

Cosina E1 SOLAR

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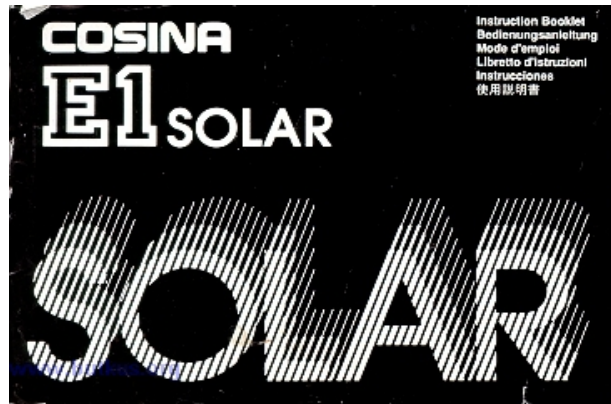
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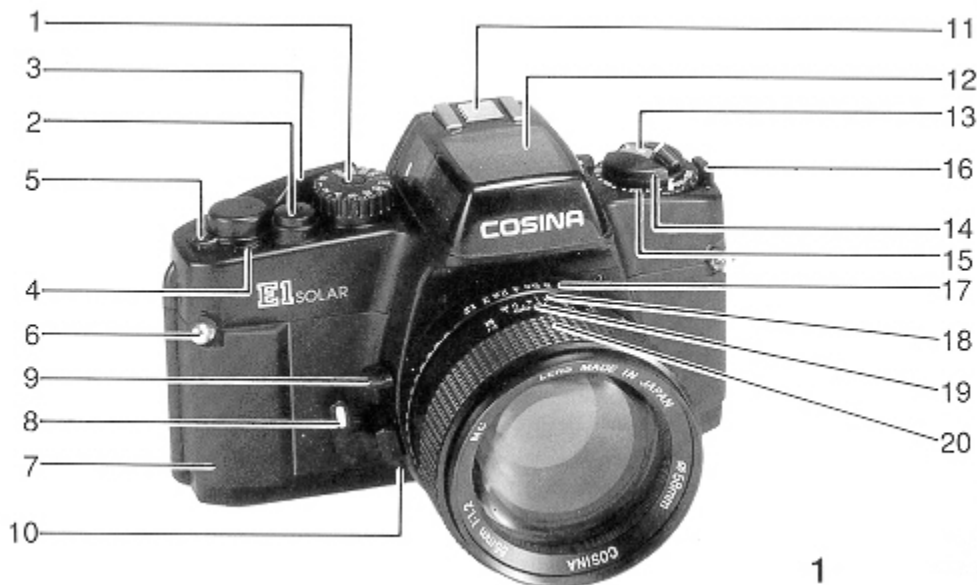
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Congratulations on your selecting of the COSINA E1 camera. This compact and lightweight SLR camera functions on solar energy only. The E1 has full open aperture TTL exposure metering with a LCD display and many other nice features to allow you good photography. With carefully reading this booklet, you can enjoy easy-to-take highest quality photography for the years ahead.

DESCRIPTION OF PARTS



1. Shutter Speed Dial

2 shutter Release Button

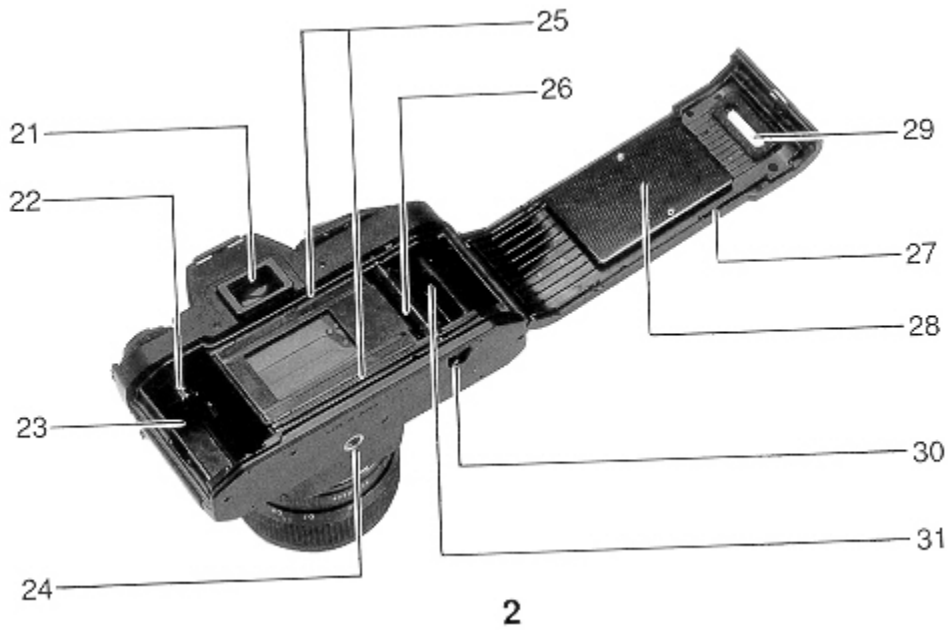
3. Film Advance lever

13. Film rewind Crank

14. Film Rewind Knob / Film
Compartment Opening Knob

4. Frame counter
5. Multi-Exposure Lever
6. Strap Hook
7. Hand Grip
8. Self-timer Lever
9. Preview Button
10. Lens Release Button
11. Hot Shoe
12. Solar Battery

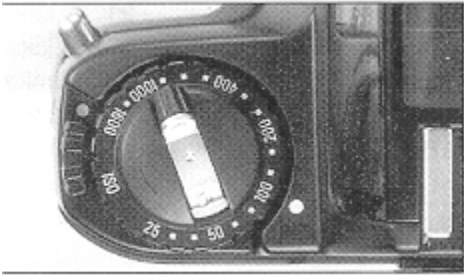
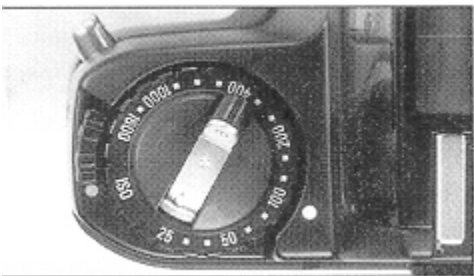
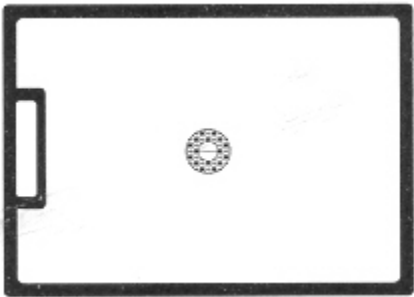
15. Film Speed Dial
16. Solar Lever
17. Aperture Ring
18. Depth-of-field Scale
19. Distance Scale
20. Focusing Ring
21. Viewfinder Eyepiece
22. Rewind Shaft
23. Film Chamber
24. Tripod Socket



25. Film Guide Bars
26. Sprocket
27. Back Cover
28. Film Pressure Plate

29. Film Transportation indicator window
30. Film Rewind Button
31. Film Take-up Spool

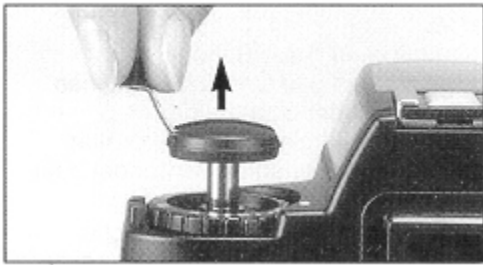
Solar Battery

 <p>3</p>	<p>1. As the camera is equipped with a solar battery (12), installing an ordinary battery is not required. Light reflected on the solar battery is converted into electricity and used as it is or stored for later use.</p> <p>2. Set the solar battery for ordinary use by turning the solar lever (16) to let the green O mark be seen.</p>
 <p>4</p>	<p>3. (1) Irradiate bright light (4,000 lux or over) to the solar battery for several minutes and put the camera into operation if it was taken out of the box or any dark place immediately before where it was stored for hours. Immediately after the solar battery is charged, it will be available continuously for 10 minutes or longer without being irradiated by light.</p>
 <p>5</p>	<p>4. Even immediately after the camera is taken out from a dark place, and if it is intended to use the camera with a light of 400 lux or over approximately being irradiated to the solar battery, set the solar lever to let the red O mark appear.</p>

(Note) In general, 4,000 lux or over is as bright as when irradiating from a height of 20cm approximately with a 20W-fluorescent lamp. 400 lux is as bright as a room illuminated at night. Leave the camera in the light and it will be always charged, regardless of where the solar battery is positioned.

4. Follow 3 if no exposure mark (see P. 17) is displayed in the viewfinder upon releasing the shutter button (2) half and looking through the viewfinder eyepiece (21) except when the camera is set at "B".

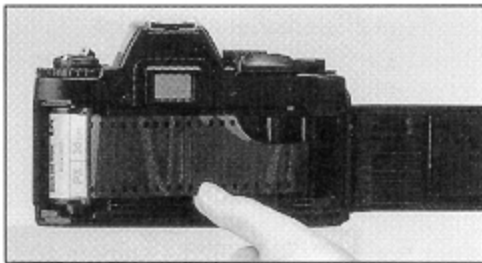
Loading film



6

1. To open the film chamber back cover (27), fold out the film rewind knob (14), then pull it out. When the back cover opens, the frame counter (4) automatically resets to "S".

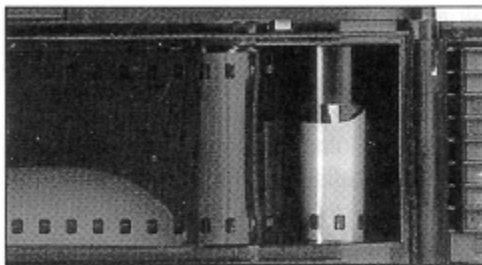
2. Insert the film cassette into the film chamber so that the projecting end of the film cassette is downward. Do this in a place away from direct sunlight.



7

3. Fold out and lift up the film rewind crank (13). Then rotate the crank carefully while push in it down lightly until the film locks on the film rewind shaft (22).

4. Return the film rewind knob to its original position.

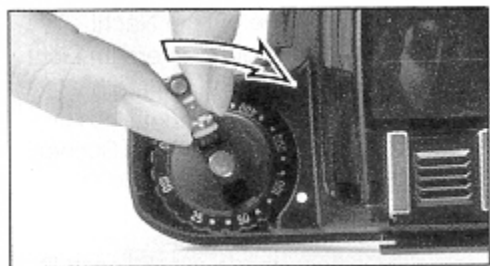


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5. Insert the film leader into the groove of the take-up spool (31) and place it so that the film perforations engage with the spool teeth.

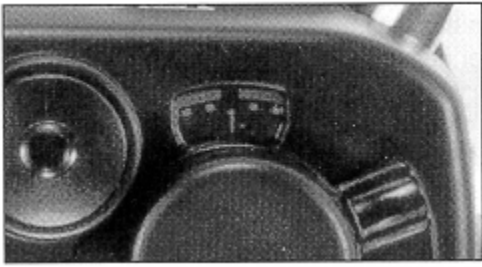
6. Check that the film perforations engage properly with the teeth of sprocket (26) and the film slides smoothly along the film guide bars (25) by operating lightly the film advance lever (3) to advance the film.

7. Turn the film rewind crank gently in the direction of the arrow to properly tension the loaded film. Stop turning the crank when it becomes stiff, and return the crank to its original position.



9

8. Close the back cover and push it until a click is heard.

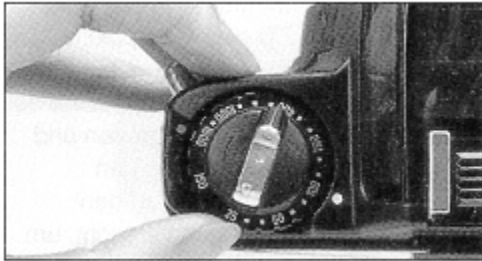


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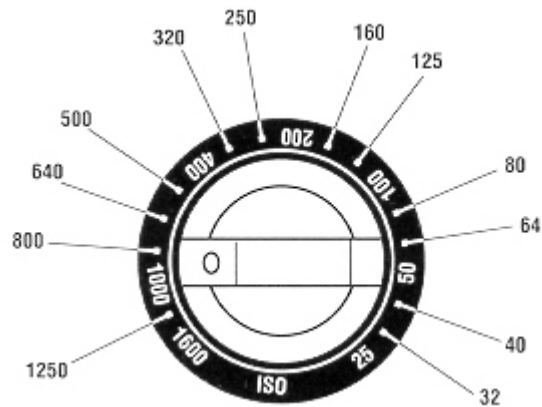
9. Advance the film a couple of frames, pressing the shutter release button each time, until the frame counter indicates "1". (In this case, the film advance lever should be at the ready position, because the shutter release is interlocked when the lever is in the stored position). The film rewind knob rotates each time the film is advanced meaning that the film is advancing properly.

Film speed Setting

1. Film speed is indicated on the outside of the film package or in the film instructions.
2. Set the film speed index (15) by turning the film speed dial according to the value indicated of the film.



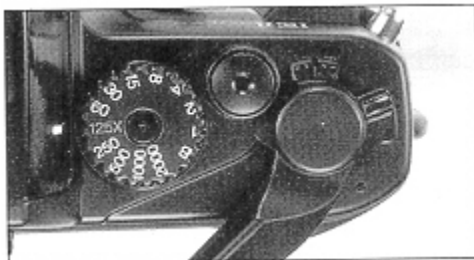
11



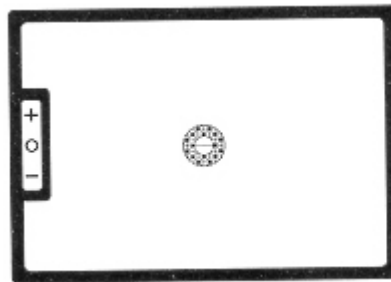
12

Exposure Setting (shutter speed priority)

1. Place the film advance lever (3) in the ready position and turn the shutter speed dial so that the indicator white line aligns with the desired shutter speed value. Then if the dial is set at the intermediate positions of the index, shutter speed will be incorrect. Be sure that the dial clicks at the position where the white line aligns with the desired value. With setting at "B" (bulb) position, exposure monitoring is impossible.



13



14

2. With brighter subjects, fast moving subjects or with the higher value film speed of the film used, it is recommended to use higher shutter speeds.

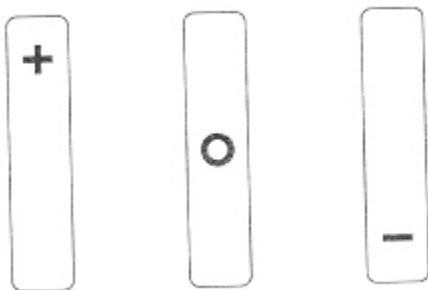
3. In photography using, telephoto lenses, use the highest shutter speed possible to avoid camera movement affecting your pictures. Generally higher than the same value of the shutter speed as that of the focal length of the lens is recommended, i.e. 1/250s shutter speed is recommended for a telephoto lens with 135mm focal length, and 1 /500s for 300mm focal length.

4. Recommended shutter speed with ISO 100/21° film and standard 50mm focal length lens under typical situation is as follows:

Subject	Shutter speed
Stationary subjects	1 to 1/15
In subdued light	
Indoors in normal conditions	1/30 to 1/60
Outdoors on a fine day	1/125 to 1/250
Seaside in midsummer	1/500 to 1/2000
Mountain area with snow	
Fast moving subjects	

5. To monitor exposure, partly press the shutter release button (2), turn the aperture ring (17) until **O** mark appears in the viewfinder. When **+** mark appears, meaning that the exposure is too great, turn the aperture ring in the direction of greater f/value. But if an **-** mark shows, exposure is below that necessary, so turn the aperture ring (17) to a smaller f/value.

(Webmaster: This is a typical "auto" exposure program with LED lights in the viewfinder. You may also have the aperture half-way between "click stops" on the lens, but NEVER on the shutter speeds)



- under exposure O + over exposure

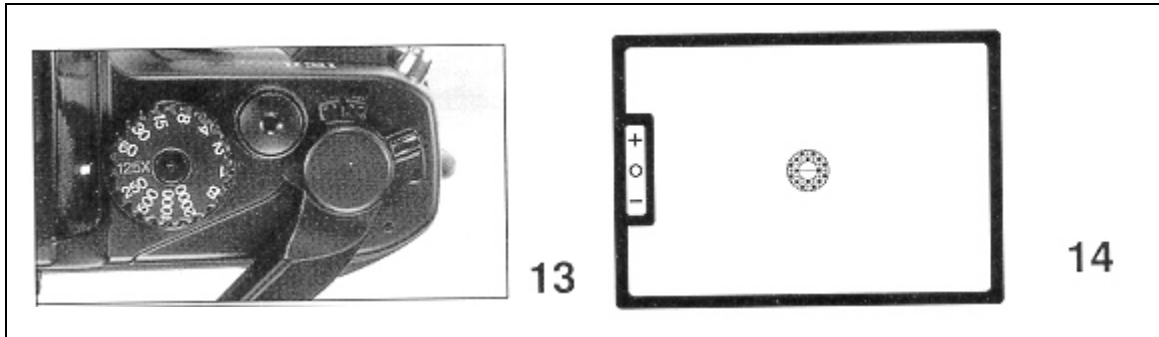
Exposure setting

(Aperture priority)

1 Place the film advance lever (3) in the ready position and turn the aperture ring (17) until the index on the lens barrel indicates the desired f/value.

(Webmaster: this means you want a particular F-stop. Either a small one, F16, or more for lots of depth of field or a wide one, F2, for little depth of field to blur out the foreground or background)

2. The suitable aperture value changes according to the brightness of the subject, the depth-of-field desired or film speed of the film in use, and typical settings of the aperture with ISO 100/21 ° (ASA100/DIN21) film are as follows:

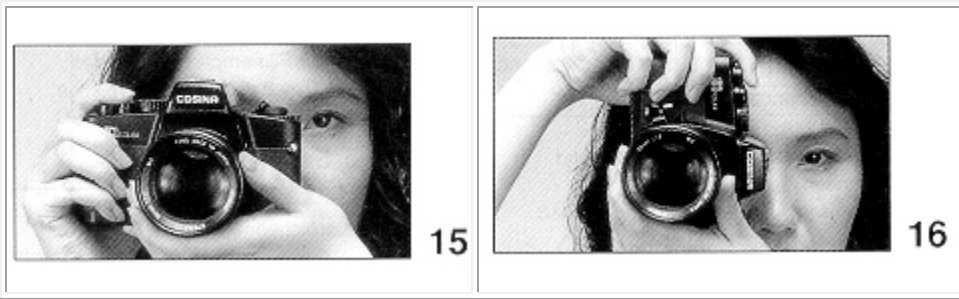


Subject	F/value
In subdued light	F/1.2 to F/2
To narrow depth-of-field	
Indoors in normal condition	F/2 to F/4
Outdoors on a cloud day	F/4 to F/8
Outdoors on a fine day	F/8 to F/11
Seaside in midsummer	F/11 to F/16
Mountain areas with snow	

When **O** mark appears at intermediate positions between two clicks, set the dial at either click and make minute control by operating the aperture ring afterwards.

Holding Camera

1. Hold the camera in the palm of the left hand so as to turn the lens focusing ring (20) easily with fingers.
2. Hold the camera body lightly by holding grip (7) and place your right fore finger lightly on the shutter release button.
3. Press your left elbow lightly against your body and look through the viewfinder eyepiece (21) to steady the camera against your face. Then relax your right arm holding the grip.



4. With telephoto lenses or lower shutter speeds, it is recommended to use a tripod and/or remote shutter release control cable. (Webmaster: a monopod works great too)

5. The exposure marks in the viewfinder may become difficult to recognize with a polarizing filter attached. This is not malfunction.

Focusing

<p style="text-align: right;">17</p>	<p>1. Focusing is done by observing through the circled area in the center of the viewfinder screen. Within the circle is the split image spot prism and around the circle there is the microprism collar.</p>
<p style="text-align: center;">In focus 18 Not in focus 19</p>	<p>2. In focusing through the split image spot, when the image divided horizontally is brought into alignment by focusing, focus is correct. When the upper-and lower-half images do not align, it is out-of-focus.</p>

3. To focus through the microprism collar outside center spot, a broken shimmering image is seen when it is out-of-focus and correct focus is at the setting in which the image becomes clear and sharp.

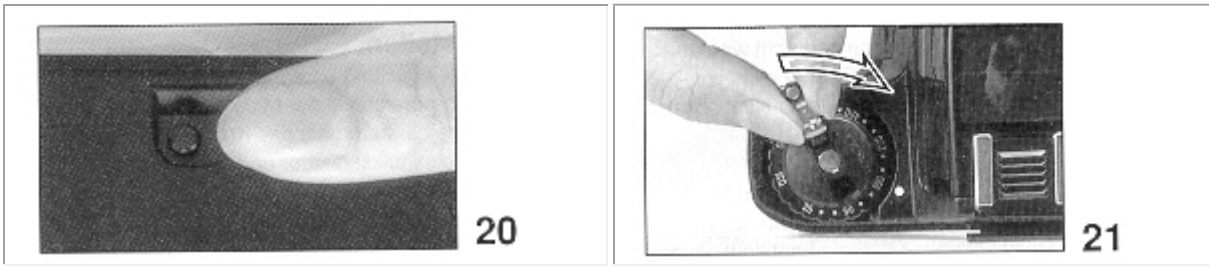
4. Focusing through the entire matte surface of the viewfinder is also possible. In this case, at the setting where the sharpest image is obtained, precise focusing is secured.

5. Choose the most effective focusing method from the above according to the shooting situation, such as the lens used, the subject, etc.

6. For viewfinder adjustment, optionally available accessories, such as a rubber eyecup piece, 3 diopter lenses, optional angle finders or magnifiers can be used.

Rewinding the film

1. When the film advance lever no longer operates smoothly, check the frame counter (4) display. If the frame counter shows that the all frames of the loaded film have been exposed, replace the film.



2. Press the film rewind button (30) on the camera base.

3. Fold out the film rewind crank (13) and turn it in the direction of the arrow.

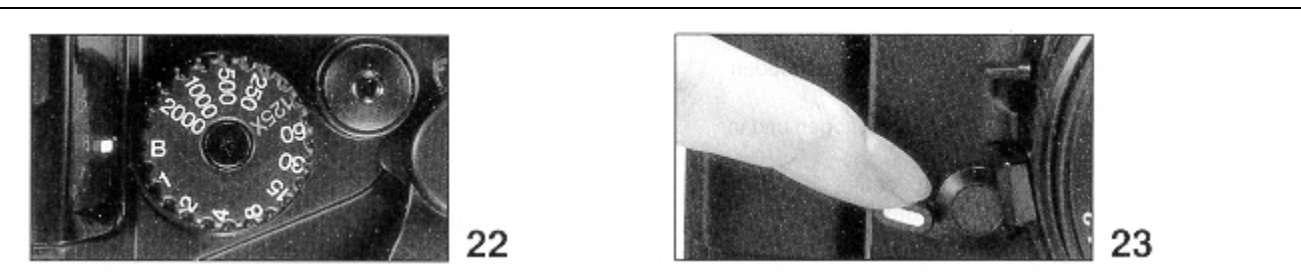
4. Once the pressure eases, the film is completely wound into the cassette.

5. Lift up the film rewind knob (14) and pull it out to open the back cover (27). Now the film cassette can be taken out.

6. Do this in a place away from direct sunlight.

"B" (bulb) Setting

1. With the shutter speed dial (1) set at "B" position, the shutter will remain open for as long as **the shutter** release button (2) is pressed.



2. This setting is useful when an exposure longer than one second is required, such as in landscape photography at night. Or it can be used for the special effect photography by employing the flash test button together with insufficient light conditions.

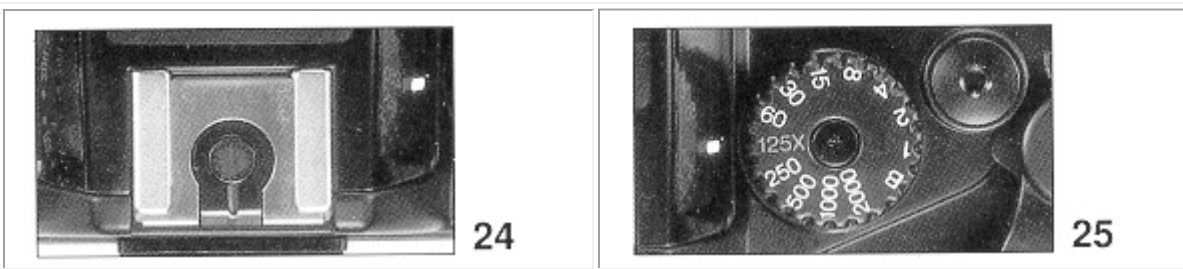
3. Be sure to use a tripod and/or remote shutter release control when using this shutter speed setting.

Self-Timer

1. Wind the film advance lever (3) and fully turn the self-timer lever (8) counterclockwise. Now the self-timer is ready to set.
2. Press the shutter release button (2) and the self timer operates to release the shutter in approximately 10 seconds later.
3. Once the self-timer becomes ready it is impossible to return it manually. So operate it only when you really need it.
4. The self-timer is very useful when you wish to include yourself in a picture, or, you can use it in order to prevent camera movement in shutter Releasing instead of using the remote shutter release control.

Flash Photography

1. You only have to directly set the flash unit in the hot-shoe (11) with the flash unit having no cable and direct synchronization features.
2. Set the shutter speed dial (1) at 1/125 second or lower.

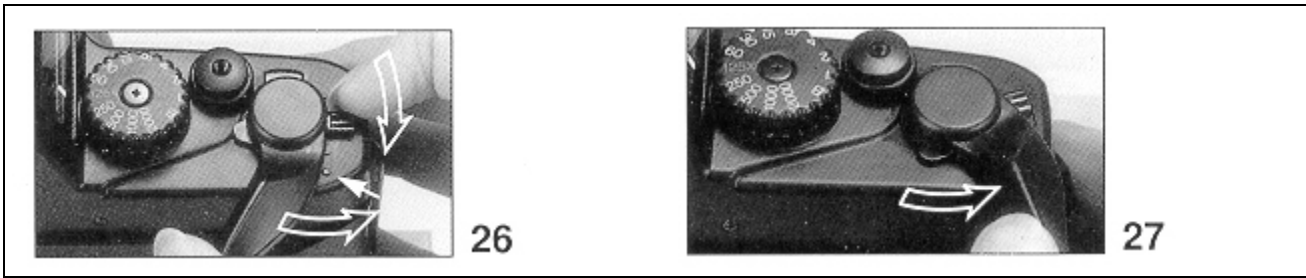


3. Set the corresponding aperture value with the Guide Number (G.N.) of your flash unit by operating the aperture ring (17). For details on how to determine the correct aperture value to use, follow the instructions given in the manual of your flash unit.

Multi-exposure Photography

Multi-exposure photography is a technique used to take several different images on the same frame.

1. Release the shutter (2) and take a picture.
2. Turn the film advance lever (3) while pulling the multi-exposure lever (5) toward you till it stops. When the film advance lever (3) reaches the arrow mark (photo 26), finger off the multi-exposure lever and turn the film advance lever (3) till it stops. Check to see then that the film is not advanced and the film counter (4) does not increment.



3. Release the shutter button and take a picture. (Multi-exposure photography)
4. Repeat 2 and 3 above, and multi-exposure photography will be made any desired times.

Caution: Tell your shop in advance that you did multi-exposure photography with the film. If not, multi-exposed frame may be regarded as an erroneous double exposure and the frame may not be processed.

Depth-of-field

1. When you are focusing on a given subject, objects in the foreground and background will appear acceptably sharp in the picture.

The range in which all objects appear acceptably sharp in the picture is called "depth-of-field."



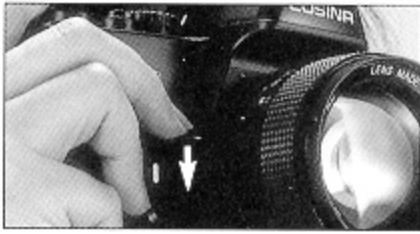
2. To obtain the depth-of-field scale at different aperture settings, the depth-of-field scale (18) is used. The depth-of-field scale is positioned between the focusing ring (20) and aperture ring (17), and the distance within the range between pairs of the same F-stops on the depth-of-field scale as the used f/value is the depth-of-field.

To obtain the actual distance values of the depth-of-field, read the values within the range off the focusing scale.

3. For instance, when the lens is focused on a subject at a distance of am with the aperture set at F8, the depth-of-field can be obtained by using the depth-of-field scale as follows: the values on the distance scale corresponding with the f/values shown on the depth-of-field scale are approximately 2.4m and 4.5m respectively. This means that all objects within the range between 2.4m and 4.5m distance can be reproduced 33 acceptably sharp in the picture with the aperture set at F8.

Depth-of-Field Preview

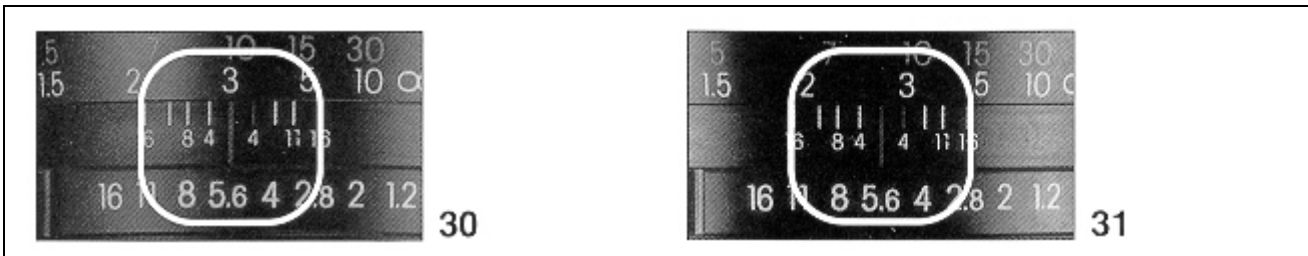
In the Viewfinder eyepiece (21) you can visually observe the depth-of-field provided by the manually selected F-stop. Press the Preview Button. Observe the results of increased sharpness on the (darkened) image in the viewfinder.



Caution: As it will cause the camera to malfunction, please refrain from pushing the shutter release button or winding the film while holding down the preview lever.

Infrared Photography

1. The stripe engraved in red on the depth-of-field scale (18) is the infrared distance indicator. This is used for reading the distance scale in infrared photography using infrared film.



2. First, secure focus in the normal manner. Then, read off the subject distance on the normal distance scale (19), then align it with the infrared distance indicator.

3. For instance, when you focus on a subject at an in the normal manner, read off the value "3" on the focusing scale and move the focusing ring until the infrared distance indicator points to "3".

4. Use the red filter always when attempting infrared photography. For other details concerning infrared photography, follow the instructions of the infrared film used.

Mounting/Removing the Lens

1. The lens mounting of this camera is the "K" mount. All other lenses with a "K" mount can be mounted on this camera.



32

2. To mount the lens, after matching the red mark on the camera body with the red mark of the lens barrel, insert the lens in the camera body and turn the lens clockwise until it clicks.

3. To remove the lens from the camera body, turn the lens all the way counterclockwise while keeping the lens release button (10) pressed, then lift it straight out of the mount.

SPECIFICATIONS

Type: 35mm SLR camera with focal plane shutter and TTL metering with 3 LCD display, exposure setting obtained by matching **O** mark.

Film format: 24mm x 36mm

Mount type: Bayonet "K" mount

Shutter release: Metal focal plane shutter operating vertically B,1--1/2000s

Flash Synchronization: Hot-shoe, X contact, synchronized at 1/125 or higher shutter speed.

Viewfinder: Eye-level finder with use of pentaprism image magnification ratio on the finder 0.84x. (with standard 50mm focal length lens at ∞) Field-of-view 93% horizontally and vertically to the actual picture area. Focusing method; Matching the divided image through horizontal split image prism center spot. Focusing through microprism collar or entire matte surface is also possible.

Displays in viewfinder:

+ mark - overexposure warning
O mark - good exposure indication
- mark - underexposure warning

Exposure metering: Full aperture TTL metering system. Center weighted area measurement.

Display: overexposure, underexposure warnings and good exposure indication. Desired setting is obtained by matching **O** mark. (zero method)

Measurement range: ISO 100/21° EV5 (F2,1/8s)--EV17 (F16,1/2000s)

Film speed setting: ISO 25/15°--1600/33°, by 1/3 steps. Film transportation indicator window

Film advancing: One frame advance by single-lever action with 135° throw and 30° stand-off. With Multi-Exposure mechanism. Shutter release button is interlocked with the advance lever stored at unused position.

Film rewinding: By operating the film rewind knob and film rewind crank, the button returns automatically to the original position at the completion of film winding.

Frame counter: Progressive type with auto reset by opening the back cover.

Self-timer: Mechanical self-timer, approx. 10 sec. duration

Power source: Solar battery with condenser

Size and weight: 138.5 x 91.0 x 66.2mm, 380g (camera body only)

These specifications and external appearance are subjected to change for improvement without prior notice.