

Global RolleiClub Presents

# THE RolleiFLEX SL 66 SE & SL 66X MANUAL

This manual can also be applied to the  
Rolleiflex SL66 E

Please note that the document is set up in a vertical  
DIN A 5 format which is 138mm wide x 210mm high  
(5 3/4" x 8 1/4").

The difference between the SL 66 E  
and the SL 66 SE model is that the SE has an  
additional switch for spot metering.

It is recommended that you print at least  
pages 3,4,5 and 6 of this PDF document,  
because they contain drawings of  
the components of the camera with  
reference numbers used throughout  
the manual.

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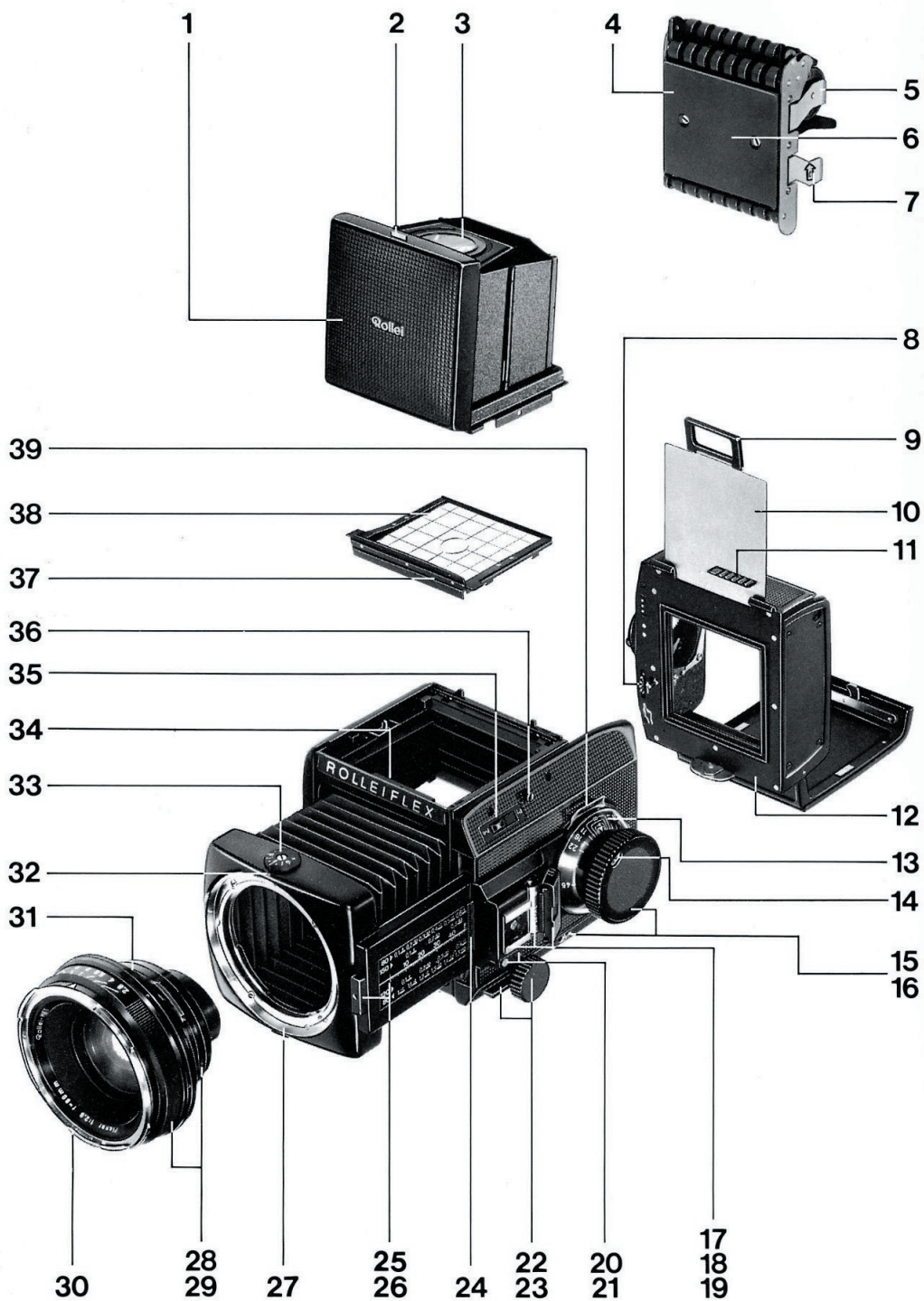
**Rollei**  
fototechnic

**Rolleiflex SL 66 SE**  
**Rolleiflex SL 66 X**

**User's manual**





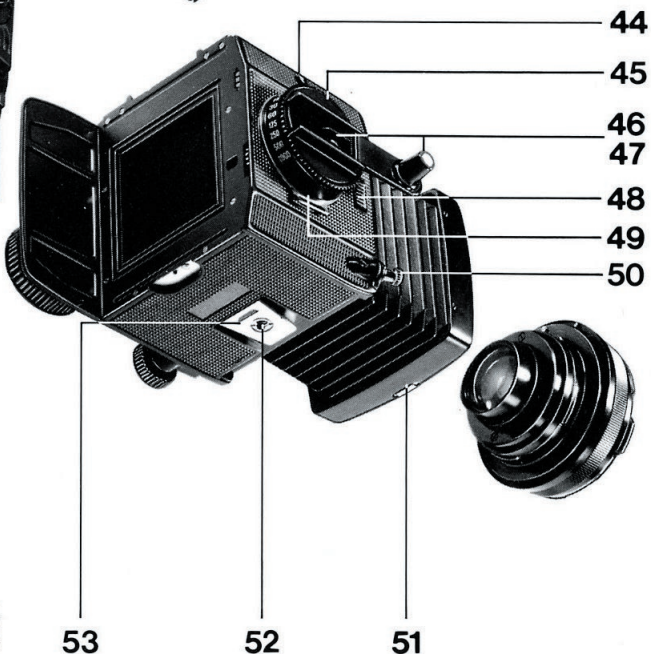
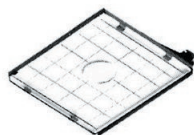
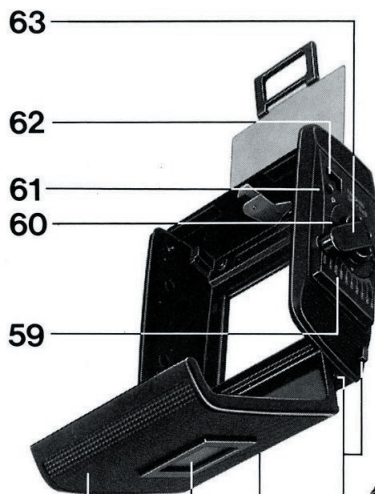
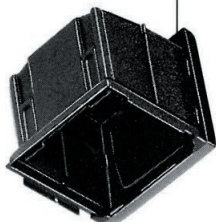
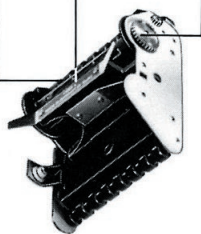


# Components and functions

- 1 Viewing head, interchangeable
- 2 Release button for magnifier
- 3 Magnifier
- 4 Magazine insert
- 5 Spool holder
- 6 Film pressure plate
- 7 Spool bearing
- 8 Sprocket for film transport
- 9 Magazine drawslide handle
- 10 Magazine drawslide
- 11 Catch for the magazine back
- 12 Magazine housing
- 13 Distance scale, adjustable to 50, 80, 150 or 250 mm focal lengths
- 14 Window indicating focal length for distance scale
- 15 Focusing knob
- 16 X-synchronizing socket
- 17 Hot shoe with X-synchronizing contact (a) and contacts for automatic flash unit (b)
- 18 Battery compartment with polarity diagram
- 19 Lid of battery compartment
- 20 Battery voltage test button
- 21 LED indicator to show adequate battery voltage
- 22 Catch for lens tilt, self-locking
- 23 Clamp knob for lens tilt
- 24 Scale for lens tilt angle,  $+8^{\circ}$  to  $-8^{\circ}$
- 25 Multiple scale for close-up photography
- 26 Lockable stop-down button
- 27 Camera double bayonet fixing for lenses in normal or reverse mounting and for macro accessories
- 28 Lens bayonet
- 29 Aperture control ring
- 30 Lens double bayonet fixing (front bayonet) for lens accessories or reverse mounting
- 31 Red spot on lens
- 32 Red spot on lens holder
- 33 Exposure correction knob for EV +1.5 to EV -1.5 (only SL 66 SE)
- 34 LED indicator for exposure balance (only SL 66 SE)
- 35 Select switch for spot/integral measurement (only SL 66 SE)
- 36 Left-hand release button for the interchangeable viewing head
- 37 Focusing screen frame
- 38 Interchangeable focusing screen
- 39 Left-hand eyelet for carrying strap

40 41 42

43



# Introduction

- 40** Empty spool
- 41** Centre support strip
- 42** Spool transport sprocket
- 43** Viewing head cover
- 44** Right-hand release button for the interchangeable viewing head
- 45** Shutter speed control ring
- 46** Lever to disconnect film transport for multiple exposures
- 47** Crank for winding on the film and cocking the shutter
- 48** Sliding catch for mirror pre-release
- 49** Right-hand eyelet for carrying strap
- 50** Shutter release with locking device and cable release socket
- 51** Release button for interchangeable lens
- 52** 3/8" tripod bush with 1/4" adapter
- 53** Quick tripod coupling
- 54** Magazine release knob
- 55** Release button for magazine winding knob
- 56** Storage compartment for magazine drawslide
- 57** Holder for tear-off tab from film box
- 58** Magazine back
- 59** Scale for film speed, ASA 25 to 6400
- 60** Control ring with pointer for ASA scale
- 61** Release knob for the ASA adjustment ring
- 62** Picture counter
- 63** Magazine knob for winding up the film

To make full use of the technology offered by the Rolleiflex SL 66 E or SL 66 X and to avoid possible faults during operation, you are strongly recommended to read through this manual carefully prior to using your camera for the first time. The instructions are set out as follows:

A comprehensive list of the components and functions is followed by a short introduction for readers in a hurry to get on with their photography.

Next, all the important information about the camera is given and illustrated in detail.

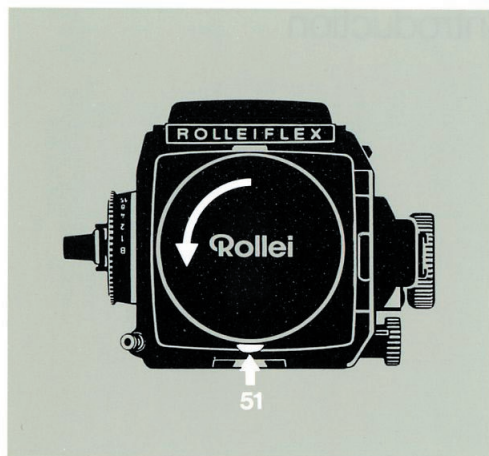
We then familiarize you with the process of taking the photograph, as well as the other possibilities and interchangeable components available to the user. You will find the tables will provide you with all important data in a concise form, enabling you to keep informed at a mere glance about all details concerning focal lengths and extension ranges.

In case of problems in operating the camera – which even the experienced photographer may have when taking pictures in a hurry or after a long period of not using the camera – a troubleshooting guide will help to quickly locate the possible cause and its solution.

Individual component numbers mentioned in the text and illustrations always refer to the same components and are first given in the two picture gatefolds, which are best left unfolded when reading the instructions.

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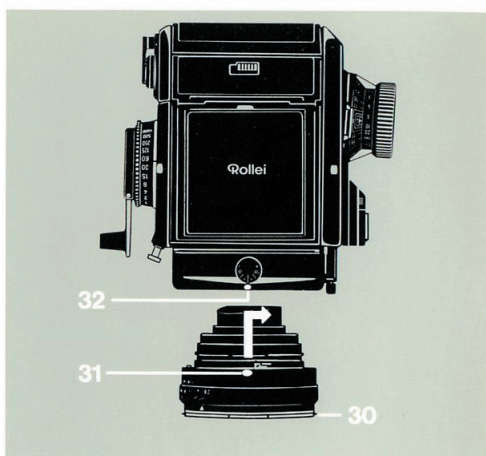




## The most important points in brief

### Fitting and changing the lenses

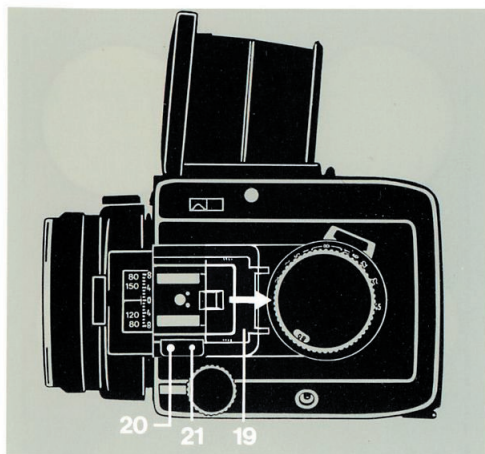
Press the release button (51) and turn the protective cover of the housing anticlockwise to the stop. The cover can then be removed from the camera bayonet. This protective cover should be kept safe, so that the camera can be carried without a lens whenever necessary.



Take the protective cap off the lens bayonet by simultaneously pressing the locking catches. Now you can see a red mark on the lens bayonet and on the camera bayonet (31 and 32). Insert the lens into the camera in such a way that the two red marks coincide. Turn the lens clockwise until it locks home. The lens is now interconnected with the camera functions.

To remove the lens again, press the release button (51) and turn the lens anticlockwise. Never put the lens away without its protective cover.

For taking pictures with the reverse mounting: insert the lens with its front bayonet (30) going into the lens holder, and here take note of the red mark on the front bayonet. With this lens mounting and when using extension tubes, the automatic aperture diaphragm is disconnected and the aperture must be set by hand.



### Inserting and changing the battery

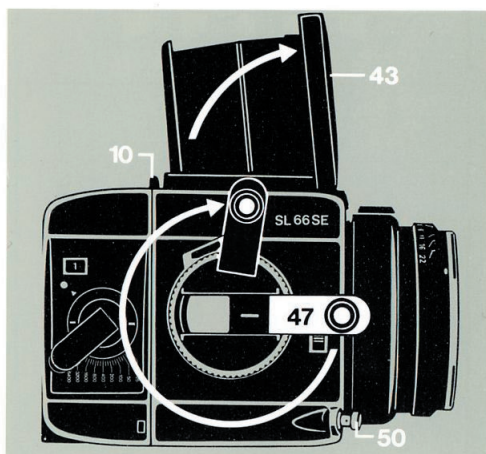
The power for TTL exposure and flash metering is supplied by a battery.

A 6 V silver oxide or lithium battery is required, e.g. Duracell PX 28 or an equivalent product. Push the lid (19) in the direction of the magazine and flip upwards. Press the battery in between the clips according to the polarity diagram. Shut the lid firmly.

### Battery check

Press the test button (20) briefly: if the LED indicator (21) lights up, the battery voltage is adequate.

**To avoid wasting your power supply, do not test the battery too often or for too long.**



### Camera release and film transport

Fold out the crank (47) and first of all try to turn it clockwise. If it will not move, the camera is already tensioned.

Make sure that the magazine drawslide (10) is not in the masking position between the camera and the magazine: this will obstruct the shutter.

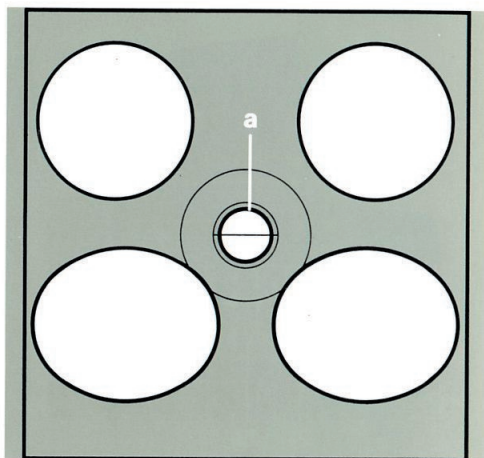
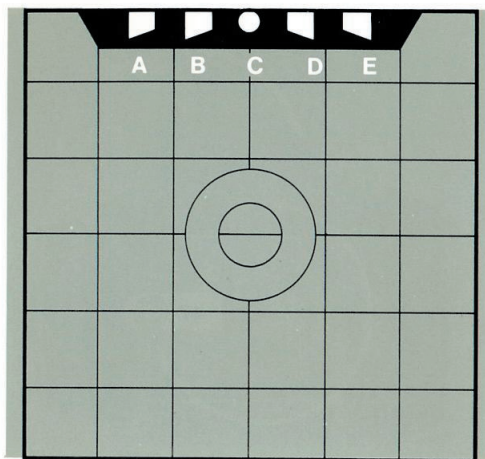
Free the release (50) by turning it outwards so that the red spot on the release button points to the side. Open the viewing head by lifting the lid (43).

Now the camera is ready for action and you can start taking pictures.

Before you load your camera with film, you should "play" with it a little, to make yourself familiar with all the functions.

Now tension the camera by means of the crank (47): turn the handle clockwise to the upper stop position and then back again to the horizontal stop position.

Repeat this procedure after each exposure.



## The SL 66 SE TTL exposure measurement

The Rolleiflex SL 66 SE has a built-in exposure metering system allowing optional choice of spot or integral measurement. Select switch (35) is used to choose the measurement characteristic required.

By lightly touching the freed release button (50), you switch on the exposure meter for about 15 seconds. The timer starts as soon as you let go of the release button! If you continue to hold the release button pressed, the electronics remain switched on; the timer will not start until your finger is removed from the release button. You can repeat this procedure whenever necessary. One of the five LEDs in the viewfinder will light up. They have the following significance:

(A) red left:  
at least one exposure  
value under-exposed

(E) red right:  
at least one exposure  
value over-exposed

(C) green centre:  
correct exposure

(B) yellow left:  
about 1/2 exposure  
value under-exposed

(D) yellow right:  
about 1/2 exposure  
value over-exposed

The illustration shows the measurement characteristics of the Rolleiflex SL 66 SE for the spot (field a) and integral measurement (all fields). With integral measurement, four other measuring cells are switched on in addition to the centre-weighted silicon cell and which are aligned to different points of the image area. This complicated measurement allows more weighting on the lower half of the picture. By means of this dual measurement system, the camera can be optimally adjusted to any photographic situation. Integral measurement for relatively evenly illuminated subjects; spot measurement (metering angle  $< 3^\circ$  with  $f: 80 \text{ mm}$ ) for backlight shots and those involving particularly high-contrast subjects.

### Matching speed and aperture Choosing the exposure time

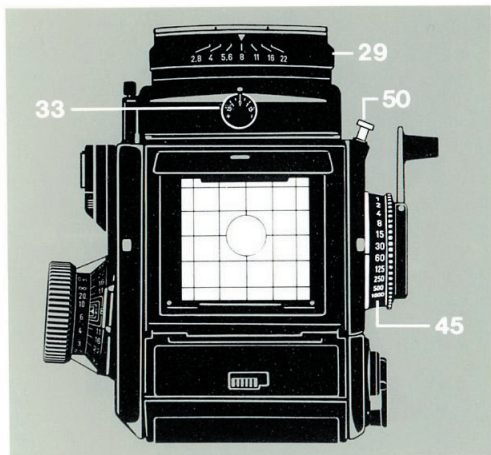
Turn the shutter control ring (45) to set the shutter speed. 1/1000 to 1 s and B (= time exposure of any desired duration). Intermediate settings are not applicable. For choice of exposure time with flash, see page 12.

### Matching with the aperture

Turn the aperture ring (29). It clicks into position on full and half aperture stops. Lenses with focal lengths of 40, 50, 60, 80, 120, 150 and 250 mm have fully automatic aperture diaphragms. The lens remains fully open until the exposure. At the moment of release, the aperture diaphragm springs to the selected value for the duration of the exposure. Other lenses: page 30.

If a balance cannot be obtained, select another speed and match the aperture again.





A balance obtained on "yellow" allows over- or under-exposing by approx. 0.5 exposure value.

To correct for back light, with extended depth or in the case of a known fault in the exposure meter, the exposure correction knob (33) can be adjusted by +1.5 to -1.5 exposure values.

**The filter factors of any filters fitted are automatically allowed for and do not require any adjustment.**

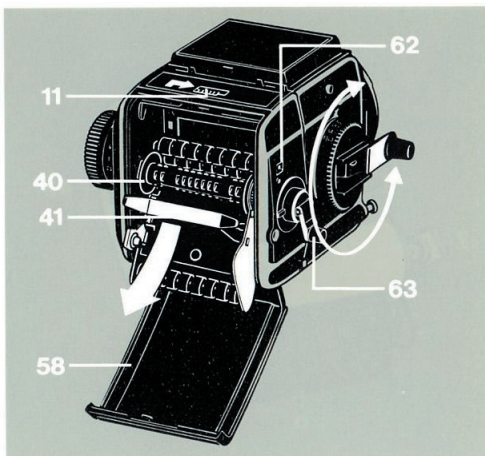
When the speed is set to "B" or the stopdown button is pressed, the exposure meter is switched off:

- Setting "B" is undefined and not measurable.
- With normally mounted lenses of 30–250 mm, the stop-down button is used only to control the depth of field.
- 500 and 1000 mm lenses, all lenses in the reverse mounting and the extension tubes operate automatically at the selected aperture, without the stop-down button being pressed!

### Stray light compensation

Stray light entering through the open viewfinder is allowed for by the metering system and compensated for up to an intensity ratio of stray light : measured light = approx. 16 : 1. The compensation feature is always in operation, i.e. whether viewing the image through the prism head, magnifying head or the folding viewfinder hood with the magnifier raised.

If the finder image is viewed through the folding hood without the viewing magnifier, direct incidence of light (e.g. sunlight and artificial light sources, particularly fluorescent lamps) must be avoided.



## The film magazine and film transport

To avoid blank frames the camera must be tensioned before a film is loaded:

Try to turn the crank clockwise and carry out the tensioning movement, if necessary, by turning forward and backwards.

**Intermediate positions of the crank lead to malfunctioning.**

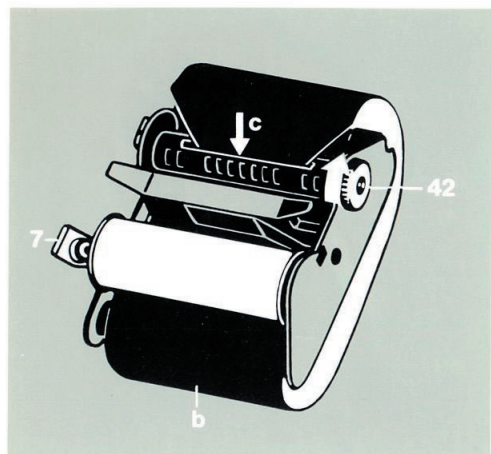
The procedure for loading the magazine is the same whether it is fitted to the camera or not. When only one magazine is used, it is not necessary to remove it. In this case, the drawslide always stays in the storage compartment at the back of the magazine.

### Opening the magazine

Unclip the back (58) with the catch (11) and open it out. The magazine knob (63) springs out and the picture counter (62) shows "S".

Hold the magazine insert by the centre support strip (41) and swing it out of the magazine.





### Inserting the film roll

Unclick the spool bearing (7). After tearing off the glued strip, insert the film roll (a) between the fixed and tilting bearings so that the black inner surface of the paper (b) is on the outside. Lead the backing paper around the outside of the film insert and insert it into the slit (c) of the empty spool. Wind on the film tightly using the sprocket (42) until the arrow marking on the backing paper covers the magazine insert indicator.

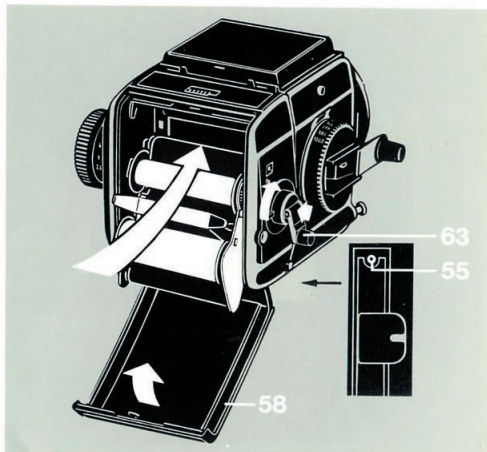
Hold the insert by the centre support strip and tilt it into the magazine with the wind-up spool first – sprocket to sprocket! (See the illustration above right).

### Closing the back cover

If the back cover does not close easily, turn the magazine winder knob slightly so that the sprockets of the magazine and insert fit into one another.

### Winding the film on to the first picture

Turn the magazine winder knob as far as it will go, i.e. to frame 1, press in the magazine winder and lodge the handle in the side wall recess. For subsequent exposures, the film is wound on by using the camera crank handle.



After winding the film to the first picture, check whether the shutter can be released. If it cannot, this means the camera was not tensioned before the film was loaded. To make sure you do not lose the first picture, tension the camera with the multiple exposure button pressed (see page 9).

### The “loaded” indicator

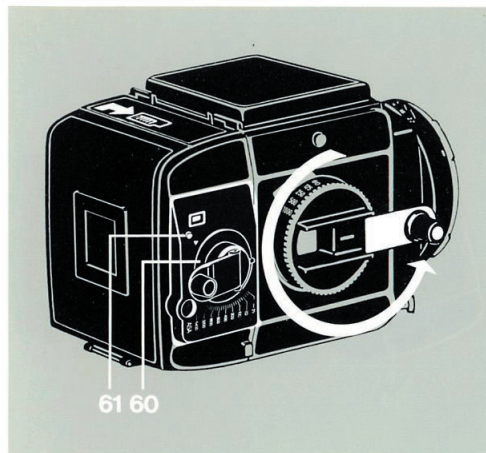
The frame counter only works if a film is loaded.

In addition to the magazine 120/6 × 6 (for 12 exposures 6 × 6 cm) supplied as standard with the camera, there are three other interchangeable magazines available which are used as follows:

magazine 120/4.5 × 6 for 120 film =  
16 exposures 4.5 × 6 cm,  
magazine 220/6 × 6 for 220 film =  
24 exposures 6 × 6 cm,  
magazine 220/4.5 × 6 for 220 film =  
32 exposures 4.5 × 6 cm.

### Releasing the magazine winder knob

When the release button (55) underneath the magazine is pressed, the winder knob springs out. Thus, the film can be easily wound up and taken out after any exposure – even when the magazine has been detached.



### Setting the film speed

Press in the release knob (61) and set the required ASA value by means of the control ring (60).

After letting out the release knob, check that the correct ASA value has been set.

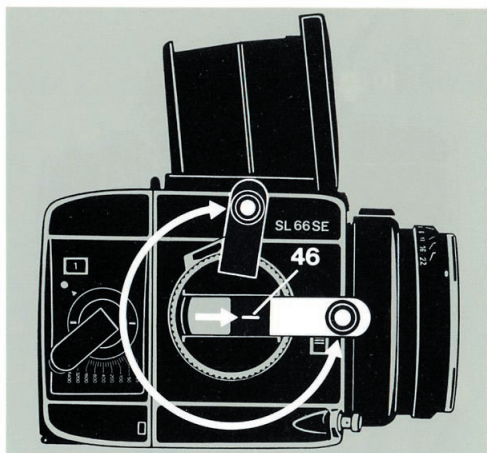
The film speed setting on the SL 66 X serves merely as a reference dial.

### Removing the exposed film

The film is wound on using the crank until the magazine winder knob springs out and the red marking is visible. This is usually done after the 12th exposure or, in the case of other magazines, after the 16th, 24th or 32nd exposure respectively. With some films made from slightly thicker stock, the magazine winder knob may already spring out after the 11th exposure (15th, 23rd or 31st exposure respectively). If this happens, the picture indicated in the frame counter still has to be exposed.

Then wind up the film end trailer using the magazine winder knob, winding until the knob can be turned easily.

**Note:** If the magazine winder knob is inadvertently pressed in when threading or winding up the film, it can be returned to transport position by pressing the release button (55).



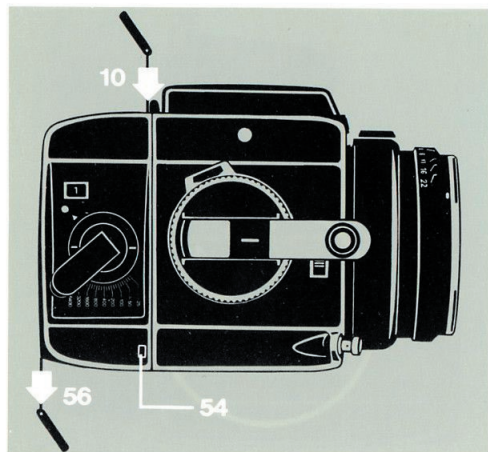
Open the magazine, take out the insert and remove the exposed film from the unclipped spool holder. The frame counter will return to "S".

**Use the magazine knob for leading in and winding up the film! Film transport between exposures is achieved by simply tensioning the camera.**

### Multiple exposures

For multiple exposures on one frame, the film transport is uncoupled when the camera is tensioned: press the lever (46) in the direction of the crank handle and hold it there while giving the crank a short turn.





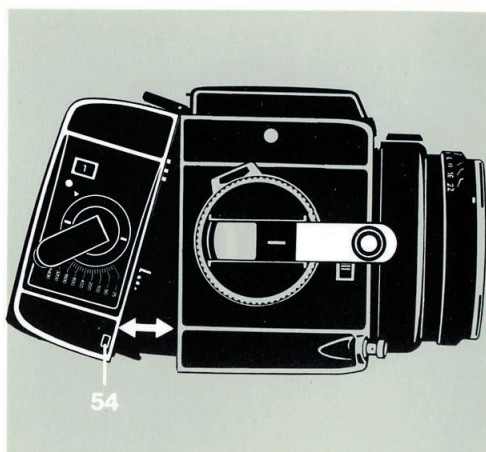
## Changing the magazine

When attached to the camera, the magazine is fully connected by the act of pulling out the drawslide. To avoid double exposures and blank pictures, the magazine can only be removed and replaced when the shutter is cocked and the drawslide is pushed in. Automatic locking devices ensure that the magazine is changed as instructed.

### Removing the magazine

Insertion of the drawslide and removal of the magazine are only possible when the camera is tensioned. Pull the drawslide (10) from its storage compartment (56) and push it in fully from above. The magazine release knob (54) is now free.

Press the knob (54) and remove the magazine at the same time.



### Fitting the magazine

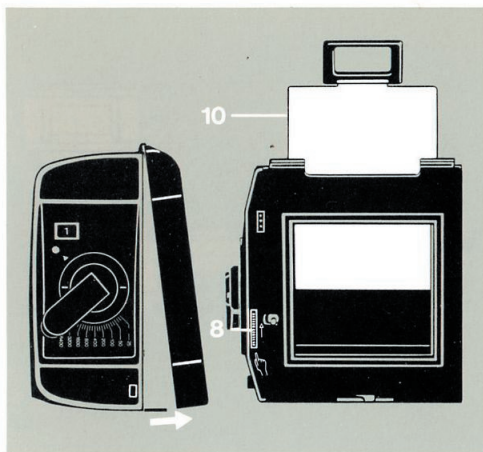
The magazine can only be fitted if the camera is tensioned; in addition, the crank should always be in its horizontal starting position (see picture above).

Hook the magazine on at the top and engage by pressing down until it clicks shut. Pull out the drawslide and stow it away in the back compartment.

To facilitate changeover to another type of film, two loaded magazines can be interchanged at any time, regardless of the number shown on the picture counter.

Since the removal of the drawslide simultaneously connects the magazine to the camera, it is recommended that the magazine should be closed with the drawslide only when it is to be removed.

**If you have attached the magazine with the crank in the wrong position and pulled the drawslide out, you will not be able to bring the crank back to its horizontal starting point. Remedy: put back the drawslide, remove the magazine and turn the crank to the horizontal starting position.**

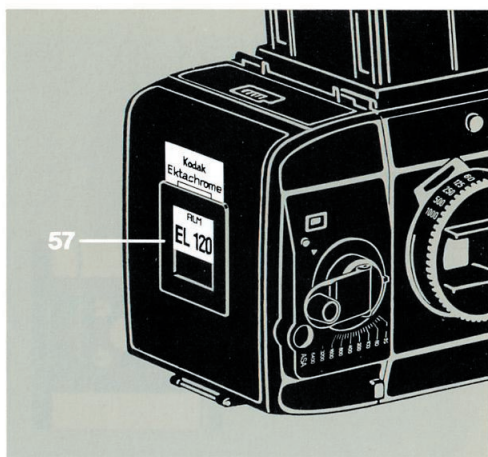


## The second magazine

The separate magazine is supplied with a protective cover. The magazine is removed from its cover and attached to it as with the camera.

The separate magazine is closed by the drawslide and can be loaded in the same way as when on the camera.

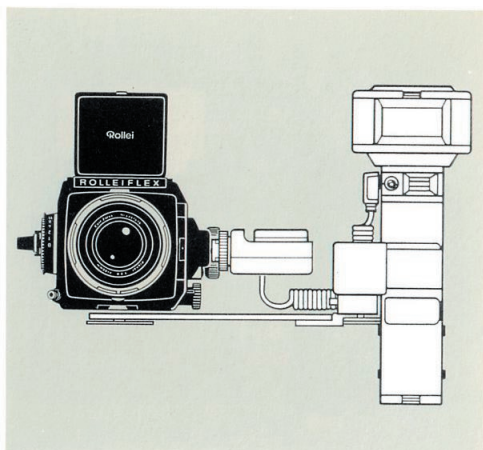
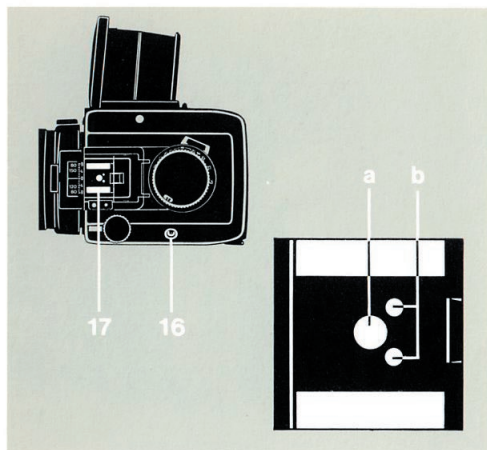
**If the drawslide of the separated empty magazine is pulled out and the outer sprocket of the magazine (8) is inadvertently turned at the same time, the drawslide cannot be pushed fully in. Remedy: remove insert, pull the slide half out, turn the sprocket in the direction of the arrow as far as it will go and then push the slide in.**



### Film memo-holder

To identify the type of film being used in the magazine, tear off the tab of the film pack and insert it into the film memo-holder (57). The colour and lettering of this distinctive means of identification prevent any error when several magazines are being used interchangeably.





## Flash synchronization

In the focal-plane shutter, two blinds descend one after the other. With a fast-acting flash, the whole frame is exposed when both blinds are clear of the film.

Thus, for flash photography, always use the orange speed range, from 1/30 s to 1 s or B.

The camera offers several possible types of connection for flash equipment:

1. To get the most out of TTL flash metering, the use of fully automatic flash units compatible with the Rolleiflex SL 66 SE/SL 66 X is recommended. The Rolleiflex SCA 356 flash adapter makes automatic operation possible with all well-known makes of flash unit offering the SCA 300 system. The Metz C 70 adapter is used with the Metz 45 CT 5 and 60 CT 2 flash units.

With fully automatic TTL flash metering, the light measurement is taken over by a light-sensitive cell in the camera which registers the light reflected from the film surface during the exposure. The special flash control electronics (housed in the Rolleiflex SCA 356 or Metz C 70 flash adapter) then meters out the quantity of light required for the particular subject. In this way, the filter factors for any attached filters and compensation for extension tubes are automatically provided.

Automatic flash control is not possible when using the Distagon f 4.0/80 mm or Sonnar f 4.0/150 mm with leaf shutters.

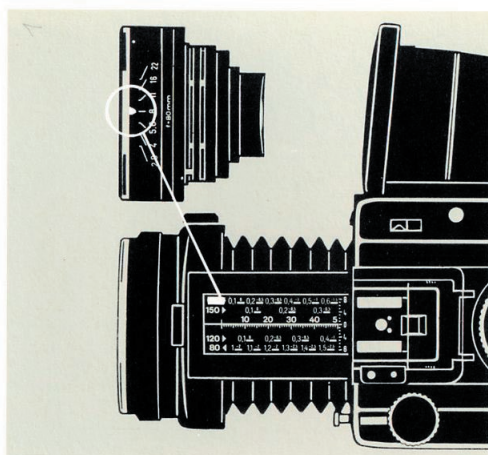
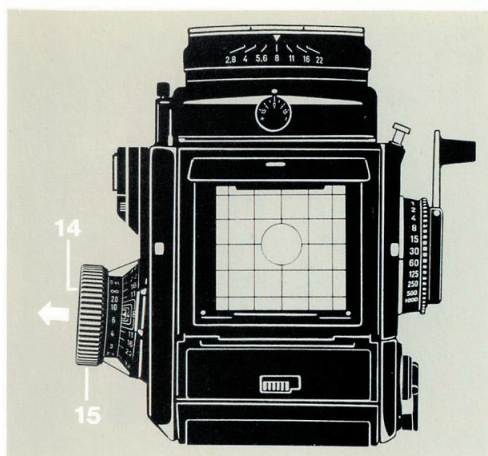
Both the Rolleiflex SCA 356 and the Metz C 70 are connected directly to the camera via the hot shoe (17), using the X-synchronizing contact (a) and the control contacts (b). Film speed setting is done on the adapter. The "flash ready" and electronic control indication can be seen on the flash unit.

If the optimum aperture is to be used, it can be obtained by a trial flash as follows: continue stopping down as long as the electronic control indicator lights up. It is recommended that the trial flashes are carried out using the multiple-exposure function (only one frame is lost).

2. Ordinary manual or electronically controlled flash units can be connected to the camera via the hot-shoe or the X-synchronizing socket (16).

3. Similarly, battery-condenser vacuum flash guns can be connected via the hot-shoe or the synchronizing socket.

The Rolleiflex FM 1 TTL flashmeter is a new type of precision measuring instrument which provides the photographer with exact measurement of flash illumination within the camera, using either studio flash lighting or normal flash guns. For this purpose the unit is connected to the camera via the hot shoe. The sensor mounted within the camera body measures the light reflected from the film surface during the exposure and transmits this data to the measurement electronics of the flashmeter. A high-sensitivity indicator shows, in EV units, whether the exposure was correct. In the event of an error, EV unit adjustment can be made by altering the aperture or the flash energy.



## Subject distance

Turn the focusing knob (15) until the sharpest image is obtained on the focusing screen (38).

### Changing the distance scale

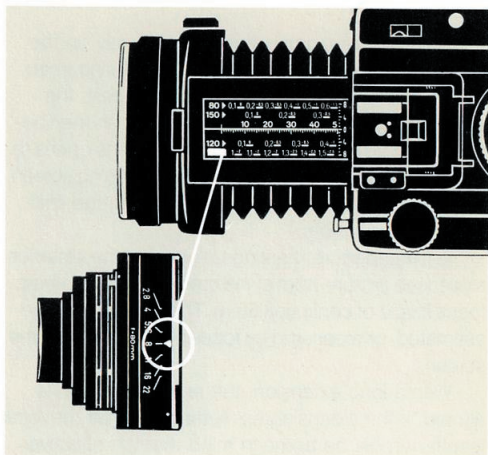
Pull the focusing knob (15) fully out and in this position turn it until the focal length being used (50, 80, 150 or 250 mm) appears in the window (14). The knob can be set most easily by turning clockwise from the  $\infty$  stop.

In taking pictures with a very long focal length and greatly extended depth, it can happen that a strip at the top of the focusing image is not reflected by the mirror. Even so, the photograph takes in the whole picture area.

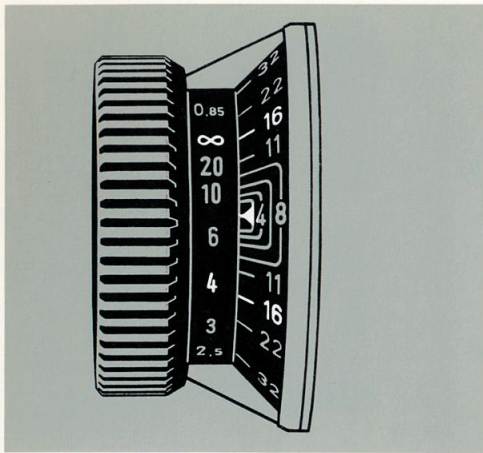
As a rule, the distance values on the focusing knob are only used for estimating depth of field, when focusing for snapshots and in flash photography.

The values on the distance scale only apply for the first rotation of the knob (with the lens in the normal mounting). They are calculated from the film plane to the subject.

The 50 mm bellows unit can be further lengthened by the addition of the 40 mm or 80 mm extension tubes, or both together, enabling photographs to be taken with any lens at even closer distances. With the reverse mounting of the lens (front element pointing back towards the film), the close-up distance can be reduced even further and the magnification increased.







### Depth of field

The depth of field can be checked directly on the focusing screen or indirectly on the focusing knob.

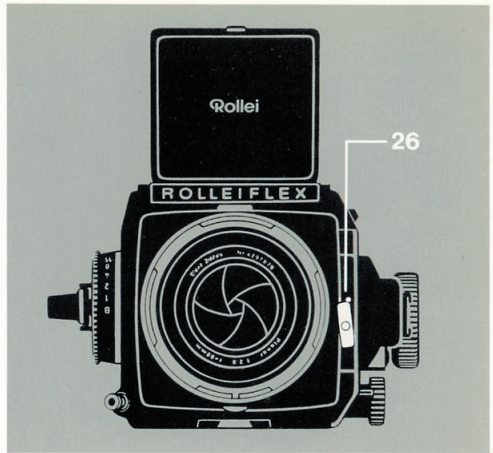
1. Lenses with automatic aperture: press the stop-down button (26). It latches in and can then be released again like a toggle switch. The lens opens to the selected value. The ground glass focusing screen is the most suitable means of monitoring the final effect on the image.

2. The aperture markings alongside the distance scale (see picture above) indicate the area of sharp focus (circle of confusion  $56 \mu$ ). The distance can be estimated, or measured by focusing the image on the screen.

With a long extension, the relative aperture is altered. If the extension exceeds about half the focal length, it must be borne in mind that the effective stop number (determining the exposure and depth of field) will no longer correspond to the number engraved on the lens.

### Magnification factor and exposure correction

For focusing in close-up photography, the magnification factor is more important than the distance. The camera can be set directly to the required magnification with the help of the scales on the bellows unit (for three focal lengths). In this case, the easiest way of bringing the lens into the focus range is to move the camera nearer or further back.



The four scales apply to the focal lengths 80, 120 and 150 mm (normal mounting) and 80 mm (reverse mounting). The triangular marks identify the position of the aperture marker in normal mounting (▶) and reverse mounting (◀).

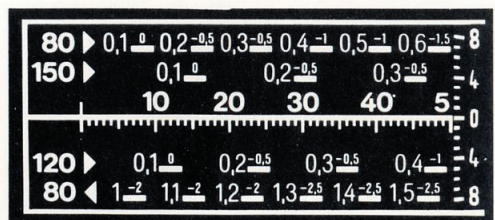
The magnification factor on the left next to the horizontal setting mark shows the size reproduction on the film in relation to the original size (e.g.  $0.4 = 0.4 : 1$ ). The required exposure correction can be read off above the mark (e.g.  $-1 =$  reduction of the exposure by one stop).

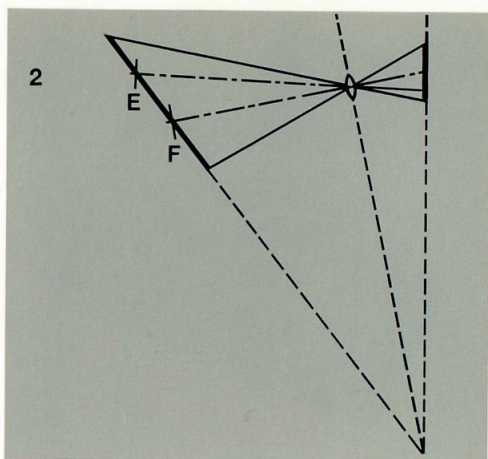
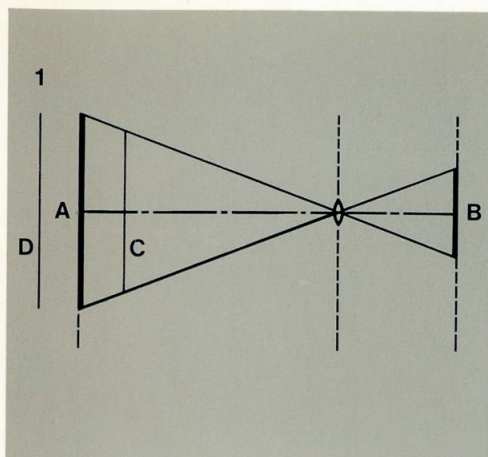
**When using the built-in exposure meter (only SL 66 SE) or fully automatic flash control you do not need to correct the exposure! The system measures and allows for this factor.**

Settings and readings are made using the edge of the combined vertical scale (graduated scale).

The length of the bellows extension is shown in mm on the middle line. For the bellows extension and magnification factors for all focal lengths, and with extension tubes, see page 31.

The middle line also serves as the pointer for the graduated scale when the lens is tilted.





## Extended depth control

The preconditions are given for the extension of the depth of field when an oblique shot is to be taken of a subject. By tilting the camera and additionally tilting the lens, pin-sharp reproduction can be extended over a large range of distances, even at full aperture. By stopping down, this range can be increased yet further.

Figure 1 shows a parallel arrangement of subject A, lens and image B, as would apply on any camera. With full aperture, a sharp image of the subject A will be obtained. Depending on the stop setting of the lens, sharp images will be obtained of the subjects C in front of it and D behind it.

Figure 2 shows an adjustable arrangement. The lens mounting can be tilted. Every point in the subject is imaged with the correct focal distance (see E and F).

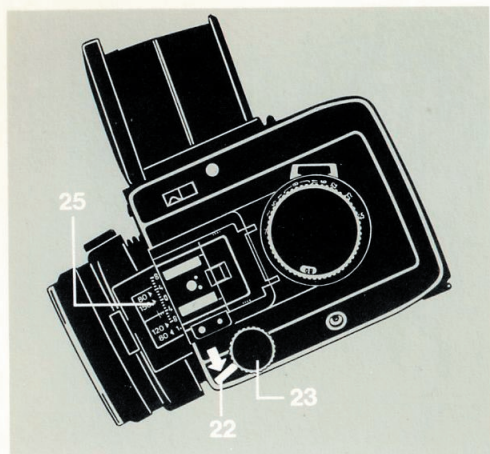
The rule for the application of the Scheimpflug principle is: when subject plane, lens plane and film plane intersect in a common straight line, a sharp image is formed. Figure 1 shows a special case: all three planes are parallel. They intersect at infinity.

This method of extending the depth of field was discovered by the Austrian geodetic surveyor Theodor Scheimpflug (1865–1911).

The Rolleiflex SL 66 SE and SL 66 X are the first medium-format cameras to have built-in "extended depth" control.

Further details on the theory of extended depth are given on page 26.





### Practical application

Extended depth can be used, with suitable subjects, for any spatial arrangement: on the ground, table tops, ceiling paintings, building façades viewed upwards or downwards, rows of houses viewed horizontally.

When extended depth is used, the lens is always to be tilted towards the subject plane.

Elements of the picture that are outside this plane but within the range of sharp focus will still give good sharp images. The completely flat surface represents the ideal case.

**Example: focal length 80 mm, tilt 8°, full aperture 2.8, camera 0.6 m above the subject plane.**

**Depth of field from 1 m to  $\infty$ .**

### Tilting the lens

Release the clamp knob (23) by turning anticlockwise. Press the catch (22) and set the middle line of the scale (25) to the required value on the graduated scale by raising or lowering the lens. Screw up the clamp knob (23) again.

The catch (22) latches at both extreme angles and in the normal position, 0°. Even on normal adjustment (0°), the clamp knob should be tightened.

Starting from the  $\infty$  setting (no tilt) of the focusing knob, the full  $\pm 8^\circ$  tilt is available after approximately half a turn.

**The modified position of the bellows unit must not (!) be forcibly overridden when turning the focusing knob back.**

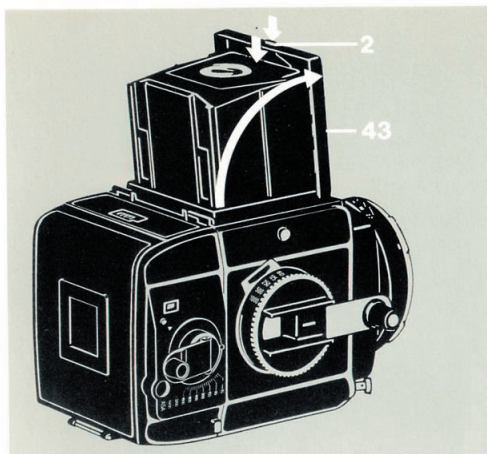
### Simple rule for flat subjects

Choose the reference area in the focusing screen. Set the focus so that this area in the middle of the screen is sharp. Do not alter this distance setting again. Slowly tilt the lens, and correct the camera position so that the sharply focused centre of the subject remains in the middle of the picture. The required lens tilt is achieved when the focusing screen shows a sharp image right from the upper edge to the lower edge of the subject. Now you can check, by turning the focusing knob again, whether in fact the optimum sharpness has been obtained for the whole image.

### For subjects with elevations above the plane

For all settings, observe the image in the focusing screen. If the subject is not flat, stop down and judge the sharpness over the whole screen.

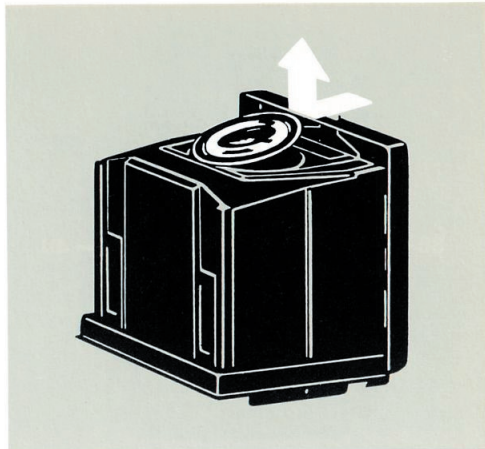
**When using the maximum tilt angle of 8°, the exposure correction knob should be set to +0.5 before balancing the exposure (only SL 66 SE).**



## Viewing head and focusing screen

Open the viewing head by flipping up the lid (43).  
(To close, fold the side walls inwards).

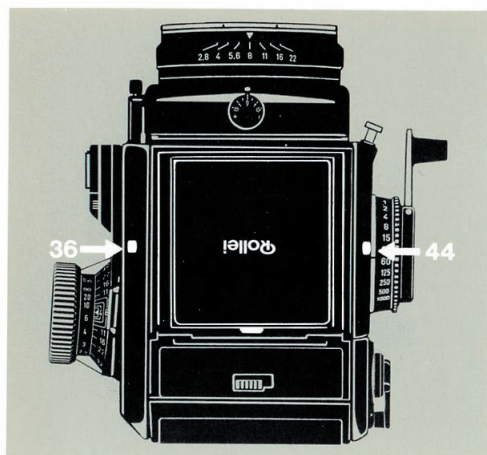
To lift the magnifier into position, press the button (2). (To fold it back in, press down on the lens holder between the lens and the lid of the viewing head until it locks).



## Changing the magnifier for use by spectacle wearers

For sharp focusing without spectacles the magnifier in the folding viewing head can be changed for one to suit eyes with visual defects between +3 and -3 dioptres (spectacle prescription).

Press the lens back against its front rim and lift out. Push the replacement lens into the holder in the same way and press home.



### Changing the viewing head

The viewing head and focusing screen can be changed at any time, regardless of the operational state of the camera.

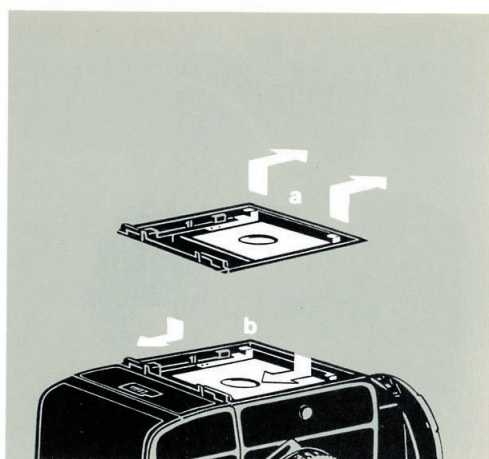
### Removing the viewing head

Disengage the viewing head by pressing the buttons at the sides (36 and 44) and take it off.

### Fitting the viewing head

Fit the viewing head in (with the magnifier button at the back) and press in to lock.

The folding viewing head can be replaced by specialized heads. These are fitted and removed in the same way.



### Changing the focusing screen

#### Taking out the frame holding the screen

Raise the two locking springs at the sides (a). Push the frame forwards and take out.

#### Removing the screen

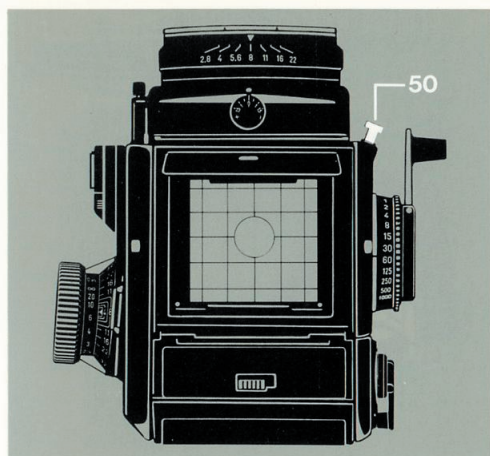
Press the two shiny retaining springs at the rear edge of the screen one after the other against the frame, and at the same time pull the screen out of its guide. Hold the screen only at its edge, without touching the patterned lower surface.

The focusing screen can be replaced by special types of screen. The same procedure is followed when fitting such screens. The patterned (rough) side of the inserted screen should face towards the camera.

#### Inserting the frame

Put the frame in so that it lies next to the nameplate; press down both the side bars and pull back until the locking springs engage (b).





## Camera and mirror release

### The release

The release button was briefly mentioned on page 5. All its functions are now described here.

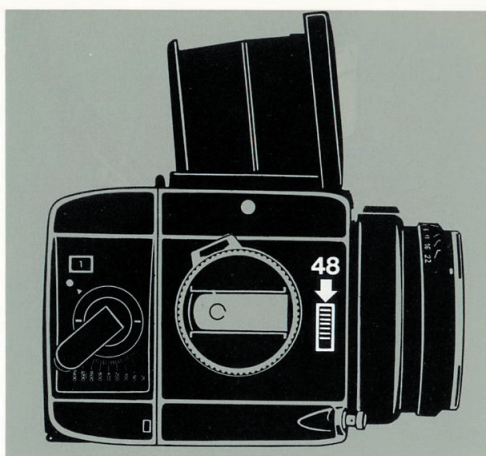
Unlock the release button (50) by turning. If the red spot is visible from above, it means the release is locked. If it is not visible from above, the release is free.

The release button has a screw thread for cable release.

**Important: before the cable is screwed in, the release button must be engaged in the "release locked" position!**

### Time exposure, setting B

Hold down the release button for the duration of the exposure or lock it in this position by turning. The shutter does not close until the button is released (unlocked).



### Mirror pre-release

The movement of the mirror as it swings back during the release sequence is mechanically and pneumatically damped. It begins slowly, accelerates and slows down again. The gentleness with which the mirror comes to rest helps to keep the camera still.

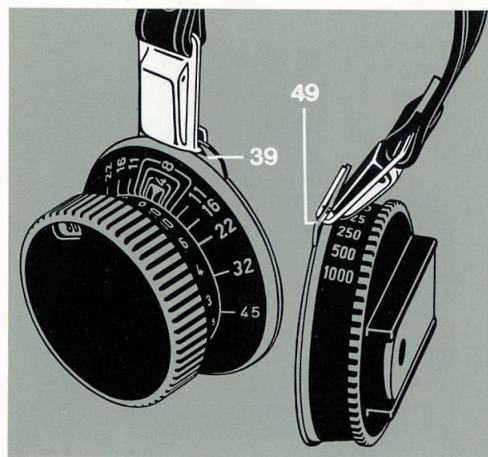
In addition, the mirror can be released beforehand (when using a tripod that is not completely vibration-free, when taking photographs with a long focal length or in the macro or micro ranges).

### Pre-release

Press the sliding catch (48) downwards. The shutter is released as usual. The mirror returns after the exposure.

If you want to cancel the pre-release: keep the lens closed (with the lens cap), release the shutter and then cock it again with the film transport disengaged (see multiple exposures, page 9).





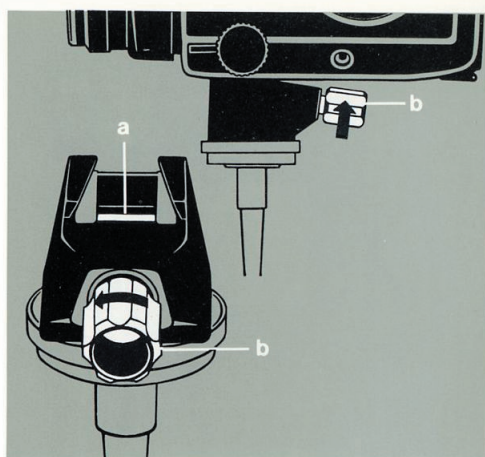
### The carrying strap

For carrying the camera by its strap, the wide spring hooks are hooked into the carrying eyelets on each side (39 and 49).

The carrying eyelets rotate freely and allow the camera to be tilted in any direction for a photograph. They also allow it to be carried in the natural position with its centre of gravity downwards, and even comfortably over the shoulder.

### Undoing the carrying strap

Press the tongue of the spring hook down and push it obliquely down below the eyelet. The hook is released by pushing forward.



### The quick tripod coupling

The camera can be mounted on the tripod or on the flash bar by means of the tripod socket or more easily using the quick coupling. The dovetail guide (53) on the base of the camera serves this purpose.

### Preparing the quick coupling

Screw the quick coupling onto the tripod or onto the flash bar and turn the knob (b) anticlockwise to the stop. This withdraws the swinging clamp bar (a) into its end position and frees the dovetail guide.

The quick tripod coupling is obtainable as an accessory (No. 208700).

### Fitting the camera

Set the camera in the dovetail guide, push forward and then tighten the knob (b) by turning clockwise. The clamp bar is thereby swung up and holds the camera firmly in the guide.

Before taking the camera off, the knob (b) must be turned anticlockwise right to the stop.

**The quick tripod coupling cannot be used with the bellows unit with slide rails.**

### **Photography with filters**

The lenses with focal lengths of 50, 60, 80, 120, 150, 250 and 1000 mm (Tele-Tessar) have the same bayonet size (VI) and use the same filters.

#### **Fitting the filter**

Fit the filter into the inside bayonet ring of the lens and turn clockwise to lock.

The Tele-Tessar 500 mm uses its own screw-on filters.

With the Tele-Tessar 1000 mm, filters with bayonet size VI are used; they are fitted to the inside of the lens (see the instructions for the lens).

The Mirotar 1000 mm requires special filters. These are inserted from the side into the lightpath in the lens.

The required correction – when necessary – is shown on the filter frame (e.g. mid-yellow filter,  $-1.5$ ). This correction value is to be subtracted from the measured exposure value with the SL 66 X. With the Rolleiflex SL 66 SE, the correction value is automatically taken into account by the built-in exposure meter.

### **Photography with a lens hood**

A standard lens hood fits lenses with focal lengths of 80, 120, 150 and 250 mm.

A special hood is used with the 50 and 60 mm lenses; the 500 mm lens has an extendable hood. The 1000 mm Tele-Tessar has a fixed built-in hood. The 30 mm fish-eye and the 1000 mm Mirotar are used without lens hoods. A hood with bayonet size VIII is available for the PCS-Rolleigon 75 mm lens.

There is also a compendium available as a Rollei accessory that can be used for focal lengths 50–250 mm.

#### **Fitting the lens hood**

Fit the lens hood in the required position on the outer bayonet ring and turn clockwise to lock.

# The most important accessories

A highly versatile accessory programme is available, expressly designed to widen the range of applications open to the user of the Rolleiflex SL 66 SE and SL 66 X. This programme not only serves to optimize handling of the camera, it even makes it possible for certain special photographic results to be achieved at all. The entire accessory range of the Rolleiflex SL 66 SE/SL 66 X can of course also be used on the Rolleiflex SL 66/SL 66 E models.

A full summary of the camera system, including all accessory components, is given on pages 38–39.

## **Interchangeable magazines**

These allow the use of 120 or 220 roll films in the 6 × 6 cm or 4.5 × 6 cm format.

## **Polaroid magazine**

The Polaroid magazine allows optional shooting of 2 exposures 4.5 × 6 cm or 1 exposure 6 × 6 cm on one frame. The possibility of switching over to twice 4.5 × 6 cm means high economy in material usage, because 2 exposure or illumination alternatives can be incorporated in one Polaroid print. The TTL exposure metering facility of the Rolleiflex SL 66 SE is retained in full. Polaroid material in the 8.3 × 10.8 cm (3 1/4 × 4 1/4 in.) format is used.

## **Interchangeable finders**

Three interchangeable finders, as well as six different bright focusing screens, ensure the ideal subject image is obtained in any photographic situation.

The standard folding viewfinder hood for waist-level viewing is fitted with an interchangeable viewing magnifier (+3 to –3 dioptres, visual magnification is 3.1 ×).

The prism viewfinder with 45° eyepiece gives an upright, right-reading finder image. It locates in four positions 90° apart as required and thus offers convenient viewing even in awkward camera positions.

The rigid magnifying viewfinder hood, designed for waist-level subject viewing, is equipped with an eyepiece offering 2.5 times magnification and dioptre adjustment from +0.6 to –2.1 dioptres.

The eyecup may be removed as desired. This finder is particularly useful for close-up and macrophotography.



**Bright matt screen with central split-image wedge and microprism ring**

Universal matt focusing screen with split-image wedge and microprism ring. The wedge provides most exact focusing on vertical lines; the microprism by the disappearance of shimmering image detail. The microstructured matt screen permits sharp focusing over the whole image area.

**Fine ground glass screen**

Fine matt ground glass screen for most exact focusing, especially in macrophotography, at all apertures and with more powerful lenses. Particularly useful in creative photography where focusing aids can be obstructive to the photographer.

**Bright matt screen**

Screen with microfine structure for full-area focusing and unobstructed composition; also suitable for small-aperture lenses and for depth-of-field monitoring.

**Bright matt screen with split-image wedge**

Universal focusing screen for best sharpness assessment with split-image wedge and matt screen. The wedge permits most exact focusing on vertical lines, e.g. in architectural shots.

**Bright matt screen with microprism spot**

Universal screen for rapid shooting with microprism and matt area to permit exact focusing even in poor light. Sharpest focus marked by shimmer-free image.

**Bright matt screen with clear spot**

Special matt focusing screen for macrophotography and photomicrography, with clear spot and graticule.

Clear spot permits parallax-free aerial image focusing at very small apertures, e.g. through a microscope. Graticule facilitates checking of the reproduction scale.

**Superbright screen with central split-image wedge and microprism ring**

Special screen for very poor light, for instance at dusk. Central focusing aids permit precise focusing while very bright outside area clearly shows image boundaries. Less suitable with long focal lengths and for macro shots.

**Handgrip**

Handgrip to make the photographer's work easier and faster: the left hand holds the camera at the grip and adjusts the focus, whilst the right hand releases the shutter and operates the quick-action crank. The cable release is particularly useful when working with long focal lengths because the right hand is free to support the lens.

### **Rollei SCA 356 dedicated flash interface module**

The Rollei SCA 356 flash adapter is the interface to all dedicated flash units of leading makes using the SCA 300 system.

The dedicated functions are connected by simply mounting the flash unit with the SCA adapter in the camera's hot shoe. This ensures correct dedicated inputs for perfect flash exposures.

### **Rollei FM 1 flashmeter**

This high-precision photometer enables accurate internal flash metering with studio flash equipment or normal flash units on the camera. The FM 1 flashmeter is connected to the camera via the hot shoe. During the exposure, a sensor built into the camera body measures the light reflected from the film plane or the metering backplate and relays this information to the metering electronics of the flashmeter. A highly sensitive display instrument will then tell the user in EV factors whether the flash power was correct to achieve a perfect exposure. If the flash output was incorrect, corresponding adjustment to the EV value can be made by altering the aperture or flash power. Metering backplates available as accessories for spot or integral measurement can be used instead of the camera back.

### **Rollei TTL macroflash MF 2**

The MF 2 is a flash facility for close-up and macrophotography. It consists of a bracket which is attached to the lens bayonet size VI and can be tilted towards the subject.

Flash illumination is done by two Metz 32 CT3 compact flash units which are driven synchronously via the Rollei SCA 356 adapter and additional control electronics. Any extension factors are automatically accounted for by the TTL control.

### **Extension tubes**

These are available in lengths of 40 or 80 mm and may be used together or in combination with the extension bellows unit.

### **Universal extension tube set**

This set consists of two special basic tubes, a lens coupling ring as well as a mounting ring for filters and lens hoods when the lens is fitted in reverse position. Stopdown function is via a conventional twin cable release. Reverse mounting is possible with 50 mm to 250 mm lenses and yields greatly improved image quality at scales above 1:1.

### **Extension bellows unit**

The extension bellows unit has a 250 mm extension and is fitted to the camera with aid of special adapter rings. It can be combined with the focusing rack, macro stage, 6 × 6 cm or 24 × 36 mm slide copying stage, and the pair of vibration dampers. The micrometer focusing drive is recommended for most precise focusing.

### **Focusing rack**

The focusing rack makes working with a tripod much easier: the distance from the subject can be continuously adjusted in comfort; there is no more need for moving to and fro when taking still objects or in reproduction, macro shots and photomicrography. The focusing rack has a stable twin tube guide with an unhindered path length of 16 cm.

### **Vibration dampers**

A pair of vibration dampers prevents vibration during focusing and when taking pictures using long extensions.

### **PCS adapter**

Using this adapter (ball/tilt principle), large-format lenses can be fitted to the SL 66 SE/SL 66 X in order to solve special tasks in the telephoto range when shooting high-detail and still objects. The tilt range is 13° to all sides and can be locked. It can be used with large-format lenses, shutter size 0 and 1, from a focal length of 150 mm upwards in combination with the corresponding adapter rings.

### **Lens adapter**

This adapter for non-Rollei lenses has a transmission opening of 58 mm and allows individual adaptation of lenses of other makes.

### **Macro lens adapter**

For use with Luminar, Photar, Summar or Mikrotar lenses. This adapter is equipped with the international standard W 0.8 × 1/36 in. microscope thread.

### **Microscope adapter**

This adapter provides a lightproof, vibration-free connection between the microscope eyepiece and the camera.



# Theoretical observations on extended depth

These operating instructions are accompanied by an indicator for 80 mm focal length (with information in feet on the reverse side) and a transparent screen. The appropriate indicator is supplied with the interchangeable lenses with focal lengths of 50, 80, 120, 150 and 250 mm.

When the indicator is covered with the transparent screen, a diagram of the Scheimpflug conditions in the area of the subject is formed on a reduced scale.

The angle of view and the optical axis of the camera are expressed by three light rays: frame upper edge X, frame centre Y and frame lower edge Z. The camera-to-subject distances are marked in the form of arcs.

The range of the extended arcs allows the vertical distance of camera to subject plane to be read off.

The spots below the camera correspond to the intersection of the three planes and, with the subject plane A, show the required tilt angle of the lens in any given circumstances.

The blue line A on the transparent screen serves to show the subject plane.

In addition, by combining with the aperture curves on the indicator, the depth of field can be checked. For this purpose, the three lower lines on the screen with the circle and star are used.

This extension of the zone of sharp focus is obtained at full aperture: it can be increased by stopping down!

## Using the indicator

### First example (1)

Focal length 80 mm, subject range 1.3 m to 5 m (measured using the focus control).

### Focusing distance for the image centre

Use the blue line to connect 5 m on line X with 1.3 m on line Z. The intersection with the optical axis (Y) gives the required distance as 2 m.

### Vertical distance from the camera to the subject plane

Read off the value of the arc which just touches the blue line (1 m). The vertical distance between the lens centre and the subject plane must therefore be 1 m.

### Lens tilt angle

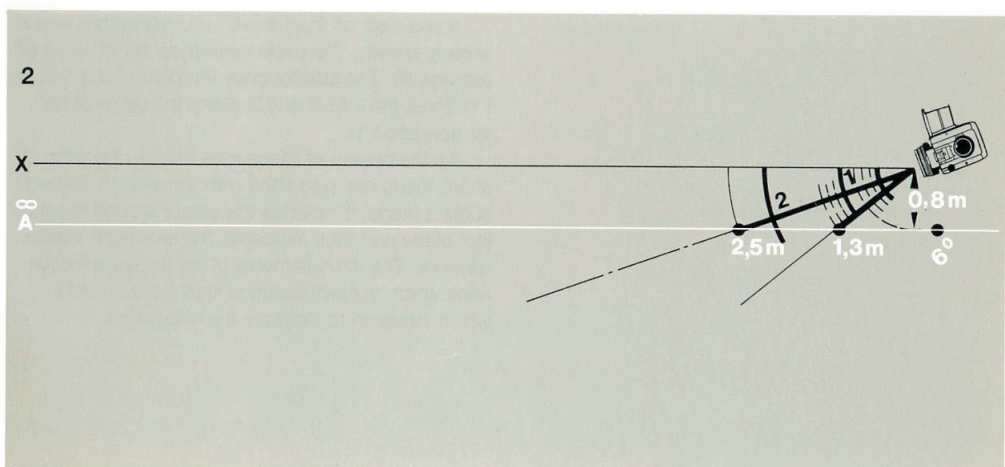
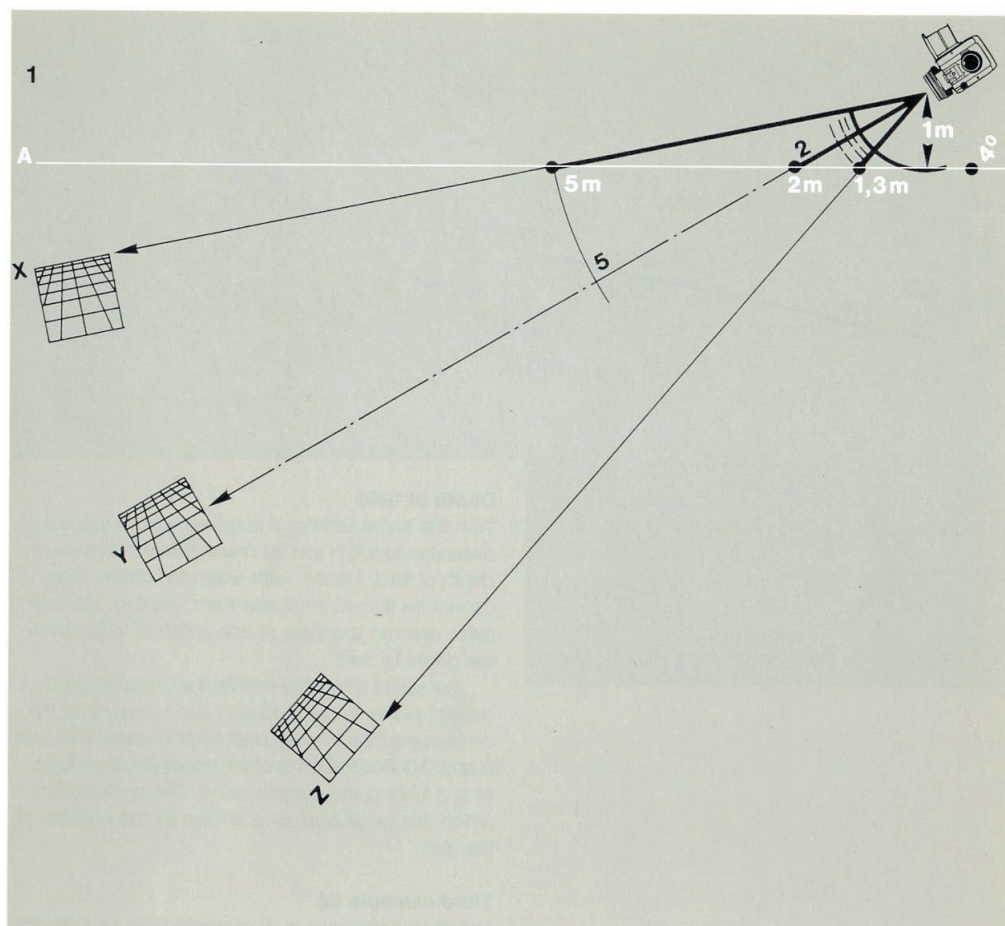
Follow the blue line through to the graduated scale. The lens must be tilted by  $4^\circ$ .

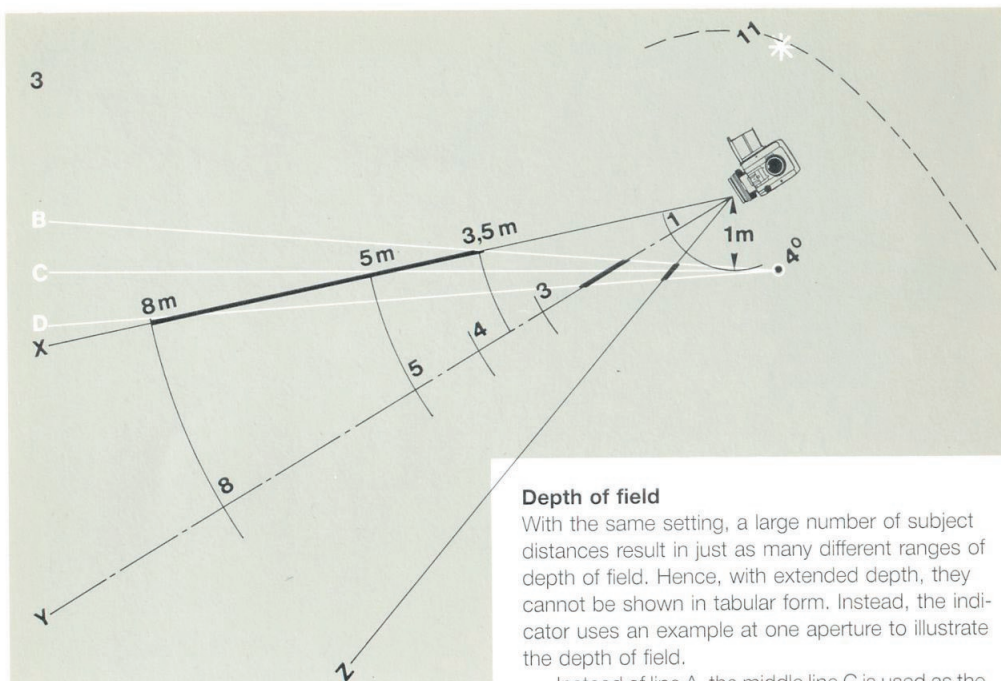
### Second example, the special case of far limit $\infty$ (2)

Focal length 80 mm, subject range 1.3 m to  $\infty$ .

With the far limit at  $\infty$ , the intersection of lines X and A is pushed out to infinity. Since only parallel lines intersect at infinity, the line A must run parallel to X on the indicator.

Result: distance setting 2.5 m, vertical distance 0.8 m, lens tilt  $6^\circ$ .





### Depth of field

With the same setting, a large number of subject distances result in just as many different ranges of depth of field. Hence, with extended depth, they cannot be shown in tabular form. Instead, the indicator uses an example at one aperture to illustrate the depth of field.

Instead of line A, the middle line C is used as the subject plane and is placed in such a way that the circle surrounds the required degree value. The lines B and D define the limits of the depth of field in front of and behind the subject plane. The aperture for which this result applies is shown by the position of the star.

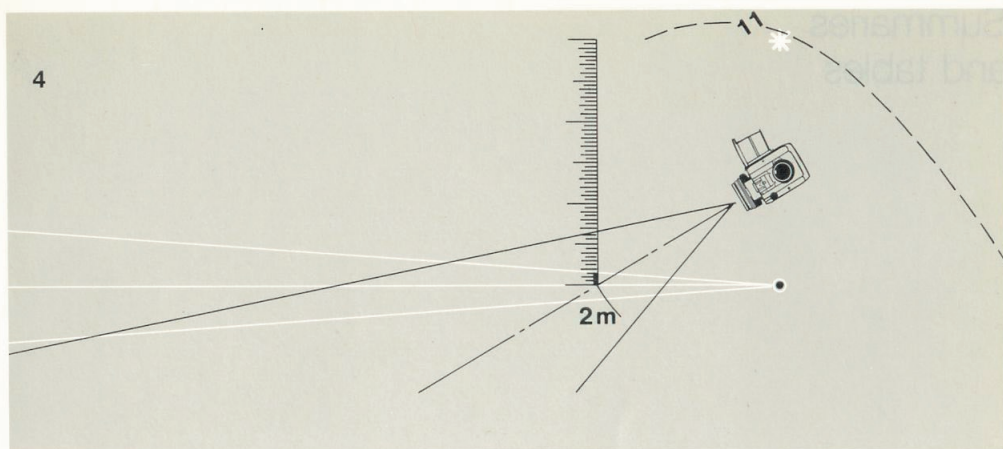
### Third example (3)

The same conditions as in example 1, i.e. focal length 80 mm, subject range 1.3 m to 5 m.

If you read off from line C, you obtain the values already known. The circle surrounds the  $4^\circ$  value of the lens tilt. The star touches the curve for aperture f 11. Thus, the lines B and D define the depth of field for aperture f 11.

As the course of these lines shows, the area of sharp focus has also tilted with the sharply focused subject plane. It includes the space around the subject plane and thus increases the extension into the distance. The main elements of the picture will determine which subject distance is of interest and in which direction to increase the sharpness.





### Increasing sharpness in the direction of the camera

The different gains in depth of field for the upper edge, centre and lower edge of the frame can be read off directly in metres; for example on the X line: 3.5 m to 8 m.

### Increasing sharpness perpendicular to the subject plane (4)

Even more significant in practice is the question of up to what height an object standing on the subject plane will form a sharp image. A centimetre scale and the reduction factor of the indicator provide precise data for this purpose:

Find the position of the base of the object on the blue line C (e.g. in the middle of the frame). Place a centimetre scale at this point perpendicular to the subject plane and read off at the point where it intersects with the line B (in the example, about 1.6 mm). Multiplication by the indicator's reduction factor of 100 gives an allowable height of 16 cm for sharp reproduction. (On the indicator for 250 mm focal length, the factor is 200).

### Depth of field with other apertures

The lines B and D on each indicator define the area of sharp focus for one aperture value (shown by the star). For estimating the area of sharpness with other apertures, the angle between the lines B and D should be doubled for each doubling of the stop number (e.g. from f 11 to f 22).

### Reading off other distances

Since all distances are reduced by the same ratio in the indicator diagram, any other distances can be calculated by measuring and multiplying by the reduction factor (for example, 4 m for the length extension of the imaged subject plane). In this way, the indicator facilitates the choice of the correct arrangement for each application.

# Summaries and tables

Interchangeable lenses	Full aperture	Focal length mm	Aperture range	Aperture control <sup>3)</sup>	Angle of view		Elements/ components	Length mm	Weight g
F-Distagon HFT	f/3.5	30	3.5-22	A	180°	110°	8/7	115	1130
Distagon HFT	f/4	40	4.0-22	A	88°	69°	11/10	101.5	732
Distagon HFT	f/4	50	4.0-32	A	75°	57°	7/7	93	555
Distagon HFT	f/3.5	60	3.5-22	A	67°	49°	7/7	80	532
Distagon (LS) <sup>1)</sup>	f/4	80	4.0-32	A	52°	38°	5/5	85	638
Planar HFT	f/2.8	80	2.8-22	A	52°	38°	7/5	63	300
Makro-Planar HFT	f/4	120	4.0-32	A	36°	26°	6/4	91	435
Sonnar HFT	f/4	150	4.0-32	A	29°	21°	5/3	94.5	545
Sonnar HFT	f/5.6	250	5.6-45	A	18°	13°	4/3	143	665
Tele-Tessar HFT	f/5.6	500	5.6-45	P	9°	6°	6/5	308	1640
Tele-Tessar	f/8	1000	8.0-64	P	4.5°	3°	4/4	770	8750
Mirotar	f/5.6	1000	5.6	-	4.5°	3°	Mirror lens	407	16500
Luminar <sup>2)</sup>	f/2.5	16	2.5-10	M	-	-	5/4	41	120
Luminar <sup>2)</sup>	f/3.5	25	3.5-14	M	-	-	4/3	36	105
Luminar <sup>2)</sup>	f/4	40	4-25	M	-	-	3/3	29	67
Luminar <sup>2)</sup>	f/4.5	63	4.5-36	M	-	-	3/3	32	135

<sup>1)</sup> LS = with leaf shutter.

<sup>2)</sup> Luminars: the information is valid for the Luminar without an adapter. The 16, 25, 40 and 63 mm Luminars use the same adapter (with microscope bush). The Luminar lenses are no longer available.

<sup>3)</sup> Aperture control systems:

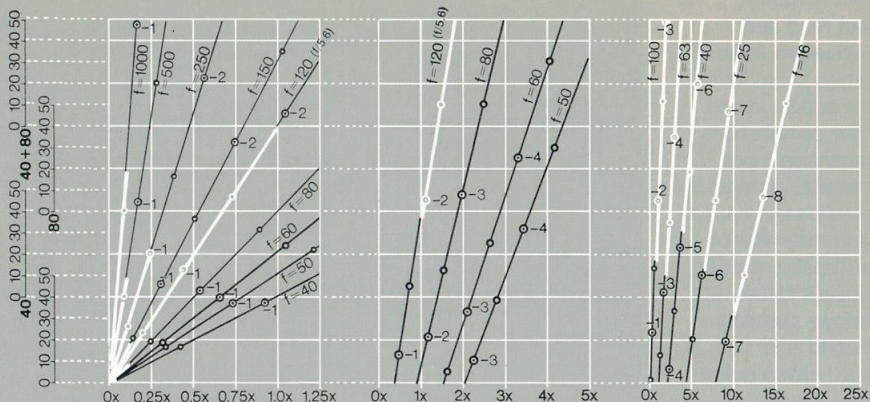
A = fully automatic aperture. The diaphragm is normally fully open and closes down to the selected aperture value only when the shutter is released.

P = preselected aperture. The aperture closes down to the selected value only when the control ring is turned to the stop.

M = manual aperture control. On the Luminars the lowest scale value 1 corresponds to the full aperture engraved on the lens, and the following numbers each correspond to one stop number.

The Mirotar mirror lens has no aperture diaphragm and always operates fully open at f 5.6. Here the exposure is controlled by the choice of speed or if necessary by inserting special grey filters.

Lenses with the inscription "Made by Rollei" are manufactured by Rollei under licence from Carl Zeiss Oberkochen, West Germany. (Rollei-HFT ® = reg. trade mark.)



### Magnification factor, extension length and exposure correction\*

In the above diagram, the sloping lines for each lens connect the intersections of the corresponding values of extension length, magnification factor and exposure correction.

A line starting from the required magnification factor on the lower scale and proceeding vertically upwards defines an intersection point on the sloping lens line. Reading across horizontally to the left, this intersection indicates the required extension tube and the setting of the extension scale on the camera.

The white parts of the lens lines indicate the range of good image formation. The black portions indicate other possible regions, where an appropriate stopping down or the use of another lens combination is recommended (see also page 32 "Normal or reverse mounting"). The numbers by the circles show the required correction in exposure values (speed or aperture stops): the smaller circles inbetween indicate half-stops. In practice, the number at the next circle up would be used.

These exposure corrections correspond to the exposure time factors in the diagram on page 36.

### Example

Makro-Planar  $f = 120$  mm in reverse mounting. Magnification factor  $1 \times (= \text{scale } 1:1)$ .

The result from the middle diagram is: set the extension scale to about 34 mm with a 40 mm extension tube. Exposure value correction  $-2$  (equivalent to a  $4 \times$  increase in exposure time).

\* When working without the built-in exposure meter and without the automatic flash.



## Subject distance, subject field and magnification factor

The tables show, for the most important lenses and their combinations with extension tubes, three operating ranges: subject distance, subject field and magnification factor. The first value in each case is for use with the bellows pushed in; the second is for use with the bellows pulled out.

Lens	Range*	Without extension tubes	40 mm extension tube	80 mm extension tube	40 + 80 mm extension tubes
Planar 2.8/80 mm	A	$\infty - 16$ cm	19 – 10 cm	10.8 – 7.7 cm	8.1 – 6.5 cm
	O	$\infty - 9$ cm □	11 – 5 cm □	5.6 – 3.5 cm □	3.8 – 2.7 cm □
	V	0 – 0.6 x	0.5 – 1.1 x	1.0 – 1.6 x	1.5 – 2.1 x
Distagon 4/50 mm <sup>+</sup>	A	$\infty - 5$ cm	6 – 2.5 cm	2.8 – 1.6 cm	11.7 – 1.1 cm
	O	$\infty - 6$ cm □	7 – 3 cm □	3.5 – 2.2 cm □	2.4 – 1.7 cm □
	V	0 – 1.0 x	0.8 – 1.8 x	1.6 – 2.5 x	2.3 – 3.3 x
Distagon 3.5/60 mm <sup>+</sup>	A	$\infty - 8$ cm	9.8 – 4.7 cm	5.2 – 3.5 cm	3.7 – 2.8 cm
	O	$\infty - 6.7$ cm □	8.4 – 3.8 cm □	4.2 – 2.6 cm □	2.8 – 2 cm □
	V	0 – 0.83 x	0.66 – 1.5 x	1.3 – 2.2 x	2 – 2.8 x
Distagon 4/80 mm <sup>+</sup>	A	$\infty - 16$ cm	19 – 9.3 cm	10.2 – 7.0 cm	7.4 – 5.7 cm
	O	$\infty - 9.4$ cm □	11.6 – 5.2 cm □	5.8 – 3.6 cm □	3.9 – 2.7 cm □
	V	0 – 0.6 x	0.5 – 1.1 x	1.0 – 1.6 x	1.4 – 2.0 x
Makro-Planar 5.6/120 mm	A	$\infty - 35$ cm	42 – 22 cm	24 – 17 cm	18 – 14 cm
	O	$\infty - 14$ cm □	17 – 7.5 cm □	8.5 – 5.2 cm □	5.6 – 4 cm □
	V	0 – 0.4 x	0.3 – 0.7 x	0.7 – 1.1 x	1.0 – 1.4 x
Sonnar 4/150 mm	A	$\infty - 60$ cm	70 – 38 cm	42 – 31 cm	32 – 27 cm
	O	$\infty - 17$ cm □	21 – 9.4 cm □	11 – 6.5 cm □	7 – 5 cm □
	V	0 – 0.3 x	0.3 – 0.6 x	0.5 – 0.8 x	0.8 – 1.1 x
Sonnar 5.6/250 mm	A	$\infty - 153$ cm	184 – 98 cm	106 – 77 cm	81 – 66 cm
	O	$\infty - 28$ cm □	35 – 16 cm □	17 – 11 cm □	12 – 8 cm □
	V	0 – 0.2 x	0.16 – 0.36 x	0.32 – 0.52 x	0.48 – 0.68 x
Tele-Tessar 5.6/500 mm	A	$\infty - 6$ m	7 – 3.6 m	3.9 – 2.8 m	2.9 – 2.3 m
	O	$\infty - 55$ cm	69 – 31 cm □	34 – 21 cm □	23 – 16 cm □
	V	0 – 0.1 x	0.08 – 0.18 x	0.16 – 0.26 x	0.24 – 0.35 x
Tele-Tessar 8/1000 mm	A	$\infty - 21$ m	26 – 12 m	14 – 9 cm	9.6 – 7.2 cm
	O	$\infty - 110$ cm □	140 – 61 cm □	69 – 42 cm □	46 – 32 cm □
	V	0 – 0.05 x	0.04 – 0.09 x	0.08 – 0.13 x	0.12 – 0.17 x
Mirotar 5.6/1000 mm	A	$\infty - 22$ m	27 – 13 cm	14 – 9.6 cm	10.2 – 7.8 cm
	O	$\infty - 110$ cm □	140 – 62 cm □	70 – 43 cm □	47 – 33 cm □
	V	0 – 0.05 x	0.04 – 0.09 x	0.08 – 0.13 x	0.12 – 0.17 x

Lens	Range*	Without extension tube	40 mm extension tube	80 mm extension tube	40 + 80 mm extension tubes
Planar 2.8/80 mm	A	16 – 12 cm	12.5 – 10.8 cm	11 – 10 cm	10.2 – 9.5 cm
	O	6.1 – 3.7 cm □	4 – 2.8 cm □	2.9 x 2.2 cm □	2.3 – 1.9 cm □
	V	0.9 – 1.5 x	1.4 – 2.0 x	1.9 – 2.5 x	2.4 – 3.0 x
Distagon 4/50 mm reversed	A	9.4 – 8.6 cm	8.7 – 8.3 cm	8.4 – 8.1 cm	8.1 – 7.9 cm
	O	2.7 – 1.8 cm □	2 – 1.5 cm □	1.5 – 1.2 cm □	1.3 – 1 cm □
	V	2.0 – 3.0 x	2.8 – 3.8 x	3.6 – 4.6 x	4.4 – 5.4 x
Distagon 3.5/60 mm <sup>+</sup> reversed	A	10.8 – 9.6 cm	9.7 – 9.1 cm	9.2 – 8.7 cm	8.8 – 8.5 cm
	O	3.4 – 2.3 cm □	2.4 – 1.8 cm □	1.9 – 1.5 cm □	1.5 – 1.3 cm □
	V	1.6 – 2.5 x	2.3 – 3.1 x	3 – 3.8 x	3.6 – 4.5 x
Distagon 4/80 mm reversed	A	17.3 – 14.3 cm	14.7 – 13.1 cm	13.3 – 12.3 cm	12.5 – 11.8 cm
	O	5.6 – 3.5 cm □	3.8 – 2.7 cm □	2.8 – 2.2 cm □	2.3 – 1.8 cm □
	V	1.0 – 1.6 x	1.5 – 2.1 x	2.0 – 2.6 x	2.5 – 3.1 x
Makro-Planar 5.6/120 mm reversed	A	43 – 25 cm	27 – 20 cm	21 – 17.5 cm	18 – 16 cm
	O	16 – 7.2 cm □	8.1 – 5.1 cm □	5.5 – 3.9 cm □	4.1 – 3.2 cm □
	V	0.4 – 0.8 x	0.7 – 1.1 x	1.0 – 1.4 x	1.4 – 1.8 x
Luminar 4.5/63 mm	A	10.4 – 8.2 cm	8.5 – 7.4 cm	7.6 – 7.0 cm	7.0 – 6.6 cm
	O	4.7 – 2.8 cm □	3.1 – 2.2 cm □	2.2 – 1.7 cm □	1.8 – 1.4 cm □
	V	1.2 – 2.0 x	1.8 – 2.6 x	2.5 – 3.2 x	3.1 – 3.9 x
Luminar 4/40 mm	A	4.7 – 4.1 cm	4.2 – 3.9 cm	3.9 – 3.7 cm	3.8 – 3.6 cm
	O	24 – 16 mm □	17 – 12 mm □	13 – 10 mm □	11 – 9 mm □
	V	2.3 – 3.5 x	3.3 – 4.5 x	4.3 – 5.6 x	5.3 – 6.5 x
Luminar 3.5/25 mm	A	1.9 – 1.7 cm	1.8 – 1.7 cm	1.7 – 1.6 cm	1.6 cm
	O	12 – 9 cm □	9 – 7 mm □	7 – 6 mm □	6 – 5 mm □
	V	4.5 – 6.5 x	6.1 – 8.0 x	7.7 – 9.7 x	9.3 – 11.2 x
Luminar 2.6/16 mm	A	1 cm	1 cm	1 cm	1 cm
	O	7 – 5 mm □	5 – 4 mm □	4.5 – 3.5 mm □	3.5 – 3 mm □
	V	8 – 11 x	11 – 14 x	13 – 16 x	16 – 19 x

\*key:

A = subject distance

(= free working distance between lens and subject)

O = subject field (□ = height and width of the framed subject area)

V = magnification factor

+ = recommended range,

see page 36

Rolleiflex HFT® = reg. trade mark

Lens	$\lambda = 720 \text{ nm}$	840 nm
F-Distagon 3.5/30	5.6	5.6–8
Distagon 4/40	5.6	8
Distagon 4/50	5.6	8
Distagon 3.5/60	5.6	11
Planar 2.8/80	4	5.6
Distagon 4/80	5.6	8
Makro-Planar 5.6/120	5.6	8
Sonnar 4/150	8	11
Sonnar 5.6/250	11	16
Tele-Tessar 5.6/500	16	32
Tele-Tessar 8/1000	45	–
Mirotar 5.6/1000	no correction	

### Normal or reverse mounting?

Lenses are best mounted normally for large subject distances (object dimension greater than picture dimension).

When the relationships are reversed (picture dimension greater than object dimension) the lens gives better optical quality when in the reverse mounting.

Thus, the rule is: when the image scale is greater than 1:1 (object dimension = picture dimension), the reverse mounting is fundamentally to be preferred.

### Focus compensation with infrared film

The difference in focal length when using infrared filters requires an additional focus correction, when a sharp focus has been obtained without a filter.

The increase in extension is dependent on the maximum sensitivity of the infrared material being used. The aperture marks at the front of the depth-of-field indicator (towards the lens) are helpful as an infrared index.

The table shows the respective aperture marks for the usual infrared materials and lenses as an infrared index.

### Correcting the focus

Focus sharply without the infrared filter. Read the distance value at the pointer. Turn the knob (15) forwards until the value read off is opposite the aperture mark indicated in the table.

If the distance is estimated, the required aperture mark is used directly as a focusing index.

### Summary of the operating ranges

The tables contain all the necessary information for close-up photography and the additional macro and micro ranges.

### Lenses

For each lens, the range of use is shown as a bar. Within that, the working ranges with extension tubes are indicated by various types of hatching. The white portions denote the best optical reproduction in each case.

### The magnification factor and the image scale

are shown as a double scale (magnification factor as decimal fractions, image scale as a ratio).

### Subject size

The value defines the dimensions of the square-framed subject field.

### Exposure correction

(Not applicable when the built-in exposure meter or automatic flash are used.) Since the effective aperture is determined by the relationship of the operative lens diameter to the image size, it deviates from the marked aperture when a long extension is used. An allowance has to be made for this in the exposure and depth of field. The scale gives the approximate deviations in exposure values = aperture stops (exact values, page 31).

### Time increase factor

If an allowance is made for exposure correction by altering the shutter speed rather than by altering the aperture, the approximate factors on this scale should be used, page 31.

### Depth of field

For reading off the depth of field (sloping lines) the aperture values (horizontal lines) are shown at the side. The aperture information on the left is valid for a circle of confusion of diameter  $56 \mu$  (1/1400 of the format diagonal); that on the right is valid for a circle of confusion of diameter  $80 \mu$  (1/1000 of the format diagonal). The aperture values correspond to the engraved values (deviation of the effective aperture already allowed for). The depth-of-field values denote the complete range. In close-up photography, this range is halved through the focusing plane.

### Reading off the values

All the numbers located vertically above or below each other belong together. Identical values on the two "magnification factor" scales are connected by a vertical line. The intersection of this line with the other scales gives the values to be read off.



The pages 35 and 36 contain a table  
which is found on a separate PDF file called

SL\_66\_SE\_35-36.pdf

in the same directory of the CD  
where you found this manual.

It can be printed on a DIN A 4 page  
(roughly letter size) or on other paper sizes  
set to: *fit to page*.

The pages 35 and 36 contain a table  
which is found on a separate PDF file called

SL\_66\_SE\_35-36.pdf

in the same directory of the CD  
where you found this manual.

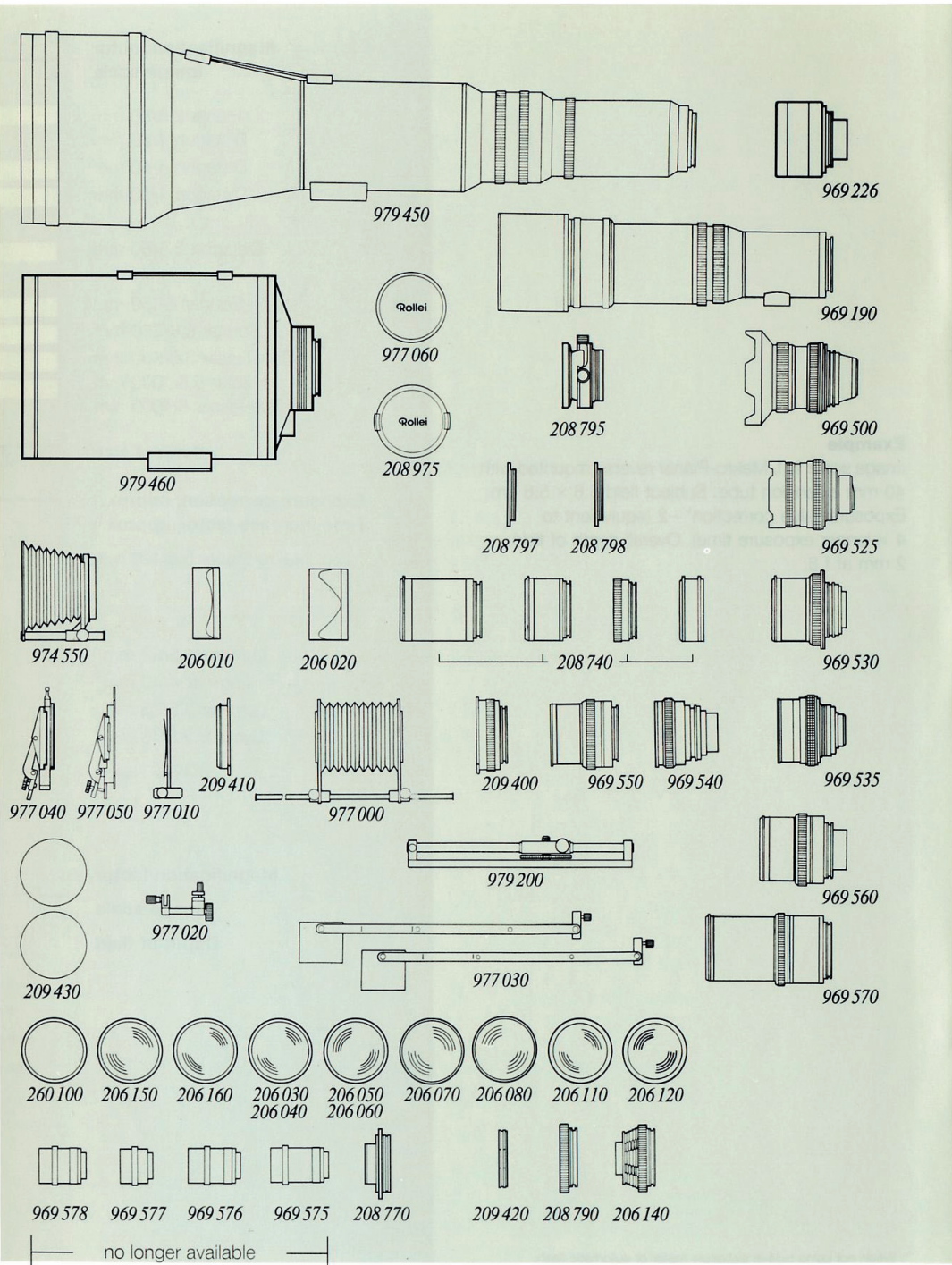
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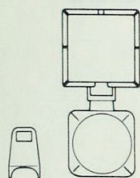
# The SL 66 SE/SL 66 X system

560 355	SL 66 SE with standard lens	208 810	Prism viewfinder with 45° eyepiece
	Planar f 2.8/80 mm HFT	209 380	Dust cap for camera body
560 375	SL 66 X with standard lens	972 485	Aluminium case
	Planar f 2.8/80 mm HFT	560 030	Fine ground glass screen
979 450	Tele-Tessar f 8/1000 mm	560 040	Bright matt screen
979 460	Mirotar f 5.6/1000 mm	560 050	Bright matt screen with split-image wedge
969 226	2 × Tele-converter	560 060	Bright matt screen with microprism spot
969 190	Tele-Tessar f 5.6/500 mm HFT	560 170	Superbright screen
969 500	F-Distagon f 3.5/30 mm HFT	560 180	Bright matt screen with central split-image wedge and microprism ring
969 525	Distagon f 4/40 mm HFT	560 378	Magazine 6 × 6–120
969 530	Distagon f 4/50 mm HFT	560 379	Magazine 6 × 6–220
969 535	Distagon f 3.5/60 mm HFT	560 320	Polaroid magazine
969 540	Planar f 2.8/80 mm HFT	560 380	Magazine 4.5 × 6–120 (horizontal format)
969 555	Makro-Planar f 4/120 mm HFT	560 381	Magazine 4.5 × 6–220 (horizontal format)
969 560	Sonnar f 4/150 mm HFT	208 700	Quick tripod coupling
969 570	Sonnar f 5.6/250 mm HFT	208 930	Handgrip with cable release
979 435	Distagon f 4/80 mm with leaf shutter	207 066	TTL FM 1 flashmeter
977 060	Rear dust cap	207 076	Metering back-integral
208 975	Front dust cap	207 077	Metering back-spot
208 795	PCS adapter	1)	Underwater camera housing (available from Ocean Optics, 6100 Darmstadt, West Germany)
208 797	Bayonet plate 0	207 068	TTL macroflash MF 2
208 798	Bayonet plate 1	2)	Metz handle-type dedicated flash unit
974 550	Compendium	207 065	Rollei SCA 356 dedicated flash interface module
206 010	Lens hood	3)	Compact or handle-type dedicated flash units (SCA 300 system)
	for Distagon f 4/50 mm, f 3.5/60 mm		
206 020	Lens hood		
	for Planars and Sonnar 80–250 mm		
208 740	Universal extension tube set		
977 040	Slide copying stage 6 × 6		
977 050	Slide copying stage 24 × 36		
977 010	Macro stage		
209 410	Lens coupling ring		
977 000	Extension bellows unit		
209 400	Camera coupling ring		
209 430	Subject stage plates for the macro stage		
977 020	Fine focusing drive		
979 200	Focusing rack for bellows unit		
977 030	Pair of vibration dampers		
206 100	Filter sheet holder size VI		
206 150	UV filter		
206 160	Circular polarizing filter –1.5		
206 030	Filter, medium-yellow –1.5		
206 040	Filter, green –1.5		
206 050	Filter, orange –1.5 to –3		
206 060	Filter, light red –2 to –3.5		
206 070	Infrared filter		
206 080	Colour conversion filter R 1.5 (against blue tint)		
206 110	Zeiss Softar I soft-focus lens		
206 120	Zeiss Softar II soft-focus lens		
969 578	Luminar f 4.5/63 mm		
969 577	Luminar f 4/40 mm		
969 576	Luminar f 3.5/25 mm		
969 575	Luminar f 2.5/16 mm		
208 770	Adapter for 16, 25, 40 and 63 mm magnifying lenses		
209 420	Front bayonet ring for magnifying lens adapter		
208 790	Adapter for other makes of lenses		
206 140	Microscope adapter		
206 130	Sports framefinder for prism finder		
971 010	Carrying strap		
972 010	Leather ever-ready case		
970 490	Soft leather camera case		
972 240	Lens case for T-Tessar f 5.6/500 mm		
972 220	Lens case for Sonnar f 5.6/250 mm		
972 230	Lens case for Distagon f 4/40 mm		
972 210	Lens case for Planar f 2.8/80 mm, Distagon f 4/50 mm or Makro-Planar f 4/120 mm		
208 710	Magnifying viewfinder hood		

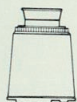
The existing lenses for the SL 66 can also be used with the SL 66 SE after factory conversion.  
 The SL 66 roll film magazines can be used without exposure metering but with automatic flash.  
 \* Set the exposure beforehand using a roll film magazine.  
 The automatic flash operates in the normal way.



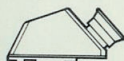




206 130



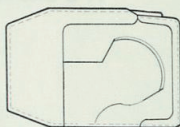
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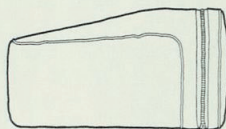
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971 010



972 010



970 490



972 240



972 220



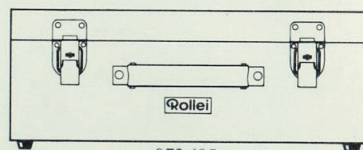
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972 210



209 380



972 485



560 030



560 045



560 050

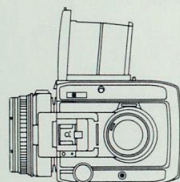


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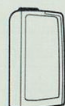


560 180

560 170



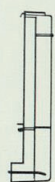
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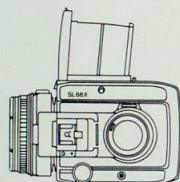
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560 379



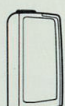
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560 375



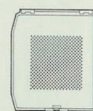
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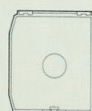
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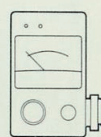
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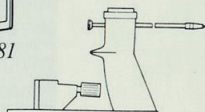
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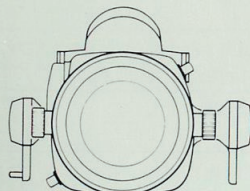
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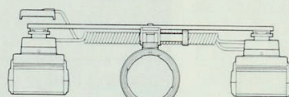
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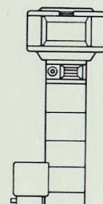
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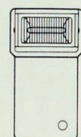
1)



207 068



2)



3)



207 065

# Troubleshooting guide

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**Problem**

---

With the magazine off, the drawslide cannot be pushed right in

---

With the magazine on, the drawslide cannot be pushed right in

---

Magazine back cannot be closed

---

Magazine cannot be attached

---

Magazine will not latch onto camera

---

Shutter release cannot be pressed

---

After winding the film on to frame 1:  
film does not stop at frame 1

---

With the magazine attached, the crank cannot be turned to the end

---

The magazine winder knob cannot be turned freely,  
i.e. the film is not being transported to frame 1

---

Crank cannot be turned back

---

Focusing image is not visible

---



<b>Cause</b>	<b>Remedy</b>
The sprocket on the front of the magazine has been disturbed by pulling the slide out	Pull the slide half out, turn the sprocket in the direction of the arrow up to the stop
Camera is not tensioned	Tension the camera
Film insert put in wrongly	Put the film insert in to the magazine, sprocket to sprocket
Camera not tensioned	Take magazine off, tension camera
Drawslide is out, or not fully in	Push drawslide fully in
Drawslide not fully in	Push drawslide fully in
1. Release is locked	1. Unlock release (by turning)
2. Magazine drawslide is in	2. Pull drawslide out
3. Shutter is not cocked	3. Swing crank forward and back
4. Crank is in an intermediate position, not in the tensioned end-position	4. Push drawslide in, remove magazine, tension camera
5. Camera not tensioned before loading the film	5. Push multiple exposure lever on crank in direction of crank handle and tension camera
6. Finger left on release button when loading	6. Take finger off the release button
Crank was not completely turned forward before attaching the magazine	Push drawslide in, remove magazine, turn crank to the end
Magazine winder knob pressed in too soon	Press the button on the magazine base: the winder knob will spring out
Magazine winder knob was not pushed right in after being turned as far as it will go	Push magazine knob in, turn crank back to the end position
Mirror has been pre-released	Either take the picture or put the lens cap on, release the shutter and tension the camera with the multiple exposure lever pressed

# Troubleshooting guide

Problem	Cause
Lens cannot be tilted 8° upwards	Frame of the focusing screen protruding
Flash pictures do not fill the 6 × 6 or 4.5 × 6 format	Shutter speed too fast
Exposure meter does not indicate (only SL 66 SE)	15 s "switched on" period has elapsed
	Speed set to B
	Stop-down button pressed or mirror up
	SL 66 SE/X-magazine not fitted
Green LED does not light up when battery test button is pressed	Battery discharged
	Battery polarity wrong
Exposure balance cannot be obtained (only SL 66 SE)	Unsuitable choice of film: high speed film in bright light or slow film in weak light
Picture is poorly exposed	Exposure balanced without the magnifier flipped up: faulty measurement due to too much stray light (only SL 66 SE)
	Important parts of the picture lie outside the measuring field (only SL 66 SE)
	Film speed set wrongly (SL 66 SE)
	Exposure correction shifted (SL 66 SE)
When using flash with system adapter	Flash unit not ready
	Flash energy too low and/or aperture too small
Lens cannot be tilted 8° upwards or downwards	Camera is set to ∞

### Remedy

Take off viewing head, press down frame and push fully back

Use the prescribed orange coloured speed range: 1/30 to 1 s or B

Touch release button again

Select a different speed

Release the stop-down button, bring mirror down

Fit the SL 66 SE/X-magazine

Change battery

Put battery in correctly

Use a more suitable film.

Use a lens that can be stopped down further or one with a larger aperture

Balance exposure with magnifier up

Refer to the measuring field of the exposure meter

Set the correct film speed

Set the exposure correction to 0

Observe the "flash ready" light

Observe electronic indication on flash after exposure and if necessary repeat exposure with larger aperture

Set the correct film speed on the adapter

Adjust the focusing knob

### Care of the camera

Your camera requires the same care as any valuable piece of equipment from which you expect long-term reliability. To keep it clean, please use these well-tried methods:

Remove dust with a soft camel-hair brush or air blower. If you need to clean the outer surfaces of the lenses, breathe on them and then polish them with lens cleaning paper. For protection against static, breathe on them and allow the moisture to evaporate.

Take special care in cleaning the focusing screens: the rough lower surface should only be treated with a soft brush or air blower. Protect this side carefully from dirt and finger marks.

Protect the camera from the long-term harmful effects of steam or dampness.

The high humidity in tropical or sub-tropical regions can lead to corrosion in the metal parts, mildew in the leather parts and fungus attacks on the glass surfaces. Whenever possible, dry the camera frequently in the fresh air and sunshine. Keep the magazine and the film guide surfaces clean (particles of gelatine rubbed off the film are a breeding ground for fungus). When the camera is not to be used for long periods, keep it in an airtight container together with silica gel cartridges. Store the leather ever-ready case particularly carefully. Take special care to protect the camera from any kind of dirt.



# Technical data

## Type

A 6 × 6 SLR automatic camera with TTL exposure meter (SL 66 SE), built-in bellows and interchangeable film magazine. Lens holder with bellows, lens vertically tiltable by  $\pm 8^\circ$  for extended depth. Mirror pre-release and multiple exposure switch. Equipped for automatic flash units with through-the-lens exposure metering.

## Interchangeable magazines

Magazines for 6 × 6/120 film, 6 × 6/220 film, 4.5 × 6/120 film and 4.5 × 6/220 film. They are equipped with magazine drawslide, magazine winder knob, holder for tear-off tab from the film box and storage compartment for the magazine drawslide. Film wind-up with automatic stop at frame 1. Film speed setting for the exposure meter on the right side of the magazine. ASA 25-6400 (15-39 DIN). Film counter for 1-12, switchable to 1-24, returns to zero when the film is changed. Magazine 4.5 × 6 horizontal format with counter 1-16, switchable to 1-32.

Rollei Polaroid magazine 6 × 6 or two times 4.5 × 6 for Polaroid film packs. The Rollei magazine can be interchanged irrespective of the number of pictures taken.

## Standard lens

Planar f 2.8/80 mm, angle of view  $52^\circ$ . Distance range in normal mounting  $\infty$  to 16 cm, in reverse mounting 16 cm to 12 cm.

## Interchangeable lenses

Zeiss lenses with focal lengths of 30-1000 mm, some mountable in the reverse position.

## Shutter

Focal plane shutter, speed range 1 s – 1/1000 s and B, X-contact, X-synchronization 1/30 s.

## Viewfinder

Mirror-reflex viewfinder, damped mirror movement with partially transparent multicoating, clear focusing screen with microprism area and split-image wedge (interchangeable). Folding viewing head with magnifier lens (3×), interchangeable with rigid magnifying head or prism head.

## Exposure metering system of the SL 66 SE

Spot measurement through integral metering by means of 5 spectral-corrected silicon photo-elements behind the swinging mirror. The measuring range for ASA 100/21 DIN spans exposure values 1-18, measured with the standard Planar f 2.8/80 mm lens. The exposure meter is activated by lightly pressing the shutter release. Switchover from the spot to integral metering mode is done via the select switch. Stray light compensation. Metering angle for spot measurement is  $< 3^\circ$  with f: 80 mm. The film speed is adjusted on the magazine, in the range 25-6400 ASA (15-39 DIN). The measured exposure is balanced by means of 5 different-coloured LED indicators in the viewfinder. Exposure correction switch for -1.5 to +1.5 EV steps.

### **Battery**

6 V silver oxide or lithium (PX 28) (not supplied as standard).

### **Flash exposure metering of the SL 66 SE/SL 66 X**

Through-the-lens flash metering by the use of a fully automatic flash unit with Rollei SCA 356 adapter. A sensor measures the light reflected from the film surface and an electronic control system in the Rollei flash adapter measures out the necessary flash energy. Mounting and electrical contact for the system adapter or the Rollei FM 1 take place via the hot shoe on the left side on the camera.

### **Focusing**

By means of built-in bellows, 50 mm extension.  
Focusing knob at the side with distance scales built in for 50, 80 150 and 250 mm focal lengths.

### **Extended depth**

(According to the Scheimpflug principle). The lens holder can be tilted 8° upwards or downwards; it is self-locking in the middle and two end positions.

### **Film transport**

By means of a transport crank, coupled to the shutter cocking mechanism. The multiple exposure locking device can be disengaged.

### **Dimensions**

H × W × L approx. 118 × 150 × 148 mm without lens;  
approx. 118 × 150 × 173 mm with f 2.8/80 mm lens.

### **Weight**

SL 66 SE: approx. 1590 g without Planar f 2.8/80 mm,  
approx. 1915 g with Planar f 2.8/80 mm.  
SL 66 X: approx. 1585 g without Planar f 2.8/80 mm,  
approx. 1910 g with Planar f 2.8/80 mm.



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