



# AE-II FINDER E

Instructions

The AE-II Finder E has been specially designed as an integral accessory in the Zenza Bronica ETRS System of Photography and converts the ETRS (and ETR-C) into a diaphragm-priority TTL (through-the-lens) automatic exposure camera, when it is mounted in place of other finders. Furthermore, it can also be switched to function as a coupled exposure metering system or it can be completely switched off and used as a prism viewfinder, without any limitations on the operations of the camera.

In the Auto mode, the exposure is automatically controlled when the lens is pointed at the subject and, therefore, the user only needs to precisely focus the subject and release the shutter for getting a correctly-exposed picture. A bright, distinct laterally-correct and upright image is viewed at the eye-level, through the prism viewfinder, while the shutter speed can be checked prior to taking the picture by simply stroking the shutter release button halfway (ETRS) and/or depressing the display button (ETRS & ETR-C). The shutter speed setting is continuously displayed digitally by LED-illumination on AUTO (while the shutter release button is half-stroked or display button pressed) but flickers on and off, in the Manual mode (coupled exposure metering) and acts as a reminder to the user of the mode of operation.

The AE-II Finder E is a very convenient and important accessory because it has a wide exposure coupling range for all film speeds, a choice of exposure compensations for making under- or over-exposure adjustments and because it can be used with the other accessories available in the ETRS System of Photography. The accessory is specially recommended for color photography because of the precise automatic exposure control that makes possible true-color pictures but, at the same time, it is considered a very valuable medium for all kinds of photography requiring very accurate exposures, especially when using telephoto lenses or when shooting close-ups.

## Contents

Specifications . . . . .	2
Nomenclature . . . . .	4
Attachment and Removal of the Finder . . . . .	6
Setting the Film Speed to the Finder . . . . .	7
Automatic Exposure Operations . . . . .	8
Pointers on Automatic Exposure Operations . . . . .	10
Manual Exposure Operations . . . . .	11
Exposure Compensation . . . . .	12
Exchanging the Eyepiece Lens . . . . .	13
Relationship Between Shutter Speed, Aperture and Exposure . . . . .	14
Care of the AE-II Finder E . . . . .	16

## Specifications

<b>Magnification</b>	0.82x, with standard 75 mm lens
<b>Finder field</b>	40.6 x 51.6 mm (96% x 94%)
<b>Eyepiece diopter corrections</b>	Interchangeable eyepiece lenses; -4.50, -3.50, -2.50, -1.50 (standard lens), -0.50, +0.50 and +1.50 diopters are available.
<b>Exposure measuring system</b>	TTL (thru-the-lens) full aperture exposure measurements; full area average readings, with two silicon photocells.
<b>Shutter speed range</b>	8 seconds to 1/500 second, in stageless steps, on Auto, but in 13 settings on Manual and OFF, of the AE dial.
<b>Exposure measuring range</b>	EV 4 to EV 17 (ASA 100 film)
<b>Film sensitivity range</b>	ASA 25 to 3,200 (DIN 15 to 36)
<b>Exposure compensations</b>	Over- and under-exposure adjustments possible up to one EV over and under indicated exposure reading.
<b>Finder indications</b>	
<b>Shutter speed:</b>	Shutter speed setting for diaphragm-priority automatic exposure is digitally indicated by LED-illumination, below focusing screen area, with half-stroke of shutter release button on body (ETRS) or depression of display button (ETRS/ETR-C). Shutter speed scale is displayed in following colors: Orange — 8 sec. to 1/30 sec. Green — 1/60 sec. to 1/500 sec. Red — Over- and under-exposure warning marks.

### Battery checker:

Red flashes in lower right-hand corner when battery power is sufficient for operations, when the battery check button on body (ETRS) is depressed.

### Shutter signal:

Battery checker LED also doubles as shutter signal and flashes when the shutter release action is completed (and indicates that film may be advanced, when used with Model ETRS.)

### AE dial

Can be switched to three settings, as follows:—

A — (Auto) AE circuit automatically controls shutter speed setting (with an illuminated display indicating the shutter speed setting).

M — (Manual) AE circuit and body control circuit operate independently (with a flickering display indicating the shutter speed for correct exposure).

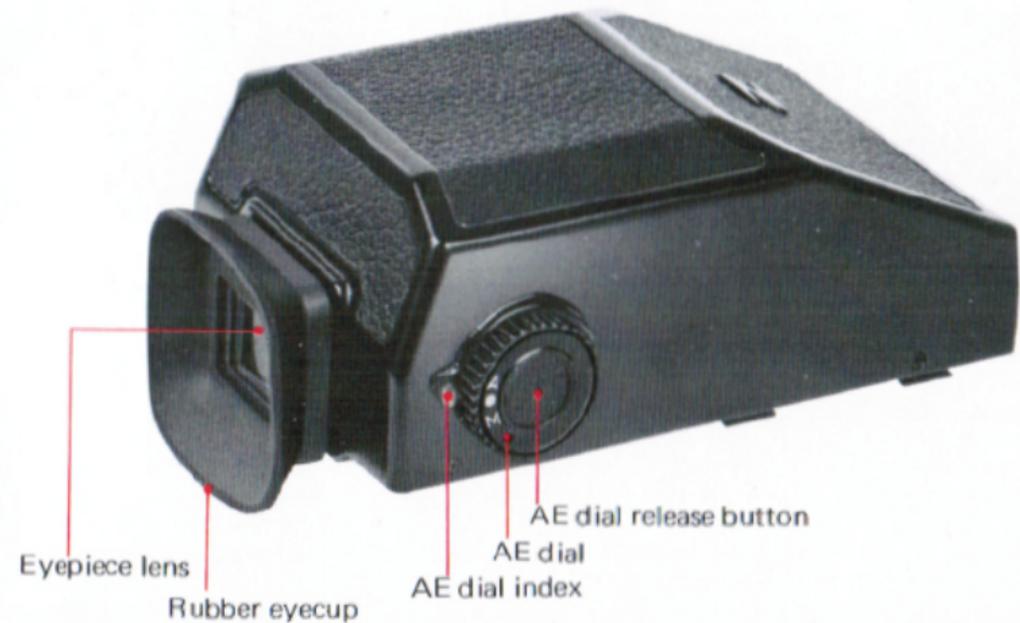
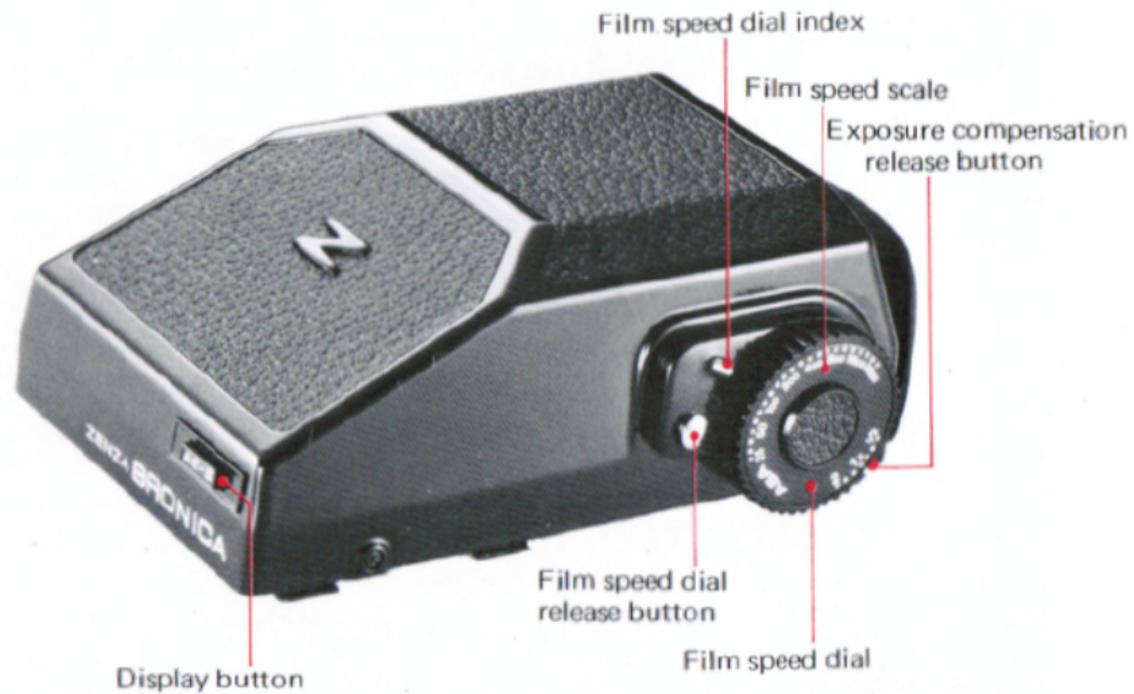
• — (OFF) AE circuit is switched OFF and body control circuit only is in operation. Shutter speed is controlled with the shutter speed dial. (No display whatsoever.)

Remarks: The 6 volt battery in the camera body is also used as the power source by the AE-II Finder E.

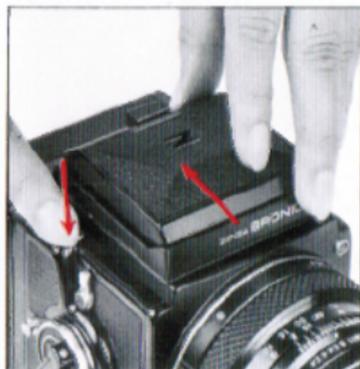
### Dimensions and weight

82.5mm(width) x 125mm(length) x 53mm(height) with eyecup attached; 380 grams.

## Nomenclature



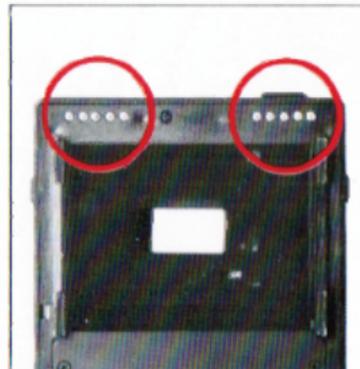
## Attachment and Removal of the Finder



- 1) The finder attached to the camera, such as Waist-Level Finder E, can be removed very easily. Simply depress the finder release button (on the camera body) and, at the same time, slide the finder to the rear where it can be lifted off.

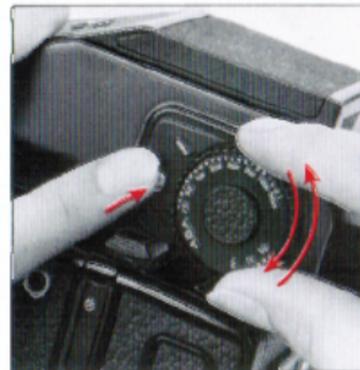


- 2) The AE-II Finder E can be attached very easily, too. First, detach the finder's base cover. Then, insert protrusions on the base of the finder into corresponding openings in the finder frame. Finally, slide the finder forward until it locks.



- 3) **Always clean the contact points on the body and the base of the AE-II Finder E before attachment, as otherwise there will be faulty contact, leading to incorrect readings. Always protect the base of the detached finder with the base cover.**

## Setting the Film Speed to the Finder

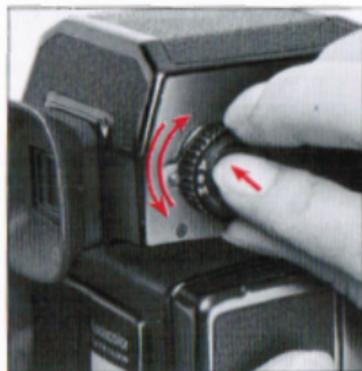


- 1) The film speed or sensitivity of the film loaded in the film back must also be set to the film speed scale of the AE-II Finder E.
- 2) Rotate the film speed dial, while depressing the film speed dial release button, and set the required ASA film speed on the film speed scale to the index.
- 3) Due to the lack of space, the film speed scale is not completely numbered, with the dots on the scale having the following ASA values. Corresponding DIN values are also shown following.

Table of Film Speed

A S A	25	32	40	50	64	80	100	125	160	200	250	320	400	500	640	800	1000	1250	1500	2000	2500	3200
Film Speed Scale	25	•	•	50	•	•	100	•	•	200	•	•	400	•	•	800	•	•	1500	•	•	3200
D I N	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36

## Automatic Exposure Operations



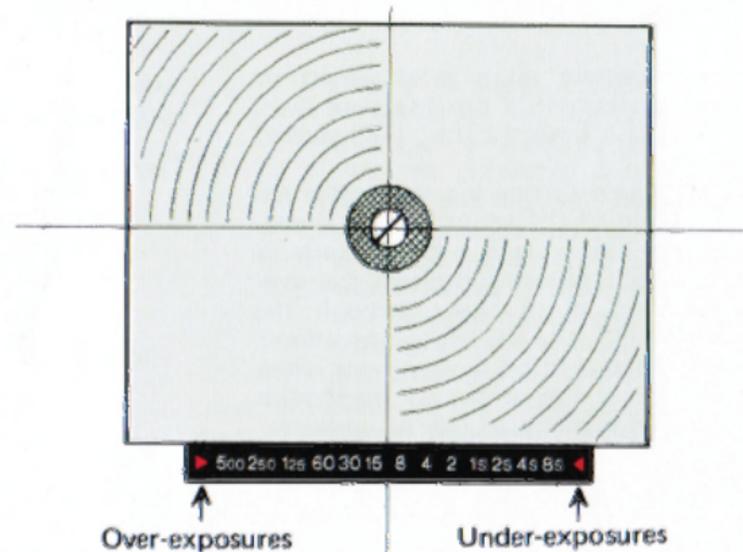
1) The shutter speed is controlled in stageless steps from 8 seconds to 1/500 second, when the AE-II Finder E is set for automatic exposure operations.

Brightness	F/Number
Portraiture indoors or night scenes	2.8 - 4
Portraiture outdoors or landscapes	5.6 - 11
Summer beach shots or winter snow shots	16 - 22

- 2) To set the finder for automatic exposure operations, simply set "A" on the AE dial to the index while pushing the AE dial release button at the same time.  
*\* Always confirm that the AE dial release button has retracted completely, before proceeding, as otherwise normal photography, as well as automatic exposure operations, will not be possible.*
- 3) Adjust the aperture ring and set the preselected F/number opposite the white index dot on the lens attached to the camera. The above table is a guide for the approximate F/number to be used with ASA 100 film.



4) Stroke the shutter release button on the ETRS body about halfway or until slight resistance is felt. The correct shutter speed setting for the preselected aperture will be displayed along the bottom of the focusing screen area by LED-illumination. (The same effect is obtained by depressing the display button, with button, with both ETRS & ETR-C.)



A red-colored triangular mark indicates under- or over-exposure and, therefore, rotate the aperture ring until a suitable shutter speed setting is displayed.

## Pointers on Automatic Exposure Operation

- 1) Use the camera on a solid tripod or otherwise steady it, if the displayed shutter speed is a slow one, i.e., 1/30 second or slower.
- 2) The displayed setting is a very close approximation of the actual shutter speed.
- 3) Cover the finder with a black cloth to prevent light entering through the eyepiece, when not looking through the finder during auto-exposure operations.
- 4) Battery consumption is very great when auto-exposure operations are made with the lens covered by its cap or under extremely dark conditions.
- 5) Save battery power, by switching the AE dial to the OFF dot between shots or when not using the camera.
- 6) Always reset the film speed dial of the AE-II Finder E, when the film back (or film holder) is exchanged for one loaded with film of different speed.
- 7) Use the AE-II Finder E on Manual for flash photography, since there are dangers of very slow shutter speeds on auto-exposure which could result in over-exposures.
- 8) Always confirm that the shutter operation is completed, i.e., look for the shutter signal LED-flash in the finder (in the case of the ETRS), before turning the film winding crank or stroking the speed-lever. If the film is advanced and the shutter cocked before the shutter has had time to close down, which is possible when slow shutter speeds are used, as in the case of flash photography on Auto, the flash illumination will not take place with the next shot.
- 9) Do not press the depth of field preview lever when using the AE-II Finder E on Auto, since the shot will be over-exposed by the difference between the selected aperture and full aperture if the shutter is accidentally released while the preview lever is still depressed.

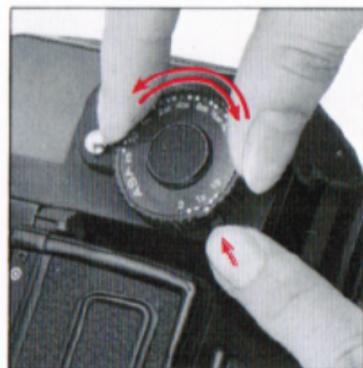
## Manual Exposure Operations

- 1) The AE-II Finder E can be used for manual exposure operations, in the following cases:—
  - a. For using a predetermined shutter speed setting.
  - b. For flash photography.
  - c. For time exposures.
  - d. For special effect shots.
- 2) The AE-II Finder E is used, in the following manner:
  - a. Align "M" on the AE dial to the index, while depressing the AE dial release button at the same time.  
The AE-II Finder E will then function as a coupled exposure meter. In other words, it will take an exposure reading and indicate the correct shutter speed for the preselected aperture, when the shutter release button on the body is half-stroked (ETRS) or when the display button is depressed (ETRS/ETRC). The shutter speed will also be displayed

played in digits below the focusing screen area, in this case, but will flicker on and off, to remind the user that the accessory is being used on Manual and not on Auto (in which case, the digits will stay illuminated).

- b. When the AE-II Finder E is used in the above manner, however, it has no control over the shutter speed setting and, therefore, the user must transfer the displayed setting to the shutter speed dial, i.e., use the shutter speed dial to set the indicated shutter speed or one adjusted for back-lighting or spot-lighting or, etc.

## Exposure Compensation



- 1) Exposure compensation of the indicated exposure setting is possible from  $1/2x$  to  $2x$ , in  $1/3$ rd EV steps, by rotating the film speed dial and setting the required exposure compensation to the index, while depressing the exposure compensation release button at the same time.

### Exposure Compensation Scale



- 2) Set to "1x" for standard exposures and change the exposure compensation, for adjusting the exposure, when there is a large contrast between the light and dark areas, such as in shots against the light, stage shots, or special effect shots.
- 3) For against-the-light shots, adjust on the over-exposure side which will give more exposure to the dark areas. Otherwise, the subject will turn out black or almost so, when standing in front of the window or against a snow-covered background if taken with the standard exposure.
- 4) For stage shots, etc., adjust on the under-exposure side. Otherwise, the spotlighted subject will be over-exposed compared to the dark surrounding stage.
- 5) Remember to return the exposure compensation scale to "1x" after taking the picture in the above manner.
- 6) With manual exposure operations, there will be no changes in the indicated exposure if compensations are made after the exposure measurement. Always adjust prior to exposure measurements, in such instances.

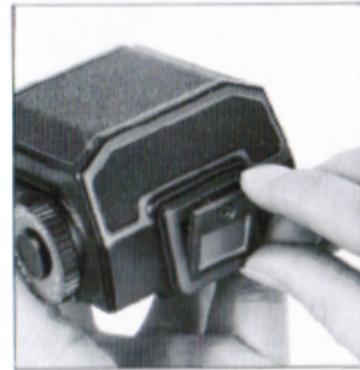
## Exchanging the Eyepiece Lens



- 1) The standard eyepiece lens supplied with the AE-II Finder E has a power of -1.50 diopters. When found unsuitable, however, it can be exchanged for one of six optional eyepiece lenses with powers of -4.50, -3.50, -2.50, -0.50, +0.50 and +1.50 diopters.

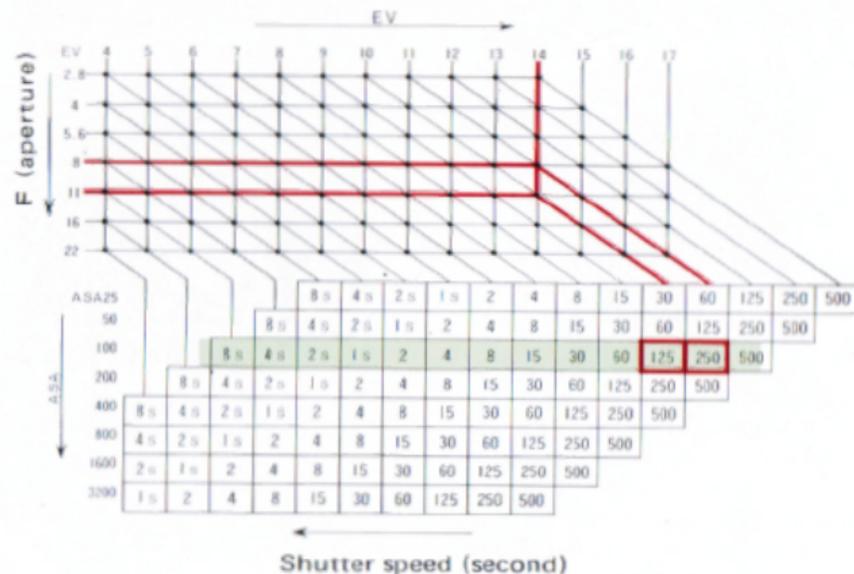


- 2) To exchange the eyepiece lens, first, detach the rubber eyecup. Then, unscrew the fixing screw at the top end of the frame which will permit detachment of the eyepiece lens with its frame.



- 3) The replacement eyepiece lens is supplied in its frame, too. Insert the bottom end first and then screw in the fixing screw at the top end. Consult your optician regarding the eyepiece lens which should be ordered.

## Relationship Between Shutter Speed, Aperture and Exposure



EV or exposure value is a combination of shutter speed and aperture (or f/number), as determined by the film speed (or sensitivity) and the intensity of the light.

### Relationship Between Shutter Speed, Aperture and Exposure

#### Example 1:

If EV 14 is the correct exposure, with ASA 100 film, the shutter speed setting will be 1/250 sec. when f/8 is set to the aperture ring.

#### Example 2:

If the aperture should be adjusted to f/11, in the above case, the shutter speed setting will become 1/125 sec.

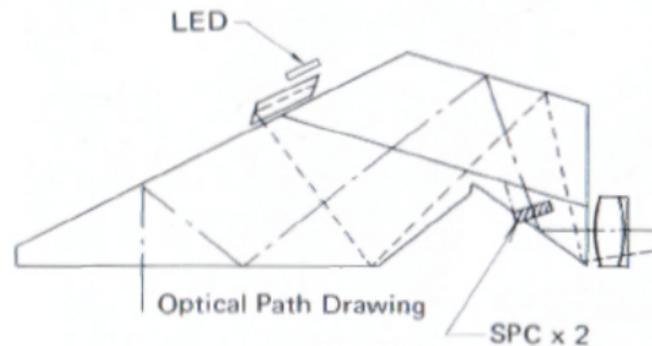
#### Remarks

\* A "brightness of EV 14" is the brightness outdoors on a bright sunny day.

\* The shutter speed indications should be read, as follows  
 1s - 8s: 1 second to 8 seconds  
 2-500: 1/2 second to 1/500 second

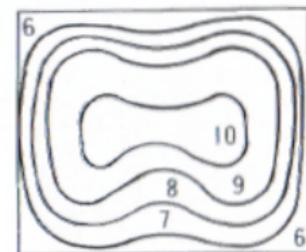
#### Exposure Measuring Range

The exposure measuring range with the AE-II Finder E is from Ev 4 to EV 17 (ASA 100 film).



#### Exposure Measuring Plane

Two silicon photocells (light receptor cells) are located in the position illustrated. Since they are attached parallel to each other, the meter sensitivity pattern is that shown to the right.



Meter Sensitivity Pattern

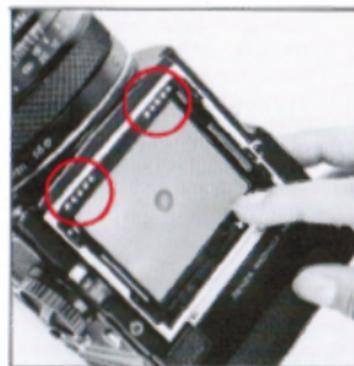
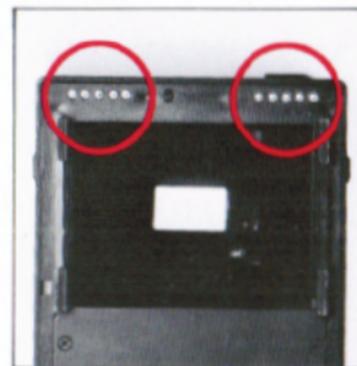
#### Exposure Measuring Sensitivity Pattern

Since the AE-II Finder E has a full aperture exposure measuring system, it has the sensitivity pattern illustrated no matter what the aperture setting. In the above pattern, the numbers indicate the ratio of sensitivity for the zones. Thus, if the sensitivity of the innermost "10" zone is considered to be 100, the outermost "6" zone is 60%.

## Care of the AE-II Finder E

- 1) Restrict cleaning of the prism surface and lens surface to blowing or brushing with the blower brush or soft camel hair brush. Or, use a soft, clean cloth but do not rub, in this case.
- 2) Restrict cleaning of the lacquered exterior surfaces to lightly wiping with a silicon cloth or a soft, clean cloth. Do not use lens cleaning solution, alcohol, thinner or other solvents.
- 3) Do not leave the AE-II Finder E in a hot place, such as on the summer beach shore, inside a closed car parked under direct sunlight, in the glove compartment, trunk or on the rear window deck. If left too long in this condition, the heat will effect the equipment and produce incorrect exposures, eventually even leading to breakdown. When left in such conditions, therefore, let the equipment cool down to the ambient temperature before using it.
- 4) Store the equipment in a cool, dry and well-ventilated place, with a lot of desiccant, such as silica gel, and, furthermore, take it out once in a while for an airing when the weather is cool and dry.
- 5) Do not leave or store the equipment in a laboratory where chemicals are used or where there are great temperature changes, as this can lead to corrosion of the electrodes and contacts and eventually to serious troubles.

## CAUTION



- 1) Always clean the contact points on the camera body and the base of the AE-II Finder E, before attaching the AE-II Finder E to the camera Body. Otherwise, there will be faulty contact between the two, should these points be dirty, which could lead to improper operations. Furthermore, always protect the base of the AE-II Finder E with its base cover when it is not being used.
- 2) **Do not depress the depth of field preview lever** when using the AE-II Finder E on "Auto". The shot will be over-exposed by the difference between the selected aperture and the maximum aperture should you accidentally release the shutter with the preview lever depressed.

**BRONICA CO., LTD.**

Futaba Bldg.,  
2-2 Shin Ogawa-Machi  
Shinjuku-ku, Tokyo, 162 Japan  
Tel: (03) 267-0211  
TELEX: 0232-2096 BRONC J  
Cable: BRONICA TOKYO

Printed in Japan  
E31280H