intersection of the vertical Av and the horizontal Tv lines must always lie exactly on a diagonal Ev line. In the example, three such combinations are shown: A = stop 2 at ¼s; B = stop 8 at 4s; and C = stop 16 at 15s. Each corresponds to the correct exposure value.

In the modes shutter priority and aperture priority, one of these values is preset, the corresponding value is set automatically; in automatic program mode, the camera automatically sets both.





Switching on the exposure meter
Turn the shutter speed setting dial to any value between 1/2000 s and 4 s. Press lightly on the shutter-release button [25] as far as the first pressure point or press the locking button on the selector switch [29]. When the LEICA R7's exposure meter is switched on, the LED display in the viewfinder lights up. If the shutter is cocked when you release the button you have used to activate the system, the LEDs continue to light for about 12s. If the shutter is not cocked, they extinguish at once.

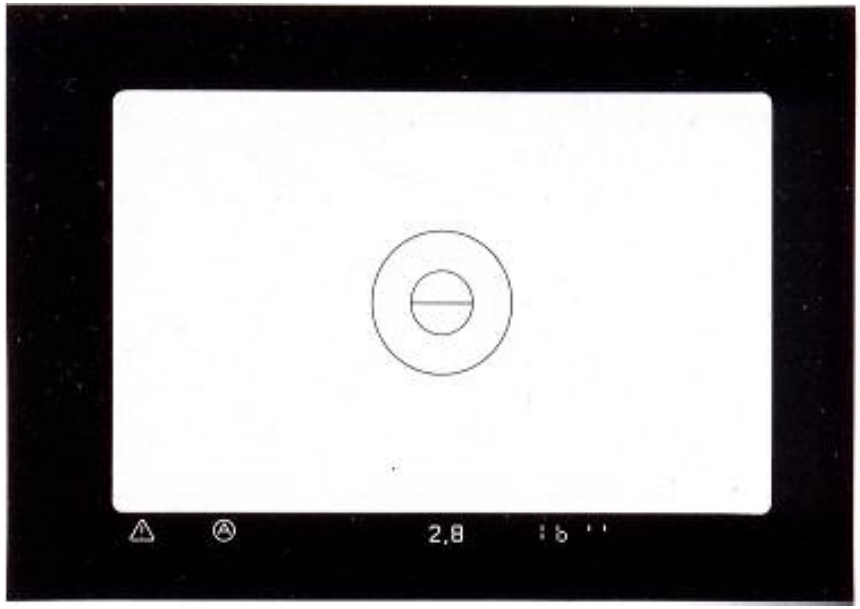
Exposure metering at full aperture
Most LEICA R-Lenses feature an automatic spring-back diaphragm. This means that, when you take an exposure meter reading, a spring opens the diaphragm to full aperture regardless of the preset stop and then closes it again to the required aperture setting for the exposure. When using the following lenses, exposure metering takes place at working aperture:

- PC-SUPER-ANGULON-R f/2,8/28 mm,
- PA-CURTAGON-R f/4/35 mm,
- TELYT-R f/6,8/400 mm,
- TELYT-R f/6,8/560 mm und
- TELYT-S f/6,3/800 mm

Exposure metering at working aperture

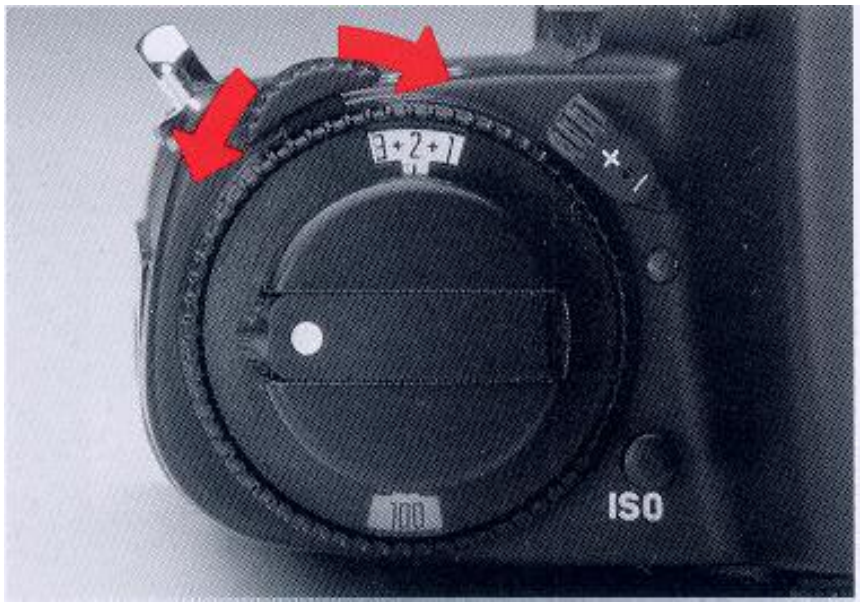
Some lenses and accessories do not have an automatic spring back diaphragm or lack the linkage mechanism for it. In these cases, you have to obtain the exposure-meter reading at working aperture, stopping up or down to adjust the amount of light reaching the exposure meter's photocell.

With lenses and accessories not equipped with automatic springback diaphragm, the modes [A], Ⓐ and ⓜ can be used.



Low-light warning

The given measuring range of the LEICA R7 has a linear characteristic. If the light intensity level is below the minimum requirement, this characteristic is no longer guaranteed due to the insufficient photocell current. This can lead to incorrect measurements.



Manual override control
(exposure correction)

Exposure meters are calibrated to a standard grey (18% reflection) value for an average photographic subject. If the subject does not conform to this standard, manual override correction of the exposure-meter reading becomes necessary.

Manual override is more often necessary with full-field integral exposure metering. In selective mode, the more limited metering field makes it possible to measure a representative detail with an average grey value, thus ensuring accurate measurement.

Example for "plus" (+) override correction

For a very brightly lit subject, such as snow, sand, or water, the high reflectivity causes the exposure meter to indicate too short an exposure. The snow itself is likely to appear grey, people much too dark: underexposure. To correct this, the time of exposure must be increased, i.e. set the override control to +2.

Example for "minus" (-) override correction

For a very dark subject that reflects only a small amount of light, the exposure meter indicates too long an exposure. A black car appears grey: overexposure. The exposure time must be reduced i.e. set the override control to -1.

To set the override control, press the locking button **[14]** and turn the setting scale **[15]** to the required value by lever **[16]**. To lock the button **[14]**, press it in and turn it anticlockwise. When the override control is at 0, the lever **[16]** fits snugly into the camera body. The override control can be set in steps of one-half of an exposure value, from Ev +3 to Ev -3. When override is active, the symbol ⍒ flashes at bottom left in the viewfinder.

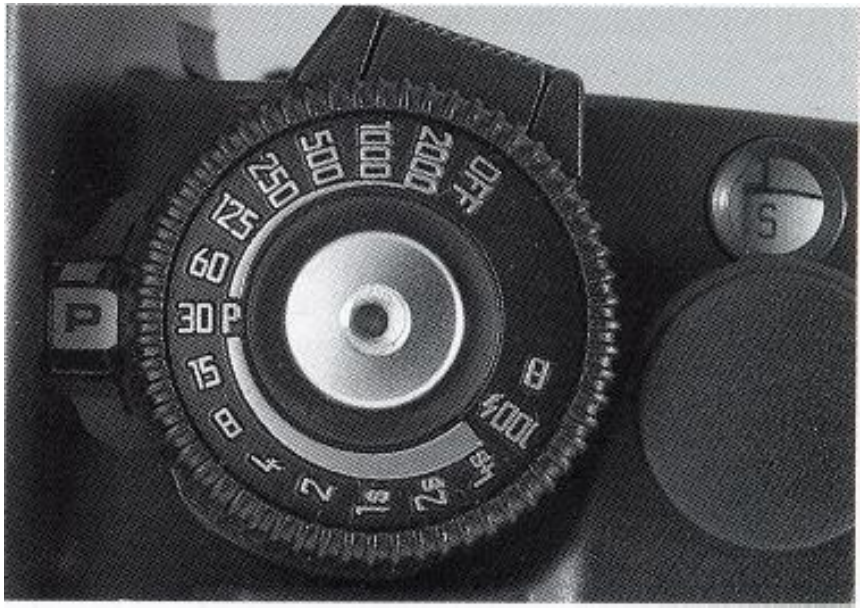
Shutter speed setting dial

The shutter speed setting dial should be set to "OFF" when the camera is not in use. In this setting, the exposure meter is switched off and the electronic shutter release blocked, preventing unnecessary battery drain.

In the program modes [T] and (m) the shutter speed between 1/2000 s and 4s must be set manually by turning the setting dial **[26]**. Half values can also be set.

In the [P] program mode, the shutter speed setting influences the tendency of the automatic program mode.

In program modes [A] and (A), the shutter speed setting dial can be engaged at any value except "B" or "100". The shutter speed is automatically computed to values between 1/2000 s and 16s.



When using non-system flash units, the shutter speed must be set to "100". In the "B" setting, the shutter remains open for a long as the exposure release button is pressed down. The symbol "bulb" is displayed in the viewfinder.

In "B" and "100", the shutter can be released without battery power. In these settings, no exposure metering occurs (except TTL-flash exposure metering), even if batteries have been inserted.

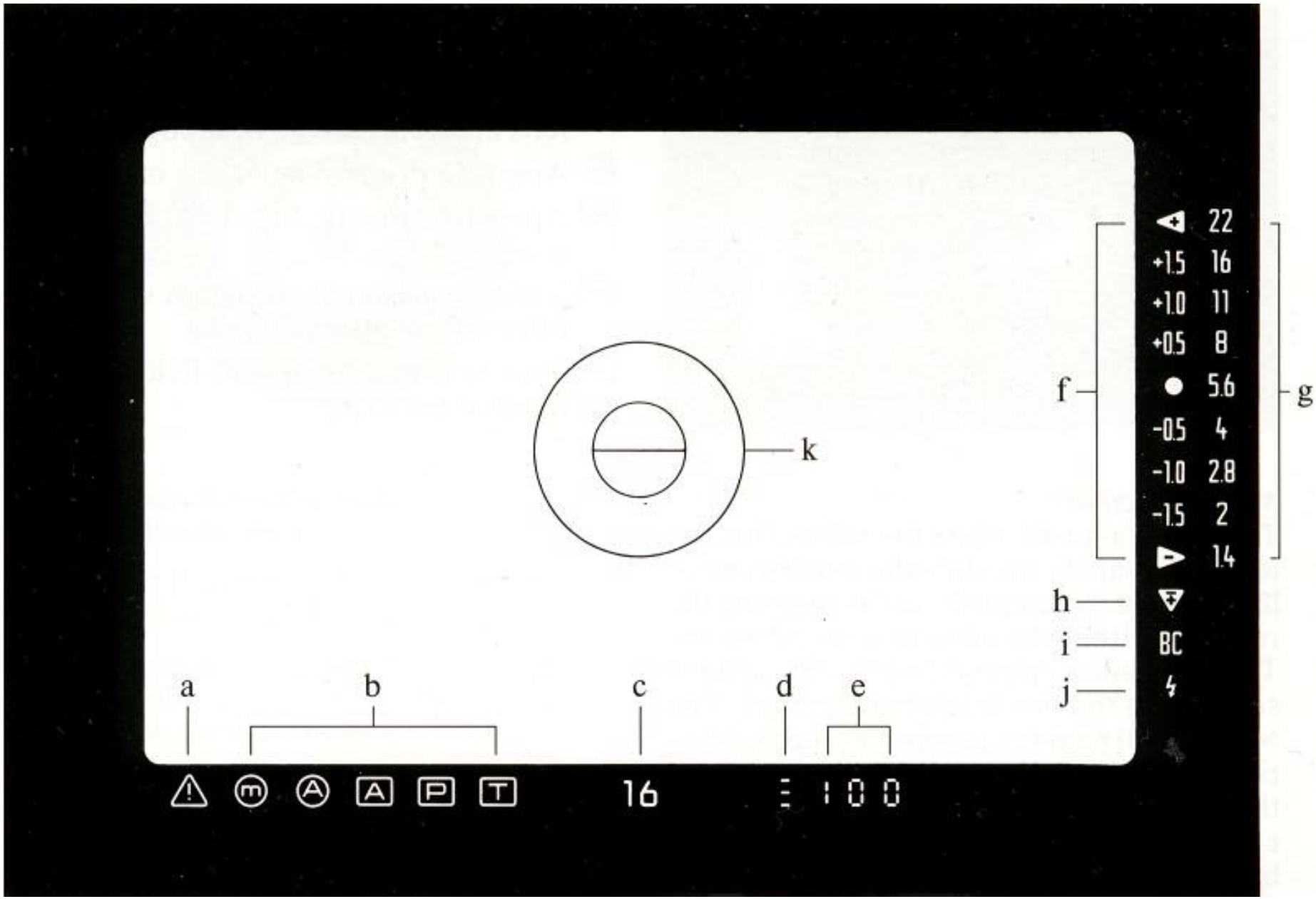
The viewfinder image

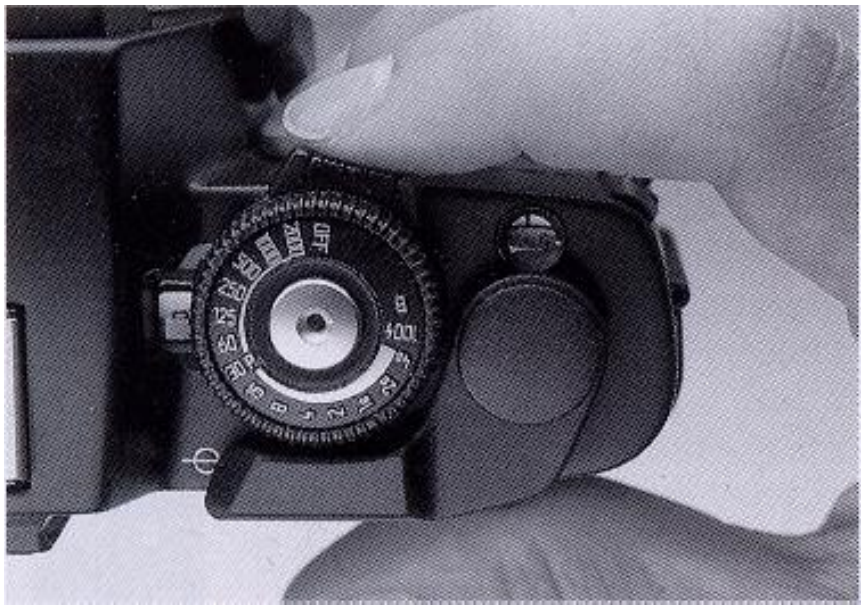
The viewfinder of the LEICA R7 acts as composition and control center for all important information:
It lets you assess focus, perspective, and picture frame; the measuring field for selective exposure metering is clearly marked (the larger circle in the viewfinder center). The viewfinder area is 92% of the frame size; with the eyepiece at 0 diopters and a standard 50mm lens fitted and focused to infinity, it has an 0.8x magnification.

The viewfinder displays all essential data for the program you have set. The LEDs light up when the release button on the program selector is activated or when the shutter release button is pressed. With the shutter cocked, the LEDs light for about 12 s. The LED brightness automatically adjusts to the subject in view, ensuring easy reading of all display data. To avoid confusion, the viewfinder displays only the essential data in each program mode.

The illustration opposite shows all the available displays:

a. low-light warning - out of exposure metering range
b. program mode symbols
c. set aperture (reflected display)
d. symbol for fill-in flash
e. set or computed shutter speed
f. light balance for manual setting
g. computed aperture
h. warning "override activated" (blinks);
   warning for discrepancy between manual film speed setting and DX-code (lights up)
i. low battery warning
j. flash ready and flash control symbol
k. measuring circle for selective exposure metering.



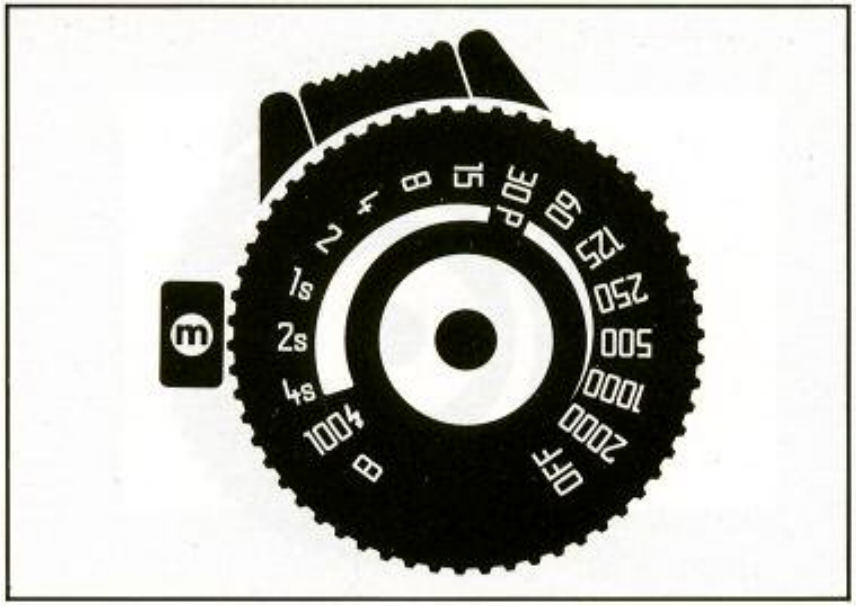


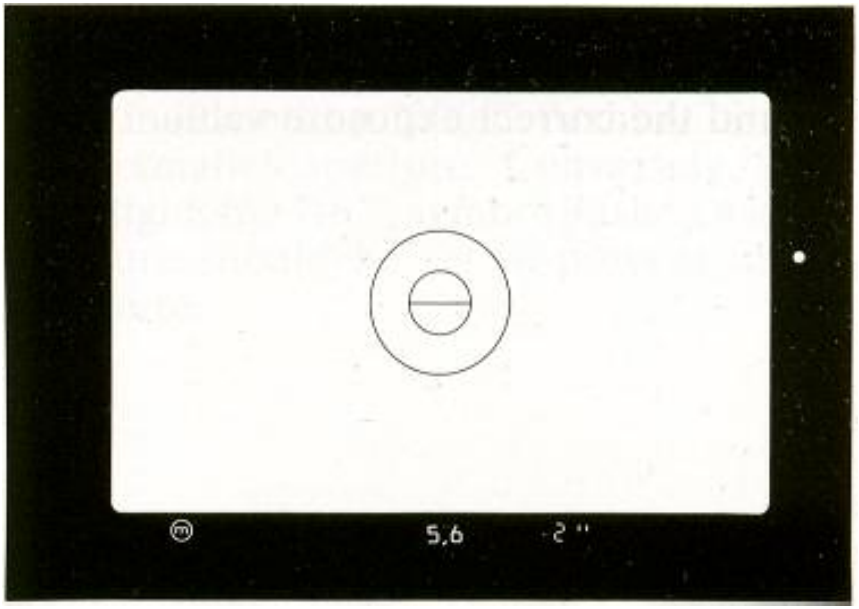
Mode selection

To choose a mode, press the release button and at the same time slide the mode selector **[29]** to the required position. By pressing the release button, the camera is switched on. The viewfinder displays the mode you have selected in the lower left-hand corner. The window **[23]** next to the shutter speed setting ring also displays the mode setting. Check that the mode selector engages properly. To change the setting, the release button must be pushed first.

You can choose between the following programs:

- ⓜ Manual setting of shutter speed and lens aperture, selective mode.
- Ⓐ Aperture priority, selective mode.
- [A] Aperture priority, full-field integral mode.
- [P] Variable automatic program mode with full-field integral metering.
- [T] Shutter priority with full-field integral metering.





Manual setting with selective mode
Set the required shutter speed and aperture by hand

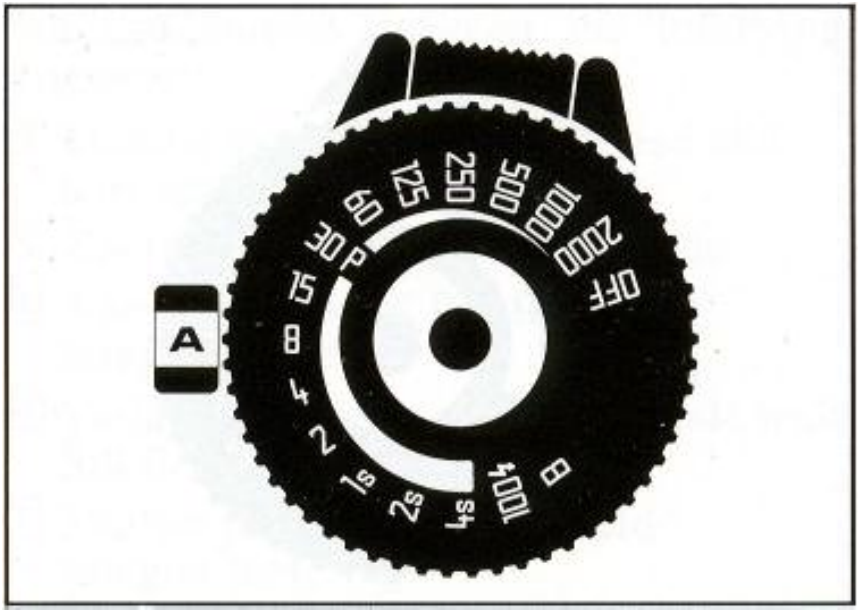
For many interesting photographic motifs, it is preferable to switch off the automatic exposure control and to set both the shutter speed and aperture by hand.
For combining the correct shutter speed and aperture values, a light balance, at right in the viewfinder, shows the deviation between the aperture/shutter speed combination set and the correct exposure value: if the set aperture and shutter speed deviate by 2 or more Ev (exposure values) from the correct value, the symbol ◀ or ▶ lights up. For deviations in the -1.5 to +1.5 range, this can be read in ½ Ev. Aperture or shutter speed must be adjusted until the symbol ● - i.e. correct exposure-lights up.

Program ⓜ works with any LEICA R-Lens and such accessories as adapters, the universal Focusing Bellows R-BR 2, etc (see page 46).

Viewfinder display:

The viewfinder displays the mode setting ⓜ in the lower left-hand corner, with the preset aperture at bottom center and the preset shutter speed at bottom right.

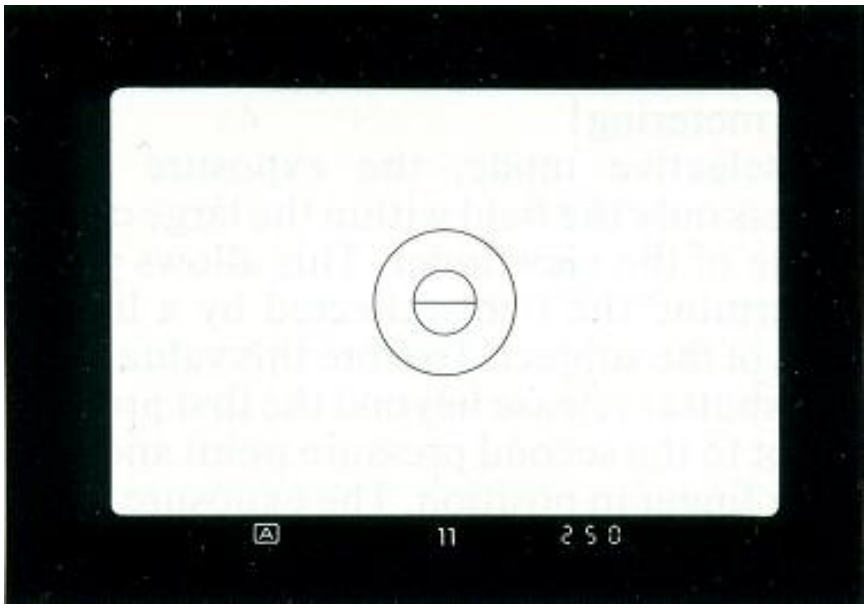
To the right of the viewfinder, a vertical light balance shows the deviation between set and the correct exposure value.



A **Aperture Priority, full-field integral mode**

Preset the required aperture, shutter speed set automatically.

This mode is particularly suitable for normal light conditions and when depth of field is an important creative element. Choose this mode for applications such as landscape and architectural photography. Set the depth of field with the aperture setting ring [13].

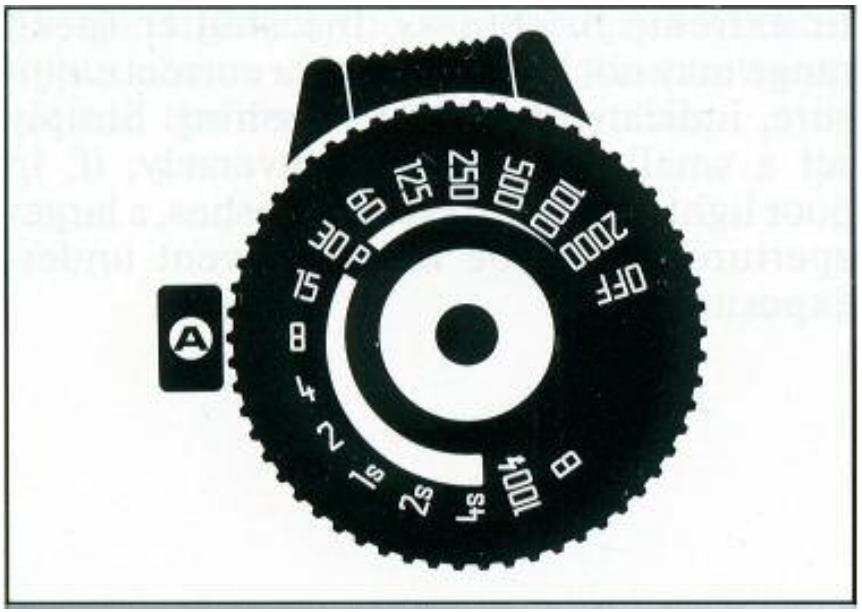


The camera automatically computes the shutter speed from 1/2000 s and 16 s, depending on the available light. The shutter speed setting dial may be set to any shutter speed from 1/2000 s to 4s, except "B", or "100".

Viewfinder display:

Below the viewfinder image, the display shows the following information at a glance: the mode chosen (in this case A, the set aperture and the automatic, corresponding shutter speed (in ½ or full shutter speed values).

In extreme brightness, the shutter speed range may not be sufficient for correct exposure, indicated by "2000" flashing. Simply set a smaller aperture. Conversely, if, in poor light, the "16"", symbol flashes, a larger aperture should be set to prevent under-exposure.



Aperture priority, selective mode

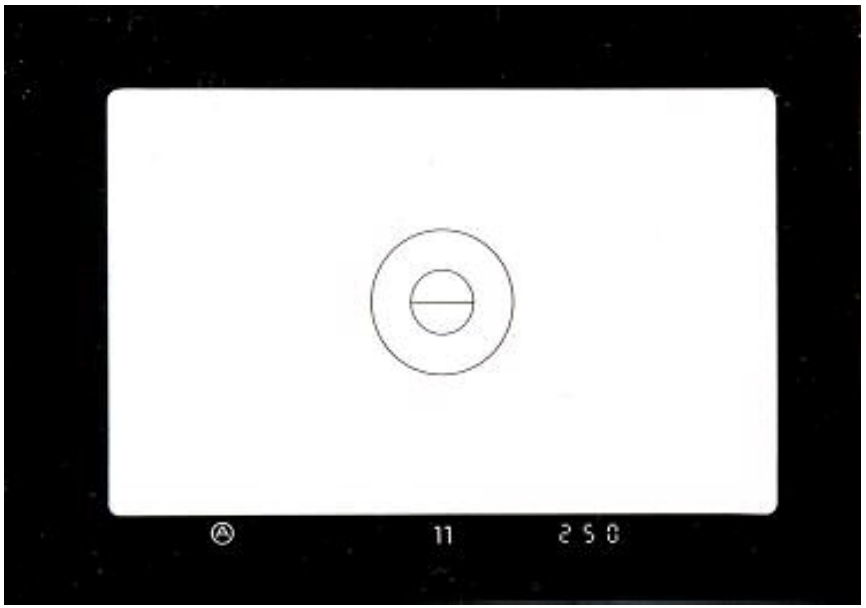
Preset the required aperture, shutter speed is computed automatically.

This mode is indicated where spot readings are necessary, for example in contre-jour portraiture and for spotlighted stage subjects. This program functions like aperture priority with full-field integral metering, in addition the exposure value can be stored for easy picture composition.

Exposure-metering memory

Only in aperture priority mode with selective metering!

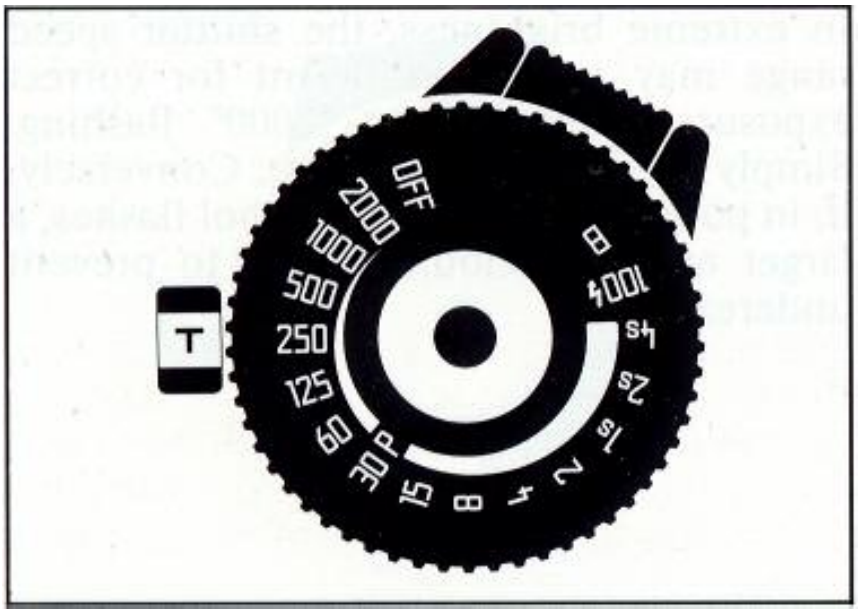
In selective mode, the exposure meter covers only the field within the large central circle of the viewfinder. This allows you to determine the light reflected by a limited area of the subject. To store this value, press the shutter release beyond the first pressure point to the second pressure point and keep your finger in position. The exposure meter reading is stored as long as you keep the shutter release pressed down in this position. To indicate this, the program mode symbol Ⓐ in the viewfinder is extinguished. Still keeping your finger on the shutter release, you can now pan the camera to compose the photograph, then press the shutter release fully home. As long as the exposure value remains in the memory, the viewfinder continues to display the stored shutter speed. If during this time you alter the aperture, the shutter speed changes automatically and the viewfinder displays the new shutter speed. As soon as you take your finger from the shutter release, the stored value is erased.



Viewfinder display:

Below the viewfinder image, the display shows the following information at a glance: the mode chosen (in this case Ⓐ, the set aperture and the automatic, corresponding shutter speed (to the nearest 1/2 or full shutter speed value).

In extreme brightness, the shutter speed range may not be sufficient for correct exposure, indicated by "2000" flashing. Simply set a smaller aperture. Conversely, if, in poor light, the "16"" symbol flashes, a larger aperture should be set to prevent underexposure.



T **Shutter priority with full-field integral metering**

The desired shutter speed is preselected; the corresponding aperture is set automatically.

This mode 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 photography, exposures from an unsteady support or with long-focal-length lenses.

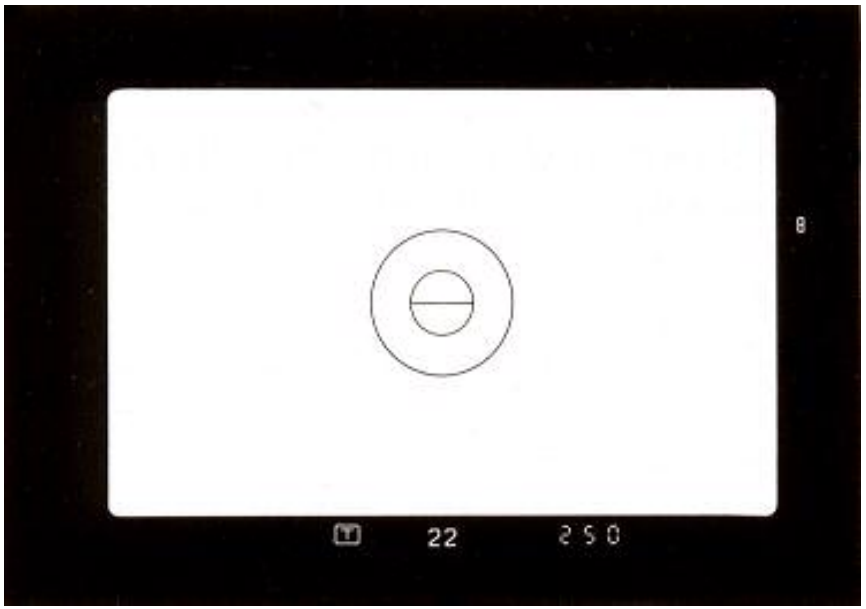
With a high shutter speed, rapid movements can be frozen with pin-sharp contours. A slower shutter speed produces deliberate movement blur, which may enhance the dynamic effect.

The desired shutter speed between 1/2000 s and 4s is preselected on the shutter speed dial; the lens aperture is automatically set depending on ambient light.

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.

Using the FISHEYE-ELMARIT-R f/2.8/ 16mm or the former ELMARIT-R f/2.8/ 19mm (11225) lens with a minimum aperture f/16, the display [T] flashes and the aperture scale at right in the viewfinder extinguishes even if the lens has been stopped down completely. Nevertheless, the correct aperture is determined automatically.

The [T] mode functions with all LEICA R-Lenses with fully automatic spring-back diaphragm.



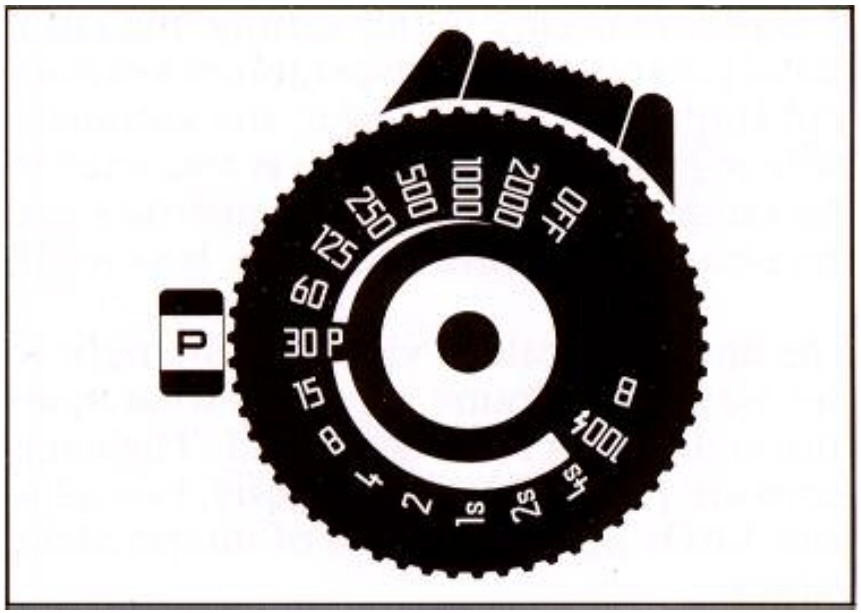
Viewfinder display:

The mode setting is displayed in the bottom left-hand corner of the viewfinder, the preselected shutter speed at bottom right. The smallest aperture set on the lens is displayed at bottom center. If the lens has not been fully stopped down, the program display [T] flashes and the aperture values at right in the viewfinder frame are not displayed.

If exposure occurs in this setting, the automatic program correctly combines aperture and shutter speed; however, the automatically computed lens aperture is restricted to the range between maximum aperture and the smallest aperture set on the lens itself.

The aperture scale is visible at the right in the viewfinder frame, showing what aperture setting has been computed. The apertures are produced continuously, two adjacent LEDs light up in case of intermediate values.

In extreme brightness or with very little light the aperture range may no longer be adequate for the preselected shutter speed. This is indicated by the aperture setting display flashing. In this case, the shutter speed is automatically corrected and the newly computed speed shown in the viewfinder. Should both aperture and shutter speed display flash simultaneously, the camera's working range has been exceeded.



Variable automatic program mode with full-field integral metering

Aperture and shutter speed are set automatically

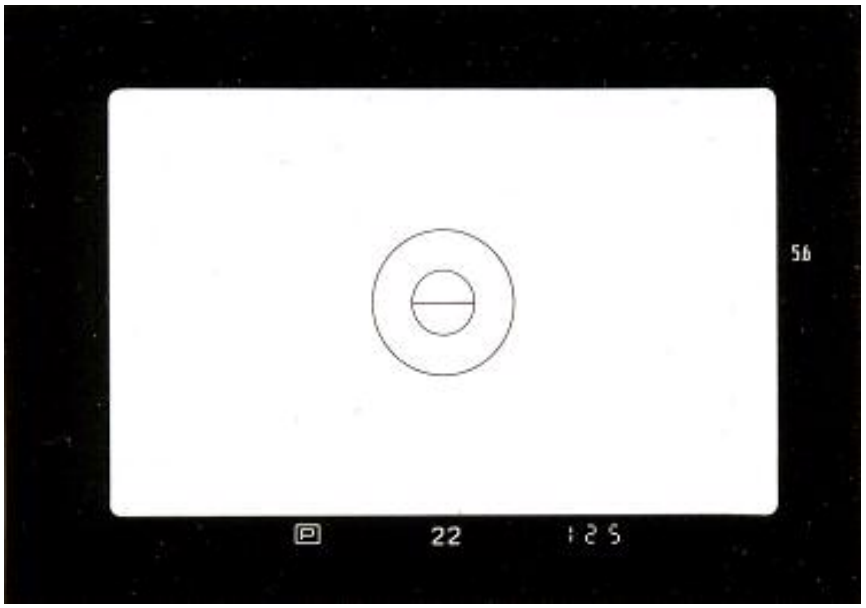
This is the right program for quick-action photography; the camera takes over exposure control for optimum ease of operation. Set a tendency for the automatic program by preselecting a shutter speed setting (normal program: "30s" shutter speed setting, next to "P"-symbol).

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.

The [P] program functions with all LEICA R Lenses with fully automatic diaphragm.

Viewfinder display:

The program symbol [P] is visible at bottom left-hand in the viewfinder; the smallest aperture set is displayed at bottom center. At bottom right, the automatic shutter speed appears while the aperture computed by the camera is displayed in the aperture scale to the right of the viewfinder. If the lens has not been completely stopped down, the program display [P] flashes and the aperture scale extinguishes. Using FISHEYE-ELMARIT-R f/2.8/16mm or the former ELMARIT-R f/2.8/19mm lens with the minimum aperture 16, the [P] symbol flashes even if the lens has been stopped down completely. Nevertheless, the correct shutter speed/lens aperture combination will be computed. In extreme brightness or very poor light, the automatically controlled shutter speed/aperture range may no longer be sufficient. This is indicated by the respective aperture/shutter speed display flashing.



Automatic program tendencies at different shutter speed setting

The LEICA R7's variable automatic program mode can be influenced by presetting the exposure time. If you want to work predominantly with shorter exposure times (higher shutter speeds), a higher shutter speed setting can be set - e.g. for sports photography; if depth of field is more important (e.g. for landscapes), a longer shutter speed should be set.

Generally, the automatic program functions as follows:
Beginning with a low-light situation, only the shutter speed is reduced automatically on a continuous scale, with increasing brightness, until this set value is reached, whereas the lens remains at full aperture. From this preselected shutter speed setting onwards, the automatic program reduces shutter speed and aperture simultaneously.

If the automatic program mode shuts the lens to smallest aperture, only the shutter speed is increased with increasing brightness, up to 1/2000 s. However, if 1/2000 s is computed before the smallest aperture is reached, the program closes only the aperture at 1/2000 s.

Example A: normal program

A lens with f/2.8 as the largest aperture is used; the shutter speed dial is set at "30" (next to the symbol "P"). In poor light, the camera always works with full aperture and shutter speeds between 16 s and 1/30 s. If the Ev value increases (more available light), the aperture is stopped down and the shutter speed is increased continuously, until the combination f/22 and 1/2000 s is reached (line A). If, for instance, the Ev reads 14, the program mode produces exposure at 1/250 s at f-stop 8. This universal program is suitable for most subjects photographed with 35mm to 90mm lenses under normal lighting conditions.

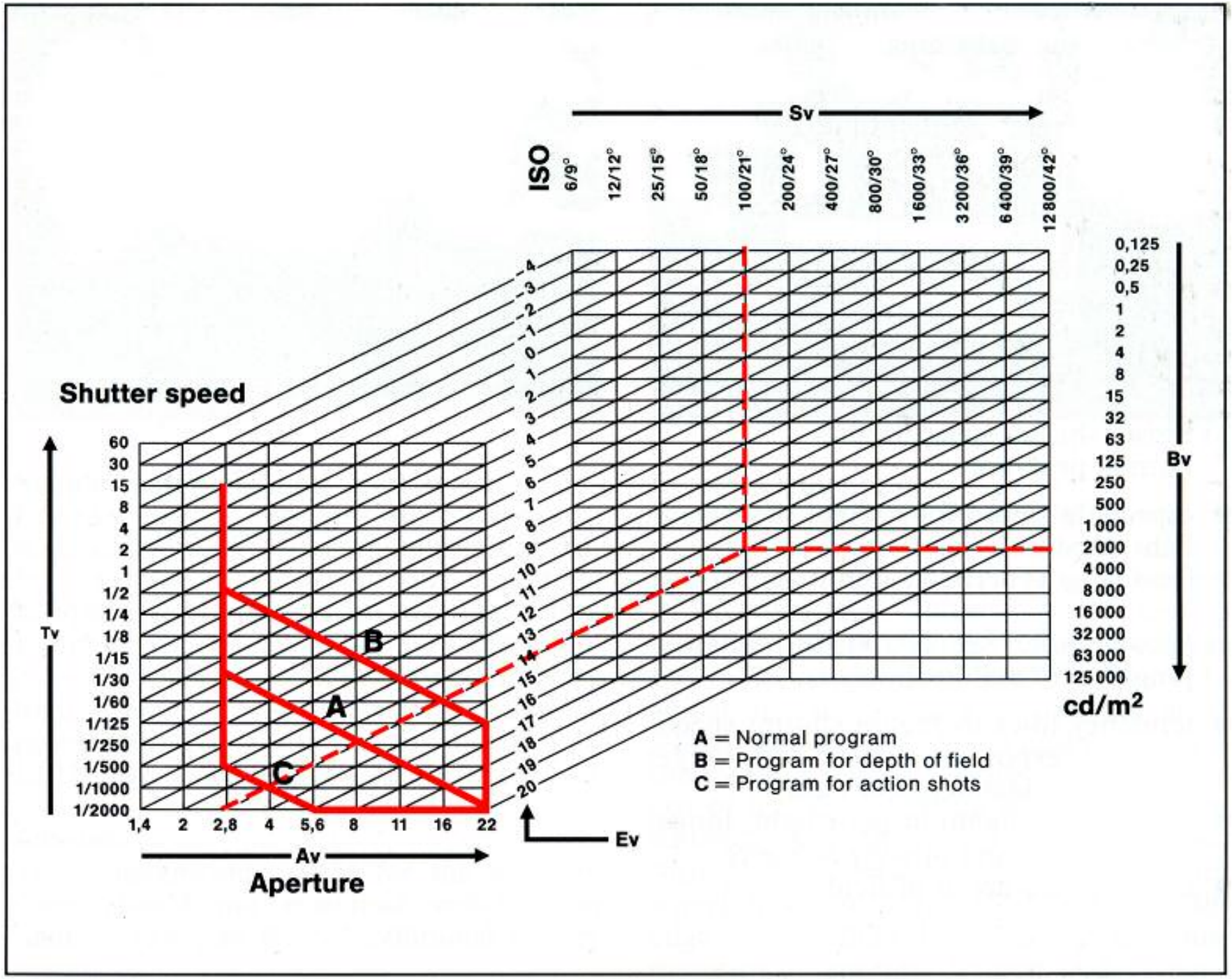
Example B: program for depth of field

If a smaller shutter speed is given, e.g. by setting "2" = 1/2 s the automatic program functions as shown by line B. This is the method of choice for better depth of field and is ideally suited to shorter focal lengths, stationary subjects and good lighting conditions.

Taking the same Ev value of 14, the automatic program now computes 1/60 s at f-stop 16.

Example C: program for action shots:

If the shutter speed is set to a shorter exposure time (higher shutter speed) - e.g. "500" = 1/500 s, line C applies. This program "prefers" higher shutter speeds (shorter times), ideal for freezing moving subjects or when using longer focal lengths. Again taking an Ev of 14, the automatic program now computes I/1000s at f-stop 4.



Characteristics, tendencies and application of variable automatic program mode

a) Preset shutter speeds between 4s and 1/15 s:
Program for depth of field

- tendency toward stopping down the lens while keeping shutter speeds low
- especially suitable for: good lighting conditions, short focal lengths, stationary subjects
- caution: beware of increased danger of camera shake in poor light.

b) Preset shutter speed 1/30 s:
normal program

- especially suited for normal scenes and light conditions
- focal lengths between 35mm and 90mm

c) Preset shutter speed 1/60 s to 1/2000 s:
program for action shots

- tendency towards higher shutter speeds (shorter exposure times) with larger apertures - less depth of field
- especially suitable in poor light, longer focal lengths and moving subjects
- caution: less depth of field

Rule of thumb: to avoid camera shake with hand-held exposures as much as possible, set a shutter speed that numerically at least equals the 1/f-value (f= focal length in mm), i.e. the lens's focal length. For instance, when using a 180mm lens, choose shutter speeds faster than 1/180 s, e.g. set the shutter speed to dial to "250" (1/250 s).

Supplementary light for aperture scale

In order to read the viewfinder's aperture scale in the dark, supplementary light can be switched on by activating the switch **[9]** located at left on the mirror housing. When switched on, the symbol "💡" lights up, otherwise "o" appears. The supplementary light is activated only when the camera's power supply is on; it extinguishes like all LED-displays after 12s with shutter cocked.

Caution:
The supplementary light for the aperture scale should not remained switched on unnecessarily, as it uses additional battery power.

Eyepiece adjustment

A sharply defined viewfinder image is essential to fully take advantage of the LEICA R7 and the high-performance LEICA R-lenses. The eyepiece lens is therefore adjustable to your eyesight, within the range from +2 to -2 diopters. To adjust the eyepiece, pull out the small setting wheel **[31]** at its left and turn this to the required setting. To do so, set the lens out of focus, e.g. at the shortest focusing distance, point the camera at the sky, look through the viewfinder, and turn the setting wheel until the circle that indicates the edge of the field for selective exposure metering is sharply defined and in good contrast. Press the

wheel back into its normal position to lock the setting obtained.

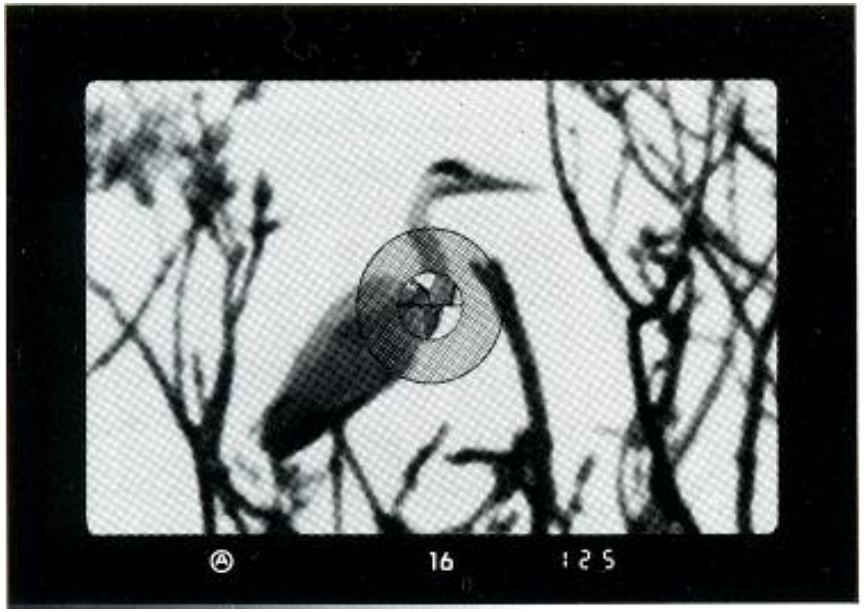
In its normal position, the setting wheel turns readily, but without altering the eyepiece setting. When the wheel is pulled out, you feel distinct click stops as you turn it.

If the standard eyepiece adjustment from +2 to -2 diopters is inadequate for your eyesight, additional correction lenses are available (see page 51).

Focusing with the universal screen

The LEICA R7 includes a universal focusing screen as standard feature. This produces a bright, high-contrast image and is suitable for photography in most of the situations that are normally encountered. When the image is out of focus, the edges and lines of the subject are discontinuous in the upper and lower semicircles of the split-image focusing screen (i.e. the smaller circle).

A ring formed by a screen of rectangular microprisms surrounds the central split wedge. When the image is out of focus, this screen appears to flicker. The outer circumference of this ring also marks the outline of the field for selective exposure metering.



The remainder of the screen looks like a ground-glass screen and is ideal for focusing telephoto lenses and for close-range photography.

Caution: Before focusing, the eyepiece must be set to the user's diopter value (see p. 33).

Additional focusing screens are available as accessories. They offer optimum focusing for different conditions and can be changed easily (see p. 53).

Eyepiece shutter

The silicon photodiode of the exposure meter is located in the base of the LEICA R7, where it is protected from stray light. Normally, therefore, there is little likelihood of light entering the viewfinder eyepiece and affecting exposure meter readings, except when your are not using the viewfinder, e.g. for taking photographs from a tripod, when direct sunlight or bright artificial light may enter through the eyepiece. To prevent this, turn the knob of the eyepiece shutter [30] at the left to the eyepiece in the direction of the arrow. When the shutter is in place, a white triangle appears in the eyepiece.

Using flash equipment

The LEICA R7 is designed for through-the- lens flash-exposure control in conjunction with SCA-compatible (System Camera Adaption) electronic flash units fitted with an SCA 351 or 551 adapter. TTL-flash exposure metering offers many advantages in various fields of application and is essential for correctly exposed photographs with flash, e.g. in macro-photography, when using zoom lenses or long focal length lenses for portrait shots. Depending on the camera mode selected, it is possible to dosage flash intensity as fill-in flash to lighten up individual subjects (see below).

TTL-flash exposure metering occurs in the full-field integral mode and uses a separate silicon photodiode, well protected from stray light, in the base of the camera next to the photocell for selective/integral exposure metering.

In the modes Ⓐ, [A] and [P], a flash synchronization speed of 1/100 s is set automatically. Flash readiness and flash control symbols appear in the viewfinder of the LEICA R7 (see below). Via suitable adapters (available in specialty stores), it is also possible to control and activate several flash units simultaneously.

Caution: for all flash applications, the working range of the respective flash unit must be taken into consideration. This may affect the range of apertures that can be set.

When using electronic flash units fitted with an SCA 350 or SCA 550 adapter, the flash light intensity is controlled via the flash unit's metering cell (in the case of computerized flash units), and not through the lens. In the modes Ⓐ, [A] and [P], a flash synchronization speed of 1/100 s is automatically set. Flash readiness and flash control symbols appear in the viewfinder. Lighting up subjects per dosaged flash does not occur, even though the symbol "≡" (see below) appears in conjunction with the respective camera mode.

In addition, all commercially available flash units with standard coaxial or central hotshoe contacts, but without SCA adapters, can be used. However, if the flash unit is activated only via the central contact, or if a studio flash is attached to the contact **[3]**, the viewfinder display does not change, there is no automatic flash synchronization and no TTL-flash control.

Simultaneously connecting flash units to both flash contacts is not recommended, as malfunctioning may occur. Using multiple connecting sockets, commercially available, enables you to connect more than one flash unit to the X-contact.

TTL-Flash exposure control in manual mode ⓜ

When using the manual mode ⓜ , all aperture values and shutter speeds between 4 s and 1/90 s can be set; the flash is controlled as primary light source. By using flash in conjunction with longer shutter speeds, many creative effects can be explored, e.g. underlaying frozen movements against a blurred background.

When shorter shutter speeds are set, the camera automatically activates flash synchronization at 1/100 s. Should this lead to overexposure because of sufficient ambient light, the shutter speed display "100" flashes. In this case, set a smaller aperture if possible and if the flash equipment's working range permits this.

If shutter speed is set at "100 ⚡" or "B", regardless of the camera mode, the flash is activated as primary light source and controlled through the lens. However, no exposure metering for ambient or surrounding light is effected. The "B" setting enables you to combine long-time exposures (e.g. exploding fireworks or a well-lit building in the background) with flash exposures (e.g. a group of people in the dark foreground).

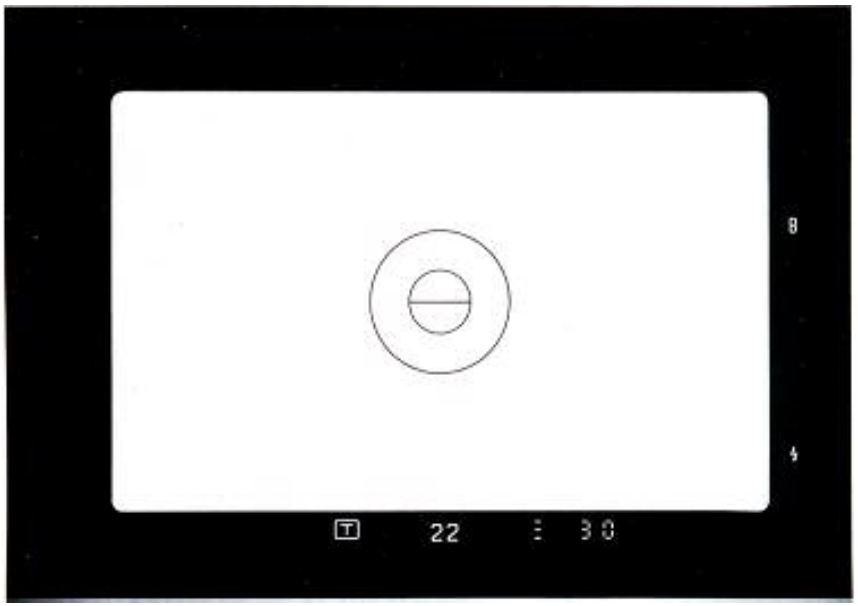
TTL-Flash exposure control in aperture priority modes Ⓐ , [A]

Any aperture values can be set; the camera sets flash synchronization at 1/100 s automatically, when the flash unit is ready. Flash is activated as primary light source.

Should the preset aperture in combination with the automatically set 1/100 s shutter speed lead to overexposure on account of sufficient ambient light, the shutter speed display "100" flashes. In this case, choose a smaller aperture if the flash's working range permits this.

TTL-fill in flash (to lighten up parts of the subject) in shutter priority [T]

Any shutter speed between 4s and 1/90 s can be used. If faster speeds are set, the camera automatically switches to 1/100 s flash synchronization. The aperture is set automatically so as to produce correct exposure in relation to ambient light, even if no flash were used.



Here, flash control occurs through the lens, but the camera deliberately moderates flash intensity. This means that parts of the subject that are in the shade are lightened without affecting ambient light.

In this case, when flash intensity is dosaged to lighten up parts of subject, the symbol ≡ appears in the viewfinder.

Should the shortest possible flash synchronization time (fastest shutter speed) of 1/100 s lead to overexposure on account of strong ambient light, the "100" symbol in the viewfinder flashes. Exposure despite this warning could lead to overexposure.

Variable TTL-flash control in automatic program mode P

The automatic program mode P offers the possibility of automatically balancing flash light intensity and ambient light. This makes for particularly carefree flash photography in many situations. Remember to set the smallest aperture, as always in automatic program mode.

Flash exposures in poor light, e. g. dark interiors (flash as primary light source):

The camera automatically selects flash synchronization at 1/100 s and f-stop 5.6. The flash acts as primary light source to lighten the subject and is controlled via the camera's TTL-flash exposure control.

Fill-in flash in normal light (flash lightens up darker parts of the subject):

The camera sets to flash synchronization at 1/100 s; the aperture is automatically regulated depending on ambient light. This would produce correct aggregate exposure even without flash. Now the camera moderates flash intensity to lighten up shaded parts of the subject (e.g. in backlighting situations) while not affecting the ambient light. To indicate this, the symbol for fill-in flash ≡ appears in front of the shutter speed display ("100").

Flash exposures in bright light (flash unnecessary):

If ambient light is so bright, that flash synchronization at 1/100 s and smallest aperture would lead to overexposure, the camera automatically sets to 1/2000 s and displays the new shutter speed in the viewfinder. The corresponding aperture is regulated automatically to ensure correct exposure. The flash unit is nevertheless activated, but, due to the extremely high shutter speed (1/2000 s), it has no effect on the exposure result.

Flash Control with the LEICA R7

Flash control	Shutter speed setting	Aperture setting	Program mode
Primary light	"100 ϟ" or "B"	manual 1.4 to 32	any
	manual[1] 4 s to 1/90 s	manual 1.4 to 32	Ⓜ
	automatic 1/100 s	manual 1.4 bis 32	Ⓐ or [A]
Automatic primary light	automatic 1/100 s	automatic 5.6	[P]
or fill-in flash[2]	automatic 1/100 s	automatic 1.4 bis 22	
Fill-in flash	manual[1] 4 s to 1/90 s	automatic 1.4 to 22	[T]

[1] Automatic switchover to 1/100 s when shutter speed is set to 1/125 s and shorter.
[2] Fill-in flash, if provided that ambient light is sufficient for correct exposure at 1/100s and automatic aperture setting.
When the aperture range is underlimit (underexposure), the flash is automatically switched to primary light (full intensity).
When the aperture range is overlimit (overexposure), shutter speed is set to 1/2000s and the corresponding aperture (depending on ambient light) is set automatically. The flash remains inactive.

Flash readiness display
The flash symbol "⚡" at bottom right in the viewfinder flashes about 2x/s (2 Hz) when the flash unit (in conjunction with SCA adapters 350, 351, 550 and 551) is ready - regardless of the camera mode set and in the "100 ⚡" and "B" setting.

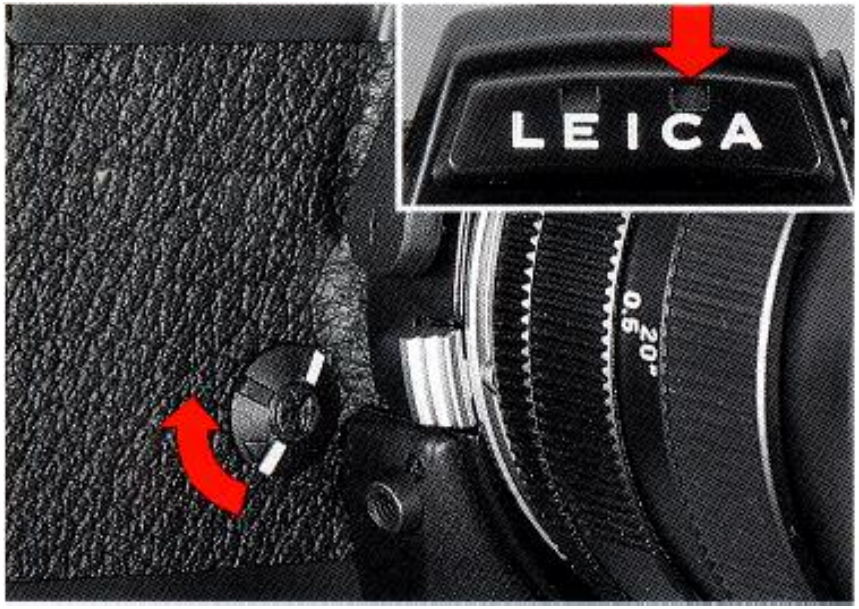
Caution: with some flash units, flash readiness and switchover to 1/100 s occurs as soon as approx. 70% flash intensity is available. In these cases, it is advisable to wait a few seconds before repeating flash exposure, especially to avoid underexposure, e.g. with very small apertures or great subject-to-camera distance.

Flash control display
With finger kept on the exposure release button, the flash symbol "⚡" shows whether flash intensity (in conjunction with SCA adapters 351 and 551) was sufficient for correct exposure:

a) symbol flashes at 2 Hz:
flash intensity was sufficient, immediate flash readiness for next exposure.

b) symbol flashes for 2s at approx. 8 Hz: flash intensity was sufficient; condenser drained.
Await renewed flash readiness before next exposure.

c) no display:
flash intensity was insufficient.
Try repeating the exposure with larger aperture; await renewed flash readiness before next exposure.



Self-timer

To set the self-timer, cock the shutter and turn the self-timer button **[7]** through 30° clockwise in the direction indicated by the arrow. To start the self-timer, gently press the shutter release or the locking button for the mode selector; the camera remains switched on and the shutter is released after a delay of about 10s. To indicate that the self- timer is activated, the LED **[2]** flashes; about 2 s before the self-timer releases the shutter, the flashing changes to continuous light.

Throughout the countdown you can stop the self-timer at any time by turning back the self-timer button **[7]** to its original position; to prolong it by restarting, simply press the release button again lightly.

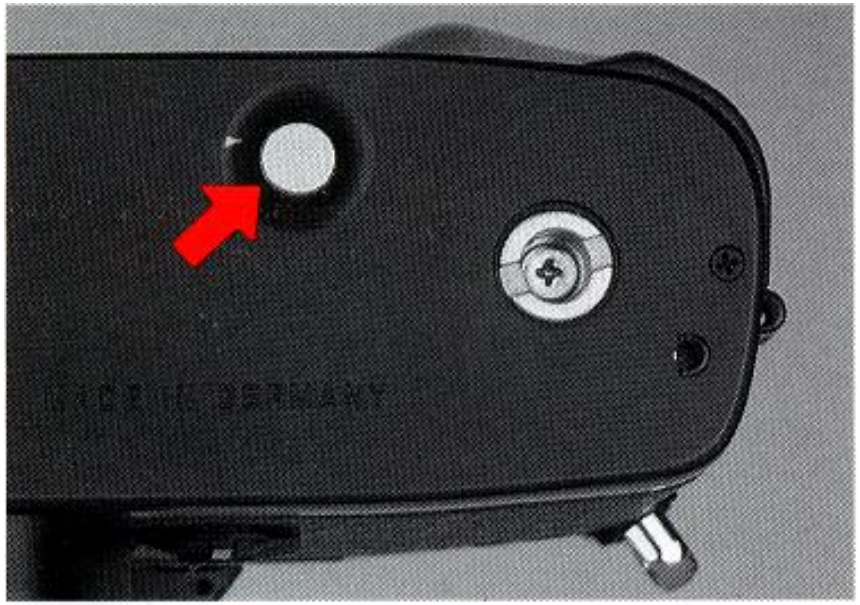
By means of the mirror lock-up release R*, the swing mirror of the LEICA R7 can be raised before exposure, and the spring diaphragm can be closed to the selected stop.
The mirror lock-up release R is screwed into the special socket underneath the bayonet lock. The described functions can be triggered simply by pressing the release pin.
To release the shutter, press the shutter release button either manually or by cable release. The mirror and automatic diaphragm are reset automatically when the shutter is released, but cannot be reset manually. The mirror lock-up release R must be activated each time you wish to hinge up the mirror.

When the mirror lock-up release is used, the electromagnetic shutter release becomes inoperative. This applies also to the self-timer, shutter release with motorized film transport, and electric cable release.

Attention:

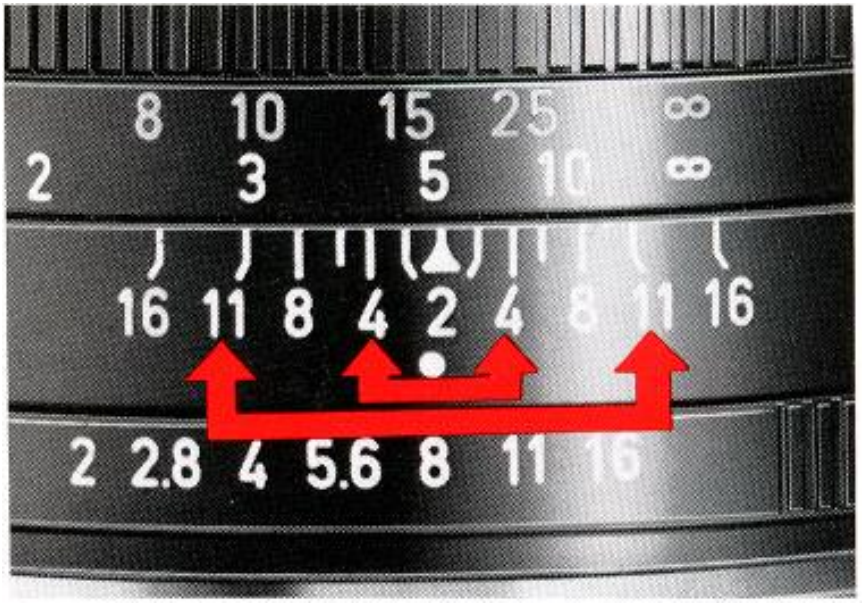
The correct aperture/shutter speed balance must be set manually, before the mirror has been hinged!
To avoid inadvertently releasing the shutter, do not press the depth of field lever at the same time as the mirror lock-up release.

* Accessory, order-no. 14087



Multiple exposures
Take the first exposure, press the rewind release button **[39]**, and move the quick-wind lever. The same frame is now ready for a further exposure. At the end of its travel, the quick-wind lever automatically resets the rewind button. To expose the same frame yet again, simply press the rewind release button **[39]** each time before you move the quick-wind lever.

The MOTOR-WINDER R and MOTOR-DRIVE R also permit multiple exposures. For details, see the manuals supplied with these accessories.



Depth of field lever

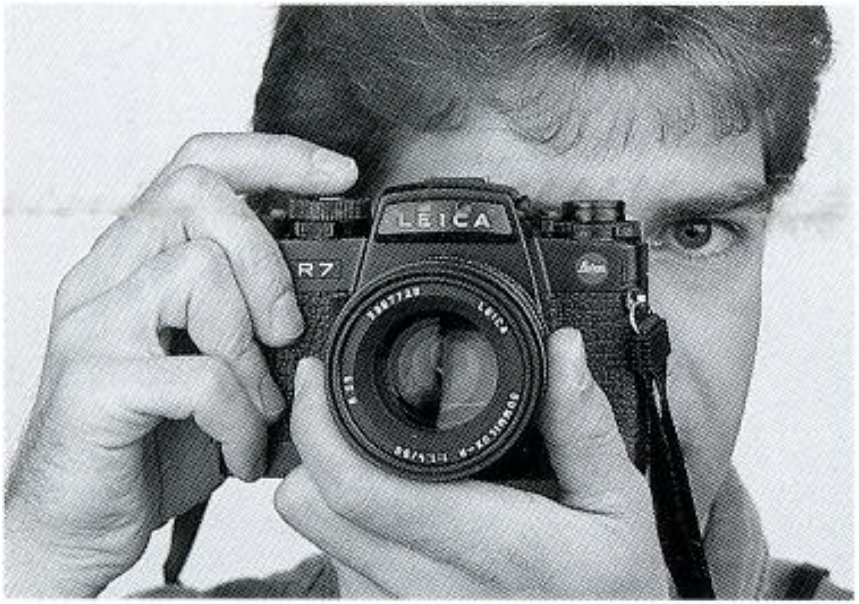
When you use a lens with an automatic diaphragm, the exposure meter of the LEICA R7 works at full lens aperture. Press the depth of field lever **[5]** to close the lens diaphragm to the preset value; when it is in this position, you can visually check the depth of field. This is particularly useful for close-ups.

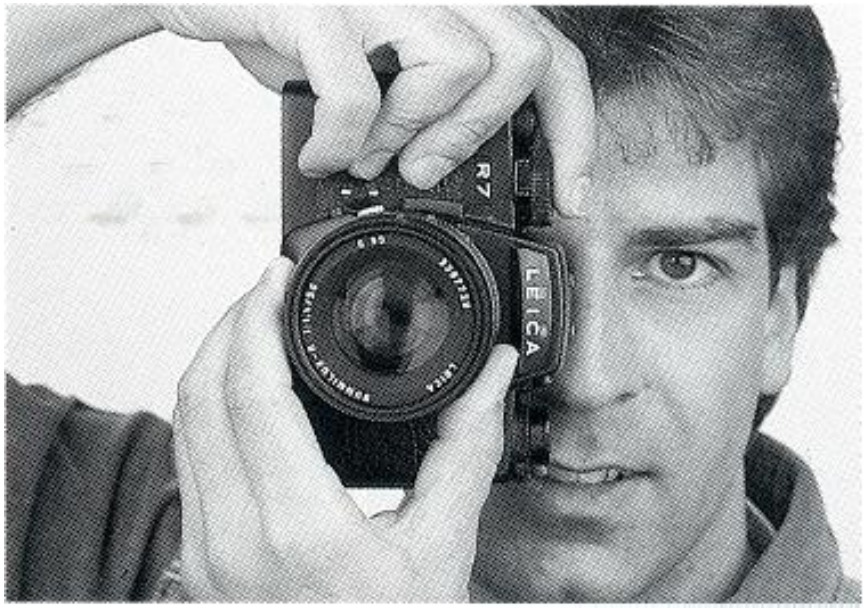
Caution: To avoid misleading exposure meter readings, do not press the depth of field lever while taking a reading.

Depth of field scale on lens

The depth of field scale **[11]** on the lens indicates the depth of field available for the focusing distance at the aperture you have set.

For example, when focusing a SUMMICRON-R f/2/50mm lens at 5m, the depth of field at f-stop 11 is from 3 m to about 20m. At f-stop 4, the field is in focus from about 4m to 8m. The Leica depth of field table (Order no. 920003) contains full details of the depth of field available at any focal length.





Holding the camera correctly

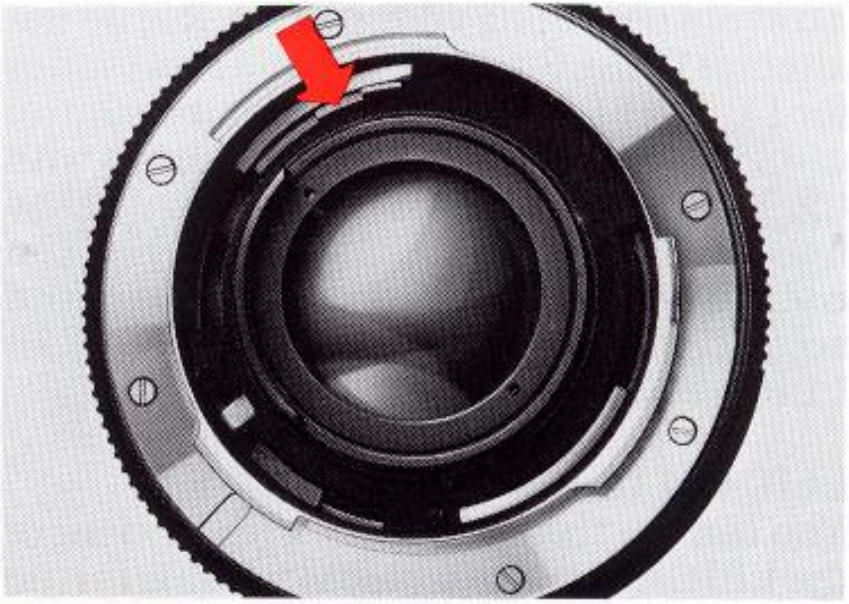
To give the camera steady three-point support, hold the camera with the right hand, the index finger resting on the release button and the thumb inserted behind the hinged-out quick-wind lever, while the left hand supports the lens from below.

For upright (portrait) exposures, simply turn the camera through 90°, with your hands in the same position as before, ready to transport the film and focus the lens.

Filters and their use

In TTL systems, the exposure meter automatically takes into account the light absorbed by the filter in use, but sensitivity in various parts of the spectrum may vary according to the type of film emulsion used. Extreme and dense filters may therefore cause deviant readings. For example, an orange filter as a rule needs about one extra f-stop and a red filter an average of about two stops more than the exposure meter reading obtained. However, the red sensitivity of black-and-white film can vary widely, and no generally applicable values can be given.

In the case of the circular polarizing filter we supply for LEICA lenses, determine the exposure as you would do with any other filter, in either integral or selective mode. The high-efficiency multiple coating on the semi-transparent swing mirror of the LEICA R7 acts as a powerful polarizing surface. As a result, the use of linear polarizing filters is not advisable, because their positioning to inhibit and transmit light may seriously affect the accuracy of the exposure meter.



Using existing lenses and accessories

The entire range of LEICA R-System Lenses and accessories can be used without modification on the LEICA R7.

The ELMARIT-R f/2.8/180 mm (to serial no 2939700) and TELYT-R f/4/250mm lenses (to serial no 3050 600) as well as some accessories can only be used with aperture priority and manual mode.

To avoid damaging your LEICA R7, do not attempt to use it with lenses and accessories for LEICAFLEX' models without a control cam. To use your LEICAFLEX lenses with the LEICA R exposure meter system, they must be fitted with a control cam. You can continue to use such modified lenses and accessories without restriction on all LEICAFLEX models.

LEICA M Lenses on the LEICA R7

You can use the LEICA R7 with any lens of the LEICA M range which is suitable for the VISOFLEX R adapter. The operating conditions, such as focusing distance and object field obtainable, are the same as those that apply to the use of these LEICA M Lenses with the VISOFLEX. A special adapter (order No. 14167) ensures compatibility of these two LEICA 35mm camera systems, but because these lenses have no automatic diaphragm, the exposure meter has to use the working aperture.

Hints on care

Carefully remove dust and fluff on the mirror by means of a soft, dry sable brush from which you repeatedly remove any grease with ether before and during cleaning. For cleaning, the brush must be perfectly dry. Avoid mechanical damage to the focusing screen: do not allow the metal ferrule of the brush to touch the screen. To avoid forcing dust into the camera's interior, do not blow into the mirror chamber.

When pointed at the sun, a camera lens acts as a burning glass. To protect your camera, always use a lens cap, keep the camera in its bag, and place it in the shade.

In addition to its designation by type and model, each lens has a serial number. Make a note of the serial numbers of all your lenses and of your camera (on the camera baseplate) e.g. in your "Leica pass"; this information may be important in case of loss.

Motor film advance and handgrip
A MOTOR-WINDER R (order No. 14208) or MOTOR-DRIVE-R (order No 14310) fitted to the LEICA R7 automatically transports the film and cocks the shutter after each exposure. The motor winder transports the film at up to 2 frames per second. The motor drive can be set for single exposures, 2 fps, or 4 fps. Either unit is suitable for all shutter speeds available on the camera. The winder is powered by six standard NiCd rechargeable batteries or non-rechargeable alkaline batteries; the drive requires ten such batteries.

The handgrip (order No 14317) with its adjustable leather loop lets you hold the LEICA R7 with motor winder or drive more securely and more comfortably.

Caution: Even when using a MOTOR-DRIVE R and MOTOR-WINDER R on the LEICA R7, the camera draws power only from the camera batteries.

DB-2 LEICA R Databack

The DB-2 LEICA R databack (order No. 14216) is a quartz- and microprocessor-controlled camera back for projecting data on the film during exposure. It is interchangeable with the standard LEICA R7 camera back supplied. No cable link is necessary between camera and databack.

The following data can be imprinted:

- Day, month, year in various sequences
- Automatic calendar to 31 December 2099
- Day, hour, minute
- Any fixed number up to 999999
- Automatic numbering of exposures, in ascending or descending order

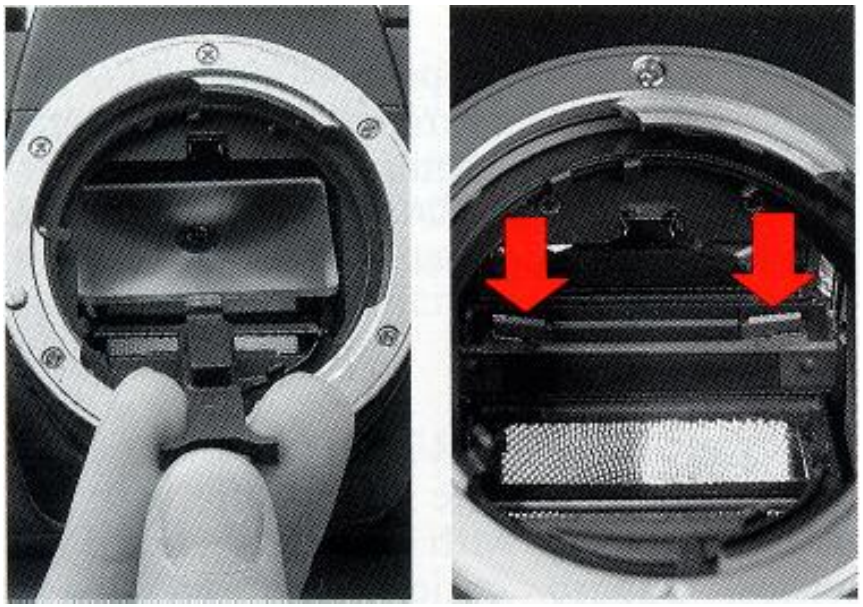
The data are projected into the lower right hand corner of the frame (horizontal format).

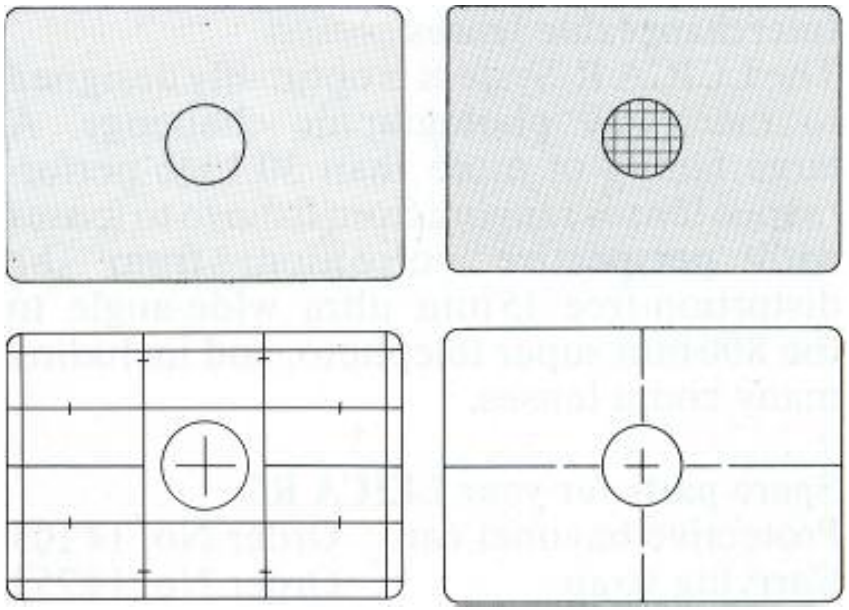
Camera bags
Several LEICA ever ready camera bags are offered for the LEICA R7, with different sized front compartments. In addition, there are a number of larger combi-bags for holding camera equipment, several lenses as well as accessories.

Correction eyepiece lenses
To change the eyepiece diopter beyond the ±2 range, correction lenses are available for plus/minus 0.5/1.0/1.5/2.0/3.0 diopters. These correction lenses are held in position by the eyecup or a special attachment that is mounted on the eyepiece. Both are locked into position securely.

Eyecup
A flexible eyecup (order no. 14215) is available to shield the eye from stray light. This makes the viewfinder image still more brilliant and permits more accurate focusing. The eyecup can also be used for fitting a correction lens.

Angle finder
On the repro stand or for shots with a bird's eye view, the angle finder (order no. 14 300) makes scrutinizing the viewfinder easy. By simple switchover, a 2x magnifier can be activated.





Interchangeable focusing screens
Special tasks require focusing screens tailor-made for fast, accurate focusing. Each of these is supplied in a case, complete with a pair of tweezers and a lens brush. Four further focusing screens are available for the LEICA R7:

- the plain ground-glass (order no. 14304) screen for extreme close-range photography and very long focal lengths;
- the microprism screen (order no. 14305) for maximum ease of composition;
- the full-field ground-glass (order no. 14306) screen with a grid for architectural photography and the reproduction of documents, including marks for making slides for TV projection;
- the clear-glass focusing screen (order no. 14307) with crosslines for scientific photography, such as photomicrography and astrophotography.

Interchangeable lenses

The LEICA R-System is optimally designed to meet any photographic challenge. A large family of more than 30 high-performance lenses ranging from fisheye to lenses with perspective correction; from the distortion-free 15mm ultra wide-angle to the 800mm super telephoto, and including many zoom lenses.

Spare parts for your LEICA R7

Protective bayonet cap	Order No. 14103
Carrying strap	Order No. 14253
Flash-contact cap	Order No. 14315
Universal focusing screen	Order No. 14303

Enlargers

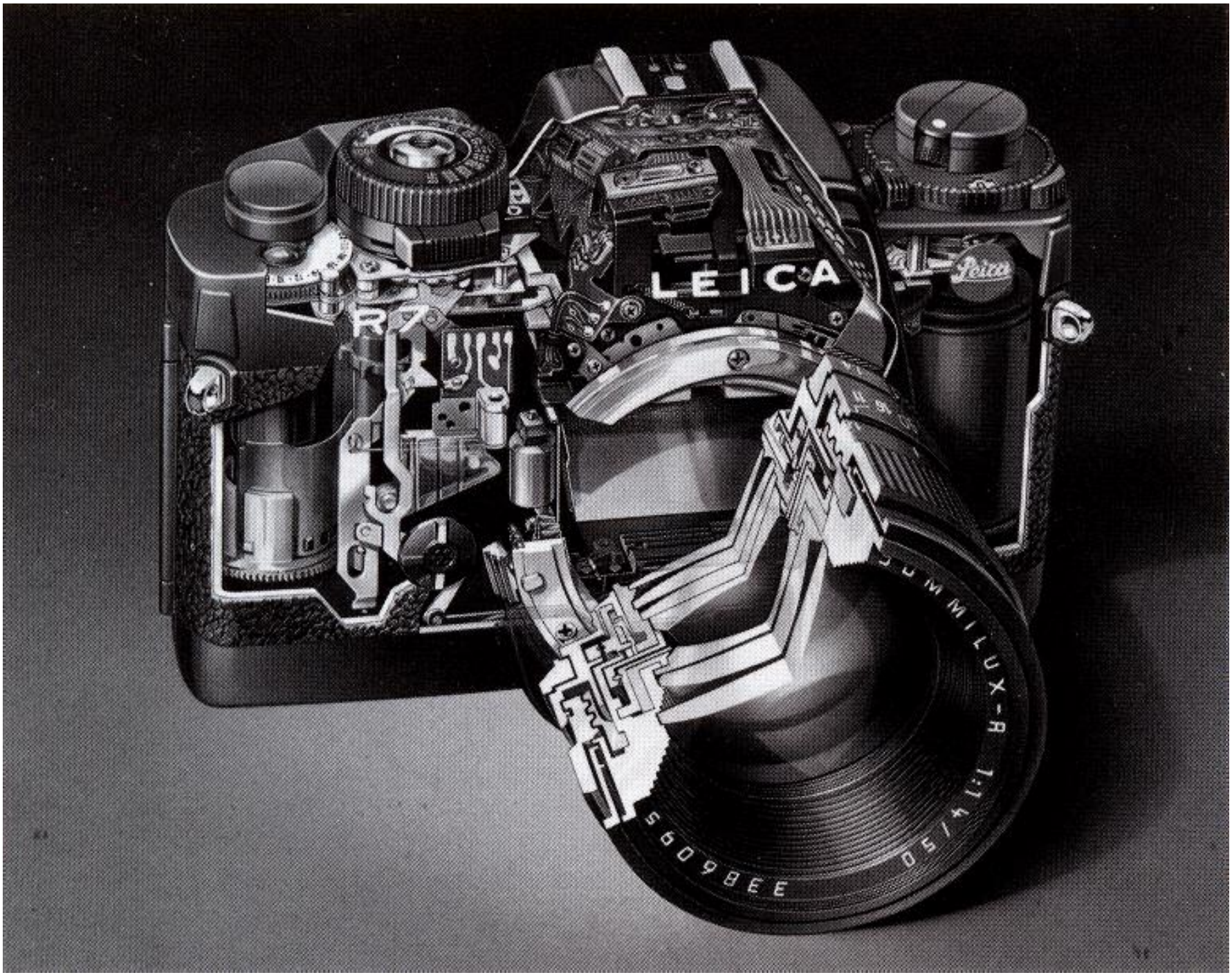
When you use a superb camera like the LEICA R7, the reproduction equipment should match the camera's quality and performance. The LEICA V35 enlarger with autofocus is the perfect complement to your LEICA R7.

Projectors

For your LEICA R7 slides there is a comprehensive range of versatile, easy-to-use projectors, with a large choice of lenses. Superb optical performance in combination with traditional LEICA precision mechanics are the common denominator of all LEICA projectors.

Technical service

Any authorized Leica agent's Technical Service (see warranty card) is available for servicing your camera and carrying out repairs in case of damage. Please contact your authorized Leica dealer or any national Leica Camera agency.



Technical Data on the LEICA R7

Camera type: microprocessor-controlled 35 mm single-lens reflex camera with electronic multi-blade focal plane shutter and multi-mode automatic functions.

Lens mount: LEICA R-Bayonet.

Lenses: more than thirty LEICA R-Lenses with focal lengths from 15mm to 800mm.

Switching on the camera: Turn shutter speed dial from "OFF" position and either slightly press shutter release button or mode selector button. With shutter cocked, the viewfinder LED's remain lit for about 12s after you release whatever button had been pressed to switch on the camera.

Exposure meter: Selective and integral through-the-lens, combined with camera modes to form programs. Exposure meter works at full aperture with LEICA R-Lenses with automatic spring-back diaphragm, and at working aperture with lenses and accessories without automatic diaphragm.

Selective exposure metering: Measuring field 7mm diameter (approx. 4.5 % of 35 mm format), marked in viewfinder.

Integral exposure metering: center-weighted full-field integral metering.

Program modes: set via program selector:

- (m) Manual setting of shutter speed and aperture, selective metering.
- (A) Aperture Priority, selective metering.
- [A] Aperture Priority, full-field integral metering.
- [T] Shutter Priority, full-field integral metering
- [P] Variable automatic program mode with full-field integral metering.

Exposure metering memory: in aperture priority mode with selective metering, by pressing shutter-release button to pressure point, memory active as long as finger is held in position.

Exposure override: From +3 to -3 exposure values, with half value click stops.

Film speed range:
manual setting: from ISO 6/9° to ISO 12800/42°;
DX code: from ISO 25/15° to ISO 5000/38°

Photocell: Silicon photodiode, protected from stray light in lower part of camera. In selective mode, the program selector automatically places a condenser lens in front of the photodiode.

Metering range of exposure meter: selective metering from 0.5 cd/m^2 to 125000 cd/m^2 at f/1.4, i.e. from Ev +2 to +20 for ISO 100/21° film or from 1/2 s at f/1.4 to 1/2000 s at f/22.
Integral metering from 0.125 cd/m2 to 125 000 cd/m2 at f/1.4, i.e. from Ev 0 to + 20 for ISO 100/21° film, or from 2s at f/1.4 to l/2000s atf/22.

Power supply: 6 volt. 2 lithium cells (Ø 11.6mm x 10.8mm) á 3V or four silver oxide button cells (Ø 11.6mm x 5.4mm) á 1.5V.

Battery check: automatic display in viewfinder.

Viewfinder system: Built-in pentaprism. 5 inter-changeable focusing screens.

Viewfinder eyepiece: Setting ring for adjustment from +2 to -2 diopters. Built-in eyepiece shutter. Eyepiece mount with mount for supplementary correction lenses, eyecup, and 90° angle finder attachment.

Viewfinder field: 23 x 34,6mm, i.e. 92% of frame size.

Viewfinder magnification: 0,8x at 0 diopter with 50mm lens.

LED displays in viewfinder:
- program symbol,
- automatic shutter speed (7 digit display) resp. set shutter speed,
- flash readiness and flash-exposure control, with system-compatible flash equipment;
- dosaged flash (lightening up parts of a subject)
- exposure metering memory active, in aperture priority mode with selective metering. The symbol goes out, the metered value continues to be displayed.

Automatic brightness adjustment: of all LED displays.

Data displayed in viewfinder: lens aperture set

Supplementary viewfinder light: for illuminating lens aperture display (aperture scale on lens)

LED warning indicators in viewfinder:
- plus/minus correction (override),
- low-light warning;
- over- or underexposure;
- limited aperture range in automatic program and shutter priority (lens aperture not set to smallest value)
- correction of preset time in shutter priority
- discrepancy between manually set and DX-coded film speed
- in DX-setting, with non-DX coded films or no film (additional warning symbol via external LED next to film speed dial
- low battery

Flash connection: standard X coaxial contact socket adjacent to prism housing, for bulb and electronic flash units. Central X hot-shoe contact.

TTL flash-exposure metering control: with system SCA 300 or 500 dedicated flash units and SCA 351 or 551 adapters.

Flash control: primary (full intensity) light source: in manual setting: all shutter speeds from 4s to 1/90 s, in faster shutter speed settings automatic switchover to 1/100s, in aperture priority mode: automatic switchover to 1/100s in "B" and "100 " settings.

Flash as fill-in: In shutter priority: all shutter speeds from 4s to 1/90 s, with faster shutter speed settings automatic switchover to 1/100 s.

Automatic switchover between flash as main light source and fill-in flash:
In automatic program mode: automatic switchover to 1/100s. Flash intensity dosaged via TTL-control metering, depending on ambient light (flash as main light source, fill-in flash or no flash effect).

Flash exposure metering: center-weighted, integral.

Photocell for TTL-flash exposure control: Silicon photodiode, next to photocell of exposure meter, protected from stray light in lower part of camera.

Film speed range for TTL flash-exposure control:
ISO 12/12° to ISO 3200/36°.

Exposure override for flash exposure metering: plus/minus 3 Ev in half-values.

Shutter: Electronically controlled focal-plane blade shutter, vertical action.

Shutter speed setting dial: easy-reach 6.5mm height; centrally positioned exposure release button.

Electronically computed shutter speeds: For automatic programs continuous from 16s to 1/2000 s. Manual settings from 4s to 1/2000 s in half values.

Mechanical shutter-speed settings:
"100 ⚡" = 1/100s flash synchronization, or in case of battery failure. "B" for time exposures of any length. (Exposures in "B"-setting electronically controlled when using drive in 4 fps setting)

Mirror system: Semi-transparent, vacuum coated swing mirror, coated with 17 layers, reflects 70% and transmits 30% light, backed by Fresnel reflector (1345 micro-reflectors) to concentrate light on exposure meter's photocell.

Film transport: Single-movement quick-wind lever (130° movement), optional MOTOR-W1NDER-R (2 fps) or MOTOR-DRIVE-R (single frame, 2fps, 4fps).

Frame counter at top of camera: frame count in ascen-ding values. Automatic reset to "0" when camera back is opened. Built-in reading magnifier.

Multiple exposures: Press rewind locking button. Auto- matic reset when shutter is cocked; exposure counter does not move forward. Any number of exposures possible. Multiple exposures also possible with motorized film advance units.

Film rewind: via hinged crank lever at top left of camera.

Shutter release: Shutter-release button with standard thread for cable release. Press down 0.3mm to first pressure point to switch on (viewfinder LEDs light, exposure meter switched on). Press down approx. 0.9 mm to second pressure point to activate memory for exposure metering value. Press down approx. 1.35mm for electromagnetic shutter release for electronically computed exposures. Press down approx. 2mm for mechanical release ("B" and "100 ⚡").

Independent mirror release: via separate cable-release connection

Electromagnetic self-timer: approx. 9s countdown; flashing red LED on front of camera indicates that self-timer is set. Repeat countdown by pressing exposure release button again; cancel by turning self-timer dial.

Film plane: Mark at top of camera.

Camera body:
Body: Die-cast aluminium,
Camera top: 1mm die-cast-zinc,
Base plate: 0.8mm brass,
Black or silver chromium finish.

Camera back: with right-hand thumbhold and film cartridge window with built-in magnifier; interchangeable with Data Back.

Tripod thread: A 1/4 (1/4" according to DIN 4503).

Normed thread for cable release connection: for cable release and independent mirror release.

Dimension and weight (camera body only, without lens):

Maße und Gewicht (ohne Objektiv):

Height: 94,8 mm (3.7")
Length: 138.5 mm (5.5")
Depth: 62.2 mm (2.4")

Weight: 670 g (lib 7 oz).

23 Display window for mode selected

24 Film-plane mark

25 Shutter release, with screw socket for cable release.

26 Shutter speed setting dial

27 Quick-wind lever to wind film and cock shutter

28 Automatic frame counter with magnifier-window

29 Mode selector with locking window

30 Eyepiece shutter

31 Eyepiece adjustment setting ring

32 Viewfinder eyepiece

33 Attachment for angle magnifier, viewfinder eyepiece and holder for correction lenses

34 Film-cartridge window

35 Contacts for motorized film advance units

36 Unlocking button for battery compartment cap

37 Battery compartment cap

38 ¼" A type socket thread for tripod

39 Rewind release and double-exposure button

Alphabetical

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